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Politically Induced Board Turnover, Ownership Arrangements and Performance of SOEs

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ABSTRACT

Manuscript Type: Empirical

Research Question/Issue: This study investigates the impact of elections on board member changes and its relationship with profit-oriented performance of state-owned enterprises (SOEs), thus providing new insights on political tie heterogeneity.

Research Findings/Insights: Using a unique hand-collected dataset of 200 SOEs in six countries of the former Socialist Federal Republic of Yugoslavia (SFRY) from 2010 till 2014, we find that board member changes within SOEs, unlike for private enterprises, are politically motivated rather than performance induced. We reveal that SOEs with higher levels of board member changes encounter lower productivity and profitability levels. These findings suggest that political interference via board member changes causes organizational inefficiencies and poor SOE performance. Moreover, the results show that board member changes are insignificant for performance of large SOEs and SOEs governed by independent government body.

Theoretical/Academic Implications: This study reveals an indirect channel for political interference, thus contributing to greater understanding of political tie heterogeneity. Moreover, our study is the first to link political interference and performance of SOEs through introduction of election cycles into the board member changes-performance relationship.

Practitioner/Policy Implications: The results of this study provide insights for policymakers who are interested in enhancement of SOEs' performance. They suggest ways in which board appointment procedures should be altered as to be insulated from political interference. In addition, they show boards how they can lower the negative consequences of frequent board member changes.

Keywords: Corporate Governance, Performance of SOEs, Election Cycles, Politically Induced Board Turnover, Ownership Arrangement

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INTRODUCTION

The political view of state ownership asserts that political ties are established through appointments of politically like-minded individuals or bureaucrats that follow certain political interests (Boycko, Shleifer, & Vishny, 1996). The primary goal of these appointees is fulfilment of their personal and/or political interests that are not in line with the enterprise value maximization objective (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2002; Shleifer & Vishny, 1994, 1997). Moreover, these appointees might lack the appropriate knowledge, competences and experience for carrying out board responsibilities (Vagliasindi, 2008; World Bank, 2014). In that way, governments constitute SOE boards to ensure that they fulfil their interests even when this may cause negative performance (World Bank, 2014).

The main focus of the past empirical research on this topic is related to personal level political ties and government ownership ties within SOEs. Researchers use political connections of CEOs (e.g., Wu, Wu, Zhou, & Wu, 2012), percentage of politicians/government officials on boards (e.g., Menozzi, Gutierrez Urtiaga, & Vannoni, 2011; Okhmatovskiy, 2010), or unlawful discharge of a board chairman or CEO (e.g., Ding, Jia, Wu, & Zhang, 2014) as political interference proxies. These proxies neglect the existence of political ties heterogeneity. Sun, Mellahi, Wright, and Xu (2015) explain that the past research has failed to recognize the informal linkages that might exist between business people and politicians. Therefore, the main question is whether political interference goes beyond the establishment of formal political ties and, if so, what kind of informal channels might exist.

Vickers and Yarrow (1988) suggest that for SOEs, board member changes comply with political rather than market forces. Government officials and political appointees are replaced whenever a new government representative or ruling political party is elected (Kernaghan, 1986). In that way, political establishments distance themselves from individuals connected to the previous political administration (Sun et al., 2015), who are unlikely to show loyalty and impartiality for the new political party in power (Kernaghan, 1986). Consequently, board member changes are triggered by election cycles, which thus represent a hidden channel for political interference. In addition, board members without direct political ties could suffer from "guilt by association". This refers to punishment of individuals or organizations because of their prior relationship with illegitimate, disadvantaged, or undesirable individuals or networks (Labianca & Brass, 2006). Hence, even non-politically connected board members might be replaced.

Politically induced board member changes might indicate that the likelihood of board member discharge due to poor performance is much lower for SOEs. Nevertheless, political interference via board member changes may lead to operational inefficiencies and poor SOE performance. The nonexistence of perfect substitution for individual board members creates a time lag before an efficient decision-making process is re-established (Sharma, 1985). Moreover, new board members need time to adapt in order to be able to positively contribute to the decision-making processes (Smith et al., 1994). Recognizing that performance depends on board decisions, politically motivated board member changes might have negative effects on SOE performance. The magnitude of these effects could be influenced by the interplay of the SOE's political importance and the government ownership ties.

In this study we examine the relationship between election cycles and board member changes and we analyse how that relationship impacts the performance of SOEs in six countries of the former Socialist Federal Republic of Yugoslavia (SFRY) - Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia, and Slovenia. Our hand-collected dataset has financial and board member information for 200 SOEs from 2010 to 2014. We examine election–board member changes and board member changes–performance relationship using panel data fixed effects and a panel data instrumental variable (IV) estimator, respectively.

The decision to investigate SOEs in countries of the former SFRY is based on several reasons. First, these countries had similar legal frameworks, market rules and ways in which they govern state ownership (Horvat, 1971). Coherent patterns could be depicted by looking at the level of state ownership, their number, and the sectors in which they operate (Bicanic, 2010). Even though each of these countries chose its own path after achieving independence, all of them still face similar problems (e.g., level of indebtedness, staggered economic activity, and political instability). Second, in spite of privatization efforts during the past 20 to 30 years, the degree of state ownership in these countries is still high. Despite the fact that absolute numbers of SOEs in each of these countries might indicate that the degree of state ownership is quite distinctive, when we take into account the employment percentage for which SOEs are accountable, similarities become apparent.[1] Third, our data reveal that countries within our sample have analogous levels of board member changes. Therefore, the six countries of the former SFRY provide a unique set-up for examining the influence of board member changes on performance of SOEs.

The results show that board member changes within SOEs are politically motivated rather than performance induced. We also uncover the hidden channel of political interference via board member changes. Furthermore, we find a negative and significant relationship between politically induced board member changes and performance of SOEs. The relationship is stronger for operating than for financial performance. Our estimates also indicate a greater presence of political interference in small and medium size SOEs. Additionally, we reveal that board member changes are insignificant for the performance of SOEs governed by independent government body.

This research contributes to the existing literature in several important aspects. First, we respond to a recent call by Grosman, Okhmatovskiy, and Wright (2016) to fill in the gap regarding the nature and drivers of board turnover within SOEs. We offer a detailed analysis and empirical evidence for Vickers and Yarrow's (1988) theoretical standing that board member changes within SOEs comply with election cycles (political force) rather than poor performance results (market force). Second, we introduce politically induced board member changes as a new proxy for political interference within SOEs. With this proxy we recognize that political interference goes beyond personal political ties of CEOs, board chairmen, or a portion of board members and takes into account the dynamics of the entire board. Third, we complement research studies on the political view of state ownership (e.g., Krueger, 1990; Shleifer & Vishny, 1997) and the political embeddedness perspective (e.g., Michelson, 2007) with our novel empirical approach to political interference. More specifically, we investigate the link between political interference and performance of SOEs by introducing the election cycles into the board–performance relationship. Fourth, we contribute to the literature about the factors that influence SOE performance. We show that political interference via unstable board membership engenders poor performance. Frequent board member changes disrupt board dynamics, thus creating numerous operational inefficiencies (Sharma, 1985). Finally, our findings provide solid grounds for policy changes suggesting ways in which SOE performance can be improved.

The rest of the paper is organized as follows. The next section reviews the literature and develops hypotheses. Section three explains data and empirical strategy. Section four presents empirical results and discussion. Section five concludes and provides implications for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Politically induced board member changes

The primary goal of politicians is attainment, exploitation and maintenance of power (Buchanan & Tullock, 1962). In order to accomplish that, politicians use SOEs for personal or political gains that are not in line with the profit maximization objective as implied by the political view of state ownership (Chong & Lopez-de-Silanes, 2005; Krueger, 1990; Shleifer & Vishny, 1997). Consequently, board positions are reserved for politically loyal and obedient individuals (World Bank, 2006) or bureaucrats who are ready to pursue certain political interests (Boycko et al., 1996). The practice of appointing board members on the basis of their political allegiance and not qualifications and business acumen is one of the most profound forms of political interference (Barberis, Shleifer, & Vishny, 1998; Greene, 2014; Wong, 2004).

Politically construed board appointments enable politicians to influence and control the decision-making processes within SOEs. For that reason, government officials do not have an incentive to appoint the best candidates for board membership as these decisions need to have a political justification (Hu & Leung, 2012). Opper, Nee, and Brehm (2015) argue that political connections and political evaluations are the only parameters for selection of government officials and managers. They explain that political leaders tend to allocate key positions to like-minded individuals with whom they can associate their interests. Furthermore, politicians and individuals with alike interests dominate SOE boards (Yoshikawa, Zhu, & Wang, 2014). Hence, the shift of political power or even substitution of political leaders triggers replacements of government officials and political appointees (Kernaghan, 1986).

Along those lines, Vickers and Yarrow (1988) argue that within SOEs, board turnover complies with political rather than market forces. They suggest that board member changes within SOEs are caused by political disagreement/lack of political obedience/election cycles rather than poor performance results. Shleifer and Vishny (1994) find that Greek elections won by an opposing party result in the overturn of top managers within SOEs. With board member changes, politicians want to avert any likelihood that their power might be destabilized and ensure a network of loyal individuals in key positions (Dittmer & Wu, 1995; Li & Bachman, 1989). Consequently, change of politically connected board members due to election cycles can be observed as a hidden channel for political interference. To gain additional insights, we propose the following hypothesis:

> *Hypothesis 1. Board member changes within SOEs are politically motivated rather than performance induced.*

Performance and political interference via board member changes

Political interference via boards and political connections can create both, benefits and costs, as suggested by the political embeddedness perspective. On the one hand, political ties are considered to be a relational asset that provides enterprises with access to valuable governmental resources, thus leading to a better enterprise performance (Boubakri, Cosset, & Saffar, 2012; Faccio, 2006; Pfeffer & Salancik, 1978). Several studies demonstrate that enterprises benefit from political connections through preferential access to financing (e.g., Chen, Shen, & Lin, 2014; Dinc, 2005; Inoue, Lazzarini, & Musacchio, 2013; Khwaja & Mian, 2005), increased probability for getting government contracts (e.g., Goldman, Rocholl,

& So, 2009; Goldman, So, & Rocholl, 2013) or subsidies (e.g., Wu & Cheng, 2011), payment of lower taxes (e.g., Adhikari, Derashid, & Zhang, 2006), lower regulatory enforcement (e.g., Agrawal & Knoeber, 2001), possibilities for influencing regulatory policies (e.g., Hillman, 2005), and provision of bail-out for financially troubled enterprises (e.g., Faccio, 2006). On the other hand, political ties enable government representatives to manipulate SOEs' resources to promote political or personal interests with negative consequences on SOE performance (Krueger, 1990; Shleifer & Vishny, 1994). Political ties in those cases cause excessive employment levels (e.g., Menozzi et al., 2011), distorted investment efficiency, and lower capital allocation efficiency (e.g., Chen, Sun, Tang, & Wu, 2011). The costs of political ties might outweigh the benefits with presence of government officials on boards (Okhmatovskiy, 2010).

Unlike for private enterprises, governance of SOEs is in the hands of three different interest groups: citizens as principals and ultimate owners, governments as fiduciary agents, and boards as direct agents (Capobianco & Christiansen, 2011; Musacchio, Pineda Ayerbe, & Garcia, 2015). The agency theory asserts that fiduciary and direct agents may choose to pursue some private benefits at the expense of wealth maximization for principals (Fama & Jensen, 1983; Jensen & Meckling, 1976). Fear of dismissal is one of the main tools for alignment of interests of agents and principals, which ensures that managers work in the best interest of the owners (Holstrom, 1979; Ross, 1973).

Politically motivated board member changes imply that one of the main tools for alignment of interests of agents and principals, fear of dismissal, might not be effectuated in the case of SOEs. Several authors explain that SOE boards lack the managerial incentives for pursuance of efficiency and profitability objectives (Boardman & Vining, 1989; Boubakri, Cosset, & Saffar, 2008; Vickers & Yarrow, 1988). This is due to political interference, which lowers the likelihood of discharge because of poor performance results. Therefore, the question in the case of SOEs is whether politically induced board member changes might cause a negative effect on their performance. Sharma (1985) argues that frequent board member changes cause inconsistent decision-making processes that result in organizational inefficiencies and poor performance. An enterprise's performance depends on board decisions, while board decisions rely on collective judgment and deliberation, which alters with board member changes. Hence, decisions are kept in a state of flux and away from real implementation, which in the end impinges on the enterprise's performance (Sharma, 1985). Crutchley, Garner, and Marshall (2002) find that greater board stability is associated with enhanced enterprise performance. We therefore propose the following hypothesis:

> *Hypothesis 2. Politically induced board member changes are negatively associated with SOE performance.*

In addition to what is noted above, the literature indicates that politicians might use the economic power of large enterprises to improve the likelihood of their re-election (Bertrand, Kramarz, Schoar, & Thesmar, 2007). Moreover, they might influence the corporate decisions of large SOEs in order to preserve their political power (Bertrand et al., 2007). For those reasons, large SOEs are considered to be one of the essential trophies in the aftermath of elections. The previous research studies suggest that politically experienced directors are prevalent in large enterprises (Faccio, 2006; Su & Fung, 2013). The greater number of politically connected directors is found within large SOEs, due to their political importance (Menozzi et al., 2011). Contrary to that, small and medium SOEs are less important because of their limited market power and curtailed influence on the re-election outcome. Considering that politicians appoint like-minded individuals to key positions (Opper et al., 2015) and that political appointees are replaced after elections (Kernaghan, 1986), greater numbers of board member changes are expected among large SOEs. Consequently, unstable boards of large SOEs might endanger their performance as a result of a considerable number of short-term decisions beneficial for politicians. However, as media are more likely to investigate large SOEs (O'Connell, 1995), politicians might opt to interfere with boards of small and medium size SOEs. In order to investigate these implications of the literature, we propose:

Hypothesis 3a. Politically induced board member changes are negatively associated with the performance of large SOEs.

Hypothesis 3b. Politically induced board member changes are less negatively associated with the performance of small and medium SOEs than of large SOEs.

Government ownership ties and political interference via ownership models

The research studies on government ownership ties analyse how state ownership affects performance (e.g., Ding et al., 2014), how government-business networks operate in cases of minority state ownership (e.g., Inoue et al., 2013; Wang, Hong, Kafouros, & Wright, 2012), and whether interaction of personal and ownership ties produces some differentiating effects (e.g., Sun et al., 2015). Furthermore, researchers recognize that political connections to local and central governments can have distinct effects on enterprise performance (e.g., Fan, Wong, & Zhang, 2007; Zheng, Singh, & Mitchell, 2015). Zheng et al. (2015) found that political ties to local governments improve enterprise performance because of the closer alignment between SOEs' and politicians' interests.

Governments can exercise their political or personal interests via interference of ownership entities in day-to-day SOEs' operations and/or board nomination procedures (World Bank, 2006). The property-rights theory explains that non-transferability of SOEs' ownership leads to the lack of incentives for government entities to perform their monitoring function comprehensively (De Alessi, 1969, 1973). Furthermore, Wong (2004) argues that politicians and bureaucrats who sit on these governmental bodies are poor overseers of state ownership. Therefore, the level of political interference depends on the ownership model adopted by governments as well as its structure.

Governments can choose between three different ownership models. They can opt for a decentralized model where line ministries are accountable for SOEs (Musacchio et al., 2015; OECD, 2012). As the second option they have a dual model in which line ministry and "central" ministry (usually Ministry of Finance) jointly exercise ownership rights (OECD, 2012). Governments can also decide to adopt a centralized model where an independent government body is responsible for ownership function over all or a vast majority of SOEs (PwC, 2015; World Bank, 2014). Table 1 reveals that countries within our sample have distinctive governing models for state ownership. In Slovenia and Croatia, an independent government body governs SOEs, while in Bosnia and Herzegovina and FYR Macedonia line ministries bear the responsibility of managing state ownership. The government de facto plays the key role in governing SOEs in Serbia and Montenegro (government ownership model), despite the fact that this responsibility is de jure in hands of line ministries.

The theory and literature clearly indicate that a centralized model should be adopted by governments as it curtails opportunities for political interference (World Bank, 2014). Contrary to that, several government bodies in decentralized and dual models can compete for influence over SOEs, creating contradictory and conflicting goals that can undermine their performance (Musacchio et al., 2015; World Bank, 2006). Furthermore, board member nomination and appointment procedures within centralized ownership models are insulated from political pressures since they are based on professional criteria - expertise and knowledge of individuals (World Bank, 2014). For all other ownership models, ministry cabinets interfere in these processes, thus enabling appointments of politically connected individuals. The nomination procedures as well as criteria for board membership outlined in Table 1 imply that politicians in Slovenia and Croatia have a rather limited space for interference. The independent government body conducts public calls for board members on the basis of predetermined criteria. Serbia and Montenegro follow completely opposite procedures within their quasi decentralized model. The nomination procedure in these countries is led by the governmental committee or office for appointments, which enables direct political interference. Therefore, SOEs in countries with centralized ownership models should experience a lower level of political interference, and thus a limited effect on their performance. In accordance with the previous literature and implications regarding different models adopted by countries within our sample, we introduce our last hypothesis:

> *Hypothesis 4. The performance of SOEs in countries with government ownership models suffers more from politically induced board member changes than does the performance of SOEs in countries with centralized ownership models.*

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Insert Table 1 about here

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DATA AND METHODOLOGY

Sample and Data Collection

Our sample contains financial and board membership data about 200 SOEs from six countries of the former SFRY for the period 2010-2014. We construct our sample through extraction of data from the Amadeus database on the basis of two criteria. The first criterion is that the enterprise operates in one of the six former SFRY's countries. The second criterion is that the ultimate owner of the enterprise is public authority, state, or government with a minimum 50.01% of direct or indirect ownership. We use this cut-off point for three main reasons. First, OECD (2015) in its guidelines on SOEs' corporate governance, defines a SOE as an enterprise with 100% or majority state ownership. Second, this cut-off point conveys effective government control. Third, prior empirical research demonstrates that enterprises with minority state ownership have a lower number of political connections, thus implying a lower level of political interference (e.g., Wu et al., 2012).

Based on the country and ownership criteria, 556 enterprises are identified as state-owned. From that sample we exclude all enterprises that declared bankruptcy, as their real performance could not be observed. Moreover, we delimit our sample by removing enterprises from the financial sector (e.g., banks, insurance enterprises), since they have distinct financial reporting and higher levels of corporate governance due to legal requirements (e.g,. Goldeng, Grunfeld, & Benito, 2004; Haniffa & Hudaib, 2006). In addition, we remove all providers of health, social, and cultural services since they are established in order to achieve some non-commercial objectives (e.g., Bozec, Breton, & Cote, 2002). Lastly, we exclude enterprises for which data are not available (e.g., Faccio, 2010). After applying all of these restrictions, our final sample encompasses 200 SOEs. Even though it may be argued that this sample is small, several facts need to be taken into account. First, we exclude SOEs whose inclusion might lead to misleading results following the implications of previous research studies mentioned above. Second, availability of data for SOEs worldwide is rather scarce, and we include all SOEs for which data are available. Third, our sample is larger or comparable to the sample sizes of similar studies (e.g., Menozzi et al. (2011) employ a sample of 114 Italian SOEs).

We download standardized balance sheet and profit and loss items, ownership data, industry code, date of incorporation, number of employees, and board membership information from the database. We fill in any missing financial data with data from SOE annual reports. For enterprises that do not report their financial data in EUR we make a conversion using exchange rates applied by Amadeus to ensure data standardization.

Due to limited availability of board member data in the database, we hand-collect data on numerous board member characteristics (e.g., names, dates of appointment and resignation, political connectedness, level of education, previous/current position, subsequent position) to complement the missing data. The collection of board level data is based on the predetermined definition of boards. As already noted, SOEs can have two-tier boards (supervisory and management board) or one-tier boards with or without the presence of managing directors. In our research we follow the definition of OECD (2015) and World Bank (2014), and we define "board" as an enterprise body that monitors management and governs enterprise. Table 2 shows that the vast majority of SOEs within our sample have two-tier boards. In Montenegro, all SOEs follow a one-tier board system due to legal stipulations, while in FYR Macedonia SOEs can have one-tier or two-tier board systems depending on the category of SOEs to which they belong.

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Insert Table 2 about here

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For the extraction of the board-level missing data we use official financial and annual reports of enterprises, databases of official enterprise registry agencies, data published on stock exchanges, and individual decisions of shareholder assemblies on the appointment and resignation of board members. Overall, we have data on 2,120 board members, which makes our dataset the first of its kind for this part of Europe.

Variables and Measures

In our study we employ two performance measures, following the approach taken in previous research studies (e.g., Boardman & Vining, 1989; Boubakri et al., 2008; Bozec et al., 2002; Dewenter & Malatesta, 2001; Ding et al., 2014; Hu & Leung, 2012; Menozzi et al., 2011; O'Connell & Cramer, 2010). We use return on equity (*ROE*) as a profitability measure and *Sales per employee* as an operating and productivity measure. *ROE*, which is a proxy of return on shareholders' investments, is computed as the ratio of net income to average total equity. *Sales per employee* is the natural logarithm of the sales over the total number of employees. It is a well-established fact that accounting based measures may suffer from financial manipulations. However, employment of standardized audited financial data provides sufficient reliability of these performance measures (Goldeng et al., 2004; O'Connell & Cramer, 2010). Despite some limitations of accounting measures, evidence from previous research studies implies that they are adequate proxies of economic rates of return (Vining & Boardman, 1992). In addition, we do not use any stock market measures since the vast majority of SOEs from our sample are not listed on stock exchanges, while the level of liquidity of traded stocks is not sufficient for valid estimations (e.g., Okhmatovskiy

(2010) recognizes the same problem for investigation of SOE performance and political ties in Russia). Moreover, Ding et al. (2014) explain that usage of market performance measures is not well suited for investigation of political interference. Due to efficient markets, political interference would be immediately reflected in stock prices. Thus, market measures might not grasp its effect.

We also employ three different measures of board member changes. *Board turnover* is the percentage of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board (e.g., Franks & Mayer, 2001). *Board political turnover* is the percentage of the total number of board members in the observed year who are politically connected[2] and who left at the end of the year after spending at least one year on the board. *Board intermediary* shows the number of board members who left in the observed year with tenures shorter than one year. This measure is employed to grasp the within-year board dynamics. In order to grasp board dynamics not captured by *Board intermediary,* we employ variables that show the number of board members who left the board within one year (*Board leavers*) and the number of board members appointed in the same period (*Board appointments*). With employment of these measures, we take into account political connectedness of all board members, thus creating a new proxy for political interference.

Bearing in mind the political view of state ownership and standing of Vickers and Yarrow (1988), who suggest that SOEs' board member changes are a result of political rather than market forces, we employ two variables that represent political force. *Parliamentary* and *Local* elections are dummy variables that take value one in the year of elections and zero for other years.[3] In addition, we use these variables as instruments for the board member changes–performance relationship due to potential endogeneity issues.

In our models we introduce several other board characteristics as suggested in the previous research. Board members with short tenures cannot adapt and contribute positively to the board decision-making processes (Smith et al., 1994). This can create a time lag (Sharma, 1985) with negative performance consequences. However, board members with long tenures are more likely to be replaced, thus increasing board member changes. Hence, we employ *Board tenure*, which is calculated as the average time that board members spent on the board (e.g., Ding et al., 2014; McIntyre, Murphy, & Mitchell, 2007). *Board size* is computed as the total number of board members, and as such appears in previous research models related to political connections (e.g., Ding et al., 2014; Okhmatovskiy, 2010). Furthermore, Yermack (1996) suggests that board size has a negative effect on performance since a greater number of board members leaves room for greater political interference. In addition, the proportion of women on boards is positively related to enterprise performance (Carter, Simkins, & Simpson, 2003; Catalyst, 2004). We therefore employ *Board male* as the percentage of men on board.

Since SOEs differentiate among themselves, we employ several enterprise-level controls. SOEs are sometimes used for employment purposes, so it is often argued that an increase in the number of employees leads to lower performance results (Fan et al., 2007). Therefore, we employ *Size*, which is calculated as the natural logarithm of the total number of employees, to control for absolute availability of resources (e.g., Hu & Leung, 2012; Menozzi et al., 2011; Vining & Boardman, 1992; Zheng et al., 2015). Hannan and Freeman (1989) explain that dissolution risk is associated with years of existence. Hence, we control for the period of SOEs' *Existence*, which is computed as the natural logarithm of the difference between years under investigation and year of SOE incorporation (e.g., Goldeng et al., 2004; Sun et al., 2015; Tian & Lau, 2001). Additionally, Gilson (1990) indicates that board member changes are common among financially distressed enterprises. We therefore control for *Leverage* as the measure of long-term debt over shareholders' equity (e.g., Faccio, 2010). Furthermore, recognizing that differences across countries might impact our results and following prior literature (e.g., Boubakri et al., 2012), we employ *GDP*, which represents the logarithm value of the gross domestic product at purchasing power parity (GDP PPP). We obtain data on GDP PPP from the World Bank online database.

Methodology

To identify whether board member changes are politically induced (Hypothesis 1), we run a following fixed effects model:

$$Board\ member\ changes_{i,t} = \alpha + \beta_1 Parliamentary_{i,t} + \beta_2 Board\ size_{i,t} + \beta_3\ Board\ tenure_{i,t} + \beta_4 Board\ male_{i,t} + \beta_5\ Size_{i,t-1} + \beta_6 Performance_{i,t-1} + u_i + \delta_t + \varepsilon_{i,t} \quad (1)$$

where *i* is the SOE id, *t* is the year effect, α is the intercept, and $\varepsilon_{i,t}$ denotes the error term. SOE specific fixed effects are captured by u_i, while time-fixed effects are depicted by δ_t. *Board member changes* is a dependent variable represented by three measures, namely *Board turnover*, *Board intermediary*, and *Board political turnover*. We run the regressions only with parliamentary elections as it is not possible to distinguish between the effects of local and parliamentary elections in years in which they occur simultaneously. Due to the greater importance of parliamentary elections, we believe that they create more profound effects on board member changes. In our second estimation, the instrumental variables are *Parliamentary* and *Local* elections, which enable us to grasp and acknowledge their mutual effect.

Significant coefficient for variable *Parliamentary* might indicate that board member changes are politically motivated. We assume no reverse causality, since board member changes cannot influence the occurrence of elections. The occurrence of elections is prescribed by the constitution, while early elections are decided based on certain political or economic reasons and they are not announced because of the board member changes within SOEs. As it can be noted, variables *Size* and *Performance* are lagged, since these variables can have non-instantaneous association with board member changes. *Performance* is represented by *ROE* and *Sales per employee*.

To investigate the relationship between politically motivated board member changes and SOE performance (Hypothesis 2), we estimate the following equation:

$$
\begin{aligned}
Performance_{i,t} = \alpha + \ & \beta_1 Board\,member\ changes_{i,t} + \beta_2 Existence_{i,t} + \beta_3 Size_{i,t} \\
& + \beta_4 Leverage_{i,t} + \beta_5 GDP_{i,t} + \beta_6 Board\,size_{i,t} + \beta_7 Board\,tenure_{i,t} + \\
& \beta_8 Board\,male_{i,t} + \varepsilon_{i,t} \qquad (2)
\end{aligned}
$$

where *i* is the state-owned enterprise id, *t* is the year effect, α is the intercept, and $\varepsilon_{i,t}$ is the error term. *Performance* is a dependent variable that is represented by *ROE* and *Sales per employee*. *Board member changes* is an independent variable of our main interest and is represented by *Board turnover*, *Board intermediary*, and *Board political turnover*.

Before choosing the estimation technique, we take into account that every research study on performance and board characteristics can suffer from endogeneity.[4] For our model, the literature implies a possibility of reverse causality: the poor performance of enterprises could lead to board member changes. In order to address endogeneity issues, we estimate our models using a panel data IV estimator, which can be implemented by *ivreg2h*.[5] This approach provides instruments identification when external instruments are not available or when there is a need to supplement external instruments with generated ones as to improve IV estimator efficiency (Baum, Lewbel, Schaffer, & Talavera, 2012; Lewbel, 2012).

The *ivreg2h* implements Lewbel's (2012) generated instruments approach, which consists of two stages. In the first stage, each of the *n* endogenous variables ($\varphi_i ... \varphi_n$) is regressed on exogenous variables ($x_1 ... x_k$) using OLS. The generated predicted residuals ($\hat{u}_i ... \hat{u}_n$) from this step are then multiplied by demeaned endogenous variables $z_i = (\varphi_i - \bar{\varphi}_i)\hat{u}_i$ as to construct instrument vector $z_1 ... z_n$ for each $i \in 1...n$. Within the second stage, we run the two-step IV-GMM, where board member changes are treated as endogenous and are instrumented by the internally generated instruments. In addition to those instruments, we create a vector of externally selected instruments that are likely to have a direct effect on board member changes but not performance of SOEs. The instruments include *Parliamentary* and *Local* elections as they might create a non-instantaneous impact on SOE performance via board member changes. In addition, for estimations of *Board turnover* and *Board political turnover*, we use within-year board dynamics as an instrument.

We first estimate model (2) for the whole sample and then we re-estimate it within two sets of sub-samples. To test Hypotheses 3a and 3b, we divide our sample on the basis of median value for the number of employees. In that way we can investigate whether differences in political importance of large, and small and medium SOEs are present. Additionally, we want to recognise whether there are any differences among SOEs that are governed by different ownership models (Hypothesis 4). For that reason, we depict SOEs that are governed by two distinct and completely opposite ownership models - independent centralized body (Slovenia and Croatia) and government governance (Serbia and Montenegro). In all estimations with *Board intermediary*, we employ two additional variables, *Board leavers* and *Board appointments*, to grasp additional layers of board dynamics.

Sample and summary statistics

Table 3 presents summary statistics for all variables in our estimations. In Panel A we report performance characteristics of SOEs. We can conclude that during the observed period the average financial SOE performance is negative since the average value of *ROE* is -5%. The average *Sales per employee* is equal to €190.72 ($225.29). Based on Panel D we can see that SOEs within our sample exist for 28 years on average and that they have on average 676 employees. The average *Leverage* is 33%, which is similar to findings of previous research studies (e.g., 28.14% for politically connected enterprises (Faccio, 2010)).

Panel B of Table 3 reports summary statistics for board characteristics. On average, boards of SOEs have five members, which is in line with good corporate governance practice suggested by OECD. Boards are male dominated since on average 81% of board members are men. The average *Board tenure* is approximately two years, while 0.33 board members spent less than one year on boards. The average turnover of all board members is 19%, which is almost 50% higher than what Franks and Mayer (2001) find for quoted German industrial and commercial enterprises. In addition, the average turnover of politically connected board members is 10%. On average, approximately 1.5 board members are appointed to boards each year, while 1.3 board members leave the board.

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Insert Table 3 about here

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Table 4 presents further analysis of board member changes by country in the period 2010-2014. Five out of six countries have average board turnover between 17% and 21%, while for other measures of board member changes analogous values are noted. Moreover, the proportion of the total board members who left the board in each of the countries is approximately 60%. Therefore, we can conclude that in countries within our sample, board member changes follow quite similar patterns, thus providing us with a unique set-up for investigation of political interference-performance relationship within SOEs.

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Insert Table 4 about here

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Table 5 reports correlations among variables. The correlation coefficients do not raise any potential issues with multicollinearity.

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Insert Table 5 about here

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EMPIRICAL RESULTS AND DISCUSSION

Figures 1 to 3 provide an overview of the proportion of board member changes by year and country, thus disclosing the link between board member changes and elections. They show that the proportion of board member changes increases in most cases during election and postelection years.[6] Figure 1 points out that the proportion of *Board turnovers* is higher in seven out of nine election years and in five out of six postelection years. Similarly, the proportion of *Board intermediary* rises in four out of nine election years and in three out of six postelection years (Figure 2). In election years, the proportion of *Board political turnover* increases in five out of nine cases and in postelection years in five out of six cases, as outlined in Figure 3. Therefore, similarities among all three measures in election and postelection years are observed, implying the existence of the link between the election cycles and board member changes within SOEs.

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Insert Figure 1 about here

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Insert Figure 2 about here

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Insert Figure 3 about here

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Table 6 shows the relationship between elections and board member changes. We find that board member changes are higher during election years. In parliamentary election years *Board turnover*, *Board intermediary*, and *Board political turnover* increase by approximately 9%, 23%, and 4% respectively. Moreover, previous year profitability (*ROE*) and productivity levels (*Sales per employee*) are insignificant. Hence, performance as a proxy of market force is not likely to induce board member changes within SOEs. These findings support our Hypothesis 1 and the contention of Vickers and Yarrow (1988) that board member changes within SOEs happen due to political rather than market forces. Moreover, these results validate the usage of election variables as instruments for board member changes.

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Insert Table 6 about here

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Table 6 reveals one more important finding. The impact of *Parliamentary* elections is much greater for changes of all board members (9%) than for changes of only politically connected board members (4%). Thus, our results suggest that non-politically connected board members suffer from social distancing and guilt by association syndrome (Labianca & Brass, 2006; Yoshikawa et al., 2014). Yoshikawa et al. (2014) explain that outside board members without political connections are likely to be faced with social distancing since a powerful owner can replace them. The newly elected politicians assume that non-politically connected board members are loyal to previous political regimes, and with their change politicians want to avert any likelihood that their power might be destabilized (Dittmer & Wu, 1995). Therefore, our results uncover a potential existence of informal political ties within SOEs that go beyond the establishment of personal political ties. A larger magnitude of the *Board intermediary* change in election years (23% vs. 9% and 4%) might indicate that politicians have the tendency to appoint temporary boards with up to three-month tenures. The temporary boards enable politicians to take over the control of certain SOEs right after the elections while deciding which individuals deserve these positions in the long run based on their political loyalty and obedience.

Other results from Table 6 show that *Board tenure* has a significant positive effect on *Board turnover* and *Board political turnover*. The increase in the time spent on boards implies that board members will be replaced as the end of their mandate is approaching. Contrary to that, *Board tenure* has a negative effect on *Board intermediary*. With increase in time spent on boards, fewer board members with tenures shorter than one year are replaced. The percentage of men on boards seems to have an insignificant effect, while increase in *Board size* increases the number of board member changes. Moreover, an upsurge in number of employees results in a lower number of board member changes. Fan et al. (2007) argue that evaluation of SOE boards depends also on certain social responsibilities, such as an increase in employment levels. Hence, when employment levels are low there is a greater likelihood of a board member change. Within our estimations we employ variance inflation factors (VIF) and we find no evidence of multicollinearity.

In order to prove consistency of the results presented in Table 6, we perform several robustness checks. First, we re-estimate the model (1) by controlling for leverage and the percentage of board members with PhD degrees. We observe consistent results regarding the impact of elections, which strengthens the argument that board member changes are politically induced. Interestingly, the percentage of board members with PhD degrees has negative significance for *Board intermediary*. Board members with higher qualifications are expected to possess a greater level of expertise and knowledge, and as such they are less likely to be replaced in short periods of time. Second, we check the possibility that the effect of *Parliamentary* elections is non-instantaneous through employment of lagged *Parliamentary* in model (1). We find negative significant coefficient for *Board turnover*, thus confirming the literature implication that politicians want to ensure position and power as soon as they are elected. The negative significance for *Board intermediary* supports the notion that politicians use temporary boards in election years. Moreover, we find insignificant coefficient for *Board political turnover*. Hence, results of this robustness check support results presented in Table 6.

Table 7 presents the IV results for the board member changes-performance relationship. We find that political interference via board member changes deteriorates SOE performance. The estimates show a significant negative relationship between *Board turnover* and SOEs' financial and operating performance, thus supporting our Hypothesis 2. Moreover, *Board intermediary* is negatively associated with financial performance and is insignificant for operating performance of SOEs. The descriptive statistics in Table 3 show that SOEs in our sample have on average five board members with average *Board turnover* of approximately 20% (during one year one board member leaves the board). In terms of economic significance, the results from Table 7 imply that the change of one board member (*Board turnover* increase of 20 percentage points) results in a 3.2 percentage points decrease in *ROE* and 16.6% decrease in *Sales per employee*. The change of one board member with less than a year tenure decreases ROE by 0.01 percentage points. Contrary to that, we find that *Board political turnover* has negative but insignificant association with both financial and operating performance of SOEs. This might imply that non-politically connected board members represent a more valuable "asset" for SOEs. Previous studies point out that politically connected board members are appointed on the basis of their political loyalty and not their professional qualifications (Barberis et al., 1998). For that reason, their change might not influence performance of SOEs. However, we recognize that further analysis in this regard is needed as to be able to create a well-based conclusion. In spite of insignificance, the negative sign supports our findings of negative association between board member changes and performance of SOEs.

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Insert Table 7 about here

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The negative association suggested by our results confirms findings of Crutchley et al. (2002) that greater stability of board membership enhances enterprise performance. Moreover, our results support Anderson and Chun (2014), who investigate the impact of board turnover on performance of the S&P 500 enterprises. Their results show that the lowest levels of performance are observed for enterprises in which five or more board members were changed over three years. Essentially, frequent board member changes disrupt decision making, leaving procedures and implementation processes unattended (Sharma, 1985). The non-existence of perfect substitution for individuals, as noted by Sharma (1985), postpones re-establishment of efficient working dynamics within boards. In addition, frequent board member changes contribute to the lack of long-term perspective and dedication of individuals who sit on boards, thus disrupting creation of sound strategic orientation. Consequently, performance that is dependent from board member deliberation and board decisions is negatively affected by unstable board memberships that are politically induced.

Table 7 also shows significant positive relationship between *Board size* and SOE operating performance. This result is different from findings of Hermalin and Weisbach (2003) and Menozzi et al. (2011), but it seems to support resource dependence theory in this regard. The theory asserts that larger boards are able to establish a greater number of external links, thus securing access to crucial resources (Pfeffer & Salancik, 1978). Moreover, *Board tenure* is positively associated with performance of SOEs, since longer tenures imply greater familiarity of board members with business operations. We also find that board members leaving the board or being appointed to the board have negative effect on operating performance. This is related to the appearance of the time lag that represents the period of adjustment to the new board dynamics (Sharma, 1985). In addition, the presence of women on boards does not improve performance of SOEs.

Results for control variables in Table 7 imply that larger SOEs have lower operating performance. Enterprise *Existence* indicates that older enterprises have higher levels of efficiency, probably due to better established procedures and prolonged market experience. Macroeconomic conditions (*GDP*) seem not to have an effect on performance, which is consistent with findings of previous research studies (e.g., Boubakri et al., 2012). Increase in

Leverage has a negative effect on financial performance, as it creates higher levels of financial distress while at the same time creating positive effects on productivity levels, likely due to investments in fixed assets, which improve efficiency.

The robustness of these results is confirmed through re-estimation of the model (2) in several ways. First, we rerun the model with different macroeconomic control variables (e.g., real GDP, inflation) and enterprise level controls (e.g., total debt/equity as leverage measure, growth opportunities). The results of these regressions suggest the negative association between *Board turnover/Board intermediary* and SOE performance, thus supporting the findings presented above.

Second, it is possible that our enterprise level and board level controls have the delayed effect on SOE performance. Therefore, we re-estimate the model (2) with lagged enterprise level controls. We find a significant negative relationship of *Board turnover* with both measures of performance. *Board intermediary* stays significant and negative for operating performance. In addition, we re-run the model (2) with lagged enterprise and board level controls. The significance of *Board turnover* in this estimation remains for financial performance, while *Board intermediary* loses its significance. Interestingly, the coefficient on *Board political turnover* becomes significant for financial performance. This result might imply that after controlling for certain delayed effects, the loss of certain political connections negatively affects SOE performance. The signs and significance for other variables in all robustness checks are quantitatively similar to the ones reported.

Third, we try to complement our analysis on endogeneity using the difference-in-differences (DID) approach with fixed-effects regression. We create treatment group (countries with elections) and control group (countries without elections) and two interaction variables, *Treatment*election* and *Treatment*postelection*, for detecting the differentiating effect of elections on the board member changes in the treatment versus the control group.[7] The intertwined effects of parliamentary and local elections limit our ability to clearly specify the treatment effect. Consequently, the significance of our results is absent. Notwithstanding, the positive sign for both interaction variables suggests that in countries with elections, board member changes are higher in election and postelection years than in countries with no elections.

The second step of our main analysis investigates whether the political importance of large SOEs alters the board member changes–performance relationship. Our results in Table 8 suggest a significant negative relation between board member changes and performance of small and medium SOEs and insignificant relation for large SOEs. These results are inconsistent with our Hypotheses 3a and 3b, and the findings of Bertrand et al. (2007), which assert that politicians use large SOEs to improve the likelihood of their re-election. However, our results are in line with findings of Wu et al. (2012), who analyse the impact of political connections on SOE performance in China. They explain that due to the importance of central SOEs (which are at the same time large) for the normal functioning of private enterprises, governments tend not to use those enterprises for fulfilment of their political goals. Garrone, Grilli, and Rouseseau (2013) find that the effect of political interference on large utility SOEs in Italy is uncertain. In addition, large enterprises are usually under the eye of the media (O'Connell, 1995), and politicians may opt not to reveal themselves and jeopardize their position.

Contrary to the above, small and medium SOEs are used by local officials for personal and political goals to secure their political power (Wu et al., 2012). Jin, Yingyi, and Weingast (2005) reveal that local officials are politically pressured to increase local employment and they do so through SOEs. In addition, several other reasons might provide explanation for our results. First, large SOEs have established procedures and systems that function despite board member changes, unlike small and medium size SOEs. Moreover, small and medium SOEs usually suffer from a lack of supervision and procedures, thus relying to a greater extent on board decision-making processes. Consequently, political interference via board member changes affects board deliberation, decision making, and performance of small and medium SOEs. The results for all other variables are consistent with the results for the whole sample. Table 8 also shows the Hausman test metrics that confirm the existence of statistically significant differences between coefficients from two sub-samples.

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Insert Table 8 about here

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Within the last step of our main analysis we determine whether different governing models for state ownership create any dissimilarities in the board member changes-performance relationship. Table 9 presents results for the centralized and government model. The results imply that for SOEs under the centralized model, politically induced board member changes are insignificant in terms of their performance. The insignificant result is in line with literature which suggests that independent body governing state ownership curtails opportunities for political interference within SOEs (Musacchio et al., 2015). Moreover, board nomination and appointment procedures within the centralized model are based on professional qualifications of individuals and not their political loyalty (World Bank, 2014).

The results also imply positive board member changes-performance relationship in countries with government model. This result could be in line with the efforts of the governments of Serbia and Montenegro to professionalise board membership. Due to this result and its implications we do not find the support for our Hypothesis 4. Other results in Table 9 are consistent with results for the whole sample such as enterprise size, enterprise existence, etc. As it can be noted, *GDP* and *Leverage* are excluded from re-estimations in both sub-samples. The reason for this is related to the significant drop in the number of observations, while the results of estimations with and without these variables are analogous. The estimations with *GDP* and *Leverage* are available upon request. We also observe significant statistical differences between sets of coefficients for these two sub-samples as indicated by Hausman test metrics.

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Insert Table 9 about here

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CONCLUSION

Prior literature recognizes the general contingency of personal-level political ties and their values/costs for performance of enterprises, but it neglects the examination and analysis of their heterogeneity. Previous research studies fell short in recognizing the informal channels through which politicians and businesspeople might influence each other (Sun et al., 2015). Considering that, our study examines whether election cycles rather than market forces lead to board member changes as well as how these board member changes relate to the performance of 200 SOEs in six countries of the former SFRY.

Overall, our results reveal that board member changes are politically motivated rather than performance induced. We also find that political interference via instable board membership is negatively associated with performance of SOEs. In addition, our findings imply that the significance and magnitude of this association depends on the SOE's political importance and ownership models. The results show that politically induced board member changes are insignificant for performance of large SOEs and SOEs governed by an independent government body.

The empirical findings of this study have several important implications. They reveal a more nuanced picture of political tie heterogeneity and show another channel for political interference within SOEs. In that way, we extend the political embeddedness perspective by enabling multilevel investigation of political influence and its impact on the behaviour of SOEs. Unlike previous research studies, our study also acknowledges the importance of differentiation among government ownership ties on the basis of adopted ownership models. Our findings in this regard might have important implications for policymakers. In particular, the results show that policymakers should adopt a centralized ownership model to create a shield from political interference. Recognizing that a centralized ownership model might not be appropriate for all countries due to their specificities, policymakers can at least ensure that appointment of board members is based on knowledge, skills, and competences rather than political allegiance.

Even though we have undertaken a careful analysis we acknowledge that our study has several limitations that suggest implications for future research. First, further examination of the characteristics of replaced board members (e.g., expertise, work experience) will enrich the understanding of why board member changes increase in years of elections. Second, in our study we do not take into account that board member changes might depend on distinct personal political ties. For example, board members working in private enterprises with political connections are less likely to be replaced than government officials with direct political ties. Such analysis would provide us with insights regarding the underlying mechanisms of politically induced board member changes. Third, as noted within the political embeddedness perspective, political ties create certain benefits as well as costs. Therefore, empirical research that would disentangle benefits and costs of individual board replacements in years of elections would provide us with better understanding of the impact of politically induced board member changes on SOE performance.

ENDNOTES

[1] The total number of SOEs ranges from 15 in Montenegro to at least 80 in Slovenia. For example, level of state ownership in Slovenia is one of the highest among OECD countries. In 2012, the SOE sector in Slovenia accounted for 11% of the total employment, which is three times higher than the OECD average (OECD, 2014). Moreover, in the same year SOEs in Serbia and Croatia employed 7% and 6.3% of the total employment respectively (Arsic, 2012; Croatian Bureau of Statistics, 2012; DUUDI, 2013). Governments have a majority state ownership in strategically important SOEs (e.g., energy, transport, telecommunication, utilities) that contribute to the overall functioning of their economies.

[2] Our definition of politically connected board members takes into consideration definitions of political connectedness from previous literature (e.g., Faccio, 2006; Faccio, 2010; Menozzi et al., 2011; Zheng et al., 2015). Hence, within the scope of our study we define politically connected board members as: (1) those who hold or held position in central or local government, parliament, or some other governmental body; (2) those who are members of the political party; (3) those who participated in election cycles as citizen representatives; (4) those who have close relationships (e.g., relatives, friends) with current/past government/parliament officials or political party representatives.

[3] The dummy variable for parliamentary elections takes value one for the following years and countries: 2010-Bosnia and Herzegovina; 2011-Croatia, FYR Macedonia, Slovenia; 2012-Serbia, Montenegro; 2014-Bosnia and Herzegovina, FYR Macedonia, Serbia, Slovenia. Following the same approach, the dummy variable for local elections takes value one in: 2010-Bosnia and Herzegovina, Montenegro, Slovenia; 2012-Bosnia and Herzegovina, Serbia; 2013-Croatia, FYR Macedonia; 2014-Montenegro, Serbia, Slovenia. Both of these dummy variables are time variant.

[4] Endogeneity appears whenever the expected value of the error term is not equal zero and when there is a correlation between independent variable and the error term. This can be caused by one of the following: (1) omitted variable - a variable that is relevant cannot be measured and proper proxy cannot be found; (2) measurement error in regressor; and (3)

reverse causality. Research papers that investigated the political interference-performance relationship independently from the econometric methodology and measure of political interference that they employ all acknowledge possible presence of endogeneity within their estimations. For further reference please see Adams, Hermalin, and Weisbach (2010), Hu and Leung (2012), Ding et al. (2014), Menozzi et al. (2011), and O'Connell and Cramer (2010).

5 *ivreg2h* is an instrumental variables estimation using heteroscedasticity based instruments and Stata command that was written by Baum and Schaffer (2012). *ivreg2h* uses a two-step GMM estimation. This technique was used by several researchers (e.g., Bremus and Buch, 2015; Mishra and Smyth, 2015).

6 For countries where elections happened at the beginning or end of the observed period, we are not able to observe prior or post levels of board member changes. In Bosnia and Herzegovina, the elections took place in 2010, so we cannot observe whether the level of board member changes increased due to the lack of data for 2009. Therefore, we count out this election year when we calculate the number of years in which there was an increase of board member changes in an election year. We apply same reasoning for postelection years for which the data is not available, and we therefore discuss nine election years and six postelection years in Figures 1, 2, and 3. Since these cases represent the minority, we do not have a reason to believe that they would significantly change our conclusion.

7 We create the treatment and control group by using binary variable *Treatment*, which takes value 1 for enterprises in Serbia and Montenegro (treatment group) and 0 for Bosnia and Herzegovina (control group). We also create the *Election* dummy variable, which takes value 1 for 2012 and 0 otherwise. This is due to the fact that in Serbia and Montenegro, parliamentary elections were held in 2012 and in the same year there were no parliamentary elections in Bosnia and Herzegovina. In addition, we create a *Postelection* dummy variable which takes value 1 for 2013 and 0 otherwise. Both of these variables are employed within our estimation in order to control for time trends. We also create two interaction variables, *Treatment*election* and *Treatment*postelection*, to be able to detect differentiating effect of elections on the board member changes in the treatment group versus the control group. Before estimating our models, we match enterprises in terms of size and industry. The underlying reason for insignificance of interaction coefficients is related to intertwined effects of parliamentary and local elections. Considering that parliamentary and local elections happen in different years in different countries, it is quite difficult to depict the treatment and control groups in which board member changes are not influenced by effects of some post or pre-election cycles. Therefore, differentiating effect of the treatment becomes insignificant due to the decrease in difference between board member changes within the treatment and control group. We tried re-estimating the model with different specification of the treatment and control groups. In all cases, the interaction variables have positive sign but remain insignificant, which additionally confirms the interplay of post and/or pre-election effects.

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TABLE 1
Governing models for state ownership, appointment procedures and criteria for board membership

	Governance model adopted	Procedure for appointment of board members	Criteria for board membership
Bosnia and Herzegovina	**Decentralized ownership model** Line ministries are responsible for monitoring and exercising ownership rights.	Line ministries create decision proposals on appointment of board members. The proposal is sent to shareholders assembly for confirmation. The details about procedures are stipulated in the Law on SOEs in Federation of Bosnia and Herzegovina (Official Gazzete of the Federation of Bosnia and Herzegovina, 2012).	Aside from the general provisions within the laws detailed criteria for board membership is not stated and the criteria is usually determined by line ministries for each individual public call.
Croatia	**Centralized ownership model** Independent government body DUUDI is responsible for monitoring and exercising ownership rights.	The procedure for appointment of supervisory board members is initiated by line ministry, but DUUDI conducts the public call. After public call DUUDI creates a proposal with justification for each candidate and this proposal is then forwarded to government for adoption.	Criteria for board membership is determined by government through adoption of the official decision in which position requirements are defined e.g., educational level, expertise (Narodne novine, 2012).
FYR Macedonia	**Decentralized ownership model** Line ministries are responsible for monitoring and exercising the ownership rights.	Line ministries create proposals of decisions on appointment of board members. The proposal is sent to the government for adoption. The details about procedures are stipulated in the Law on public enterprises in Macedonia (Official Gazzete of the FYR Macedonia, 2013).	Aside from the general provisions within the laws detailed criteria for board membership is not stated and the criteria is usually determined by line ministries for each public call.
Montenegro	**Government ownership model** The quasi decentralized model in which de facto the government governs SOEs, while de jure line ministries are responsible.	The line ministry prepares a call for appointment of board members. Governmental committee or office for appointments takes over the call, announces the process, governs the procedure and decides on candidates to be proposed. The final decision on appointment is made by government and sent to shareholders assembly for confirmation.	The only criteria stated in legal provisions is that board members cannot work for SOEs' auditor, perform duty of executive director or be convicted for any crime.
Serbia	**Government ownership model** The quasi decentralized model in which de facto the government governs SOEs, while de jure line ministries are responsible.	The line ministry prepares a call for appointment of board members. Governmental committee or office for appointments takes over the call, announces the process, governs the procedure and decides on candidates to be proposed. The final decision on appointment is made by government and sent to shareholders assembly for confirmation.	Criteria for appointment of board members such as education, work experience and level of expertise is stated in legal provisions of Serbian laws (e.g., Law on SOEs).
Slovenia	**Centralized ownership** Independent government body called Slovenian Sovereign Holding is responsible for monitoring and exercising ownership rights.	Personal commission within Slovenian Sovereign Holding carries out recruitment process for supervisory board membership and sends proposals to shareholders assembly for confirmation (Slovenian Sovereign Holding, 2011).	The Slovenian Sovereign Holding's Rules on supervisory board member selection and other regulatory documents provide detailed criteria for supervisory board membership (e.g., level of education, work experience, postulates about non-political involvement etc).

Notes: Description of governing models for state ownership, appointment procedures, and criteria for board membership in six countries of the former SFRY for the period 2010-2014.

TABLE 2
Board and ownership characteristics

ONE TIER VS. TWO TIER	
Number of SOEs with one-tier board system	Number of SOEs with two-tier board system
14	186

OWNERSHIP STRUCTURE		
Number of SOEs with 100% state ownership	Number of SOEs with minority shareholder	Number of SOEs with significant minority shareholder
102	98	12

ORIGIN OF SIGNIFICANT MINORITY SHAREHOLDER	
Domestic	Foreign
3	9

OWNERSHIP ENTITY	
Direct government control	Indirect government control via local self-government
102 SOEs	98 SOEs

Notes: Board and ownership characteristics of 200 SOEs from six countries of the former SFRY.

TABLE 3
Descriptive statistics

	Mean	Std	Obs
Panel A: Performance measures			
ROE	-0.05	0.22	957
Sales per employee	190.72	919.24	971
Panel B: Board level measures			
Board turnover	0.19	0.27	1,000
Board intermediary	0.33	1.12	1,000
Board political turnover	0.10	0.18	1,000
Board size	5.38	3.10	1,000
Board male	0.81	0.19	919
Board tenure	2.12	1.21	919
Board appointments	1.53	2.19	1,000
Board leavers	1.33	2.05	1,000
Panel C: Political interference measures			
Parliamentary	0.34	0.47	1,000
Local	0.28	0.45	1,000
Panel D: Control variables			
Existence	28.12	23.99	977
Size	675.53	1517.72	989
Leverage	0.33	0.64	817
GDP	55847.84	24252.24	1,000

Notes: This table reports descriptive statistics for key variables. The sample covers 200 state-owned enterprises from Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro, Serbia and Slovenia for the period 2010-2014. Please note that for the variables that are used in logarithm form within our estimations in this table we report non-logarithm values. Panel A reports the summary statistics for state-owned enterprise performance variables. *ROE* is the ratio of net income to average total equity. *Sales per employee* is the natural logarithm of sales over the total number of employees. In panel B the summary statistics for board level variables are reported. *Board turnover* is the percentage of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board. *Board intermediary* shows the number of board members who left in the observed year with tenures shorter than one year. *Board political turnover* is the percentage of the total number of board members in the observed year who are politically connected and who left at the end of the year after spending at least one year on the board. *Board size* is the total number of board members. *Board male* is the percentage of men on board. *Board tenure* is the average time that board members spent on the board. *Board appointments* is the number of board members appointed to the board within one year. *Board leavers* is the number of board members that left the board within one year. Panel C reports the summary statistics for political interference variables. *Parliamentary* is a dummy variable which takes value 1 in years of parliamentary elections. *Local* is a dummy variable which takes value 1 in years of local elections. In Panel D the summary statistics for control variables are reported. *Existence* is the natural logarithm of the difference between years under investigation and year of SOE incorporation. *Size* is the natural logarithm of the total number of employees. *Leverage* is equal to long-term debt over shareholders equity. *GDP* is the logarithm of GDP PPP.

TABLE 4
Board member changes per country

MEAN VALUES OF BOARD MEMBER CHANGES PER COUNTRY						
	Bosnia and Herzegovina	Croatia	FYR Macedonia	Montenegro	Serbia	Slovenia
Board turnover	0.17	0.21	0.33	0.21	0.20	0.18
Board intermediary	0.25	0.35	0.30	0.32	0.58	0.32
Board political turnover	0.09	0.14	0.08	0.16	0.10	0.07

PROPORTION OF CHANGED BOARD MEMBERS						
	Bosnia and Herzegovina	Croatia	FYR Macedonia	Montenegro	Serbia	Slovenia
Total number of board members	474	620	40	144	148	694
Number of board members who left the board	306	383	40	81	90	427
Proportion of board members who left the board	64.56%	61.77%	100%	56.25%	62.50%	61.53%

Notes: *Board turnover* is the percentage of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board. *Board intermediary* shows the number of board members who left in the observed year with tenures shorter than one year. *Board political turnover* is the percentage of the total number of board members in the observed year who are politically connected and who left at the end of the year after spending at least one year on the board.

TABLE 5
Pearson's correlation matrix

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. ROE	1.0000															
2. Sales per employee	0.1210***	1.0000														
3. Board turnover	0.0220	0.0306	1.0000													
4. Board intermediary	-0.0653	0.0301	0.4361***	1.0000												
5.Board political turnover	0.0295	-0.0067	0.8040 ***	0.3062***	1.0000											
6. Board size	0.0319	0.3255***	0.3619***	0.3299***	0.3032***	1.0000										
7. Board male	0.0922**	0.0496	-0.0453	-0.0033	-0.0164	0.0380	1.000									
8. Board tenure	0.0648†	-0.0157	-0.0593	-0.2337***	-0.0065	-0.1897***	0.0652	1.0000								
9. Board appointments	-0.0322	0.0951***	0.3329***	0.4947***	0.2596***	0.6047***	-0.0221	-0.4615***	1.0000							
10. Board leavers	0.0027	0.1219***	0.8366***	0.4778***	0.6792***	0.6535***	-0.0331	-0.1429***	0.5496***	1.0000						
11. Parliamentary	0.0031	0.0047	0.0604**	0.0229	0.0294	-0.0719*	-0.0155	0.0363	-0.0781*	0.0002	1.0000					
12. Local	0.0096	0.1129***	-0.0130	-0.0134	-0.0194	0.0125	0.0093	-0.0210	0.0080	-0.0236	-0.0660*	1.0000				
13. Existence	0.0197	0.2079***	-0.0585†	-0.0805*	-0.0422	0.1168***	0.0782*	0.1066**	-0.0348	-0.0230	0.0053	0.0158	1.0000			
14. Size	0.0200	0.0820*	0.0219	0.0826**	0.0231	0.3353***	0.2403***	-0.733*	0.1745***	0.1417***	-0.0419	0.0055	0.1910***	1.0000		
15. Leverage	-0.2327***	0.1342***	0.0275	0.0913***	-0.0012	0.1360***	0.0327	-0.0504	0.1038**	0.0892*	-0.0251	-0.0252	-0.1277***	0.1731***	1.0000	
16. GDP	0.0248	0.2613***	0.0102	0.0248	-0.0171	0.2238***	0.0216	-0.0888**	0.1081***	0.0816**	-0.0046	-0.0189	0.2413***	0.1681***	0.1834***	1.0000

Notes: †p<0.10 *p<0.05 **p<0.01 ***p<0.001.

TABLE 6
Effect of elections on board member changes

	BOARD TURNOVER		BOARD INTERMEDIARY		BOARD POLITICAL TURNOVER	
	(1)	(2)	(3)	(4)	(5)	(6)
Parliamentary	0.088***	0.093***	0.233**	0.235**	0.040***	0.043***
	(0.022)	(0.023)	(0.091)	(0.091)	(0.014)	(0.015)
Board size	0.081***	0.081***	0.226***	0.223***	0.046***	0.046***
	(0.007)	(0.007)	(0.060)	(0.059)	(0.005)	(0.005)
Board tenure	0.048***	0.049**	-0.177**	-0.182**	0.035***	0.037***
	(0.014)	(0.015)	(0.061)	(0.059)	(0.011)	(0.011)
Board male	-0.045	-0.066	-0.227	-0.232	-0.063	-0.078
	(0.121)	(0.123)	(0.311)	(0.318)	(0.077)	(0.079)
Size (lagged)	-0.072**	-0.073*	-0.160	-0.108	-0.004	0.001
	(0.025)	(0.032)	(0.142)	(0.141)	(0.014)	(0.018)
ROE (lagged)	0.000		0.023		-0.010	
	(0.073)		(0.218)		(0.048)	
Sales per employee (lagged)		0.016		0.123		0.024
		(0.033)		(0.105)		(0.028)
No. of Obs.	722	732	722	732	722	732
R^2 Within	0.30	0.29	0.21	0.21	0.23	0.22
Prob>F	0.000	0.000	0.000	0.000	0.000	0.000
Mean VIF	1.10	1.18	1.10	1.18	1.10	1.18

Notes: The table presents the results for the relationship between board member changes and election cycles. Fixed effects panel data was used. First panel (columns (1) and (2)) show results for the board turnover-election relationship. Second panel (columns (3) and (4)) present results for the board intermediary-election relationship. Third panel (columns (5) and (6)) present results for the board political turnover-election relationship. In columns (1), (3) and (5) lagged *ROE* is performance measure. In columns (2), (4) and (6) lagged *Sales per employee* is performance measure. Robust standard errors are reported in parentheses. In all regressions a constant term is estimated but not reported. †p<0.10 *p<0.05 **p<0.01 ***p<0.001. *Board turnover* is the percentage of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board. *Board intermediary* shows the number of board members who left in the observed year with tenures shorter than one year. *Board political turnover* is the percentage of the total number of board members in the observed year who are politically connected and who left at the end of the year after spending at least one year on the board. *Parliamentary* is a dummy variable which takes value 1 in years of parliamentary elections. *Board size* is the total number of board members. *Board tenure* is the average time that board members spent on the board. *Board male* is the percentage of men on board. *Size* is the natural logarithm of the total number of employees. *ROE* is the ratio of net income to average total equity. *Sales per employee* is the natural logarithm of sales over the total number of employees.

TABLE 7
Effect of board member changes on SOE performance: Whole sample

	ROE	Sales per employee	ROE	Sales per employee	ROE	Sales per employee
	(1)	(2)	(3)	(4)	(5)	(6)
Board turnover	-0.158†	-0.826*				
	(0.094)	(0.426)				
Board political turnover			-0.205	-0.983		
			(0.147)	(0.685)		
Board intermediary					-0.010*	0.011
					(0.018)	0.077
Existence	-0.036*	0.216**	-0.037*	0.213**	-0.027	0.213***
	(0.016)	(0.069)	(0.017)	(0.073)	(0.016)	(0.066)
Size	-0.010	-0.113**	-0.008	-0.101*	-0.003	-0.119**
	(0.009)	(0.046)	(0.009)	(0.045)	(0.010)	(0.043)
Leverage	-0.096**	0.175**	-0.100***	0.157*	-0.096**	0.194**
	(0.031)	(0.066)	(0.031)	(0.067)	(0.030)	(0.064)
GDP	0.028	0.184	0.030	0.200	0.036	0.148
	(0.027)	(0.123)	(0.027)	(0.125)	(0.027)	(0.123)
Board size	0.009*	0.171***	0.009	0.164***	-0.001	0.249***
	(0.005)	(0.026)	(0.006)	(0.028)	(0.008)	(0.032)
Board tenure	0.020*	0.011	0.023**	0.024	0.021*	-0.049
	(0.009)	(0.047)	(0.009)	(0.046)	(0.009)	(0.052)
Board male	0.123†	-0.067	0.135*	-0.004	0.136**	-0.020
	(0.068)	(0.340)	(0.067)	(0.338)	(0.063)	(0.341)
Board leavers					0.009	-0.100**
					(0.010)	(0.040)
Board appointments					-0.000	-0.101**
					(0.008)	(0.040)
No. of Obs.	427	424	427	424	427	424
Mean VIF	1.36	1.37	1.35	1.35	1.81	1.82
Underidentification LM statistic P val	0.00	0.00	0.00	0.00	0.00	0.00
Hansen J statistic P val	0.98	0.12	0.56	0.02	0.51	0.09

Notes: The table presents the results for estimation of board member changes and SOE performance. IV estimation using heteroskedasticity-based instruments (*ivreg2h*) was used. In columns (1) and (2) *Board turnover* is the measure of board member changes. In columns (3) and (4) *Board political turnover* is the measure of board member changes. In columns (5) and (6) *Board intermediary* is the measure of board member changes. Robust standard errors are reported in parentheses. In all regressions a constant term is estimated but not reported. †p<0.10 *p<0.05 **p<0.01 ***p<0.001. *ROE* is the ratio of net income to average total equity and is dependent variables in columns (1), (3) and (5). *Sales per employee* is the natural logarithm of sales over the total number of employees and is dependent variable in columns (2), (4) and (6). *Board turnover* is the percentage of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board. *Board political turnover* is the percentage of the total number of board members in the observed year who are politically connected and who left at the end of the year after spending at least one year on the board. *Board intermediary* shows the number of board members who left in the observed year with tenures shorter than one year. *Existence* is the natural logarithm of the difference between years under investigation and year of SOE incorporation. *Size* is the natural logarithm of the total number of employees. *Leverage* is equal to long-term debt over shareholders equity. *GDP* is the logarithm of GDP PPP. *Board size* is the total number of board members. *Board tenure* is the average time that board members spent on the board. *Board male* is the percentage of men on board. *Board leavers* is the number of board members that left the board within one year. *Board appointments* is the number of board members appointed to the board within one year.

Table 8

Effect of board member changes on SOE performance: Differences between small and medium SOEs and large SOEs

	ROE Panel 1		Sales per employee Panel 2		ROE Panel 3		Sales per employee Panel 4		ROE Panel 5		Sales per employee Panel 6	
	Small and medium SOEs	Large SOEs	Small and medium SOEs	Large SOEs	Small and medium SOEs	Large SOEs	Small and medium SOEs	Large SOEs	Small and medium SOEs	Large SOEs	Small and medium SOEs	Large SOEs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Board turnover	-0.126	-0.044	-1.189**	-0.457								
	(0.110)	(0.121)	(0.505)	(0.515)								
Board political turnover					-0.307	-0.067	-1.199	-1.171				
					(0.217)	(0.175)	(0.866)	(0.735)				
Board intermediary									-0.031†	-0.019	-0.029	-0.005
									(0.018)	(0.025)	(0.128)	(0.061)
Existence	0.023	-0.005	0.425***	0.150*	0.017	-0.006	0.442***	0.116	0.026	0.001	0.443***	0.121†
	(0.027)	(0.019)	(0.114)	(0.070)	(0.028)	(0.020)	(0.118)	(0.076)	(0.025)	(0.019)	(0.111)	(0.063)
Size	0.032	-0.012	-0.227**	-0.121*	0.031	-0.012	-0.204*	-0.143*	0.038†	-0.006	-0.193*	-0.142**
	(0.023)	(0.017)	(0.096)	(0.060)	(0.022)	(0.018)	(0.092)	(0.062)	(0.022)	(0.018)	(0.090)	(0.058)
Board size	0.006	0.002	0.245***	0.129***	0.009	0.002	0.233***	0.141***	0.004	-0.007	0.285***	0.211***
	(0.007)	(0.007)	(0.035)	(0.031)	(0.008)	(0.007)	(0.038)	(0.027)	(0.009)	(0.009)	(0.044)	(0.031)
Board tenure	0.021*	0.016	-0.063	0.096†	0.021*	0.017	-0.041	0.107†	0.019†	0.013	-0.103*	0.046
	(0.011)	(0.013)	(0.049)	(0.058)	(0.011)	(0.013)	(0.048)	(0.059)	(0.011)	(0.014)	(0.051)	(0.063)
Board male	0.009	0.179	-0.285	0.299	-0.002	0.186†	-0.234	0.418	0.015	0.189†	-0.194	0.377
	(0.073)	(0.111)	(0.396)	(0.410)	(0.075)	(0.110)	(0.396)	(0.412)	(0.067)	(0.103)	(0.397)	(0.406)
Board leavers									0.008	0.018	-0.049	-0.103**
									(0.013)	(0.013)	(0.060)	(0.040)
Board appointments									-0.003	-0.001	-0.104†	-0.065†
									(0.013)	(0.011)	(0.059)	(0.037)
No. of Obs.	254	275	262	273	254	275	262	273	254	275	262	273
Mean VIF	1.28	1.23	1.28	1.23	1.28	1.21	1.28	1.21	1.73	1.74	1.73	1.75
Hausman	18.90**		97.01***		22.02***		32.83***		17.71**		86.73***	
Underidentification LM statistic P val	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.03	0.00	0.04	0.00
Hansen J statistic P val	0.72	0.79	0.49	0.16	0.78	0.83	0.47	0.31	0.70	0.65	0.12	0.06

Notes: The table presents the results for estimation of board member changes and SOE performance for two sub-samples: small and medium SOEs and large SOEs. IV estimation using heteroskedasticity-based instruments (*ivreg2h*) was used. Panel 1, Panel 3 and Panel 5 present results for the board member changes-ROE relationship for both sub-samples. Panel 2, Panel 4 and Panel 6 present results for board member changes-sales per employee relationship for both sub-samples. Hausman is the Durbin-Wu-Hausman type test for differences between two sets of coefficients (Chi-square value reported). Robust standard errors are reported in parentheses. In all regressions a constant term is estimated but not reported. †p<0.10 *p<0.05 **p<0.01 ***p<0.001. *ROE* is the ratio of net income to average total equity and is dependent variables in odd columns. *Sales per employee* is the natural logarithm of sales over the total number of employees and is dependent variable in even columns. *Board turnover* is the percentage of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board. *Board political turnover* is the percentage of the total number of board members in the observed year who are politically connected and who left at the end of the year after spending at least one year on the board. *Board intermediary* shows the number of board members who left in the observed year with tenures shorter than one year. *Existence* is the natural logarithm of the difference between years under investigation and year of SOE incorporation. *Size* is the natural logarithm of the total number of employees. *Board size* is the total number of board members. *Board tenure* is the average time that board members spent on the board. *Board male* is the percentage of men on board. *Board leavers* is the number of board members that left the board within one year. *Board appointments* is the number of board members appointed to the board within one year.

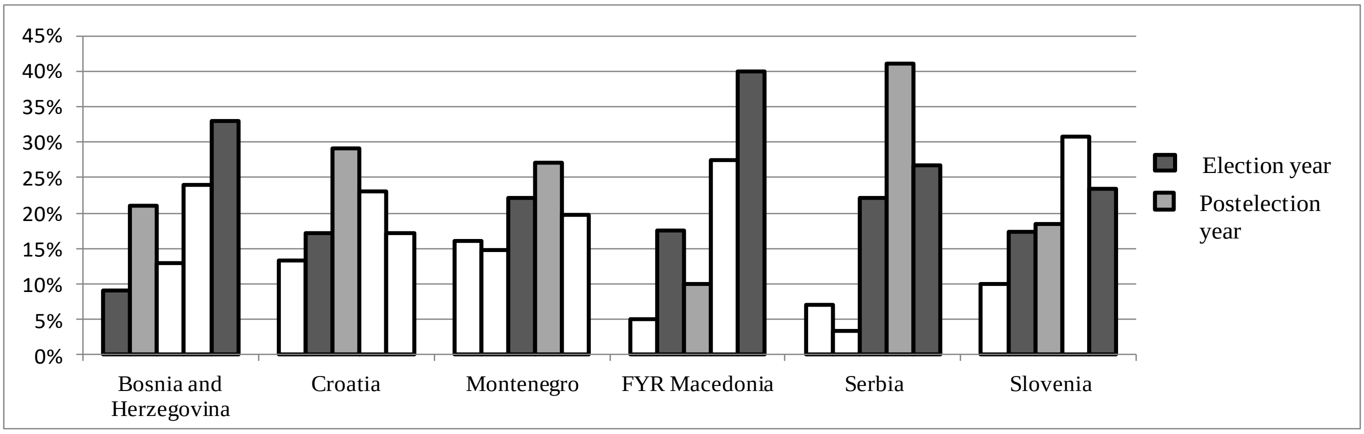
Table 9

Effect of board member changes on SOE performance: Differences between centralized and government model

	ROE Panel 1		Sales per employee Panel 2		ROE Panel 3		Sales per employee Panel 4		ROE Panel 5		Sales per employee Panel 6	
	Centralized model	Government model	Centralized model	Government model	Centralized model	Government model	Centralized model	Government model	Centralized model	Government model	Centralized model	Government model
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Board turnover	-0.220	0.509*	-0.130	0.588								
	(0.168)	(0.240)	(0.516)	(0.854)								
Board political turnover					-0.282	0.308	-1.354	1.087				
					(0.219)	(0.205)	(0.900)	(1.097)				
Board intermediary									-0.028	0.047	-0.046	0.179†
									(0.018)	(0.029)	(0.061)	(0.103)
Existence	0.028	0.001	0.231**	0.266**	0.031	-0.005	0.190*	0.310**	0.045*	-0.014	0.232**	0.228**
	(0.023)	(0.024)	(0.094)	(0.094)	(0.021)	(0.027)	(0.095)	(0.111)	(0.021)	(0.020)	(0.086)	(0.085)
Size	-0.004	0.026	-0.170***	-0.209†	-0.004	0.014	-0.186***	-0.216†	0.001	0.018	-0.170***	-0.253**
	(0.013)	(0.034)	(0.054)	(0.119)	(0.012)	(0.036)	(0.054)	(0.117)	(0.012)	(0.036)	(0.051)	(0.098)
Board size	0.003	-0.041†	0.036	0.155*	0.002	-0.024	0.068*	0.149*	-0.015†	-0.033	0.035	0.264***
	(0.008)	(0.022)	(0.031)	(0.068)	(0.008)	(0.019)	(0.033)	(0.064)	(0.008)	(0.026)	(0.035)	(0.055)
Board tenure	-0.002	0.012	0.006	0.128	0.002	-0.003	0.014	0.106	0.002	0.004	-0.006	0.070
	(0.013)	(0.034)	(0.068)	(0.090)	(0.013)	(0.032)	(0.072)	(0.089)	(0.014)	(0.034)	(0.083)	(0.091)
Board male	0.156	0.006	0.353	-0.573	0.180†	0.001	0.329	-0.681	0.198*	0.033	0.372	-0.504
	(0.103)	(0.187)	(0.440)	(0.828)	(0.095)	(0.194)	(0.426)	(0.789)	(0.090)	(0.184)	(0.421)	(0.767)
Board leavers									0.014	0.021	0.008	-0.086
									(0.012)	(0.030)	(0.041)	(0.072)
Board appointments									0.008	-0.009	-0.005	-0.091
									(0.011)	(0.020)	(0.046)	(0.060)
No. of Obs.	305	73	306	73	305	73	306	73	305	73	306	73
Mean VIF	1.40	1.41	1.40	1.41	1.41	1.39	1.41	1.39	1.94	1.96	1.94	1.96
Hausman	50.08***		26.77***		44.99***		23.73***		84.04***		878.05***	
Underidentification LM statistic P val	0.01	0.13	0.01	0.13	0.00	0.15	0.00	0.15	0.01	0.07	0.01	0.07
Hansen J statistic P val	0.49	0.22	0.00	0.38	0.13	0.17	0.03	0.12	0.44	0.14	0.00	0.26

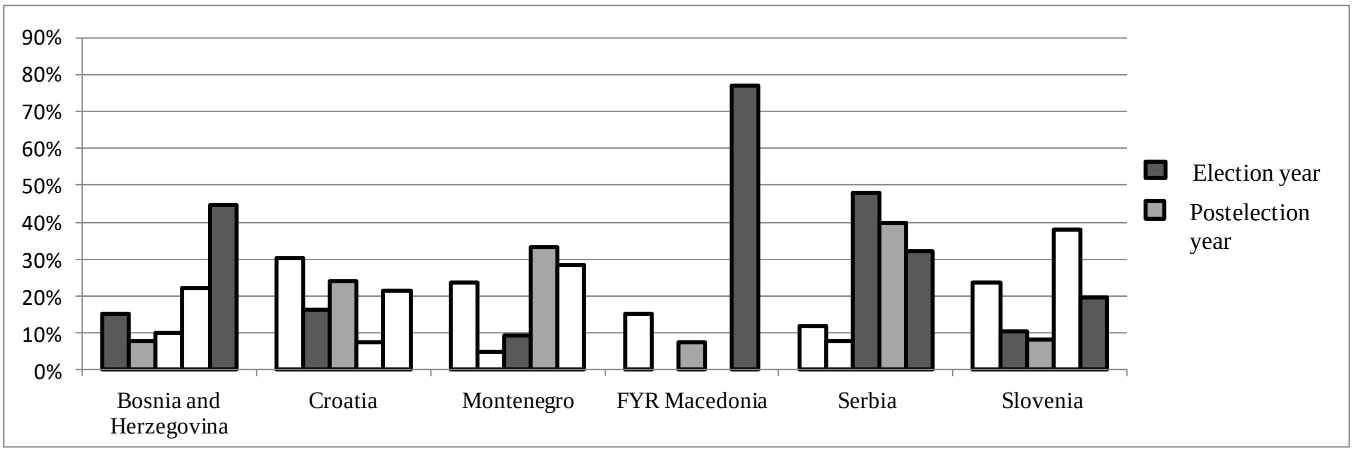
Notes: The table presents the results for estimation of board member changes and SOE performance for two sub-samples: centralized governance model and government governance model. IV estimation using heteroskedasticity-based instruments (*ivreg2h*) was used. Panel 1, Panel 3 and Panel 5 present results for the board member changes-ROE relationship for both sub-samples. Panel 2, Panel 4 and Panel 6 present results for board member changes-sales per employee relationship for both sub-samples. Hausman is the Durbin-Wu-Hausman type test for differences between two sets of coefficients (Chi-square value reported). Robust standard errors are reported in parentheses. In all regressions a constant term is estimated but not reported. $^{\dagger}p<0.10$ $^{*}p<0.05$ $^{**}p<0.01$ $^{***}p<0.001$. *ROE* is the ratio of net income to average total equity and is dependent variables in odd columns. *Sales per employee* is the natural logarithm of sales over the total number of employees and is dependent variable in even columns. *Board turnover* is the percentage of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board. *Board political turnover* is the percentage of the total number of board members in the observed year who are politically connected and who left at the end of the year after spending at least one year on the board. *Board intermediary* shows the number of board members who left in the observed year with tenures shorter than one year. *Existence* is the natural logarithm of the difference between years under investigation and year of SOE incorporation. *Size* is the natural logarithm of the total number of employees. *Board size* is the total number of board members. *Board tenure* is the average time that board members spent on the board. *Board male* is the percentage of men on board. *Board leavers* is the number of board members that left the board within one year. *Board appointments* is the number of board members appointed to the board within one year.

FIGURE 1
Proportion of board turnovers per year and country



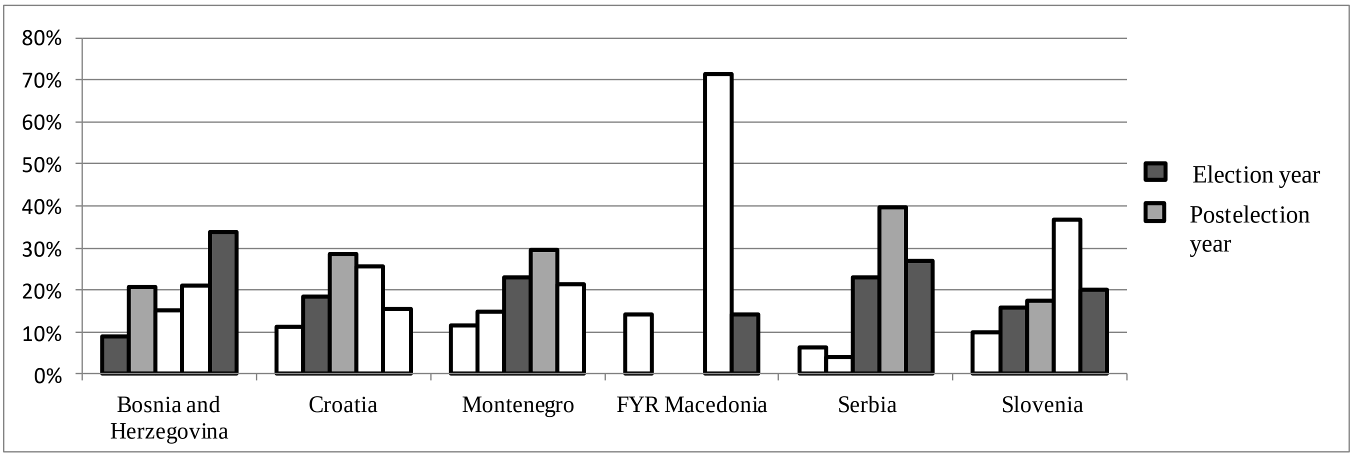
Notes: Proportion of the total number of board members in the observed year who left at the end of the year after spending at least one year on the board.

FIGURE 2
Proportion of board intermediary per year and country



Notes: Proportion of the total number of board members who left in the observed year with tenures shorter than one year.

FIGURE 3
Proportion of board political turnovers per year and country



Notes: Proportion of the total number of board members in the observed year who are politically connected and who left at the end of the year after spending at least one year on the board.

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