



The political economy of energy regulation in OECD countries

Chun Ping Chang ^{a,*}, Aziz N. Berdiev ^b

^a Shih Chien University, Kaohsiung, Taiwan

^b Department of Economics, Bryant University, Smithfield, RI 02917, USA

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ABSTRACT

This paper examines the effect of government ideology, political factors and globalization on energy regulation in electricity and gas industries using the bias-corrected least square dummy variable model in a panel of 23 OECD countries over the period of 1975–2007. We find that left-wing governments promote regulation in gas and electricity sectors. Also, less politically fragmented institutions contribute to deregulation of gas and electricity industries. Long tenures of incumbent government have limited impact on regulation in electricity sector, while it is associated with an increase in regulation of gas sector. Further, we find that higher political constraints and more globalized countries lead to deregulation in electricity and gas sectors. We discover that economic and social integration are the forces that promote deregulation in the gas industry, whereas political integration advance deregulation in the electricity industry. We emphasize that political economy factors are important determinants of energy regulation.

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1. Introduction

The increasing evidence continues to assert that energy is a significant component in aggregate production (Stern, 1993). Beaudreau (2005) emphasizes that energy is a “key factor input” and highlights the essential function of energy in production processes (p. 212). In this regard, energy security, which represents confidence and assurance to access reliable and affordable energy, influences the feasibility and costs of production (International Chamber of Commerce, 2007). Until recently, the energy industry has been comparatively closed to international trade and investment (Conway and Nicoletti, 2006). This evidence suggests that the regulatory reform in energy sector has rarely been contested via international competition. In due course, technological innovations, the evolution of governance, and international exposure have made liberalization and privatization gradually possible in the energy industry (Conway and Nicoletti, 2006).

The debate on energy policy and energy regulation continues to emerge in academic discussions. Fudge et al. (2008) assert that implementing successful energy policies is the primary reason of concern by the public and policymakers. According to Hawdon (2003), the effects of regulatory reform have been critically important in many countries. Pearce (2006), for instance, insists that many governments worldwide have major concerns with the influence of regulation on competitiveness. Spiller (1996) suggests that economic performance is associated with the

regulatory structure in utilities due to the nature of demand and technology. Pitlik (2007) indicates that government interventions may generate unfavorable outcomes for the society, however, also suggests that some regulations are “crucial for the functioning of a market economy (p. 161).” Nevertheless, several papers have documented arguments against regulation, including Hosoe (2006), who affirms that regulatory regimes generate distortions in the economy and supports the importance of deregulation in advancing productivity.

Therefore, the main purpose of this paper is to examine the effect of government ideology, political factors, and globalization on energy regulation (in electricity and gas industries) using annual data, over the 1975–2007 period, covering 23 Organization for Economic Co-operation and Development (OECD) countries. We employ the bias-corrected least square dummy variable (LSDVC) model developed by Kiviet (1995, 1999), Judson and Owen (1999), Bun and Kiviet (2003) and Bruno (2005), who proposed a methodology to approximate the small sample bias of the LSDV estimator, constructed the LSDVC estimator and demonstrated that the LSDVC estimator is more efficient and robust compared to numerous instrumental variable estimators in dynamic panel data models, including LSDV, first differenced and system GMM. We use the energy regulation indicators in gas and electricity sector developed by Conway and Nicoletti (2006), who provide various indicators that evaluate differences in the regulation of non-manufacturing sectors of OECD countries. We explicitly focus on regulation indicators in electricity and gas industries because gas and electricity has become increasingly essential as a source of energy in OECD countries (Hawdon, 2003) and it significantly generates

* Corresponding author. Tel./fax: +886 7 6678888-5713/+886 7 6679999.
E-mail address: cpchang@mail3.kh.usc.edu.tw (C.P. Chang).

greenhouse gas (GHG) emissions, which, in turn, is a foremost objective of global climate change regulation (MacGill et al., 2006).

In recent decades, industries universally are experiencing extensive deregulation process, primarily motivated by the market-oriented reformations (Duso, 2002). Although the deregulation process has been promoted and advanced via economic objectives, many governments worldwide anticipate that these restructuring might potentially contribute to climate change objectives. MacGill et al. (2006) explain that a positive restructuring process contains “economically efficient and environmentally sound” objectives (p. 14). Also, Jacobs (1994) argues the significance of understanding government regulation because “it has a broader and more far-reaching impact on economic growth, on the development of the rule of law, and on government effectiveness (p. 8).” It is therefore exceedingly important to understand energy regulation for the benefit of competitiveness, productivity, and long-term investment.

As such, the literature on government ideology has made considerable progress in providing evidence that ideology influences the regulation process (Benoit and Laver, 2006; Bjørnskov and Potrafke, 2011; Bortolotti and Pinotti, 2008; Bortolotti et al., 2003; Duso, 2002). In particular, market-oriented and right-wing governments favor privatization and deregulation process, while left-wing governments prefer government involvement and maximum regulation (Bjørnskov, 2005a; Duval, 2008; Pitlik, 2007; Potrafke, 2010b). In addition, Hibbs (1977), Alesina (1987) and Pearce (2006) explain that political parties promote policies in line with their government ideological inclinations. Political ideological differences may therefore explain the regulation in energy industry.

Further, it is possible that political and institutional factors influence the regulation process of the energy sector. More specifically, the degree of government fragmentation, political strength and government authority, and institutional constraints may challenge governments to enact feasible policy changes (Alesina and Drazen, 1991; Bodea, 2010; Mierau et al., 2007; Pitlik, 2008; Pitlik and Wirth, 2003; Vowles, 2008). For instance, Mierau et al. (2007) argue that fiscal policy adjustments are less likely to transpire in politically fragmented governments. Vowles (2008) also suggests that institutions with strong political power and government authority are in a better position to devise policy measures. As such, political and institutional factors may also determine energy regulation.

Also, the process of globalization, which integrates the world economy into a single system, may potentially impact the regulation of energy industry. This is because many countries have attempted to facilitate economic integration via trade agreements to liberalize commercial flows through reduction in tariffs. Concurrently, advancement in technology is facilitating improvement in the flows of information and of goods and services. These movements are promoting the stability and growth of an economy by creating greater efficiency in coordination and reducing the costs of transaction and transportation. The process of globalization represents the “widening and deepening of the international flows of trade, capital, technology and information within a single integrated market (Petras and Veltmeyer, 2001:11).” As such, it has been noted that the period of globalization is a phase of continuing deregulation trends (Heinemann, 2007) where it restructures the economic and political configuration of the world (Gaston and Nelson, 2004). Norris (2000) also describes global integration as eroding “national boundaries, integrating national economies, cultures, technologies, and governance, producing complex relations of mutual interdependence (p. 155).” In this line, global integration has considerably influenced the ability of countries to implement policy changes.

Overall, we provide robust evidence that government ideology considerably influences energy regulation. More precisely, we find that left-wing governments are associated with more regulation in gas and electricity sectors. In addition, less politically fragmented institutions contribute to deregulation of gas and electricity industries. Long tenures of incumbent government have limited impact on regulation in the electricity sector, whereas it is associated with an increase in the

regulation of gas sector. We also find that higher political constraints and more globalized countries promote deregulation in electricity and gas sectors. We discover that economic and social integration are the forces that promote deregulation in the gas sector, while political integration advance deregulation in the electricity sector.

The remainder of the paper is organized as follows. In Section 2, we present a literature review. Section 3 describes the data. In Section 4, we discuss the econometric methodology employed in the analysis. Section 5 presents the empirical results. The final section summarizes the major findings.

2. Literature review

The energy market may experience market failures because they frequently display (1) “natural monopolies in at least some network provision, and a generally concentrated supply side”, (2) “a vital role in providing essential public services, and contributing to wider societal objectives such as economic growth”, (3) “dysfunctional interactions with some other important markets due to uncoordinated decision making”, (4) “information failures, particularly on the demand-side where many end-users are poorly informed” (5) “capital intensive and long lived assets that can lead to cycles of over and under-investment”, and (6) “very significant environmental externalities, particularly from the GHG emissions that arise from the use of fossil-fuels (MacGill et al., 2006:12).” According to MacGill et al. (2006), these components may constrain the power of competition, and, therefore, generate inefficient energy markets. As such, the role of government in the economy is to act when energy markets fail to generate efficient results for the general public (MacGill et al., 2006). In other words, the failure of the market is a necessary provision for validating government regulation in order to enhance the welfare of the society (Munger, 2008). However, several authors have argued that the regulation process reduces competition in the industry (Conway and Nicoletti, 2006), which, in turn, generates distortions in the economy (Hosoe, 2006).

As such, the literature has documented that political parties promote and advance policies in conformity with their government ideology (Hibbs, 1977). Pearce (2006) suggests that “governments may begin with an ideology and part of that ideology translates into policy proposals (p. 155).” Alesina (1987) also notes that political parties favor the “inherent effects of their policies and that parties have different objectives and incentives (p. 652).” Government ideological differences across political parties generate diverse attitudes in regards to policy and influence the partiality to embark on a reform (Alesina, 1987; Duval, 2008). Therefore, the ideological orientation of the political parties is critically important in explaining the regulatory restructuring of a country (Bortolotti and Pinotti, 2008; Duso, 2002). As a result, the principal role of government in the economy is an underlying discord between right-wing and left-wing parties (Potrafke, 2010b). Right-wing governments favor protection of property rights and legal quality, while left-wing governments prefer government intervention in the economy (Bjørnskov, 2005a).

Government ideology may potentially impact the quality of regulation because it involves the “degree of individual wage formation, price controls, and overall reliance on market mechanisms (Bjørnskov, 2005a:11).” Right-wing governments are associated with the privatization and deregulation processes to expand the support for market-oriented reforms (Bortolotti et al., 2003; Potrafke, 2010b). That is, market-oriented and right-wing parties promote economic freedom and prefer minimum government involvement in the economy. In addition, right-wing parties approve significantly more policies on deregulation, compared to left-wing governments (Benoit and Laver, 2006). The empirical literature has ascertained that market-oriented and right-wing governments pursue privatization, liberalization and deregulation processes (Bjørnskov and Potrafke, 2011; Bortolotti and Pinotti, 2008; Duso, 2002; Pitlik, 2007; Potrafke, 2010b).

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