# Better Than On-the-job Training:
# National Executive's Political Experience And
# Economic Performance[*]

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June 2020

## Abstract

This paper studies how the pre-tenure experience of national executives affect their performance. Drawing on the literature of organizational economics and corporate finance, we argue that diverse political experience of national executives enhances their general human capital and personal power, which consequently contributes to the competence of economic governance. Using a cross-country data set of national executives in 1950-2010, our analysis finds that the variety of pre-tenure political experiences of national executives is positively associated with economic growth. This effect is more pronounced in mitigating negative growth shocks in the face of crises than in normal times. More experienced national executives are able to preside over growth of a higher quality, and they have a better record of maintaining political stability. By contrast, there is no evidence that national executives' experience in the private sectors particularly matters for their performance.

**Keywords:** National Executives, Variety of Experience (VOE), Economic Performance

# 1 Introduction

National executives differ considerably in pre-tenure career experience. While many established the reputation as veteran politician before their ascendance to the highest office, some others emerged on the political stage with little verifiable information about their leadership qualification. Whether and how political experience contributes to the competence of leadership, however, remains a topic of controversy. A 2018 opinion poll reports that more than half of Americans prefer a political outsider over a political insider.[1] This contemporary public sentiment contrasts some classical arguments holding experienced politicians in high esteem. For example, Alexander Hamilton (1788) argues that "That experience is the parent of wisdom, is an adage the truth of which is recognized by the wisest as well as the simplest of mankind." Referring to his credential of political experience, Joe Biden asserted in the 2008 presidential campaign that "the presidency is not something that lends itself to on-the-job training."

The recent literature of economics and political science provides increasing evidence that national executives make a difference for policy making and economic performance. Cross-countries researches document large variations in economic performance among different national executives (Glaeser et al., 2004; Jones and Olken, 2005). National executives with a higher or Western educational background produce stronger economic performance (Besley, Montalvo and Reynal-Querol, 2011), and they are likely to promote economic or political liberalization at home (Dreher et al., 2009; Gift and Krcmaric, 2017; Li, Xi and Yao, 2020; Spilimbergo, 2009). By contrast, the pre-tenure military background of head of state is positively associated with the initiation of inter-state conflicts (Horowitz and Stam, 2014). However, there has been little research examining how the pre-tenure political experience of national executives affect their competence of managing economic affairs.

In this paper, we examine how the diversity of national executives' pre-tenure political experience affect economic performance. We draw on the literature of organizational

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[1] https://www.monmouth.edu/polling-institute/reports/monmouthpoll_us_082218/

economics and corporate finance to argue that the diversity of political experience is commensurate with one's general human capital as well as political power. Based on the established wisdom in organizational economics that the generalist human capital and the centrality of leaders are important for organizations' performance, we hypothesize that (1) National executives with more diverse pre-tenure political experience produce better economic performance; (2) National executives with more diverse pre-tenure political experience are better at managing economic growth in the face of pre-existing social or economic crisis; and (3) National executives with more diverse pre-tenure political experience preside over economic growth with a higher quality and social stability.

We assemble the biographic information of national executives in 135 countries in 1950-2010 to empirically test these hypotheses. We measure the diversity of pre-tenure political experience as the variety-of-experience (VOE), which is obtained through summing over the indicators of executives' prior experience in various public sector positions. Consistent with Hypothesis 1, we find a robustly positive impact of the VOE index on economic performance. In the baseline model, a unit rise in the VOE index is associated with an increase in gross domestic product (GDP) growth by at least 0.35 percentage point. By contrast, national executives' experiences in the private sector do not make the economy grow faster. Leaders' age and seniority, as measured by pre-tenure years spent in the public sector, also do not affect growth. An examination of the dynamic pattern identifies persistent effects of leaders' VOE on long term growth, but not on the preexisting trajectory of growth rate.

We test how the VOE interplays with economic growth in the face of severe economic or political crises. Consistent with Hypothesis 2, we find that economic growth is more resilient when the handling of crisis is presided over by a national executive with more diverse pre-tenure political experience. Interestingly, the estimated coefficients for VOE become considerably smaller when controlling for its interaction term with the indicators of economic or political crisis. These results suggest that political experience of national executives contribute to economic performance at least partially through enhancing their

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competence of problem solving in times of crisis.

We investigate how national executives' VOE in the public sector affect the quality of growth, which is indirectly measured by total factor productivity (TFP) and the share of government consumption in GDP. Consistent with Hypothesis 3, we find that a national executive's VOE is positively associated with TFP growth and negatively associated with government consumption. At the same time, executives with higher VOE contribute to the duration of political regime and decrease the level of social unrest. These results lend further supports to the premise that political experience of national executives enhances their competence of maintaining economic and political stability.

Two empirical strategies supplement the main results to assess the endogeneity problem in the estimations. To address the concern of reverse causality that politicians with more political experience are more likely to be elected to overcome crisis, we collect the information of major rival candidates in democratic elections in 1950-2010. We find that the propensity to elect candidates with higher VOE is unaffected by the preexisting trends of growth. Moreover, the estimations using a quasi-random leadership transition sample, following the idea of Jones and Olken (2005) preserve positive growth effects of VOE from the public sector but not VOE from the private sector.

The remainder of this paper proceeds as follows. Section 2 presents a conceptual framework for understanding the importance of diverse political experience of national executives and develop the hypotheses. Section 3 discusses the source of data, variables, and the empirical strategy. Section 4 presents the baseline results in corroboration with Hypothesis 1. Section 5 and 6, respectively, report the empirical tests in the light of Hypotheses 2 and 3. Section 7 addresses the endogeneity problem. Section 8 discusses several robustness checks. Section 9 concludes.

# 2 Theory and Hypothesis Development

Our theoretical argument follows Ahlquist and Levi (2011) to define leadership as the head of organization who "must coordinate their followers to produce desired actions and outcomes." First, we argue that diverse pre-tenure work experience contributes to the general human capital of executives, enhancing decision making capabilities for coping with complicated situations. Lazear (2009) theorizes the competence necessary for leadership as a weighted sum of diversified skills in the context of corporate governance. These skills may stem from exposure to pre-tenure work experiences of various kinds. This perspective is consistent with the classical human capital model proposed by Becker (1962), who argues that "on-the-job training is a process that raises future productivity and differs from school training in that an investment is made on the job rather than in an institution that specializes in teaching."

An array of literature on corporate governance documents the importance of career experience for the selection of corporate CEOs. Murphy and Zabojnik (2004) attribute the surging trend of CEO pay in the recent decades to the increasing importance of general management skill for firm values. Custódio, Ferreira and Matos (2013) measure this skill through the use of variety of work experiences, including the number of positions, firms, industries, previous CEO experiences, and report a sizable pay premium for generalist CEOs. Brockman, Lee and Salas (2016) argue that the demand for generalists stems from complex strategic situations of large corporations.

For national executives, the skill of governance requires a general understanding about how the political system works. Pre-tenure political experience from different capacities, particular those involving legislation, ministerial work, and local government, thus provides necessary job training for national executives to develop the competence of coordinating among different jurisdictions and government branches. Consistent with Besley (2005)'s argument that "political competence is probably a complex mix of skills", we hypothesize that diverse political experience of national executives

help promote economic performance through increasing their general human capital.

**Hypothesis 1.** *National executives with more diverse pre-tenure political experience produce better economic performance.*

Second, diverse political experience allows politicians to cultivate personal power. Through taking a leading role in different government branches, policy makers acquire a high degree centrality in political networks and learn how to garner political supports across partisan lines (Cruz, Labonne and Querubin, 2017; Ingold and Leifeld, 2016). Hermalin (1998) studies the efficacy of leadership in inducing the self-enforcing compliance of followers. They show that leaders can send a credible signal about the fundamental return to effort through personally engaging in a costly effort (leading by example). We argue that pre-tenure experience serves a similar role of boosting credential for national executives in related areas. Dewan and Myatt (2008) focus on the information problem and construe leadership as a focal point in policy making. Pre-tenure political experience helps reduce the cost of communication and reassures the commitment to policy agreements among different political parties.

In turn, the capability of national executives to overcome economic difficulty is deeply rooted in their background of dealing with similar problems. Being an "insider" of political systems may thus be an advantage for political leaders in crisis management. This conjecture is consistent with a strand of comparative politics literature showing that veteran politicians enjoy a higher rate of legislative success (Cox and McCubbins, 2005; Saiegh, 2009; Shugart and Carey, 1992). This reasoning leads us to the following proposition on the contingent effects of political experience in times of crisis.

**Hypothesis 2.** *National executives with more diverse pre-tenure political experience are better at managing economic growth in the face of pre-existing social or economic crisis.*

Third, we examine how diverse pre-tenure political experience of national executives contributes to the quality of development. Following the previous argument that diverse political experience enhances leaders' capability of solving complicated problems, we

expect that veteran politicians not only do a better job coping with preexisting crises, but also are more effective at containing the risk of crisis. As a result, these leaders are able to preside over more stable economic growth and use stimulating policies less frequently. This logic implies that economic growth tends to have a higher quality in terms of total factor productivity (TFP) and the share of private economic activities in the total economy. Meanwhile, domestic political environment is expected to enjoy higher stability under the leadership of more experienced chief executives. Hypothesis 3 summarizes the empirical prediction in line with this reasoning.

**Hypothesis 3.** *National executives with more diverse pre-tenure political experience preside over economic growth of a higher quality and social stability.*

# 3 Data and Specification

## 3.1 Leaders' Experiences

We manually collect the information of national executives' political experience for 135 countries in 1950-2010. We focus on the chief executive of the administration, that is, the president in presidential systems and the prime minister (premier) in parliamentary systems. For the leaders in semi-presidential systems, we follow the definition in Przeworski (2013) to identify the president as the chief executive if the president has the constitutional power to remove the prime minister. We also follow Goemans, Gleditsch and Chiozza (2009) to identify the general secretary of the Communist Party as a national executive for communist regimes.

We document seven categories of executives' pre-tenure political experience in the public sectors. *Vice president* is a dummy variable indicating whether the executive served as the vice president (or vice prime minister in parliamentary systems). *Minister* is a dummy variable indicating whether the executive served as a minister or head of a bureaucratic agency. *Legislator* captures whether the leader served as a lawmaker in the

lower or upper chamber. *Local governor* specifies whether the executive has executive experience at a subnational level. *Party leader* measures whether the executive served as the general secretary or chairman of a political party. *Central government* indicates whether the leader worked as a technocrat in any bureaucratic office of the central government. *Military* captures whether the leader served in the military sector or intelligence agency[2]. Based on these measures, we construct an index for the variety of political experiences through summing up these binary categories.

$$\text{VOE[Public]} = \sum_{i=1}^{7} \text{exp}_i$$

In the above expression, $\text{exp}_i$ refers to the dummy variable for a specific experience category $i$. So VOE[Public] is a categorical variable taking values in $\{0, 1, ..., 7\}$.

We use a similar approach to construct an index for the executive's richness in the work experience in the private sector. We document whether the executive had any pre-tenure work experience in each one of the following sectors, separately: *Agriculture* indicates that the executive worked in the farming, forestry, fishery, or animal husbandry industry; *Manufacture* indicates whether the executive worked in the manufacturing sector; *Science* indicates whether the executive worked in a lab or research institute; *Finance* indicates whether the executive worked in the financial sector; *Law* indicates whether the executive worked in a law firm or law-related industry; *Media* indicates whether the executive had any work experience in the media; *NGO* indicates whether the executive worked in a nongovernmental organization (NGO); *Art-sport* indicates whether the executive had any previous career experience related to arts or sports. The variety of experience in the private sector is obtained by summing all these categories.

Figure 1 presents the distribution of VOE[Public] and VOE[Private] for all national executives in 1950-2010. It is evidence from the figure that national executives in democratic countries have relatively richer experience in both public and private sectors com-

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[2]A chief executive who is simultaneously commander-in-chief according to the constitution (such as the U.S. presidents) is not considered having experience in military service. For example, military experience is registered for Eisenhower and George Bush, but not for Obama and Trump.

Figure 1: Distribution of VOE
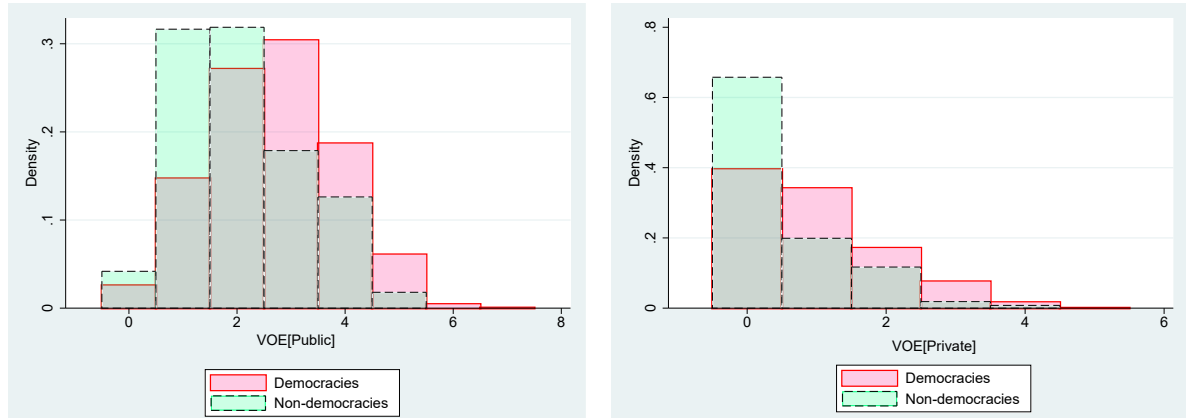


Notes: The left panel presents the distribution of VOE[Public] of national executives in 1950-2010. The rights panel presents the distribution of VOE[Private] of national executives in 1950-2010. The definition of democracy follows Cheibub, Gandhi and Vreeland (2010).

pared with those in non-democratic countries. The sample mean of VOE[Public] is 2.68 for democracies and 2.08 for non-democracies. Meanwhile, the sample mean of VOE[Private] is 0.98 for democracies and 0.52 for non-democracies.

## 3.2   Economic and Political Variables

The main dependent variable is economic growth, which is measured through the logarithm of per capita GDP. The information on GDP and population were obtained from Penn World Table (PWT) 8. We make use of a set of control variables of executives' personal characteristics and socioeconomic conditions. The specific definitions of these variables are as follows.

We include two variables of leaders' characteristics, *Age* and total *Years in the Public Sector*, which may be a confounding factor for the VOE. It is possible that competence in promoting growth is correlated with age and one's total time length of political experience, rather than the diversity of it. Or, it may be the case that the electorate is more in favor of more senior politicians or political insiders when economic performance is satisfactory. Controlling *Age* and *Years in the Public Sector* helps alleviate the confounding factors in political experience. In addition, we control for *1[Male]* and the level of

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education (*1[College]* and *1[Graduate School]*) of national leaders.

For socioeconomic conditions, we are interested in whether the effects of experience are different during normal times and during crises. We adopt two measures of crisis. *1(Economic Crises)* is a dummy variable that takes value one if the growth of per capita GDP in a year is negative, or if the inflation rate is higher than 10%. The dummy variable *1(Political Crises)* indicates whether a political regime is under the threat of being overthrown. It is coded in accordance with "domestic4," indicating "any rapidly developing situation that threatens to bring the downfall of the present regime," which was obtained from the Cross-National Time-Series Data Archive (Banks and Wilson, 2017).

In addition to the indicator of crisis, we employ several variables reflecting the channels of economic growth and political stability. *log(K per Capita)* is computed according to information on capital stock from PWT 8. *log(TFP)* measures the logarithm of real TFP from the national accounts. $\frac{G}{GDP}$ measures the share of government consumption over total GDP. *Regime Durability* is computed as the number of years since the most recent regime change, defined by a three-point change in the Polity Score within the window of three years or less, or the length of time since the last regime transition, as defined by the Quality of Government database (Teorell et al., 2016). *1(Unrest)* is a dummy variable indicating whether there were any social riots, registered by *domestic6* and *domestic7* in Banks and Wilson (2017). Finally, economic growth and political selection may be correlated with the quality of democratic institutions. To deal with the omitted variable bias, we control for *Polity2*, an indicator of political democracy obtained from the Polity IV database (Marshall, Gurr and Jaggers, 2017). Table A.I in the appendix provides a summary of statistics for the main variables.

## 3.3 Model Specification

The baseline model estimates the effects of VOE on economic growth in the full 1950-2010 sample. Let *y* be the main dependent variable, the logarithm of per capita GDP. The growth effect of VOE is estimated by the following equation.

$$y_{ij,t} = \alpha \cdot y_{ij',t-1} + \theta \cdot \text{VOE}[\text{public}]_{jt} + X_{ij,t} \cdot \beta + u_i + v_t + \varepsilon_{ijt} \qquad (1)$$

In equation (1), $y_{ij,t}$ is the logarithm of per capita GDP in country $i$ with leader $j$ during year $t$, and $y_{ij',t-1}$ is the GDP per capita of country $i$ in year $t-1$ under the leadership $j'$, where $j'$ and $j$ need not be the same person. $\text{VOE}[\text{public}]_{jt}$ is the index of experience as defined in section 3.1. $X_{ij,t}$ includes a set of control variables, including leaders' personal characteristics and the Polity Score. $u_i$ and $v_t$, respectively, represents the country and year fixed effects. Inclusion of the country and year fixed effects helps eliminate the omitted variable bias that is specific to a country or time period. The standard Nickell bias due to the lagged dependent variable is largely compressed in a long panel ($T \geq 30$).

# 4    Testing Hypothesis 1:  Effects of VOE on Economic Performance

Table 1 presents the empirical tests on the effects of national executives' VOE on economic performance in line with Hypothesis 1. In Column 1 of Table 1, we use VOE[public] as the main explanatory variable, only controlling for the lagged dependent variable and the country and year fixed effects. VOE[public] is found to have a significantly positive estimated coefficient, with a unit (one-category) increase in VOE[public] leading to a 0.353 percentage point increase in the growth rate. This estimate implies that one standard deviation in the national executive's VOE[public] translate into 6.7% of one standard deviation in the growth rate in the full sample.[3]

Column 2 provides a placebo test using the length of career in the public sector, as opposed to VOE[public], as the explanatory variable. It may be the case that the

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[3]We also adopt an alternative specification including the square term of VOE[public] to account for non-linear effects. For all specification as in Table 1, the coefficient of VOE[public] is positive and significant, and that of the Square term is small and insignificant. We adhere to the linear term henceforth.

Table 1: The Variety of Experience (VOE): Baseline Results

| | Dependent variable: log[GDP per Capita] | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| VOE[public] | 0.353*** | | 0.367*** | | | 0.413*** |
| | (0.108) | | (0.111) | | | (0.106) |
| VOE[public+presidency] | | | | 0.297*** | | |
| | | | | (0.104) | | |
| VOE[private] | | | | | -0.050 | 0.011 |
| | | | | | (0.151) | (0.011) |
| Public-years | | 0.001 | -0.006 | -0.004 | -0.004 | -0.012 |
| | | (0.012) | (0.011) | (0.012) | (0.011) | (0.011) |
| Age | | 0.014 | 0.009 | 0.013 | 0.008 | 0.003 |
| | | (0.012) | (0.012) | (0.012) | (0.011) | (0.011) |
| 1(Female) | | 0.270 | 0.222 | 0.223 | 0.164 | 0.205 |
| | | (0.606) | (0.578) | (0.583) | (0.572) | (0.582) |
| 1(College) | | 0.705 | 0.631 | 0.724 | 0.661 | 0.598 |
| | | (0.677) | (0.661) | (0.643) | (0.694) | (0.711) |
| 1(Grad School) | | 0.564 | 0.470 | 0.540 | 0.495 | 0.397 |
| | | (0.648) | (0.642) | (0.628) | (0.673) | (0.689) |
| Lag Polity Score | | -0.019 | -0.028 | -0.010 | -0.029 | -0.025 |
| | | (0.027) | (0.026) | (0.025) | (0.025) | (0.026) |
| Lag log(GDP per Capita) | 96.88*** | 97.04*** | 96.92*** | 96.94*** | 96.66*** | 96.53*** |
| | (0.793) | (0.740) | (0.787) | (0.780) | (0.727) | (0.777) |
| Fisher-type test (p-value) | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Country FE | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y |
| R-squared | 0.980 | 0.981 | 0.981 | 0.981 | 0.981 | 0.981 |
| Number of countries | 135 | 135 | 135 | 135 | 134 | 134 |
| Observations | 5,954 | 5,980 | 5,925 | 5,924 | 6,064 | 5,882 |

All results are based on within estimates. The sample covers 135 countries for 1950 to 2010. VOE[public] counts the sum of work experiences of leading a government sector (such as being a minister, legislator, governor). VOE[Private] registers only the variety of work experiences in the private sector. For each column, we report the p-value for the Fisher-type unit root test on the null hypothesis that all panels have a unit root. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

electorate is willing to select a familiar figure when economic growth is satisfactory. A positive coefficient for Public-years may suggest the existence of such an alternative mechanism. It is interesting to note that, in the real world, the variety of experience and the length of political career need not go hand in hand. For example, Marine Le Pen has a lower score for VOE[public] than Emmanuel Macron does, despite that Le Pen is 10 years older than Macron, and had spent 13 years more in the public sector than Macron had as of 2017.[4] As column (2) reports, the coefficient for years spent in the public sector is small and insignificant. Hence, the hypothesis about the familiarity bias in political selection is not favorably supported by the data.

In Column 3, we additionally control for national executives' personal characteristics, including age, gender, and level of education, as well as the Polity Score. The estimate for VOE[public] is qualitatively the same, and the personal characteristics do not appear to enhance growth. The Polity Score also does not have a significant effect on growth. This finding sheds lights on a novel mechanism linking political democracy to economic growth in the recent literature (Papaioannou and Siourounis, 2008). Because democracies tend to select national executives with a higher degree of VOE[public] than autocracies do, and executives with higher VOE[public] help the economy grow faster, democracies may enhance growth by selecting more experienced leaders. Column 4 addresses the possibility that national executives may acquire new political skills from previous terms and includes an indicator of previous experience as national executive in the VOE[public] index. The results are similar.

In comparison, national executives' political experience in the private sector does not appear to help the economy grow faster. The estimated coefficient for VOE[private] reported in Column 5 is negative and insignificant. In Column 6, we disentangle VOE[public] and VOE[private] as two channels of political competence. The coefficient for VOE[public] remains positive and significant, and the coefficient for VOE[private] remains insignifi-

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[4]Following our definition of VOE[main], Macron had three different work experiences prior to his bid for the French presidency: he was the Minister of Economy and Finance, and the leader of a political party (En Marche!). His VOE[public] score is then 2. Le Pen had only one public sector career before: the president of the National Front. So her VOE score is 1.

cant. This result suggests that political experience in the public sectors is more important than the private sector experience for enhancing economic performance.

An obstacle to the causal identification for the impacts of national executives' political experience lies in time-varying omitted variables that correlate with the selection of national executives. The electorate may prefer more experienced politicians to carry out the mandate of boosting growth (Stokes, 2001). For example, one could argue that economic growth became a salient goal for the Communist Party of China in the 1980s following a decade of internal chaos during the Cultural Revolution. The promotion of senior cadres and technocrats with richer experiences may simply reflect the changing direction of economic policies. To detect this mechanism, we investigate the dynamic impacts of national executives' VOE[public] on growth.

$$
\begin{aligned}
y_{ij,t} = &\sum_{1 \leq \tau \leq 5} \theta_\tau^1 \cdot VOE_j \cdot POST_{ijt,t_1+\tau} + \theta_6^1 \cdot VOE_j \cdot POST_{ijt,t_1+6} \\
&+ \sum_{1 \leq \pi \leq 5} \theta_\pi^2 \cdot VOE_{j+1} \cdot PRE_{i,j+1,t,t_2-\pi} + \theta_6^2 \cdot VOE_{j+1} \cdot PRE_{i,j+1,t,t_2-6} \\
&+ \alpha \cdot y_{ij',t-1} + X_{ij,t} \cdot \beta + u_i + v_t + \varepsilon_{ijt}
\end{aligned}
\tag{2}
$$

In equation (2), $y_{ij,t}$ is the logarithm of per capita GDP of country $i$ under the leadership of $j$ in year $t$. $\sum_{1 \leq \tau \leq 5} \theta_\tau^1 \cdot VOE_j \cdot POST_{ijt,t_1+\tau}$ captures the dynamic long-term effect of executives' VOE. $POST_{ijt,t_1+\tau}$ is a dummy variable indicating whether year $t$ was $\tau$ years post year $t_1$, the starting year of leader $j$'s current term. We bundle the period after six years into one dummy variable. By a similar token, $VOE_{j+1} \cdot PRE_{i,j+1,t,t_2-\pi}$ models the pre-trending effect that growth at time $t$ may be "impacted" by the next leader $j+1$, who would come into office at a future time $t_2$. For simplicity we also bundle the period lagging six years or more into one dummy. If the selection of high-VOE[public] executives is associated with forthcoming improvement of economic performance, we should expect a strong pre-trending effect of VOE[public]. Otherwise, the estimated coefficients of $\theta_\pi^2$ should not be significantly different from zero.

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Figure 2: Dynamic Impacts of VOE[public] on Growth
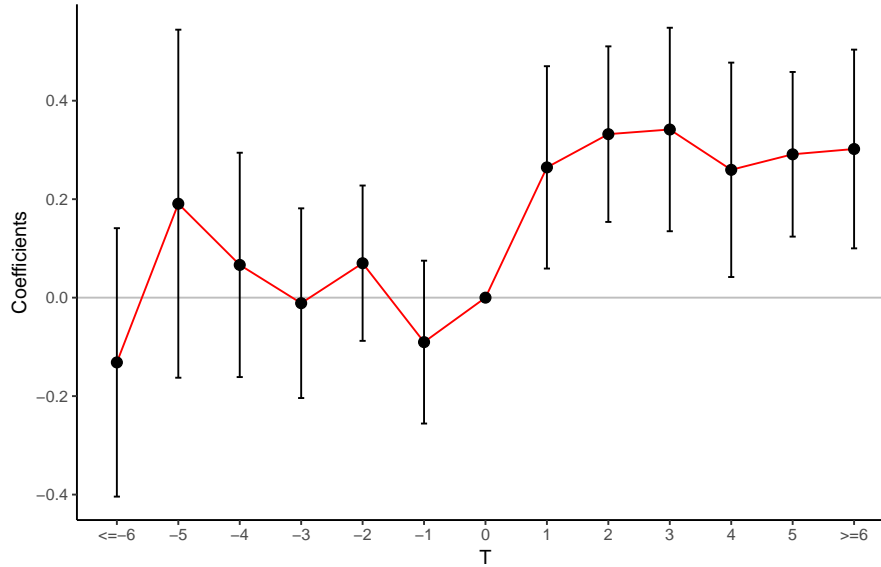


The figure presents the impacts of pre-trends and post-trends of VOE[public] on growth. Time 0 is the year in which a political leader $j$ starts his/her current term. The coefficients for $t = 1, 2...$ report the estimated effect of leader $j$'s VOE on the years following 0. The coefficients for $t = -1, -2...$ report the estimated effect of VOE[public] on growth in the preceding years.

Figure 2 graphically presents the estimated results from equation (2). It is evident that VOE[public] does not have any significant growth effects in the years leading to the leaders' current term. By contrast, VOE[public] has strong and persistent effects of promoting growth provided that the same leader remained in office. The finding that the VOE[public] effect does not shrink over time reinforces the argument that more experienced leaders help enhance growth.

# 5  Testing Hypothesis 2: Times of Crisis

Economic growth follows different dynamic patterns in different countries. Cross-country research has shown that economic fluctuations occur more frequently in developing countries than in developed countries (Cerra and Saxena, 2008; Pritchett, 2000). In turn, national executives may exert personal influence on growth differently during normal times and in crises. The positive correlation between VOE[public] and growth may

Table 2: VOE and Crises

| | Full Sample | | Pre-elected Leaders | | Newly-elected Leaders | |
|---|---|---|---|---|---|---|
| | Dependent Variable: log(GDP Per Capita) |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| VOE[public] | 0.028 | 0.299*** | 0.054 | 0.256** | -0.230 | 0.237 |
| | (0.106) | (0.108) | (0.120) | (0.126) | (0.263) | (0.254) |
| 1(Economic crisis) | -6.568*** | | -6.032*** | | -7.376*** | |
| | (0.592) | | (0.547) | | (1.571) | |
| 1(Economic crisis)*VOE[public] | 0.669*** | | 0.536*** | | 0.925** | |
| | (0.184) | | (0.193) | | (0.382) | |
| 1(Political crisis) | | -3.095*** | | -2.994*** | | -1.580 |
| | | (0.815) | | (0.991) | | (1.181) |
| 1(Political crisis)*VOE[public] | | 0.464* | | 0.557 | | 0.032 |
| | | (0.280) | | (0.353) | | (0.381) |
| Country FE | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y |
| R-squared | 0.984 | 0.981 | 0.985 | 0.983 | 0.982 | 0.979 |
| Number of country | 135 | 135 | 135 | 135 | 130 | 130 |
| Observations | 5,924 | 5,924 | 4,990 | 4,990 | 934 | 934 |

All results are based on within estimate. The sample covers 135 countries for the period between 1950 to 2010. 1(Economic crisis) is a dummy variable indicating whether there was a economic crisis in the preceding year (captured by negative GDP growth or an inflation rate higher than 10%). 1(Political crisis) is a dummy variable indicating whether there was a political crisis in the preceding year, as defined by Banks and Wilson (2017). The control variables include the lagged dependent variable, leaders' age, gender, levels of education, and the polity score. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

be driven by two underlying mechanisms. First, higher VOE[public] executives may do a genuinely better job at stimulating the economy during normal circumstances. Second, higher VOE[public] executives may be better problem-solvers: in hard times, more experienced leaders help bring the economy back to the normal track. To disentangle these two mechanisms, we construct two measures capturing the incidence of economic crisis and political crisis, and study the heterogeneous impacts of VOE[public] in different circumstances.

Column 1 of Table 2 employs VOE[public], the dummy indicating the incidence of economic crisis in the previous year, and the interaction between VOE[public] and the crisis dummy as explanatory variables. The crisis dummy has a mean of 0.44, so it covers a large range of circumstances of economic difficulty for countries around the world. Not surprisingly, the incidence of economic crisis strongly lowers future economic growth. However, the negative shock is significantly neutralized by VOE[public]. Meanwhile, the coefficient for VOE[public] per se becomes small and insignificant after the interaction is controlled. We interpret this as suggestive evidence that political experience plays a better role in stabilizing the economy than boosting growth in normal times. In Column 2, we investigate whether executives' VOE[public] have different growth impacts in the face of a political crisis. We find that VOE[public] has a positive and statistically significant coefficient, and the interaction term is positive and significant at the 0.1 level. This result suggests that the effect of VOE[public] in mitigating political crisis is not correlated with its mitigating effect on economic crisis.

In columns 3 and 4, we do a similar estimation but only considering national executives who assumed power before the crisis. In this subsample, the intention to select a particular politician should be unrelated to policies targeting economic recovery. To the extent that the incidence of crisis is beyond the control of national executives, the interaction term may capture precisely the executives' personal competence in dealing with economic and political shocks. As the columns show, VOE[public] plays an important role of cushioning economic crises, and it has a positive, albeit insignificant, effect in

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neutralizing the impact of political crises. Columns (5) and (6) report the estimates based on only national executives who were elected after the incidence of crises. The results are qualitatively similar.

The empirical results reported in Table 2 are consistent with historical cases. France under the presidency of Giscard d'Estaing is a suitable example of quick recovery from recession. France was hit by the oil crisis and suffered from a negative growth rate of -1.7% in 1975. d'Estaing was elected president in May 1974. d'Estaing took several important measures to deal with the economic crisis. First, d'Estaing removed several Gaullist ministers, including his prime minister Jacques Chirac, who had posed a challenge to his political authority. Second, d'Estaing appointed several key figures, including the second prime minister Raymond Barre, who was a key figure for designing the fiscal austerity plan. Thirdly, d'Estaing's administration proposed the eighth Five-Year-Plan, initiating industrial policies on telecommunication, information technology, and micro-electronics, and nuclear energy. The public investments in these areas turned out to be instrumental for enhancing the competitiveness of the French economy. In turn, the economy rebounded in 1976 and was able to maintain an annual growth rate of 5% from 1976 to 1980.

In d'Estaing's case, rich public sector experiences contributed to competence. Before the presidency, he had careers in the executive and legislative branches, scoring 6 on VOE[public]. He was regarded by political pundits as "an extraordinarily adept politician, who confounded opponents and enemies alike by his remarkable ability to take advantage of their internal differences" (Hollick, 1981). The other examples of recovery presided by high VOE[public] executives include Germany under Gerhard Schroder (2004) and Angela Merkel (2010), and Hungary under Gyula Horn (1994).

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Table 3: VOE and the Quality of Governance

| Dependent Variable | log(TFP) | $\frac{G}{GDP}$ | Regime Duration | Social Unrest |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| VOE[public] | 0.003*** | -0.001* | 0.228*** | -0.013* |
| | (0.001) | (0.0005) | (0.071) | (0.007) |
| Controls | Y | Y | Y | Y |
| Country FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |
| R-squared | 0.934 | 0.781 | 0.900 | 0.114 |
| Number of Countries | 97 | 135 | 135 | 135 |
| Observations | 4,107 | 5,779 | 5,779 | 5,779 |

All results are based on within estimates. The sample covers 135 countries between 1950 and 2010. The control variables include the lagged dependent variable, leaders' age, gender, and level of education, and the Polity Score. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

# 6 Testing Hypothesis 3: Quality of Governance

We proceed to test Hypothesis 3, which concerns how VOE[public] affects the quality of economic growth and political stability. First, national executives with higher VOE[public] may be able to adopt policies to improve the institutional environment and enhance the economic activities of the private sectors. The cases of the French and German leaders discussed in the previous section fit this story. In column 1 of Table 3, we regress the logarithm of country-level TFP against VOE[public]. Consistent with Hypothesis 3, we find that VOE[public] induces faster TFP growth. In column 2, we find that VOE[public] is negatively associated with the share of government consumption over total GDP.

In column 3, we report the effect of VOE[public] on regime duration. With control of the lagged dependent variable, the empirical model amounts to an estimation of the probability of regime survival conditional on the longevity of the regime (as identified by the Polity Score). We find that VOE[public] has a strong positive effect of enhancing regime duration. A unit increase in VOE[public] promotes the probability of regime survival by 22.8 percentage points. A related finding is presented in column (4), which shows that VOE[public] reduces the level of social unrest. Altogether, these tests suggest that public

sector experiences make tangible contributions to long-term growth: higher VOE[public] executives manage economic affairs more efficiently with less public spending, and they are more skillful at maintaining political stability.

# 7    Endogeneity Problem

In addition to the pre-trend test, we deal with the concern about endogeneous political selection through investigating whether the electorate's preference over VOE[public] is related to the trend of growth. To this end, we collect information of the major runner-up candidates in about 170 national elections of democratic countries in the 1950-2010 period. The runner-up candidate is defined as the one with the largest vote share among all the losing candidates. With the information on the runner-ups' political experience in the public sector, we are able to construct a dummy variable 1(Higher-VOE[public] Candidate Wins). We then employ a linear probability model to study whether the probability of selecting a higher VOE[public] candidate was affected by the dynamics of economic growth and political stability.

We adopt three sets of measures of preexisting growth trajectories. In column 1 of Table 4, the main explanatory variables are the three time lags of economic growth. The explanatory variable used in column 2 is the average growth rate for the three preceding years. Neither the lagged growth or the three-year average affected the probability of electing the candidate with higher VOE[public]. In columns 3 and 4, we include dummy variables indicating economic crisis in the previous years. Columns 5 and 6 expand the definition to a political crisis, which is defined by "domestic4" in (Banks and Wilson, 2017). Neither economic or political crisis appears to be significantly correlated with the winners' VOE[public]. It is unlikely that the aspiration for strong growth causes the more experienced national executives.

We also follow Jones and Olken (2005) to explore the cases in which leaders died in office by natural causes. These transitions in leadership are quasi-random because

Table 4: Accounting for Political Selection

| | 1(Higher-VOE[public] Candidate Wins) | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Lag1 growth | 1.139 | | | | | |
| | (0.830) | | | | | |
| Lag2 growth | 0.075 | | | | | |
| | (0.835) | | | | | |
| Lag3 growth | -0.178 | | | | | |
| | (0.880) | | | | | |
| Avg. Lag1-3 growth | | 1.124 | | | | |
| | | (1.114) | | | | |
| Lag1 economic crisis | | | -0.045 | | | |
| | | | (0.065) | | | |
| Lag2 economic crisis | | | 0.050 | | | |
| | | | (0.063) | | | |
| Lag3 economic crisis | | | 0.103 | | | |
| | | | (0.070) | | | |
| Avg. Lag1-3 economic crisis | | | | 0.112 | | |
| | | | | (0.094) | | |
| Lag1 political crisis | | | | | -0.002 | |
| | | | | | (0.038) | |
| Lag2 political crisis | | | | | -0.006 | |
| | | | | | (0.041) | |
| Lag3 political crisis | | | | | -0.006 | |
| | | | | | (0.042) | |
| Avg. Lag1-3 political crisis | | | | | | -0.013 |
| | | | | | | (0.068) |
| p-value for F-test | 0.543 | | 0.266 | | 0.998 | |
| Country FE | Y | Y | Y | Y | Y | Y |
| Election Year FE | Y | Y | Y | Y | Y | Y |
| R-squared | 0.459 | 0.456 | 0.477 | 0.472 | 0.473 | 0.473 |
| Observations | 376 | 376 | 391 | 391 | 386 | 386 |

The estimates are based on national elections in democratic countries for the 1990-2010 period. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

exits were not planned ahead. This approach identifies 47 scenarios of quasi-random transitions in 1950-2010. Among them, 19 cases feature a transition from leaders with lower to higher score on VOE[public]. High-profile cases of such transition include the transition from Gamal Nasser to Anwar Sadat in Egypt (1970), from Masayoshi Ohira to Zenko Suzuki in Japan (1980), and from Georges Pompidou to Giscard d'Estaing in France (1974).

Table A.II in the appendix presents a set of difference-in-difference estimates for the effects of VOE[public] in the random transition sample. We find that VOE[public] has a positive and statistically significant effect on growth, with the magnitude larger than those obtained by the baseline model. The results remain robust when we exclude the transition year from the regression (column 2). Moreover, VOE[private] does not appear to have a significant impact on growth in this setting.

# 8 Robustness Checks

We implement a set of robustness checks on the growth effects of VOE[public]. To address the Nickell bias due to dynamic panels, we estimate the baseline results using GMM estimation. The results in Table A.III report a positive and significant coefficient for VOE[public]. We account for the concern that executives may have persistent long term impacts on growth. To deal with this problem, we control for up to eight time lags of per capita GDP in addition to the baseline specification. The results presented in Table A.IV are qualitatively similar after controlling more lagged variables.

We then address the non-linear impacts of VOE[public] on growth. Table A.V presents the estimates of the baseline results with the alternative use of a binary measure for VOE[public]. Instead of coding VOE[public] as a categorical variable, we focus on whether the number of experiences in different sectors reaches certain threshold. As the table shows, the variety of experience matters for each cutoff between 2 and 4. For VOE[public] greater than 4 or less than 2, the variation in the explanatory variable is not

large enough to have large statistical power.

# 9 Concluding Remarks

Just as corporate CEOs are important for shaping firms' performance, national executives matter for countries' prosperity. In this paper, we draw on the literature of organization theory and corporate finance to argue that diverse pre-tenure political experience of national executives makes a tangible contribution to economic performance. To test this argument empirically, we collect biographic information of national executives of 135 countries in 1950-2010. Using a measure of the variety of experience (VOE) of national executives based on their experiences working in the public and private sectors before ascending to the highest political office in the country to measure the diversity of political experience, the empirical investigation comes down to three major findings. First, national executives' VOE in the public sectors has a positive effect on growth, but that in the private sectors does not. Second, the growth effect of VOE[public] is more important during economic crises than in normal times. Third, more experienced leaders promote the quality of growth as well as enhance political stability.

These findings shed new lights on the debate over "institutions versus leadership" in the political economy of development. While a vast literature maintains that political institutions play a fundamental role in shaping growth (Acemoglu, Johnson and Robinson, 2005; Claessens and Laeven, 2003; Flachaire, García-Peñalosa and Konte, 2014; North and Weingast, 1989), an increasing literature aims to switch the focus on how political leaders at national or subnational levels shape economic policies and performance (Besley, Montalvo and Reynal-Querol, 2011; Li, Xi and Yao, 2020; Jones and Olken, 2005; Yao and Zhang, 2015). This research reconciles these two lines of research through the finding that national executives' diverse political experience amounts to a kind of general human capital that helps navigate the economy. Thus, democratic institutions may enhance economic performance through selecting politicians with richer

political experience as national executives.

Studying the growth effects of leaders' experience sheds lights on the importance of political selection in a time when democracies face challenges of economic and political uncertainty. Descending from classical political writings such as *The Federalist Papers*, it is widely recognized that the advantage of republics lies in their effectiveness in selecting good leaders (Besley, 2005). However, the rising anti-establishment sentiments and right-wing populist movements pose a serious challenge to the conventional wisdom of political selection. Economic downturns hence popularizes arguments that people business experiences may outperform veteran politicians in leading the economy. Our paper offers a cautious rebuttal to this claim.

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Table A.I: Summary Statistics

| Variable | Obs | Mean | Std. Dev. | Min | Max | Data Source |
|---|---|---|---|---|---|---|
| | | Panel A: Leaders' Characteristics | | | | |
| VOE[pub] | 5779 | 2.42 | 1.21 | 0 | 7 | 1 |
| VOE[private] | 5736 | 0.76 | 0.97 | 0 | 4 | 1 |
| Age | 5777 | 56.81 | 11.10 | 18 | 91 | 1 |
| 1(Female) | 5779 | 0.02 | 0.15 | 0 | 1 | 1 |
| 1(College) | 5779 | 0.31 | 0.46 | 0 | 1 | 1 |
| 1(Grad School) | 5779 | 0.67 | 0.47 | 0 | 1 | 1 |
| Years of Public Sector Experience | 5772 | 20.15 | 12.60 | 0 | 67 | 1 |
| | | Panel B: Country Characteristics | | | | |
| log(GDP per Capita) | 5779 | 8.30 | 1.26 | 5.32 | 11.82 | 2 |
| growth | 5779 | 0.022 | 0.064 | -0.671 | 0.926 | |
| Polity Score | 5774 | 1.48 | 7.47 | -10 | 10 | 3 |
| 1(Economic Crisis) | 5779 | 0.44 | 0.50 | 0 | 1 | 2 |
| 1(Political Crisis) | 5779 | 0.15 | 0.36 | 0 | 1 | 4 |
| log(K per Capita) | 5779 | 9.29 | 1.36 | 5.63 | 12.24 | 2 |
| log(TFP) | 4130 | -0.07 | 0.26 | -1.44 | 1.67 | 2 |
| Share of G in GDP | 5779 | 0.20 | 0.11 | 0.02 | 1.56 | 2 |
| Regime Durability | 5779 | 23.09 | 28.84 | 0 | 201 | 4 |
| Unrest | 5779 | 0.30 | 0.46 | 0 | 1 | 4 |

Table A.II: Regression on Random Transitions

| | Dependent variable: log[GDP per Capita] | | | |
|---|---|---|---|---|
| | 10-year window | Excluding transition year | 10-year window | Excluding transition year |
| | (1) | (2) | (3) | (4) |
| VOE[public] | 1.263** | 1.748*** | | |
| | (0.616) | (0.612) | | |
| VOE[private] | | | 0.929 | 1.126 |
| | | | (0.590) | (0.747) |
| Controls | Y | Y | Y | Y |
| Country FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |
| R-squared | 0.942 | 0.951 | 0.937 | 0.944 |
| Number of countries | 43 | 43 | 43 | 43 |
| Observations | 318 | 275 | 325 | 282 |

The sample covers all countries that had experienced at least one random leadership transition during the 1950-2010 period. The control variables include the lagged logarithm of GDP per capita, age, gender, education level of leaders, and the Polity Score. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

## Table A.III: GMM Estimates

| | Dependent variable: log[GDP per Capita] | | | |
|---|---|---|---|---|
| dependent variable lagged | 1 period | 2 periods | 4 periods | 8 periods |
| | (1) | (2) | (3) | (4) |
| VOE[public] | 0.376*** | 0.231*** | 0.243*** | 0.227*** |
| | (0.107) | (0.087) | (0.081) | (0.081) |
| | | | | |
| Public-years | -0.004 | 0.049 | 0.061 | 0.037 |
| | (0.018) | (0.004) | (0.038) | (0.034) |
| | | | | |
| Age | 0.011 | -0.032 | -0.031 | -0.044 |
| | (0.018) | (0.035) | (0.036) | (0.036) |
| | | | | |
| 1(Female) | 0.418 | -1.03 | -1.39 | -2.89 |
| | (0.836) | (1.37) | (1.41) | (1.91) |
| | | | | |
| 1(College) | -0.673 | -2.09 | -1.53 | -0.830 |
| | (0.828) | (2.32) | (2.49) | (2.29) |
| | | | | |
| 1(Grad School) | 0.399 | 0.701 | 0.442 | 0.473 |
| | (0.356) | (0.691) | (0.749) | (0.702) |
| | | | | |
| Lag Polity Score | -0.040 | -0.015 | -0.005 | 0.078 |
| | (0.037) | (0.051) | (0.059) | (0.057) |
| | | | | |
| lag log(GDP per Capita) | 94.9*** | 96.4*** | 96.4*** | 96.4*** |
| | (1.01) | (0.814) | (0.832) | (0.830) |
| AR(2) test p-value | 0.011 | 0.197 | 0.945 | 0.458 |
| Country FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |
| Number of countries | 135 | 135 | 135 | 135 |
| Observations | 5,772 | 5,691 | 5,411 | 4,865 |

All results are based on difference GMM estimation. For each column, p-values are reported for the AR(2) test of the null hypothesis that the error terms are not serially correlated. The sample covers 135 countries for the 1950-2010 period. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A.IV: Long Term Growth and Regime Change

| Dependent Variable | log(GDP per Capita) | | | |
|---|---|---|---|---|
| | Lag 1 | Lag 1-2 | Lag 1-4 | Lag 1-8 |
| | (1) | (2) | (3) | (4) |
| VOE[public] | 0.376*** | 0.231*** | 0.243*** | 0.227*** |
| | (0.107) | (0.0869) | (0.0813) | (0.0812) |
| Controls | Y | Y | Y | Y |
| Country FE | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y |
| R-squared | 0.981 | 0.982 | 0.982 | 0.981 |
| Number of Countries | 135 | 135 | 135 | 134 |
| Observations | 5,924 | 5,797 | 5,537 | 5,016 |

All results are based on within estimates. The sample covers 135 countries for the 1950-2010 period. The control variables include the lagged dependent variable, leaders' age, gender, and level of education, and the polity score. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A.V: Robustness: Binary Measures

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | | | Dependent variable: log[GDP per Capita] | | | |
| VOE[public]≥ 1 (96.23%) | 0.0147 | | | | | |
| | (0.594) | | | | | |
| VOE[public]≥2 (71.9%) | | 0.679** | | | | |
| | | (0.265) | | | | |
| VOE[public]≥3 (41.74%) | | | 0.690*** | | | |
| | | | (0.227) | | | |
| VOE[public]≥4 (18.7%) | | | | 0.573* | | |
| | | | | (0.296) | | |
| VOE[public]≥5 (3.78%) | | | | | 0.0371 | |
| | | | | | (0.460) | |
| VOE[public]≥ 6 (0.01%) | | | | | | -0.294 |
| | | | | | | (0.386) |
| Country FE | Y | Y | Y | Y | Y | Y |
| Year FE | Y | Y | Y | Y | Y | Y |
| R-squared | 0.981 | 0.981 | 0.981 | 0.981 | 0.981 | 0.981 |
| Number of countries | 135 | 135 | 135 | 135 | 135 | 135 |
| Observations | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 | 6,106 |

All results are based on within estimates. The sample covers 135 countries for the 1950-2010 period. The explanatory variables are the dummy variables indicating whether VOE[public] is greater than or equal to specific values. The sample averages of these dummy variables are reported in the parentheses. The control variables include the lagged dependent variable, leaders' age, gender, and level of education, and the Polity Score. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. $***p < 0.01$, $**p < 0.05$, $*p < 0.1$.