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Institutional determinants of power sector reform in Pakistan

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ABSTRACT

The electricity supply sector in Pakistan has performed poorly in recent years. Reforms were introduced in the mid-1990s to improve the sector, but progressed slowly with no significant impacts on pre-reform performance. This study uses new institutional economics as a theoretical basis to elucidate reasons for the failure of power sector reforms in Pakistan to make improvements. Interviews with 23 experts using Q-methodology generated 215 statements that were used as a Q concourse. Of these, 51 statements were selected for the Q sample and ranked by 34 respondents depending on their importance. Analysis revealed four important discourses on the determinants of power sector reform failure in Pakistan. These included weak governance structure, country and sectoral endowments, inefficient regulator and unspecified political institutions or unfriendly political contexts. The study recommends establishment of institutions that support a market based power supply sector and improvements to the contractual arrangements between stakeholders to reduce opportunistic behaviour.

1. Introduction

The reason why some countries have managed to reform their power supply sector quickly and effectively, whereas other countries have taken a long time to only take initial steps, has been the subject of intensive study (Jannuzzi, 2005; Tankha et al., 2010; Polemis, 2016). Inconsistency in reform progress between countries has been ascribed to dissimilarities in economic, social and political circumstances at national level and differences of endowments at sectoral level (Hunt, 2002; Joskow, 2006; Bacon and Besant-Jones, 2001; Kopsakangas-Savolainen and Svento, 2012; Besant-Jones, 2006).

Reviews of power sector reforms in developing countries, with the exception of Latin American countries,[1] has shown slow progress in reforms and their impacts (Erdogdu, 2013; Gratwick and Eberhard, 2008a). Pre-reform problems included lags in generation capacity, insufficient financing, subsidized prices, high transmission and distribution losses and inefficient public management of the power sector (Erdogdu, 2011). These problems still prevail in many reforming countries, and in some cases have worsened. For example Pakistan adopted the UK electricity reform model in 1994 with advice from the World Bank, but without improving pre-reform sectoral indicators (Kessides, 2013). The reforms progressed slowly, and until recently have only moved to the third of eight steps in the reform model (Kugelman, 2015). In this paper we attempt to answer the question why intended improvement of the Pakistan power sector's organization and performance did not occur following reform. In particular, we analyse why later steps of the reform model, such as privatization and formation of wholesale and retail markets, could not be initiated.

Analysing causes of the slow progress of reforms is not easy in a country like Pakistan where statistical data for energy sector reforms is incomplete. In order to avoid this barrier, we collected original interview data using Q-methodology. This methodology utilizes both qualitative and quantitative methods for data collection and analysis to minimise researcher bias. We used New Institutional Economics to frame our research focus and design to address the research question: which institutional factors caused failure of the power sector reform in Pakistan? Institutions in this sense are the formal and informal laws, regulations and social norms that govern the incentive structures of society and under which organizations form and operate (North, 1994a; Williamson, 2000). Selection of a New Institutional Economic perspective for analysing power sector reforms in Pakistan is mainly supported by literature that supports reinforcing the capability of institutions for explaining differences in economic performance among countries and sectors.

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[1] Latin American countries were ranked among developing countries at the time when power sector reforms started; however economic, social and institutional indicators in some of the Latin American countries were almost similar to developed countries. Chile has been the global flag bearer of power sector reforms.

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The paper is organised as follows. Section 2 presents an overview of the power sector in Pakistan. It explains the pre-reform structure, need for reforms, reform models implemented and progress of reforms so far. Section 3 briefly elaborates the perspective of New-Institutional Economics in relation to reforms. This perspective guided development of the questionnaire for the expert interviews. Section 4 explains research design and methods. Section 5 presents and discusses the results. The paper concludes with recommendations in Section 6.

2. Overview of power sector reforms in Pakistan

2.1. Reform model

By the early 1980s, poor performance of vertically integrated electricity sectors motivated many countries (developed and developing) to implement reforms towards market oriented institutional frameworks (Bacon and Besant-Jones, 2001; Erdogdu, 2012; Jamasb, 2002). Prior to reforms, developed countries faced surplus capacity, an expensive generation mix, high prices and inefficient production; while developing countries suffered from capacity shortage, inefficient production, subsidies and poor governance of utilities (Pollitt, 2009; Bacon and Besant-Jones, 2001; Bacon, 1995). Despite differences in institutional and sectoral endowments, it was presumed that market driven institutional arrangements in the power sector would help overcome pre-reform problems (Joskow, 1996, 2006).

International development partners instructed the Government of Pakistan to adopt a general template of reforms, which was mainly designed for early reforming countries such as Chile, the UK and the US (Joskow, 1996; Newbery, 2002; Bacon, 1995; GOP, 1994). The general template of reforms focused mainly on restructuring, privatization, regulation and competition, which were assumed to improve the efficiency, financing, sufficiency, reliability and sustainability issues in the sector (Alexander and Estache, 1999). During the initial round of reforms, less attention was given to institutional frameworks in the host countries. Developed countries that had better institutional frameworks for market based transactions were able to fix early problems of reforms, thus enabling them to reform the reforms (Joskow, 2006; Gratwick and Eberhard, 2008b). In contrast, developing countries were characterized by weak democratic and market institutions and lacked capacity to absorb reforms in accordance with their institutional frameworks and vice versa. Therefore, in the initial round of reforms, performance in the power sector even worsened in some developing countries (Bacon and Besant-Jones, 2001).

Following recurrence of problems after the initial round of reforms, developing countries were asked to adopt incremental reforms starting from establishment of a revised institutional environment and governance structure favouring a market based institutional framework for the power sector (Besant-Jones, 2006; Sioshansi, 2008; WorldBank, 2003). The incremental model of reforms mainly included enactment of electricity law, formation of an independent regulatory authority, unbundling of vertically integrated power sector utilities, entry of independent power producers (IPPs) in generation, corporatization, privatization (divestiture) of distribution and generation utilities, wholesale market, retail market, and access (negotiated, regulated and open) to transmission (Bacon, 1995; Joskow, 1996; Newbery, 2002; Pollitt, 2004). Based on early experiences, developing countries were advice to follow these steps in order to attain better results.

2.2. Electric power reforms in Pakistan

2.2.1. Pre-reform structure of electricity industry

Pre-reform organization and performance of the power sector in Pakistan faced several challenges. Electricity infrastructure consisted of two vertically integrated state utilities in two distinct regions. The Water and Power Development Authority (WAPDA) controlled electricity supply infrastructure in Pakistan, except Karachi and its peripheries which were served by the Karachi Electric Supply Co. (KESC). All the segments of the infrastructure such as generation, transmission and distribution and retail sales were the sole responsibilities of these two utilities (GOP, 1994). Both utilities were characterized by financial and technical inefficiencies that left them unable to generate sufficient funds for maintenance and expansion of power infrastructure to meet consumer needs (WorldBank, 1994). As a result, the utilities remained dependent on state resources for their capacity addition investment requirements. However, government financial meltdown in the late 1980s and early 1990s; high pressure for investments in other social arenas; and reduced interest of international development partners such as the World Bank and Asian Development Bank (ADB) (which were main financiers of the power sector earlier) for investing in publicly owned utilities, eroded the government's capacity in financing the loss making (public) power entities. This situation stimulated the government to open the sector to private investment and create markets at different nodes of the electricity infrastructure (WorldBank, 1993).

2.2.2. Implementation of reforms

Reforms in the power sector of Pakistan started under a textbook template, but with a different sequence than that proposed in the model. Implementation of a different sequence was mainly due to stakeholder requirements and impending needs of the sector. Electricity reforms in Pakistan started with IPP entry under the plan for restructuring and privatization of WAPDA (WorldBank, 1994). This plan basically laid the foundation of the 1994 Power Policy, which formalized involvement of IPPs in power generation (GOP, 1994). In addition to IPP entry in power generation, this policy also included the government plan to disintegrate the vertically integrated monopolies and form a separate regulatory authority to regulate the restructured power market.

Consequently, the power regulator, National Electric Power Regulatory Authority (NEPRA), was established by a 1995 presidential ordinance approved by parliament in 1997 (NEPRA, 2010). WAPDA (one of the two vertically integrated electric utilities) was disintegrated by separating generation, transmission and distribution segments. Each segment was further broken down through horizontal restructuring into more entities with the distribution sector divided into 8 DICSOs,[2] the generation sector divided into 4 thermal GENCOs and a group of 14 hydro projects. Thermal generation of WAPDA was entrusted to four public limited thermal companies (GENCOs), whereas tasks relating to the development and management of hydro projects remained with WAPDA. The transmission segment was handed over to a single and newly established transmission operator, the National Transmission and Dispatch Company (NTDC). Although unbundling started slowly, it was completed by 2002. In addition to vertical and horizontal breakup of WAPDA into several companies, a new entity, the Pakistan Electric Power Company (PEPCO), was established within WAPDA to enhance the process of reform. PEPCO oversaw control of the affairs of the newly established transmission company (NTDC), 4 thermal GENCOs and 8 DISCOs in order to prepare those companies for privatization. After completing the assigned tasks, it was required that PEPCO dissolve itself by 2006. However, PEPCO was unable to complete the assigned tasks and became deeply involved in internal matters of the entities such as procurement, appointments at key posts and finance. PEPCO even indulged in mobilising employees of the unbundled utilities to stage protests and demonstrations against the power sector reforms. This

[2] Recently the number of DISCOs has reached to 10: Tribal Electric Supply Co (TESCO), Peshawar Electric Supply Co (PESCO), Islamabad Electric Supply Co (IESCO), Gujranwala Electric Power Co (GEPCO), Faisalabad Electric Supply Co (FESCO), Lahore Electric Supply Co (LESCO), Multan Electric Power Co (MEPCO), Sukkur Electric Power Co (SEPCO), Hyderabad Electric Supply Co (HESCO), Quetta Electric Supply Co (QESCO).