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What is the relation between public manager compensation and government effectiveness? An explorative analysis with public management implications

Mario Coccia, Igor Benati

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What is the relation between public manager compensation and government effectiveness? An explorative analysis with public management implications

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Public managers play a central role in public administration to support the overall efficiency with appropriate public policies. In several countries, the public considers the central government senior managers overpaid. These executive compensations tend to be considered disproportionate and in-equitable in relation to the activity and results of public managers. A growing literature has analysed the possible determinants and consequences of higher levels of compensation in public and private organizations. However, a main question unknown is how the levels of compensation of public managers are related to the capacity of the government to effectively formulate and implement sound policies. The findings of this study, based on OECD and World Bank data, show that the government effectiveness and regulatory quality of nations seem to be negatively associated to high levels of compensation for central government senior manager, standardized with GDP per capita of countries. This study also shows that some possible factors of the findings can be due to low level of freedom of expression, rule of law and corruption control of some countries. These results provide fruitful insights to support best practices in public administration based on salaries in-centive-oriented that may stimulate public managers' work and enhance the national government effectiveness of countries.

KEYWORDS: Compensation, Reward, Public managers, Salary, Incentive, Government effectiveness, Regulatory quality, New Public Management, Personnel Policy, Public Policy, Public Administration, Rewards.

JEL CODES: D72; H0; J3; J45.

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Overview of the problem

The compensation in public sector has inspired a voluminous literature since public managers play a central role in public administration to support the organization and efficiency of public bodies (Benati and Coccia, 2017; Jarque, 2008; Coccia, 2005, 2007, 2013; Bozeman, 2007; Vakkuri, 2010; Hood and Dixon, 2015, 2015a; Guy and Jon, 2016). In general, the public considers disproportionate and inequitable the executive compensations in relation to their activity and achievements. Gao and Li (2015) show that Chief Executive Officers (CEOs) in public firms are paid 30% more than CEOs in comparable privately-held firms. Malul and Shoham (2013, p. 75) argue that a non-competitive market structure in the public sector can generate a distorted ownership (public) structure that induces abnormal wages. In this context, the hot debate, both in scientific literature and in media, is around the fact that government senior managers are overpaid (Jarque, 2008; Colvin, 2005). Several studies have analysed different factors relating to high compensation of managers in public sector (cf., Chen and Bozeman, 2014; Hood and Dixon, 2015, 2015a). However, the consequences of public manager compensation on overall efficiency of public administration are hardly known.

In light of the continuing importance of this research field concerning public manager wages, the study here seeks to analyse the following research questions:

a) *How is the relation between public manager compensations and government effectiveness of countries?*

b) *Which countries have good and fair government effectiveness in relation to the level of public manager wages? And why?*

The critical problem in public sector, underlying these research questions, is the possible impact of public managers' salary on government effectiveness and regulatory quality of countries (*cf.* Thomas, 2010).

This study here endeavours to shed some empirical light on recent trends about this relationship between public manager compensation and government effectiveness. This study focuses specifically on two goals. The first is to substantiate the hypothesis that that high levels of compensation for central government senior manager are associated to lower government effectiveness and regulatory quality of countries. The second is to stress the importance of appropriate policies of compensation of public managers based on incentives schema that can ameliorate the overall efficiency of public administration and performance of countries. In order to position the analysis within existing theoretical frameworks, this study begins by reviewing some studies in these research fields.

1. Theoretical background

The studies on salaries of public and private managers are conducted in several research domains such management, public economics, public administration and so on (Malul and Shoham, 2013; Coccia and Rolfo, 2007, 2013; Rimington, 2008). These studies on compensation of managers have increased in the last decades to understand some components of the salary and support the efficiency of public and private organizations as well as of public administration in the whole (Gao and Li, 2015; *cf.,* Chen and Bozeman, 2014). There is a hot debate about *whether* executive compensation contracts are excessive (Fahlenbrach, 2009). In general, the average compensation of managers has risen in recent years and the public considers disproportionate and inequitable executive compensation of public sector (Jarque, 2008; Colvin, 2005). Moreover, the recent economic crisis and socio-economic problems in Europe have lead several governments and regulators to reform laws of compensation packages in public sector (cf. Italian Law DL n. 201/ 2011; Dittmann et al., 2011; Kuhnen and Niessen, 2012).

Friedman (2008) argues that the high compensation for managers cannot be explained easily using economic factors and that the managers are often paid high salaries even when organization's earnings are ordinary or there are consistent losses. Many scholars claim that the labour market is a main factor that determines the level of compensation contracts, although in some countries the power of trade unions influences the increase of salaries that may not be linked to performance and goals of public firms[1] (*cf.* Lamm West and Mykerezi, 2011; Hubbard, 2005). The ownership structure of the company (public or private) can also affect managers' compensation and the executive power in the company (Denis et al., 1997). Gao and Li (2015, pp. 388-389) show that CEOs in public firms are paid 30% more than CEOs in comparable privately-held firms. Malul and Shoham (2013, p. 75) identify the reasons for the huge differences in Chief Executive Officers' (CEOs') compensation and some abnormal components. In particular, CEOs in monopolies take advantage of the non-competitive market structure in the sector to gain abnormal wages. In addition, a distorted ownership structure may generate a severe distortion in wages, especially when the level of competitiveness in the sector is relatively low (cf., Meier and O'Toole, 2010).

López-Iturriaga et al. (2015) analyse some factors of remuneration policy, such as composition and sensitivity. The results suggest that directors appointed by pressure-resistant investors increase the relative weight of the variable compensation, decrease the proportion of fixed compensation, and induce compensation packages sensitive to performance. In this debate regarding appropriate compensation policies, 90% of institutional investors believe that corporate executives are overpaid (Brandes et al., 2008; cf., Rosen, 1990). This perception has led, some institutional investors, to become actively engaged in the compensation decisions at their portfolio firms (Bushman and Smith, 2001; Hartzell and Starks, 2003).

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[1] For performance in public research organizations see Coccia, 2001a, 2003, 2004, 2005, 2005a, 2006, 2008; Coccia et al., 2015; Coccia and Rolfo, 2002.

The rapid growth in director compensation has caused a big controversy, since directors serving on the compensation committee can determine the level and mix of their own compensation packages (Cordeiro et al., 2000; *cf.* EUCGF 2009). Moreover, due to an alleged lack of efficiency of independent directors in European countries, some authors highlight that the supervising role in these environments is actually played by directors appointed by institutional investors (Sánchez Ballesta and García Meca, 2007; *cf.* Van de Walle and Bouckaert, 2007; Enikolopov, 2014). DeVaro and Fung (2014, p. 131) study the effects of institutional constraints on incentive contracts and suggest that "the policy reduces CEO retention rates, raises total compensation and firm profit, and distorts compensation contracts, yielding base pay (a slope) that is inefficiently low (high)".

Considering these topics in a context of national economic system, Ahlerup and Hansson (2011) argue that nation-building is believed to have a positive influence on economic and political outcomes. Butkiewicz and Yanikkaya (2011) analyse the impact of government expenditures on economic growth, emphasizing how government effectiveness influences the efficiency of government spending. The study by lo Storto (2016) shows a trade-off between expenditure efficiency and effectiveness across major municipalities.

Overall, then, the growing literature in these research fields has analysed several topics concerning the compensation by senior managers in public and private organizations, however, the relation between the compensation of public managers, government effectiveness and regulatory quality of countries is hardly known and the literature has largely ignored this vital linkage.

Next section presents the study design to analyse this main relation and some possible explanations for supporting the efficiency of public sector as a whole.

2. Materials and Methods

The hypothesis of this study is the following (*HP*ϕ):

*HP*ϕ: high levels of compensation for central government senior manager are negatively associated to government effectiveness and regulatory quality of countries, *ceteris paribus.*

The theoretical framework of the study is summarized in the following schema of Figure 1.

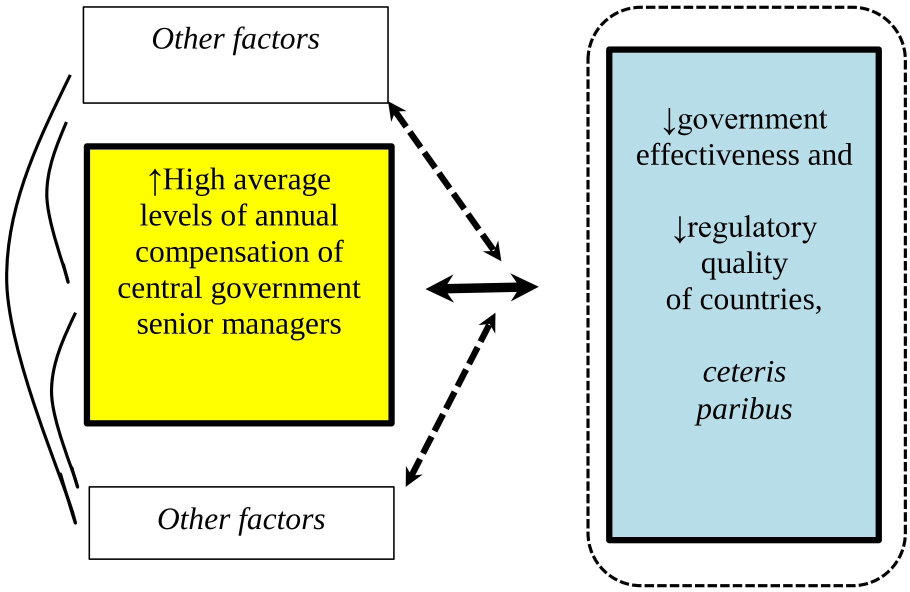


Figure 1. Model of the relation between average levels of annual compensation of central government senior managers, government effectiveness and regulatory quality of countries, ceteris paribus.

The purpose of the present study is to see whether statistical evidence supports the hypothesis (*HP*ϕ) that low government effectiveness and regulatory quality of countries can be associated to high levels of compensation for central government senior manager (*cf.,* model in figure 1). The indicators of this study are in Table 1. Sources of data are OECD (2013), World Bank (2008) and Worldwide Governance Indicators -WGI-(*cf.*, Norris, 2008) that consider data per countries.

Table 1: Indicators of the analysis

Description	**Year**	**Source**
• Average annual compensation of central government senior managers D1 position, USD PPP (at country level)	2011	OECD 2013
• GDP per capita PPP constant 2005 international $	2005	World Bank 2008
• Kaufmann government effectiveness	2006	WGI (Norris, 2008)
• Kaufmann regulatory quality	2006	WGI (Norris, 2008)
• Kaufmann Voice and Accountability	2004	WGI (Norris, 2008)
• Kaufmann rule of law	2004	WGI (Norris, 2008)
• Kaufman corruption control	2004	WGI (Norris, 2008)

Note: OECD is Organisation for Economic Co-operation and Development; WGI is Worldwide Governance Indicators by World Bank (2008).

The sample of countries is based mainly on OECD countries that are described in Appendix A. Other countries are not considered in the analysis here because of missing values of variables under study in the datasets under study. This study focuses on the relation between higher annual compensation of central government senior managers and efficiency of public administration. In particular, the level of total compensation for senior managers in the public sector is one indicator of the attractiveness of the public sector and of its ability to keep talent for positions with high levels of responsibility in government. Senior managers have a leading role in government policy making and execution. In particular, D1 managers are top public servants below the minister or Secretary of State. These D1 Managers are top public servants just below the minister or Secretary of State/junior minister. They can be a member of the senior civil service and/or appointed by the government or head of government. They advise government on policy matters, oversee the interpretation and implementation of government policies and, in some countries, have executive powers. D1 managers may be entitled to attend some Cabinet/Council of ministers meetings, but they are not part of the Cabinet/Council of ministers. They provide overall direction and management to the ministry/Secretary of State or a particular administrative area. The precise job title can differ across countries (OECD, 2012).

This study also considers the levels of Gross Domestic Product (GDP) per capita (World Bank, 2008) to standardize the annual compensation of central government senior manager across several countries to create a comparable framework. In order to investigate the relation between wages of public managers, government effectiveness and regulatory quality across countries, a number of measures of the quality of governance are considered from Worldwide Governance Indicators (Thomas, 2010). In particular, the capacity of the government to effectively formulate and implement sound policies is measured by (Kaufmann et al., 2008; 2005):

- Government Effectiveness (GE) – capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- Regulatory Quality (RQ) – capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Remark: Government Effectiveness (GE) and Regulatory Quality (RQ) indices are considered in the 2006, which is the last year available in the dataset under study (Norris, 2008). Dataset shows that these indicators are rather stable over time.

In addition, this study analyses the factors of Kaufmann voice and accountability, rule of law and control corruption to explain some possible determinants of vital relationships under study.

- Kaufmann Voice and Accountability Index captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media (Kaufmann et al., 1999, 2005, 2008).
- Kaufmann Rule of Law– capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- Finally, Kaufmann Control of Corruption – capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

These data are from Worldwide Governance Indicators -WGI-(Kaufmann et al., 2008; Kaufmann et al, 1999, p. 1; WGI, 2010; Norris, 2008). Dataset was subjected to horizontal and vertical cleaning (excluding some countries with missing values and/or outliers). The normal distribution of variables is checked with Kurtosis and Skewness coefficients. As some variables do not have normal distributions, a logarithmic transformation has adjusted these distributions in order to apply correctly statistical analyses. First of all, the average annual compensation of central government senior managers divided by GDP per capita PPP constant 2005 international $ (this ratio is called RCM) is calculated to compare the results across countries in a homogenous framework. The descriptive statistics of variables is performed for a preliminary analysis. The relationships between variables are analysed with correlation analysis. In addition, the hierarchical cluster with the Squared Euclidean distance and Ward's Method linkage is also applied to detect and analyse in a comparative framework homogenous sets of countries that have a similar behaviour concerning the proxy of government effectiveness and regulatory quality used in the study here. The sets of the hierarchical clusters are analysed with descriptive statistics to understand differences, between homogenous sets of countries, in the level of annual compensation of central government senior managers, of government effectiveness, of regulatory quality as well as Kaufmann Voice and of Accountability, Rule of law and control of corruption. Statistical analyses of this study are performed by means of the Statistics Software SPSS.

3. Statistical analysis

Table 1A, 2A and Figure 1A and 2A in Appendix A show general arithmetic mean of some variables under study over time and a comparison of specific macro regions.

Table 2: Correlations

		LN Kaufmann government effectiveness 2006	LN Kaufmann regulatory quality 2006	LN Ratio Average annual compensation of central government senior managers / GDP per capita PPP constant 2005 international $
LN Kaufmann government effectiveness 2006	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	20		
LN Kaufmann regulatory quality 2006	Pearson Correlation	0.896**	1	
	Sig. (2-tailed)	0.001		
	N	20	20	
LN Ratio Average annual compensation of central government senior managers / GDP per capita PPP constant 2005 international $	Pearson Correlation	–0.598**	–0.414*	1
	Sig. (2-tailed)	0.005	0.070	
	N	20	20	20

** Correlation is significant at the 1% level (2-tailed); * Correlation is significant at the 10% level (2-tailed).

Table 2 shows a negative association between the Ratio (Average annual compensation of central government senior managers / GDP per capita PPP constant 2005 international $) -acronym RCM- and Kaufmann government effectiveness 2006 (–0.598, $p<0.01$) and Kaufmann regulatory quality (–0.414*, $p<0.1$).

This is consistent with the hypothesis stated above about the expected negative association between high levels of compensation for central government senior manager, government effectiveness and regulatory quality of countries, *ceteris paribus*.

Figure 2 shows the scatter of data, considering the variable government effectiveness (GE) 2006 on RCM 2005. A comparative analysis shows four main sections in which the countries are located with different behaviour.

In particular,

- *High-High (H-H GE)* is in North-East corner: countries with High Ratio (Average annual compensation of central government senior managers/ GDP per capita) and high government effectiveness (e.g., New Zealand, Australia, etc.);
- *High –Low (H-L GE)* is in South-East corner: countries with High Ratio (Average annual compensation of central government senior managers/ GDP per capita) and low government effectiveness (e.g., Poland, Italy, etc.);
- *Low-Low (L-L GE)* is in South-West corner: countries with low Ratio (Average annual compensation of central government senior managers/ GDP per capita) and low government effectiveness (e.g., Greece, Spain, etc.);
- *Low-High (L-H GE)* is in North-West corner: countries with low Ratio (Average annual compensation of central government senior managers/ GDP per capita) and high government effectiveness (e.g., Germany, Denmark, Finland, etc.). This set may represent virtuous countries in terms of government effectiveness compared to the ratio RCM.

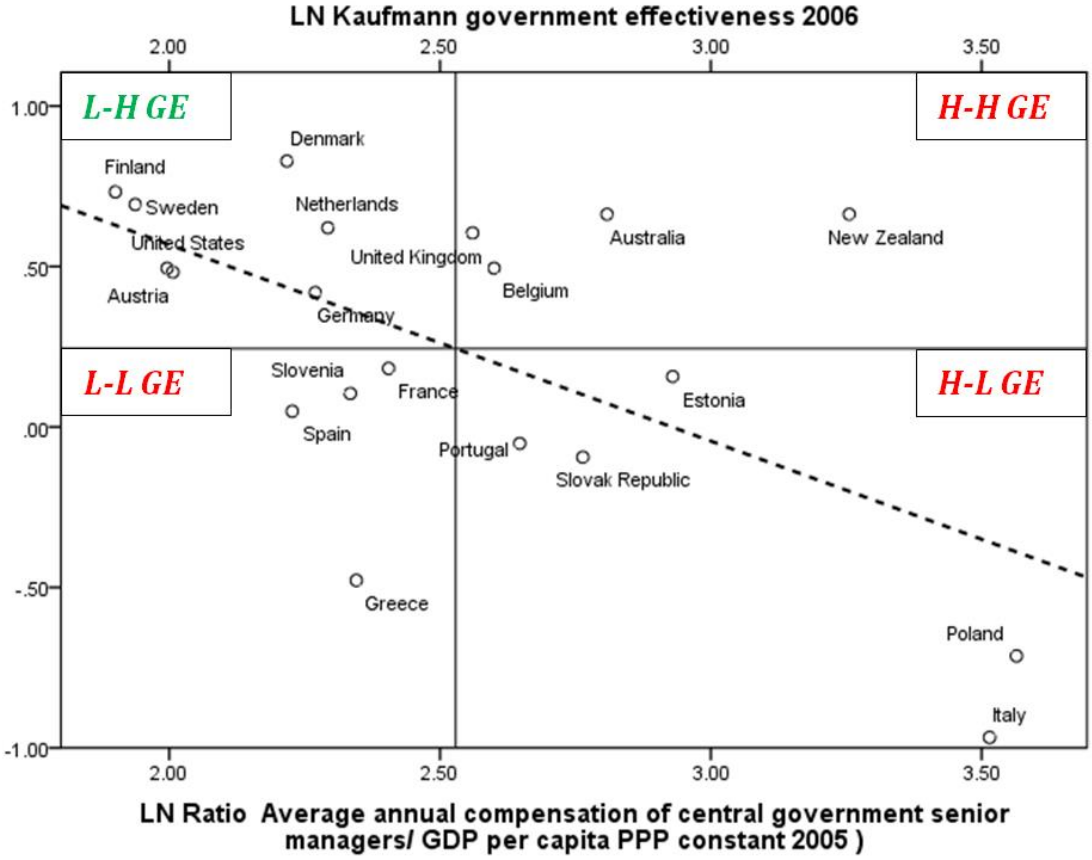


Figure 2: Relationship of Kaufmann government effectiveness on Ratio Average annual compensation of central government senior managers/ GDP per capita PPP constant (RCM)

Figure 3 shows the scatter of data, considering the variable regulatory quality (RQ) 2006 on RCM 2005. A comparative analysis here also detects main groups of countries that show:

- *High-High (H-H RQ)* is in North-East corner in fig. 3: countries with High Ratio (Average annual compensation of central government senior managers/ GDP per capita) and high regulatory quality (e.g., New Zealand, Australia, etc.);
- *High –Low (H-L RQ)* is in South-East corner: countries with High Ratio (Average annual compensation of central government senior managers/ GDP per capita) and low regulatory quality (e.g., Poland, Italy, etc.);

- *Low-Low (L-L RQ)* is in South-West corner: countries with low Ratio (Average annual compensation of central government senior managers/ GDP per capita) and low regulatory quality (e.g., Greece, Spain, France, etc.);
- *Low-High (L-H RQ)* is in North-West corner: countries with low Ratio (Average annual compensation of central government senior managers/ GDP per capita) and high regulatory quality (e.g., Germany, Denmark, Finland, Austria, etc.). This set may represent virtuous countries in terms of regulatory quality compared to the ratio RCM.

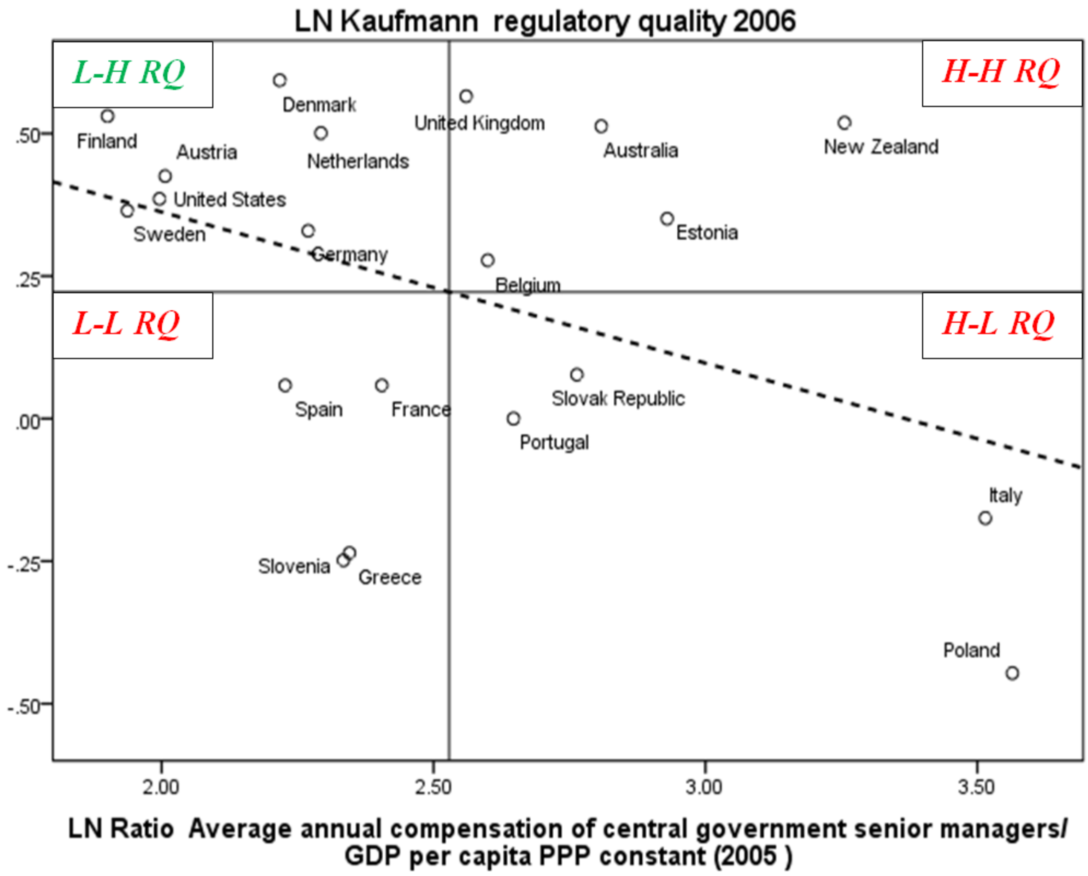


Figure 3: Relationship of Kaufmann regulatory quality on Ratio Average annual compensation of central government senior managers/ GDP per capita PPP constant (RCM)

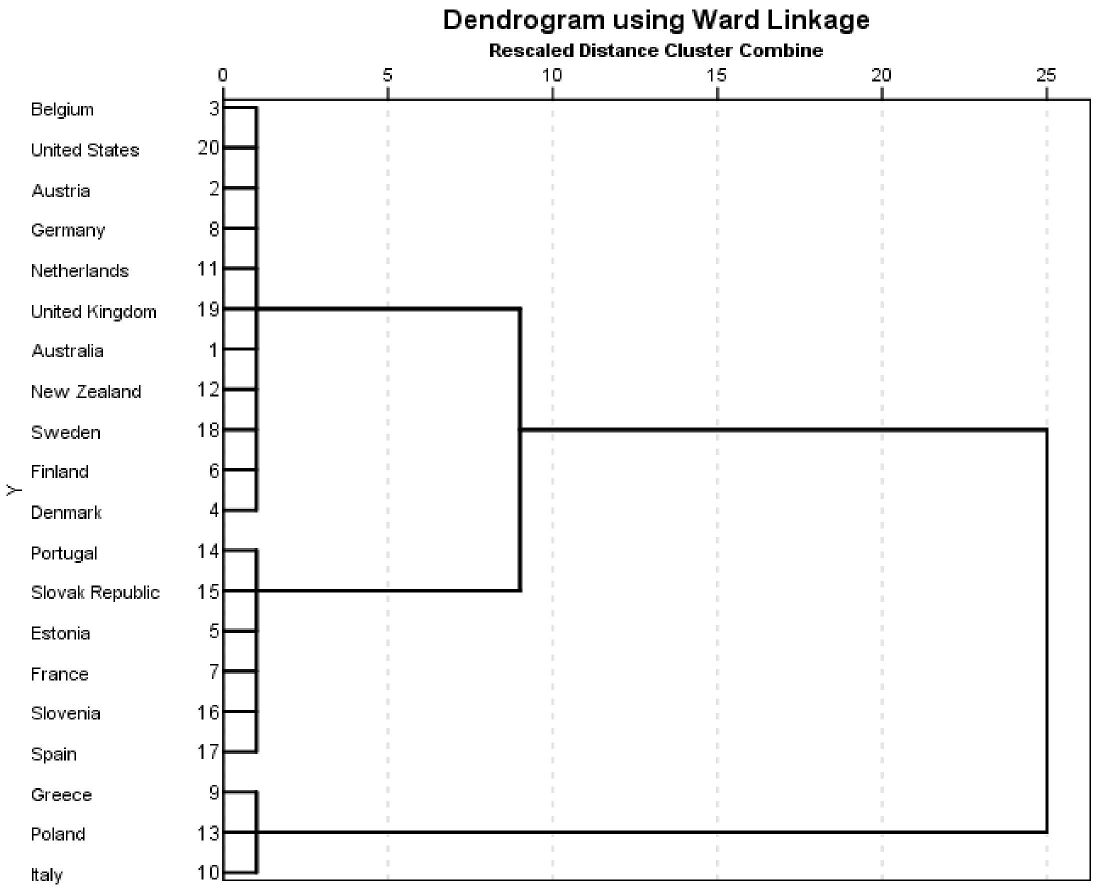


Figure 4: Dendrogram based on Kaufmann government effectiveness 2006 of countries

Figure 4 shows the dendrogram with three main groups, using the variable of Kaufmann government effectiveness. Comparative analyses of these groups in table 3 show that the group A (Greece, Italy and Poland) has a high average level of Ratio (annual compensation of central government senior managers/GDP per capita) -*i.e.* 26.45- associated to lower levels of government effectiveness and regulatory quality across countries, *ceteris paribus*. A possible explanation of causing factors is that this group A has, compared to other groups B and C, low freedom of expression, freedom of association, free media, lower quality of contract enforcement and property rights and corruption control (see Tab. 3).

Table 3: Analysis of the groups of countries from dendrogram based on Kaufmann government effectiveness

		Ratio Average annual compensation of central government senior managers/ GDP per capita PPP constant (RCM)	Kaufmann Voice 2004	Kaufmann rule of law 2004	Kaufmann corruption Control 2004	Kaufmann government effectiveness 2006	Kaufmann regulatory quality 2006
A)	N	3	3	3	3	3	3
	Mean	**26.45**	**1.15**	**0.63**	**0.42**	**0.50**	**0.76**
	Std. Error of Mean	8.02	0.03	0.11	0.13	0.07	0.06
B)	N	6	6	6	6	6	6
	Mean	13.23	1.26	1.00	1.05	1.07	1.07
	Std. Error of Mean	1.49	0.07	0.14	0.15	0.05	0.08
C)	N	11	11	11	11	11	11
	Mean	11.46	1.61	1.78	2.08	1.85	1.58
	Std. Error of Mean	1.73	0.05	0.05	0.09	0.07	0.05

Groups: A) Greece, Italy, Poland; B) Portugal, Slovak Rep., Estonia, France, Slovenia, Spain; C) Belgium, USA, Austria, Germany, Netherlands, UK, Australian, New Zealand, Sweden, Finland, Denmark.

Figure 5, instead, shows the dendrogram with four main groups, using the variable of Kaufmann regulatory quality.

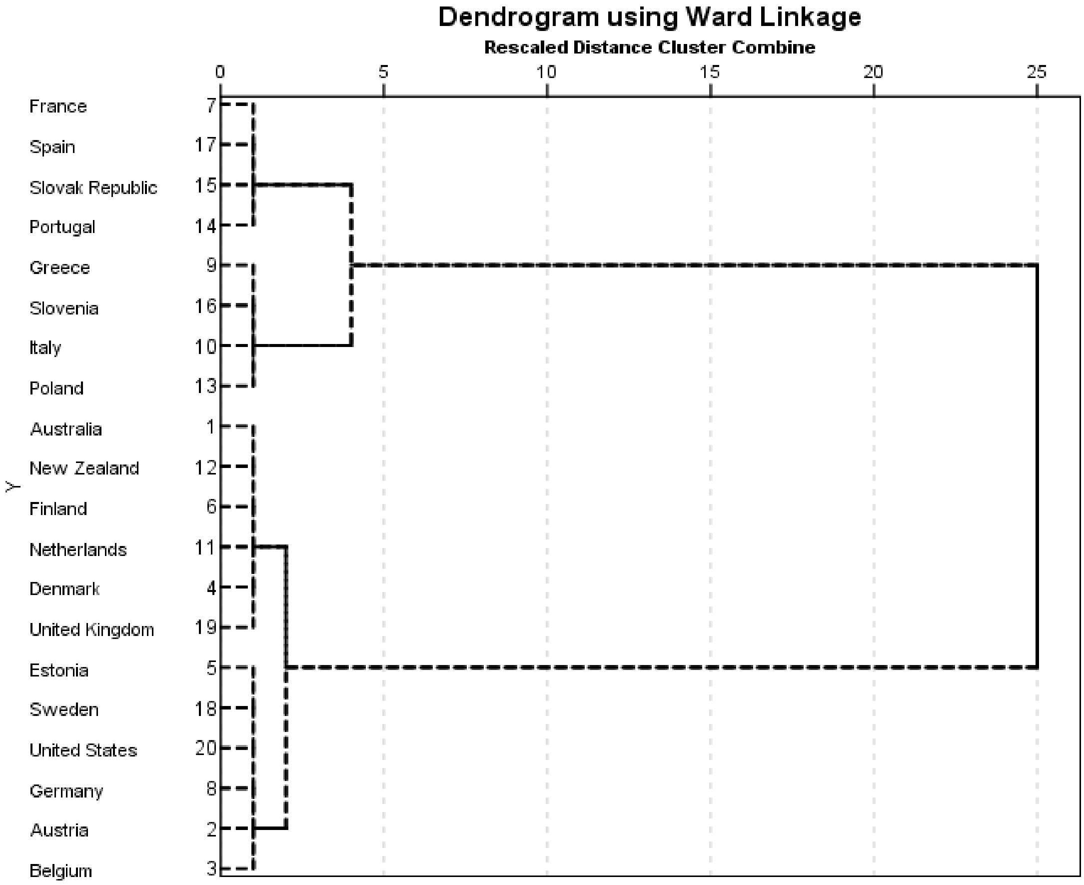


Figure 5: Dendrogram based on LN Kaufmann regulatory quality 2006 of countries

Comparative analysis of these groups in Table 4, considering the variable regulatory quality, shows that the group B (Greece, Italy; Poland and Slovenia) has a high average level of the ratio annual compensation of central government senior managers/GDP per capita (*i.e.* 22.42) associated to low levels of government effectiveness and regulatory quality across countries, *ceteris paribus*. A possible explanation of determinants is that this group B has, compared to other groups A, C and D, low freedom of expression, freedom of association, free media, lower quality of contract enforcement and property rights and corruption control.

Table 4: Analysis of the groups of countries from dendrogram based on Kaufmann regulatory quality

		Ratio Average annual compensation of central government senior managers/ GDP per capita PPP constant (RCM)	Kaufmann Voice 2004	Kaufmann rule of law 2004	Kaufmann corruption control 2004	Kaufmann government effectiveness 2006	Kaufmann regulatory quality 2006
A)	N	4	4	4	4	4	4
	Mean	12.58	1.32	1.07	1.10	1.03	1.05
	Std. Error of Mean	1.48	0.10	0.20	0.23	0.06	0.02
B)	N	4	4	4	4	4	4
	Mean	**22.42**	**1.15**	**0.68**	**0.56**	**0.65**	**0.76**
	Std. Error of Mean	6.96	0.02	0.10	0.17	0.16	0.04
C)	N	4	4	4	4	4	4
	Mean	13.54	1.70	1.86	2.24	1.99	1.71
	Std. Error of Mean	2.84	0.05	0.04	0.10	0.07	0.02
D)	N	6	6	6	6	6	6
	Mean	10.60	1.45	1.54	1.73	1.60	1.43
	Std. Error of Mean	1.91	0.09	0.15	0.19	0.11	0.03

Note: A) France, Spain, Slovak Rep., Portugal; B) Greece, Slovenia, Italy, Poland; C) Australia, New Zealand, Finland, Netherlands., Denmark, UK; D) Estonia, Sweden, USA, Germany, Austria, Belgium

4. Discussion

Public managers play a central role in public administration, defining what tasks are to be completed, what targets are to be reached and policy implemented for the government effectiveness of countries.

The statistical evidence here seems to support hypothesis ϕ that on average, low levels of government effectiveness and regulatory quality across countries can be also explained by higher levels of average annual compensation of central government senior managers divided by GDP per capita PPP constant 2005 international $ (ratio RCM), *ceteris paribus*.

In general, differences in compensation levels across countries result from differences in the share of highly qualified employees and seniority levels. Differences can also be the result of different organisational structures of public administration across countries. Studies by OECD (2013, 2011) show that on average, a D1 senior manager's compensation is 3.4 times higher than the average tertiary educated employee's compensation. Relative to GDP per capita, D1 senior managers in Italy, New Zealand and Poland experienced the highest compensations compared to other countries. These high levels of compensation can also be due to differences in national labour markets, laws of public contracts, power of trade unions and remuneration of the private sector for comparable skills.

This study seems to show that high public manager compensation is associated to lower levels of government effectiveness and regulatory quality across countries. This result can be due to manifold factors that concern the overall socio-political environment and administrative structure of countries. In particular, countries with High Ratio Average annual compensation of central government senior managers/ GDP per capita and low government effectiveness and regulatory quality seem to have:

- a socio-political environment based on low freedom of expression, freedom of association, free media, lower quality of contract enforcement, property rights and corruption control.
- a regulation of public administration in which the wage of public managers is not linked to performances and goals, *i.e*. they receive the same amount of salary both in case of good and in case of bad performances.

Newton (2015), considering the Pay-for-Performance Hypothesis, also finds a significantly negative relationship between CEO-to-employee relative pay and multiple measures of non-profit performance. The results here highlight the importance of strong governance mechanisms in mitigating high levels of relative pay to and poor performance by executives in organizations with ineffective monitoring mechanisms. As a matter of fact, the administrative structure and regulations of some countries can explain the high levels of average annual compensation of central government senior managers and low efficiency of the overall public administration. In order to control (and also reduce) this distortion between high compensation of public managers and poor government effectiveness, some recent reforms (such as the legislative decree n. 150/2009 in Italy) require that public administrations should introduce system of evaluation, incentives and rewards (monetary and non-monetary) based on performances, achievements and merit. Public administrations are also required to set up an Independent Evaluation Unit to evaluate top managers, to ensure the adoption of an appropriate evaluation system, and to certify performance reports. Hence, many changes must be implemented in several countries that have low government effectiveness and regulatory quality associated to high compensation of public managers in order to enhance/reach the level of performance and efficiency of some Scandinavian and/or North European countries (*cf.*, Bouckaert and Halligan, 2008; Capano, 2003; Ongaro, 2011; Ongaro and Valotti, 2008 for Italy and other countries).

5. Implications of public sector management and concluding observations

On the basis of the argument presented in this paper, the findings show that high levels of the Ratio Average annual compensation of central government senior managers/GDP per capita seem to be negatively associated to government effectiveness and regulatory quality across countries, *ceteris paribus*.

This study also shows that this negative association may be due to low freedom of expression, freedom of association, free media, quality of contract enforcement and property rights and corruption control of countries. In order to correct these distortions in public sector, in particular when the efficiency of public administration of specific countries is low, the implementation of appropriate managerial principles in public sector organizations based on elements of New Public Management (NPM) is more and more necessary (*cf.,* Capano et al., 2015; Schillemans, 2015; Aucoin, 1990; 2012; Hood, 1991; Hood and Dixon, 2015; Vakkuri, 2010). As a matter of fact, according to the NPM framework, in many countries (i.e., Anglo-Saxon countries, Scandinavia, Spain, Portugal and many OECD countries), public services have come under increased pressure to improve their efficiency and effectiveness as well as to reduce demand on taxpayers, while maintaining the volume and quality of services supplied to the public (Perry, 1996; Barzelay, 2001; Hood, 1991). In some countries, the low freedom of expression, freedom of association, free media, and corruption control can be causing factors of possible inefficiencies that hinder the reduction of the high compensation of public managers. To increase the efficiency of public administration, public sector and governments should introduce various reforms and “private sector” management techniques. For instance, Italy has proved to be less effective than Anglo-Saxon counterparts in the introduction of NPM reforms and does not emphasize performance management as strongly as other countries (Bouckaert and Halligan, 2008; Ongaro, 2011; Ongaro and Valotti, 2008; Di Mascio *et al.,* 2016). The study and evidence here can explain some characteristics of the relationship between high compensation of public managers and efficiency of the overall public administration; in particular,

(1) The present conceptual framework focuses on higher levels of average annual compensation of central government senior managers across countries, standardized with GDP per capita, that can be negatively associated to the government effectiveness and regulatory quality of nations. This relation is neglected by several theoretical frameworks to explain the main differences of government effectiveness among countries.

(2) A comparative analysis of countries shows main groups in terms of binomial relation between compensation of public managers and government effectiveness: efficient nations in terms of moderate annual compensation of public managers associated to high government effectiveness are represented mainly by Germany, Denmark and Finland. Vice versa, Poland, Italy, etc. have low government efficiency associated to high compensation of public managers. These countries need to improve the structure, management and organizational behaviour of public administration (*cf.,* Coccia, 2008, 2012, 2014a; Coccia and Cadario, 2014; Coccia and Rolfo, 2008, 2009, 2010).

(3) This study shows that high levels of public manager compensations and low efficiency of public administration are also associated to low freedom of expression, freedom of association, free media, lower quality of contract enforcement and property rights and low control of corruption. This result confirms that public services have to be under increased pressure to improve their efficiency and effectiveness.

(4) The results here also may help policymakers to show sources of national inefficiencies in public sector and support reforms based on the implementation of appropriate managerial principles that improve the efficiency of overall public administration.

Practically, the comparative analysis of results across countries can be important to design appropriate best practices in quest of a greater efficiency in the public administration.

In particular, the government effectiveness and regulatory quality can enhance in several countries only by reducing the current bureaucratic organization and regulations (Coccia, 2009, 2009a), and implementing best practices for public sector management, such as:

- Design a *reward scheme* for human resources development by flexible salaries, paying outstanding performers more than other workers. Kochanski and Ledford (2001) claim that without any differentiation in extrinsic rewards, high performers would feel dissatisfied and leave and/or working less if treated in the same way as low performers, mainly in public sector (in fact, this is a main organizational deficiency in current public administration of some countries, such as Italy; *cf.,* Cassandro, 1979).
- Foster social willingness to work in team for supporting efficiency of products and service in public administration (*cf.*, Bartlett and Ghoshal, 1989);
- Create stimulating work environment (clear objectives, collaborative teams, fluent communication, opportunity to growth and fair reward system linked to scientific performance) in order to increase the performance of public administration.
- Reduce sources of conflicts and misunderstandings within the public bodies that can hurt or frustrate public servant, cause low performance and lead to dissatisfaction and stress (Tsui *et al.*, 1992, Cordero *et al.*, 1996). Top management in public sector should foster work involvement, job satisfaction and motivation of its groups since these are key elements to increase performance and efficiency of public administration (*cf.* Coccia, 2001, Coccia and Rolfo, 2013; Witesman and Walters, 2014).

- Reinforce the strategic leadership of top managers because this is an important factor that inspires others with their vision, creates excitement in groups and provides incentives for achieving goals in competitive environments (Vera and Crossan,2004; Bass and Avolio, 1990).

Overall, then, the most interesting finding of this study is that high levels of the Ratio Average annual compensation of central government senior managers/GDP per capita seem to be negatively associated to government effectiveness and regulatory quality across countries, *ceteris paribus*. The high levels of public manager compensations and low efficiency of public administration are also associated to low freedom of expression, freedom of association, free media, lower quality of contract enforcement and property rights and low control of corruption.

However, the current study here is exploratory in nature and examines only a limited number of variables. Although this study offers important contributions to knowledge in these research fields, the study's findings need to be considered in light of their limitations. In fact, countries have a high heterogeneity due to structural differences in political, cultural and social system that affect the compensation of public managers and government effectiveness (Coccia, 2005b, 2008a, 2014). Hence, some results discussed here should be considered with great caution because they are based on aggregate data of different countries. To exploring the general implications of this study, future research should consider some controls and intervening variables that may be useful in providing a deeper and richer explanation of these phenomena of interests (e.g., institutional contexts, electoral systems, level of democratization, etc.). Future efforts could also examine other metrics that more closely related to the performances of public administration and specific case study such as Singapore.

Overall, then, the results of this study are of course tentative, since we know that other things are often not equal over time and space. In particular, more fine-grained studies will be useful in future, ones that can more easily examine other complex factors of socioeconomic systems that explain the dissimilar performances of public administration across countries. This preliminary study can be a starting point to understand a basic relation between salary of public managers and overall efficiency of public sector to design best practices directed to improve laggard countries in government effectiveness. To conclude, there is need for much more detailed research to shed further empirical light on this vital relation between average wage of central government senior managers, government effectiveness and overall efficiency of public administration of countries. Most of the focus here is on some variables, clearly important, but not sufficient for broader understanding of *how* high salaries of public managers affect performance and efficiency of several nations over the long run.

Appendix A. Sample of countries

Australia, Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom, United States, New Zealand.

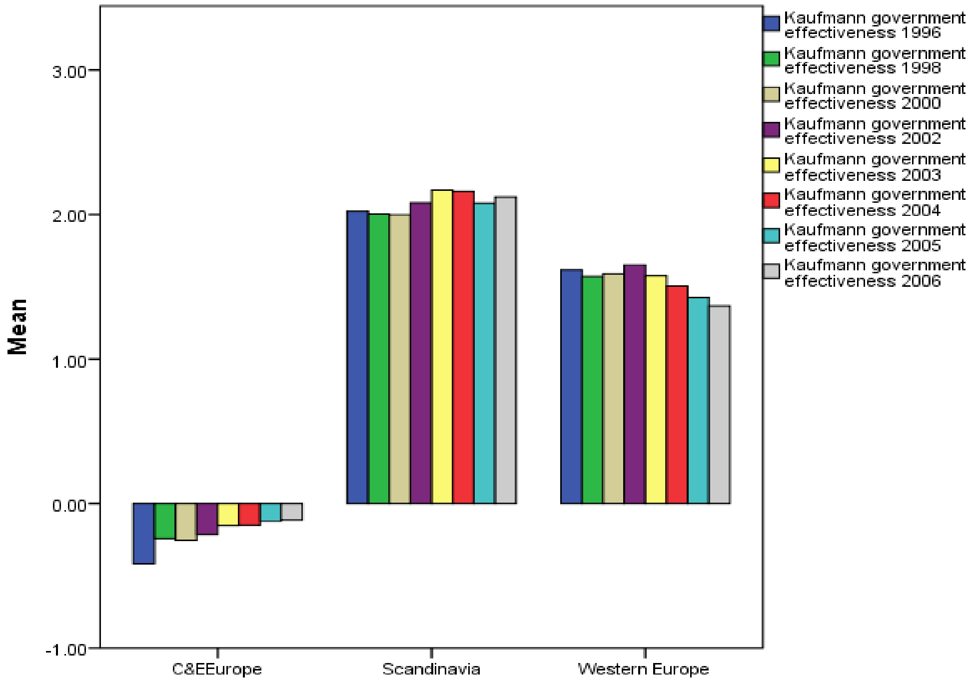
Table 1A – Descriptive Statistics

	Kaufmann Government effectiveness 2006	Kaufmann regulatory quality 2006	LN Kaufmann government effectiveness 2006	LN Kaufmann regulatory quality 2006
Mean	1.41	1.30	0.24	0.22
Std. Deviation	0.56	0.37	0.50	0.31
Skewness	-0.34	-0.34	-1.11	-0.70
Kurtosis	-0.97	-1.23	0.56	-0.68

Table 2A – Arithmetic mean and standard deviation of Kaufmann government effectiveness and regulatory quality (1996-2006)

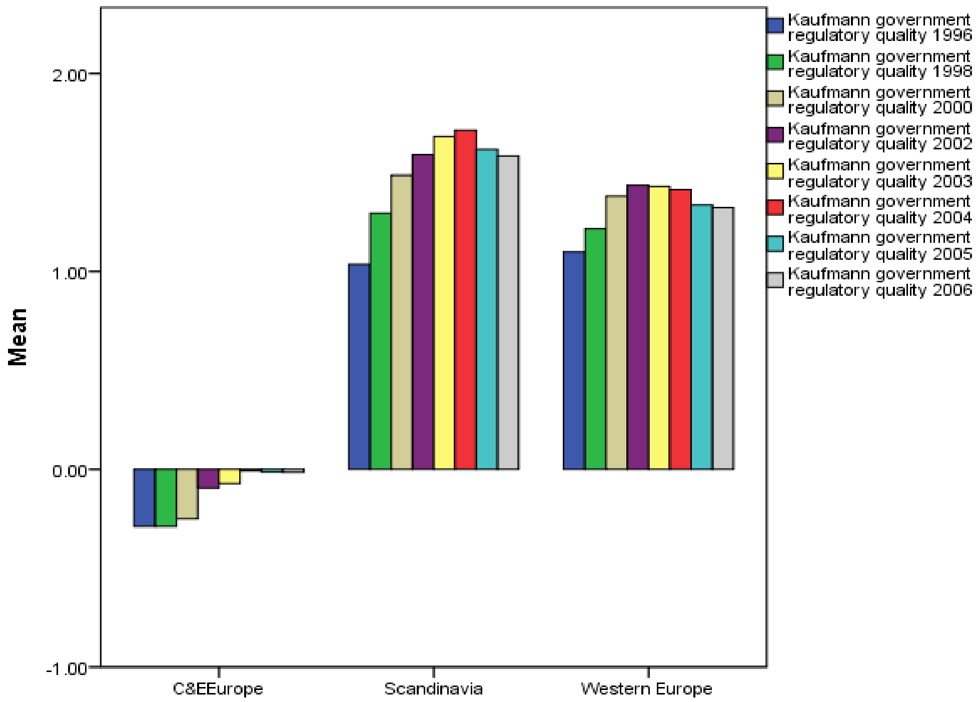
	N	Mean	Std. Deviation
Kaufmann government effectiveness 1996	178	-0.0557	.99056
Kaufmann government effectiveness 1998	185	-0.0322	1.01095
Kaufmann government effectiveness 2000	186	-0.0323	1.00870
Kaufmann government effectiveness 2002	190	-0.0451	1.00609
Kaufmann government effectiveness 2003	190	-0.0461	1.00921
Kaufmann government effectiveness 2004	190	-0.0474	1.01610
Kaufmann government effectiveness 2005	190	-0.0587	1.00286
Kaufmann government effectiveness 2006	190	-0.0534	1.00768
Kaufmann government regulatory quality 1996	179	-0.0350	1.00833
Kaufmann government regulatory quality 1998	185	-0.0358	1.01167
Kaufmann government regulatory quality 2000	186	-0.0576	.99960
Kaufmann government regulatory quality 2002	186	-0.0569	1.00178
Kaufmann government regulatory quality 2003	186	-0.0571	.99753
Kaufmann government regulatory quality 2004	186	-0.0625	.99696
Kaufmann government regulatory quality 2005	186	-0.0656	.99498
Kaufmann government regulatory quality 2006	186	-0.0600	.99768
Valid N (listwise)	178		

Source: Elaboration on data by Norris (2008).



Source: Norris (2008).

Figure 1A – Arithmetic mean of Kaufmann government effectiveness (1996-2006) per three macro regions.



Source: Norris (2008).

Figure 2A – Arithmetic mean of Kaufmann government regulatory quality (1996-2006) per three macro regions.

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