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Moving beyond dichotomy: Comparing composite telecommunications regulatory governance indices

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ABSTRACT

Despite an apparent consensus about the importance of the quality of telecommunications regulatory agencies, there is no agreement among researchers about how to measure it. While dichotomous coding of de jure independence has served as a proxy to measure whether an agency's regulatory governance is transparent, non-arbitrary, and free from political influence, we view measuring multiple components of regulatory governance including incorporating measures of regulatory independence into a composite index as providing a more nuanced understanding of facilitating or inhibiting factors. This paper compares composite telecommunications regulatory independence indices and regulatory governance indices available in the literature in order to construct more parsimonious indices. Using a methodology labeled “qualitative meta-synthesis” based on synthesizing previously published indices, we construct six different indices using combinations of 32 different variables, and different weights. Data from the OECD database are used to re-create the five original indices from the literature as well as our own six composites. Some of these indices (original and composites) were found to be negatively correlated with independent measures of regulatory governance such as the World Bank's Government Effectiveness Index and the Rule of Law Index; this may be attributable to the fact that countries, and especially those with poor overall governance standards, may need to put in place stronger telecommunications governance institutions in order to attract telecommunications investment to the country. The analysis suggests that a parsimonious index of as few as seven variables is capable of measuring the quality of telecommunications governance in a country, at the same time making the selection of variables and their weighting in the index more systematic than in previously available indices.

1. Introduction

Globally, the majority of countries have transitioned telecommunications services from public-owned monopolies to full privatization in hope of increasing variety of services and equitable distribution (Levy & Spiller, 1996). Because utilities services tend to have large sunk costs and large economies of scale, they are highly vulnerable to administrative expropriation and arbitrary and unpredictable decisions by regulators (Cherry & Wildman, 1999). In order to encourage private investment in the sector, nations are putting in place structures such as the establishment of de jure independent regulatory agencies in attempt to mitigate the potential for government and industry expropriation.

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According to numerous scholars (Levy & Spiller, 1996; North, 1990), the institutional endowments of a nation and the effectiveness of regulatory governance mechanisms are closely correlated with economic growth and development, though the direction of causality is contested (Chang, 2011). As nations undertake telecommunications reform, the quality of their regulatory institutions has come under scrutiny (Mohammed & Strobl, 2011; Waverman & Koutroumpis, 2011). Since regulatory quality is a multi-dimensional concept that is not amenable to direct observation, international lending agencies and national governments themselves have relied on various indices to benchmark progress (The World Bank, 2010). The indices that are adopted need to be comprehensive, conceptually sound, easy to measure and interpret, and flexible enough to fit many national circumstances—not easy criteria to realize in practice. While numerous researchers have studied and proposed measures for the quality of telecommunications governance (see Bauer, 2003; Bortolloti, D'Souza, Fantini, & Megginson, 2001; Edwards & Waverman, 2006; Fink, Mattoo, & Rathindran, 2002; Gual & Trillas, 2004; Gutierrez, 2003; Gutierrez & Berg, 2000; Mohammed & Strobl, 2011; Ros, 1999, 2003; Wallsten, 2001; Waverman & Koutroumpis, 2011), a consensus on the pertinent factors to use in index construction has not been reached. Drawing on prior measures of telecommunications regulatory independence and governance, this paper seeks to construct a more parsimonious telecommunications regulatory governance index.

It is the view of the authors that the selection of variables in different indices of telecommunications regulatory independence and regulatory governance are not guided by strong theoretical considerations, and are based mostly on the judgment of individual researchers. Furthermore, measures of regulatory independence are often considered a sub-component of regulatory governance (see Waverman & Koutroumpis, 2011) and both concepts tend to have considerable overlap in variables used in their construction (The World Bank, 2010; Andres, Guasch, & Azumendi, 2008; Wallsten et al., 2004; see Table 2). Thus, this study sought to identify the degree of overlap between indices measuring regulatory independence and regulatory governance and the utility of combining these concepts into one, overarching regulatory governance index. The purpose of this research is not to contribute to a single theoretically derived index or to evaluate interactions between regulators and institutional endowments on effective regulation. Instead, our paper's contribution is to utilize a meta-synthesis approach to construct a parsimonious index derived from expert consensus.

To this end, we compare various telecommunications independence indices and governance indices available in the literature, analyze their composition, and determine to what extent they correlate among themselves and with other indicators of a state's quality of governance. Such a comparison is made difficult by the fact that regulatory indices are often constructed using data for different years and countries. This paper attempts to fill this gap, first by recreating different indices using the same database in order to analyze their correlations with each other, and with other measures of governance quality. Second, the paper investigates possible means of constructing new indices of telecommunications regulatory governance, through a qualitative meta-synthesis of common operationalizations of telecommunications

Table 1
Relevant literature and measurements.

Title of study	Concept being measured	Measurement	Data set used	Findings
Gutierrez & Berg (2000)	Regulatory independence	Dummy	Panel (19 Latin American nations)	Countries with political democracy, economic freedom, and sound regulation have more telecom investment.
Bortolotti et al. (2001)	Regulatory independence	Dummy	Panel (25 nations) 1981–1998	ITO increased profits, output, efficiency, and investment after privatization and establishment of independent regulator.
Wallsten (2001)	Regulatory independence	Dummy	Panel (30 African and Latin American nations) 1984–1997	Privatization of ITO and establishment of independent regulator improved productivity.
Fink et al. (2002)	Regulatory independence	Dummy	Panel (86 developing nations, 1985–1999)	Privatization of ITO followed by introduction of competition improved productivity.
Ros (2003)	Regulatory independence	Dummy	Panel (20) Latin American countries, 1990–1998	Privatization and establishment of an independent regulator increased teledensity and productivity.
Mohammed & Strobl, 2011	Regulatory independence	Dummy	Panel (143 nations, 1990–1999)	Regulators with operational independence rather than solely legal independence from government increased growth.
Bauer (2003)	Regulatory independence	Index	Cross-section (15 EU nations, 2000)	Private regulated firms achieve the same public interest goals as state-owned firms.
Gutierrez (2003)	Regulatory governance	Index	Panel (22 Latin and Caribbean nations) 1980–1997	Sound regulatory governance aided network expansion and efficiency.
Gual & Trillas (2004)	Regulatory independence	Index	Cross-section (37 nations, 1998)	Countries with weak institutional endowments are more likely to create independent regulators.
Edwards & Waverman (2006)	Regulatory independence	Index	Panel (15 EU nations, 1997–2003)	Public ownership makes rules favoring ITO more likely. Independence of regulator mitigates this effect.
Waverman & Koutroumpis (2011)	Regulatory governance	Index	Cross-section (142 countries in 2006)	Countries with better institutions have better telecom regulators.

Adapted from Edwards and Waverman (2006) and updated by the authors. *Note:* ITO stands for Incumbent Telecommunications Operator.