Varieties of Experiences: How Do Leaders' Public-Sector Experiences Matter for Economic Performance?

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Keywords: Variety of Experience (VOE), Leaders, Economic Performance

Varieties of Experiences:
How Do Leaders' Public-Sector Experiences Matter for Economic Performance?*

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May 9, 2022

Abstract

Despite an increasing awareness on the importance of political leaders in shaping economic performance, there is little consensus regarding what make a leader good for growth. We argue that the variety of public-sector experiences enhances leaders' capabilities, and use cross-country data of national executives over six decades to test that premise. We explore a novel instrumental variable using leaders' birthplace and a regression discontinuity design using close elections for causal identification. We find a robust positive effect of the variety of leaders' public-sector experiences on growth. Moreover, leaders with more diverse public-sector experiences are positively correlated with a set of indicators of economic and political governance. By contrast, there is no discernible effect of leaders' private-sector experiences on growth. These findings shed light on the recent debates about meritocracy and the rise of political populism in democracies.

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1. Introduction

Political leaders vary enormously in their career backgrounds. Many leaders established reputations as veteran politicians long before ascending to the highest office, while others emerged on the political stage as new faces with less verifiable information about their governing capabilities. How important political experience is for leaders remain a controversial issue. From Washington to Paris, populist leaders accuse their opponents of holding records of public service too long. A 2018 opinion poll reports that more than half of Americans prefer a political outsider to an insider.[1] This contemporary sentiment contrasts with the conventional wisdom in political thoughts, which holds career politicians in high esteem. For example, Alexander Hamilton (1788) argues 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."

Recent literature on political and organizational economics provides evidence that national executives make a difference for policy making and growth. A large body of literature attributes variations in economic performance to political leaders (Blinder and Watson, 2016; Glaeser et al., 2004; Jones and Olken, 2005). Highly educated leaders produce stronger economic performance (Besley et al., 2011), and authoritarian leaders with a background of Western education are likely to promote economic or political liberalization (Dreher et al., 2009; Gift and Krcmaric, 2017; Li et al., 2020; Spilimbergo, 2009). However, there has been little research that examines how the political experience of national executives affects their competence in managing economic affairs.

This paper focuses on a specific perspective: a leader's public-sector experiences before the highest executive position. What matters specifically for a political leader is the variety of his or her public-sector experiences, as indicated by service in different leadership capacities from the central and regional governments. Exposure

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

to one kind of experience helps leaders obtain a specific set of political skills for governing specific policy domains. In turn, the experience of serving multiple sectors cultivate leaders' capability of navigating complicated situations. This reasoning implies that national leaders with more diverse pre-tenure political experience are more capable of boosting economic growth.

We assemble the biographic information of national executives in 135 countries from 1950 to 2010 to empirically test for this argument. We measure the variety of experience (VOE) for the leaders, which we obtain by summing the number of public-sector experiences before the tenure of national leadership. We find a robustly positive impact of the VOE index on economic performance. In the baseline model, a standard deviation increase in VOE is associated with a more than 33 percent standard deviation in the logarithm of gross domestic product (GDP).

By contrast, national leaders' experiences from 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 pre-existing trajectory of growth rate.

We employ two empirical strategies to alleviate the concern about endogeneity in the estimations. First, we explore an instrumental variable estimation using the information of leaders' birthplace. Our rationale is that politicians depend on local networks to start their political careers. Hence, politicians born in regions farther away from political capitals may have to serve in more regional positions before assuming the highest office. The second empirical strategy uses close elections in which the vote margin between the winner and the loser was less than 5 percent, and the final electoral outcome was likely driven by random causes. The instrumental variable estimations and the regression discontinuity design report qualitatively similar results as the baseline.

We supplement the main results with a set of empirical tests on the channels

through which leaders' experiences matter for economic performance. VOE is positively associated with employment and total factor productivity growth and is negatively correlated with the share of government consumption. The economy is less likely to suffer from hyper-inflation and severe unemployment when presided by leaders with higher VOE. Moreover, leaders with higher VOE contribute to the quality of political governance, as manifested by political stability, transparency, and the probability of democratization. These findings lend support to our hypothesis that extensive public-sector experiences cultivate the competence for maintaining a high-quality political governance.

The remainder of this paper proceeds as follows. Section 2 presents the related literature for the importance of diverse political experiences of national leaders. Section 3 introduces the data. Section 4 presents the estimation model and baseline results. Section 5 presents the instrumental variable estimates and the results of regression discontinuity design. Section 6 examines the association between public experiences and the quality of growth. Section 7 summarizes additional robustness checks, and Section 8 concludes.

2. Variety of Experiences and Economic Performance

A rich body of literature attributes the competence of corporate chief executive officers (CEOs) to the diversity of their work experiences. The classical human capital model proposed by Becker (1962) maintains 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."

Echoing that idea, Lazear (2009) theorizes the competence of leadership as a weighted sum of diversified skills. Murphy and Zabojnik (2004) attribute surging CEO pay in recent decades to the increasing importance of generalist skills. Custódio et al. (2013) measure this skill using a variety of work experiences, including

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the number of positions, firms, industries, and previous CEO experiences, and they report a sizable pay premium for generalist CEOs. Brockman et al. (2016) argue that the demand for generalists stems from complex strategic situations of large corporations.

For national leaders, the skill of governance requires a proper understanding about how the economic and political systems work. Public-sector experiences from different capacities, particularly those involving legislation, ministerial work, and local government, provide necessary job training for national executives to develop the competence of coordinating among different jurisdictions and government branches. Consistent with the argument in Besley (2005)'s argument that "political competence is probably a complex mix of skills. It could include intangible leadership skills, like persuading others in debate or inspiring trust, and also more standard analytical skills, such as spotting flaws in policy proposals.", diverse political experience of national leaders should cultivate generalist human capital for policy formation.

In addition to the ability of policy formation, diverse public-sector experiences also enhance leaders' ability to elicit the support of political elites and to get policies enacted. This ability requires the cultivation of personal authority. Hermalin (1998) shows that leaders can send out a credible signal about the fundamental return to effort through personally engaging in a costly effort. Dewan and Myatt (2008) focus on the information problem and construe leadership as a focal point in policy making.

Following those ideas, leaders with richer public-sector experiences have more credibility to broker policy deals and to solve complicated problems. By taking a leading role in different government branches, policymakers acquire a high degree of centrality in political networks and learn how to work across partisan lines (Cruz et al., 2017; Ingold and Leifeld, 2016). This conjecture is consistent with the literature that shows that veteran politicians enjoy a higher rate of legislative success

(Cox and McCubbins, 2005; Saiegh, 2009; Shugart and Carey, 1992).

While it is difficult to integrate all the insights in one model, the following heuristic example sheds lights on how diverse experiences help the leadership guide complicated tasks. Suppose that the economic performance y is achieved through completing N tasks $(G_1, ..., G_N)$, where G_i denotes the leader's performance on task i. The quality of the completion of each task, G_i, is a strictly increasing and strictly concave function of the leader's work experience in doing that task, which is denoted by x_i. So $G_i'(x_i) > 0$, and $G_i''(x_i) < 0$. For simplicity, assume that the economic performance is a linear combination of all tasks, with a weight λ_i for task i: $y = \sum_{i=1}^{N} \lambda_i G_i(x_i)$, where $\lambda_i > 0$ for all i.

Imagine that the selectorate faces a set of candidates $j \in J$ and chooses the candidate with the highest expectation of y. Each candidate j is featured with a vector of experiences for the task i, x_i^j, with $\sum_{i=1}^{N} x_i^j \leq \bar{x}$ for each j, where $x_i^j \geq 0$ and $\bar{x} > 0$. Here $\bar{x}$ can be understood as an upper limit of the variety of experiences due to time constraint. Thus, the optimal selection is obtained by solving $\max \sum_{i=1}^{N} \lambda_i G_i(x_i^j)$, subject to $\sum_{i=1}^{N} x_i^j \leq \bar{x}$. Assuming that an interior solution is attainable, it follows that $\lambda_i G_i'(x_i^j) = \mu$, where μ is the Lagrangian multiplier associated with the experience constraint. The leader capable of generating the optimal growth is featured with $x_i^* = G'^{-1}(\frac{\mu}{\lambda_i})$.

In practice, the optimal candidate may not be available given a finite set of candidates J. Nevertheless, the selectorate can compare the expected performance among candidates based on their experiences. We define the variety of experience as $VOE^j \equiv \sum_i^N 1(x_i^j > 0)$, and we consider two candidates a and b, respectively with VOE^a and VOE^b. We then define the best economic performance given each VOE level as $y^*(VOE^j = k) = \max_{x_i, \sum_{i=1}^{N} 1(x_i^j > 0) = k} \sum_{i=1}^{N} \lambda_i G(x_i)$. Given the concavity of $G_i(\cdot)$, we can prove the following argument.

Argument 1. $y^*(VOE^a) > y^*(VOE^b)$ *if and only if* $VOE^a > VOE^b$.

It follows from the above argument that economic performance increases in

VOE under some regular conditions. Since a leader's experience in each task has diminishing marginal returns, the optimal way to allocate it is to distribute each experience evenly to all tasks, which thus leads to a higher VOE index. In this formulation, x_i can be understood as a specific knowledge in solving one task (such as legislation), or a leader's personal authority and credibility in achieving specific tasks. Thus, we can use VOE as a sufficient statistics for a leader's generalist human capital and political ability in boosting economic performance.

3. Data and Specification

We manually collect the information of national executives' political experience for 135 countries from 1950 to 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 et al. (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 executive* a dummy variable that indicates whether the executive served as the vice president (or vice prime minister in parliamentary systems). *Minister* is a dummy variable that indicates 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 chair 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 an intelligence agency[2]. Based on those measures, we construct an index for the variety of political experiences by summing the binary categories.

$$\text{VOE\_pub} = \sum_{i=1}^{7} \exp_i$$

In the previous expression, $\exp_i$ refers to the dummy variable for a specific experience category i. So VOE_pub is a variable that takes values in $\{0, 1, ..., 7\}$.

We use a similar approach to construct an index for a leader's richness of their work experience in the private sector. We document whether the executive had any pre-tenure work experience in each of the following sectors: *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. We obtain the variety of experience in the private sector by summing all the categories.

Figure 1 presents the distribution of VOE_pub and VOE_private for all national leaders from 1950 to 2010. It is evident that national executives in democratic countries have relatively richer experiences in both the public and private sectors compared with those in non-democratic countries. The sample mean of VOE_pub 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. To see whether

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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_pub
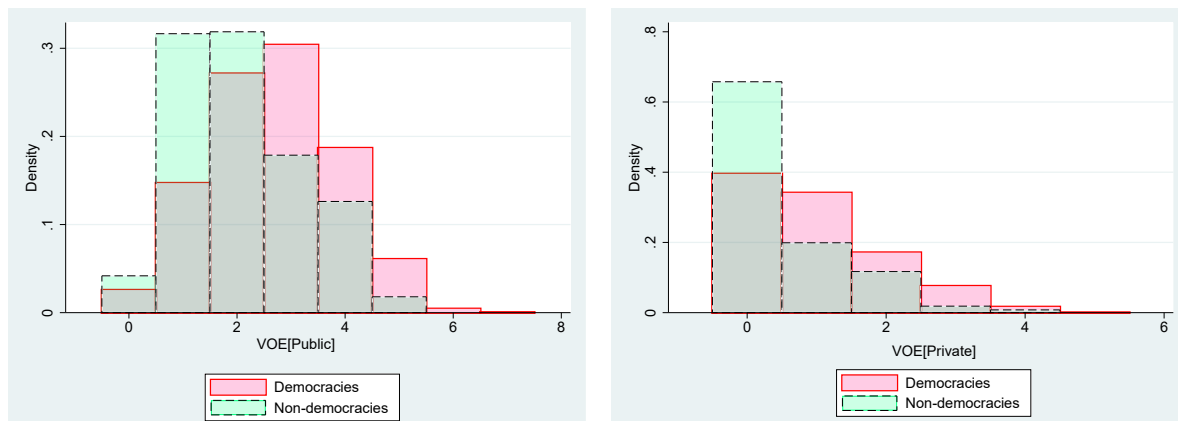
Notes: The left panel presents the distribution of VOE_pub of national executives from 1950 to 2010. The rights panel presents the distribution of VOE_private of national executives from 1950 to 2010. The definition of democracy follows Cheibub et al. (2010).

the variety of public-sector experience is correlated with the other characteristics of leaders, we regress the education years and the leader's college major against VOE_pub. Table A.1 in the appendix shows that VOE_pub is not significantly correlated with the education year or majors, with the only exception of a weak correlation between VOE_pub and military major.

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 9.0.

4. Effects of VOE on Economic Performance

Our baseline analyses use the universe of 135 countries from 1950 to 2010 to study the effects of leaders' public-sector experiences on their overall economic performance. The discussion in Section 2 suggests that leaders with a higher variety of public-sector experiences prior to assuming office are associated with faster economic growth. We empirically examine this relationship by estimating the following linear regression model.

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$$Y_{ij,t} = \alpha \cdot Y_{ij',t-1} + \theta \cdot \text{VOE\_pub}_{jt} + X_{ij,t} \cdot \beta + u_i + v_t + \epsilon_{ijt} \qquad (1)$$

In equation (1), the dependent variable $y_{ij,t}$ is the logarithm of per capita GDP in country i during year t, when the country was presided by individual leader j. $y_{ij',t-1}$ is the one-year lag of per capita GDP in country i under the leadership of j, who may not be the same as i. The main variable of interest throughout our empirical investigation is VOE_pub_{jt}. With the lagged logarithm of per capita GDP being controlled, the estimated coefficient θ captures the difference to the growth rate associated with a unit change in the variety of leaders' public-sector experience.[3] $X_{ij,t}$ stands for a set of control variables, including the degree of political democracy in country i, as indicated by the Polity score, and several characteristics of national leaders that might be correlated with their governing capacity in addition to the public-sector experiences, such as their age, gender, and the education level. Table A.2 in the appendix presents the summary statistics for all variables used for econometric analyses.

As a comparison to the main argument, we estimate a similar growth model but focus instead on the variety of leaders' work experiences from the private-sectors. u_i and v_t represent the country and year fixed effects, respectively. Including the country fixed effects eliminates the concern that some countries with mature political institutions may simultaneously result in the selection of leaders with rich public-sector experiences and fast economic growth. By a similar token, controlling for the year fixed effects addresses the temporal trends in economic growth and leaders' public-sector experiences across the world.

Column (1) of Table 1 presents the effect of VOE_pub on the economic growth, only controlling for the lagged per capita GDP and the country and year fixed

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[3]The standard Nickell bias due to the lagged dependent variable is largely compressed in a long panel (T ≥ 30).

effects. We find that VOE_pub has a significantly positive estimated coefficient, with a unit increase in VOE_pub leading to 0.353 percentage point increase in the growth rate. An increase of one standard deviation in the leader's VOE_pub translates into 33 percent standard deviation in the logarithm of GDP in the full sample.

In addition, Column (2) controls for leaders' personal characteristics. We include two variables of leaders' characteristics, Age and total Years in the public-sectors, both manually collected along with the leaders' education and work experiences. It is possible that competence in promoting growth is correlated with age and a leader's total length of political experience, rather than the diversity of that background. Or, it may be that the electorate is more in favor of more senior politicians or political insiders when economic performance is satisfactory. Controlling for Age and total Years in the public-sectors helps alleviate the confounding factors in political experience. We also control for 1[Male] and the level of education (1[College] and 1[Graduate School]) of national leaders. The estimated coefficient for VOE_pub is qualitatively similar. Notably, most variables of leaders' personal characteristics are not significant. The Polity Score also does not significantly affect growth.

Columns (3) and (4) report the estimated results using two alternative measures. First, VOE_pub(HHI) is the Herfindahl-Hirschman index that indicates the concentration of experiences in specific sectors, just opposite to VOE.[4] Second, Voe_presidency is similar as VOE_pub, with the difference that the experience of the chief executive is counted for leaders in their second term or beyond. Leaders might acquire extra skills for an effective leadership along the tenure of national leaders. We obtain substantively similar results in Columns (3) and (4).

To ensure that the estimated effect of public-sector experiences on growth come from variety, we test two alternative explanations. First, leaders' public-sector

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[4]The VOE_pub(HHI) is computed as the following: VOE_pub(HHI)$= 1 - \sum_i (s_i)^2$, where s_i is the share of the leader's work years in sector i in the total working years before assuming the national leadership.

experiences and economic growth may incidentally correlate if the electorate favors political "outsiders" to "insiders" during recessions. Interestingly, 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_pub than Emmanuel Macron does, despite that Le Pen is 10 years older and spent 13 more years in the public sector than Macron had as of 2017.[5]

To address this concern, in Column (5), we regress growth against total years serving in public-sectors before assuming the highest office. The small and insignificant coefficient reported in Column (5) alleviates the concern about confounders due to political selection.

Another explanation for the result is that the variety of public-sector experiences reflects the capability of political leaders. Hence, the baseline may capture a reserve causality that highly capable leaders pursue many different types of leadership roles throughout their careers. To test this argument, we regress economic growth against leaders' variety of private-sector experiences, constructed in a similar manner as the public-sector experiences. The estimated coefficient for VOE_private reported in Column (6) is negative and insignificant.

Column (7) presents a horse race between VOE_pub and VOE_private. The coefficient for VOE_pub is significant, and has a similar size as the baseline, but that for VOE_private remains insignificant.[6] The results ascertain that the growth-enhancing capabilities stem mainly from the diversity of public-sector experiences.

While the baseline results show a robust association between the variety of leaders' public-sector experiences and economic growth, it is plausible that one type of experience provides a specific set of skills to better national leadership. Table

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[5]Following our definition of VOE_pub, 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_pub score is then 2. Le Pen had only one public-sector career before: the president of the National Front. So her VOE_pub score is 1.

[6]Table A.3 in the appendix reports more horse race estimations between VOE_pub and other characteristics, including total years in the public-sectors, total years in the private-sectors, age, the level and total years of education.

A.4 in the appendix disentangles different skills. It shows that some experiences, particularly being a government minister, or legislator and serving in the central bureaucracy, have a standing-alone impact on growth. The results link the value of public-sector experiences to task-specific knowledge.

Table 1: Variety of Experiences and Economic Performance (1950-2010)

	Dependent Variable: Log(GDP Per Capita)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VOE_pub	0.353***	0.359***					0.396***
	(0.108)	(0.107)					(0.104)
VOE_pub(HHI)			-1.368***				
			(0.472)				
VOE_presidency				0.297***			
				(0.104)			
Public_years					0.001		
					(0.012)		
VOE_private						-0.044	0.026
						(0.146)	(0.149)
Age		0.009	0.007	0.013	0.014	0.008	0.003
		(0.012)	(0.011)	(0.012)	(0.012)	(0.011)	(0.011)
1(Female)		0.222	0.075	0.223	0.270	0.164	0.205
		(0.578)	(0.614)	(0.583)	(0.606)	(0.572)	(0.582)
1(College)		0.631	1.139	0.724	0.705	0.661	0.598
		(0.661)	(0.702)	(0.643)	(0.677)	(0.694)	(0.711)
1(Grad School)		0.470	0.725	0.540	0.564	0.495	0.397
		(0.642)	(0.667)	(0.628)	(0.648)	(0.673)	(0.689)
Lag Polity		-0.029	-0.019	-0.028	-0.019	-0.010	-0.025
		(0.026)	(0.027)	(0.025)	(0.027)	(0.025)	(0.026)
Lag Log(GDP Per Capita)	96.88***	96.92***	96.58***	96.94***	97.04***	96.66***	96.53***
	(0.79)	(0.79)	(0.75)	(0.78)	(0.74)	(0.73)	(0.78)
Year fixed effects	Y	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y	Y	Y
R-squared	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Number of country	135	135	134	135	135	134	134
Observations	5,954	5,925	5,759	5,924	5,980	6,064	5,882

Notes: This table presents the effects of VOE_pub on economic performance. The sample covers 135 countries from 1950 to 2010. All results are based on within estimates. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Growth is dynamic. Thus, a challenge for interpreting the results is whether growth at time t is attributable to the leader at t. Suppose a reformer (A) implements massive structural adjustments that have a negative short-term impact but a positive long-term impact on economic growth. Unhappy with economic costs

incurred during the reform, the electorate replaces the reformer with a veteran politician (B) with richer public-sector experiences. Economic performance starts to increase after B assumes office. To ensure that our estimation captures those dynamics correctly, we estimate the following model.

$$
\begin{aligned}
y_{ij,t} = {} & \sum_{1 \leq \tau \leq 5} \theta_\tau^1 \cdot \text{VOE}_j \cdot \text{POST}_{ijt,t_1+\tau} + \theta_6^1 \cdot \text{VOE}_j \cdot \text{POST}_{ijt,t_1+6} \\
& + \sum_{1 \leq \pi \leq 5} \theta_\pi^2 \cdot \text{VOE}_{j+1} \cdot \text{PRE}_{i,j+1,t,t_2-\pi} + \theta_6^2 \cdot \text{VOE}_{j+1} \cdot \text{PRE}_{i,j+1,t,t_2-6} \quad (2) \\
& + \alpha \cdot y_{ij',t-1} + X_{ij,t} \cdot \beta + u_i + v_t + \epsilon_{ijt}
\end{aligned}
$$

In equation (2), $y_{ij,t}$ is the logarithm of per capita GDP of country i under the leadership of j in year t. $\sum_{1 \leq \tau \leq 5} \theta_\tau^1 \cdot \text{VOE}_j \cdot \text{POST}_{ijt,t_1+\tau}$ captures the dynamic effects of VOE_pub. $\text{POST}_{ijt,t_1+\tau}$ is a dummy variable indicating whether year t was τ 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, $\text{VOE}_{j+1} \cdot \text{PRE}_{i,j+1,t,t_2-\pi}$ 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. We also bundle the period lagging six years or more into one dummy. If the selection of leaders with more public-sector experiences is driven by a strong growth mandate, there should be a strong pre-trend of growth associated with VOE_pub. Otherwise, the estimated coefficients of θ_π^2 should not be significant.

Figure 2 presents the estimated results from equation (2). It is evident that VOE_pub does not have significant growth effects in the years leading to the leaders' current term. By contrast, VOE_pub has strong and persistent effects on growth as long as the same leader remained in office. The results help attribute economic growth more precisely to public-sector experiences of incumbent leaders.

Figure 2: Dynamic Impacts of VOE_pub on Growth
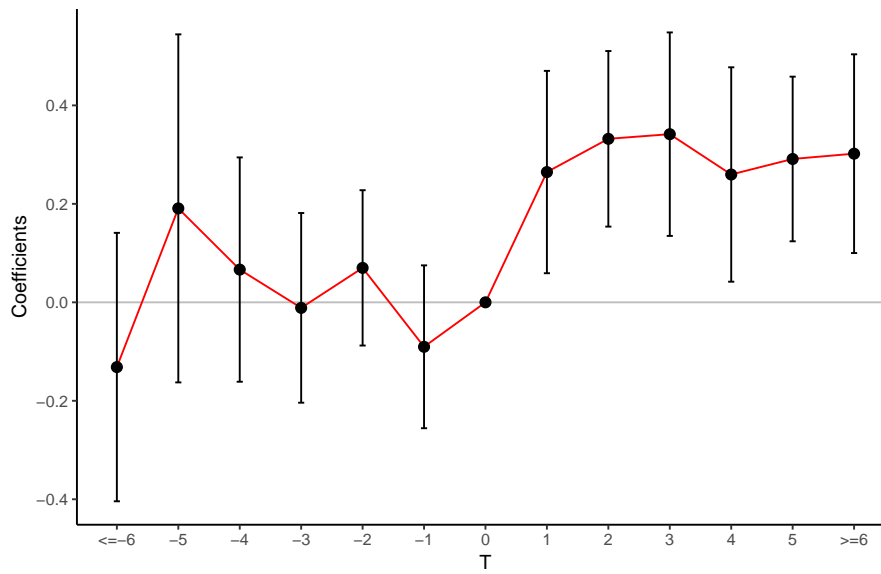
Notes: The figure presents the impacts of pre-trends and post-trends of VOE_pub on growth. Time 0 is the year in which a political leader j starts his/her current term. The coefficients for $t = 1, 2...$ report the estimated effect of leader j's VOE_pub on the years following 0. The coefficients for $t = -1, -2...$ report the estimated effect of VOE_pub on growth in the preceding years. The sample covers 135 countries from 1950 to 2010. The control variables include the lagged dependent variable, leaders' age, gender, the level of education, major dummies, and the Polity Score. All results are based on within estimates.

5. Dealing with Identification Challenges

The baseline and dynamic estimations ascertain the importance of public-sector experiences in producing economic growth. However, there may still be a concern that the results are driven by contemporaneous factors motivating growth and political selection. For example, the recent emergence of political populism worldwide may comove with the trends of economic stagnation and rising inequality. We adopt two strategies to overcome the identification problem. First, we employ a novel instrumental variable for political leaders' public-sector experiences. Second, we focus on winners of close elections and use a regression discontinuity design to illustrate the effect of VOE_pub.

5.1. Instrumental Variable Estimation

Our instrumental variable estimation is based on the premise that socioeconomic contingencies, such as local networks and ethnic affiliations, shape the career paths of politicians (Cruz et al., 2017; Iyer and Mani, 2012; Xu, 2018). In particular, politicians often develop their career and power base from one locality and form social ties with local elites there (Burgess et al., 2015; Persson and Zhuravskaya, 2016). By contrast, politicians who were born closer to political centers may have more opportunities to start their political careers earlier in the central government. In turn, politicians born in regions farther away from capital cities may have more diverse public-sector experiences. Motivated by this thought, we manually collect the information on the birthplace of political leaders and calculate the distance between their birthplace and the capital city. The adopted instrumental variable is the interaction term between the (logarithm of) distance and a linear decade trend to allow for the temporal variation in the impact of political geography.

Columns (1) to (3) of Table 3 presents the respective first-stage results using the three instruments. All three instruments are highly correlated with VOE_pub.

Table 2: Variety of Experiences and Economic Performance: Instrumental Variable

	Second stage		First stage	
Dependent variable:	log(GDP Per Capita - End)		VOE_pub	
log(1+Distance)×Decade			0.0041**	0.0038**
			(0.0016)	(0.0016)
log(GDP Per Capita - Initial)	0.608***	0.618***	0.0541***	0.0488***
	(0.0581)	(0.0568)	(0.0173)	(0.0173)
Term_length	0.0602***	0.0564***	0.00524	0.00912
	(0.0127)	(0.0133)	(0.00635)	(0.00641)
VOE_pub	1.046**	1.080**		
	(0.439)	(0.472)		
Public_years		-0.0189**		0.0171***
		(0.00885)		(0.00256)
1(Female)		0.133		-0.118
		(0.164)		(0.156)
Country Fixed Effects	Y	Y	Y	Y
Control Variables	Y	Y	Y	Y
Kleibergen-Paap rk Wald F statistic	6.422	5.743		
R-squared	0.836	0.839	0.395	0.419
Observations	1,584	1,579	1,584	1,579

Notes: The sample covers 1,584 leaders' terms in 135 countries from 1950 to 2010. The instrumental variable is the interaction term between log(1+Distance) and the linear decade trend. For each observation, the dependent variable is the log of per capita GDP in the year when a leader's term ended. The control variables include log per capita GDP in the initial year of the term, length of term, leaders' age, gender, the level of education, major dummies, and the Polity Score. Columns (4)-(6) report the second-stage results, which respectively use the instruments presented in Columns (1)-(3). All the reported coefficients are multiplied by 100. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Correspondingly, the second-stage estimations obtain a positive and significant coefficient for VOE_pub. The size of the coefficient is close to those in the baseline. For all three instrumental variables, the Kleibergen-Paap tests reject the null hypothesis of weak instrument by a reasonably large margin. The instrumental variable estimations alleviate the endogeneity concern.

In addition, we follow Giuliano et al. (2013) to use the spatial lags of VOE_pub in neighboring countries as an instrumental variable. Our rationale for using this instrumental variable is that countries with a high degree of political or cultural proximity may learn from each other in shaping institutions and political outcomes. Over time, this leads to a convergence in the background of leaders. Meanwhile, the VOE_pub of leaders in neighboring countries is not directly correlated with a country's own growth. To the extent that socioeconomic outcomes in nearby countries follow common trends, we control these unobserved factors by country and year fixed effects. Table A.5 in the appendix present the estimates based on the spatial instruments. Our first choice of instrumental variable follows the literature in international relation to use the average VOE_pub among a country's alliance as the instrument (Nieman and Gibler, 2021). We obtain the information of international alliance from the Correlates of War Formal Alliance data (Gibler, 2009). The second instrument is the average VOE_pub of a country's geographic neighbors, that is, all countries sharing a common border with a specific country.[7] The third instrument expands the definition of neighbor to all the other countries on the same continent and computes the average VOE_pub of those neighbors. We clearly see that all three instruments are highly correlated with VOE_pub. Correspondingly, the second-stage estimations obtain a positive and significant coefficient for VOE_pub.

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[7]The value of neighbors' VOE_pub is weighted by the inverse of distance between the two countries' capitals.

5.2. Close elections

Our second identification strategy deals with the endogeneity in the context of contested elections. To this end, we explore contested national elections from 1950 to 2010. We collect two sets of information. The first set concerns the career background of runner-up candidates in the election, in which we define the runner-up as the one with the largest vote share among all the losing candidates. With the information on the runners-up's political experiences in the public sector, we can construct VOE_pub for all runners-up and compare them with those of winners. Second, we collect the share of popular votes by winners and runners-up in the general election.

We examine the validity of regression results in elections where candidates lost elections in a small vote margin (less than 5 percent between the top two candidates).[8] A small vote margin suggests that the final electoral outcome, and, essentially, whether the candidate with a higher variety of public-sector experiences won the election, was likely driven by quasi-random causes (Lee et al., 2004; Pettersson-Lidbom, 2008). Figure 3 plots a set of variables against the vote margin of candidates with higher VOE_pub: population, VOE_pub, and the age of incumbent leaders. There are no distinguishable differences in the distributions of those variables at vote margin zero. We also conduct a falsification test to rule out the possibility that economic pre-trends affect the winners' VOE_pub. Table A.6 in the appendix presents linear probability estimations for the probability that the candidate with a higher value of VOE_pub won the election. The results show that lagged growth rates did not have a significant effect on that probability. Alternative specification using preexisting economic crises report similarly.[9]

By contrast, Figure 4 shows that countries grow considerably faster when candi-

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[8]The vote margin is defined only between the winner and the runner-up. For example, if the winner's vote share in the total votes is V_W, the runner-up's vote share is V_R, the vote margin is defined as $|V_W - V_R|$.

[9]Economic crisis is defined as an scenario of negative GDP growth or > 10 percent inflation rate.

dates with higher VOE_pub barely won than when candidates with higher VOE_pub barely lost elections ($p < 0.1$). Table A.7 in the appendix reports the regression results using the regression discontinuity design. It shows that the annual growth rate increases by 5-7percent when elections are won by candidates with a higher variety of public experiences.

Figure 3: Vote Margin of Higher VOE_pub Candidates and Other Variables
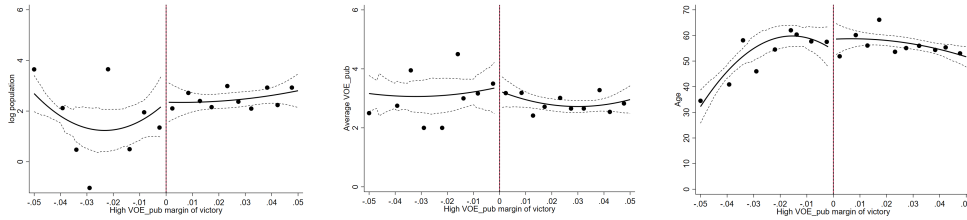
Notes: These figures present the distribution of country and individual level variables with respect to the vote margin of the higher VOE_pub candidates. The 95 percent confidence intervals are reported. The Y-axis variables from left to right: population, average value of VOE_pub, and age of leaders.

5.3. Turnovers due to Leaders' Death

Jones and Olken (2005) explore leadership turnovers due to death in office and report a significance growth difference due to individual leaders. The empirical context of our research is different from Jones and Olken (2005) because we are primarily interested in the effect of leaders' experiences. To the extent that the successors to leaders who die in office are not randomly assigned and are not determined through elections, the empirical strategy employed by Jones and Olken (2005) may not readily apply to our problem. With this caveat in mind, we replicate similar exercises using the 1950-2010 data as a further check. We identify 47 scenarios of quasi-random transitions from 1950 to 2010. Among them, 19 cases feature a transition from leaders with a lower to higher score on VOE_pub. High-profile cases of such transitions include Gamal Nasser to Anwar Sadat in Egypt

Figure 4: The Discontinuous Impact When Higher VOE_pub Candidates Win
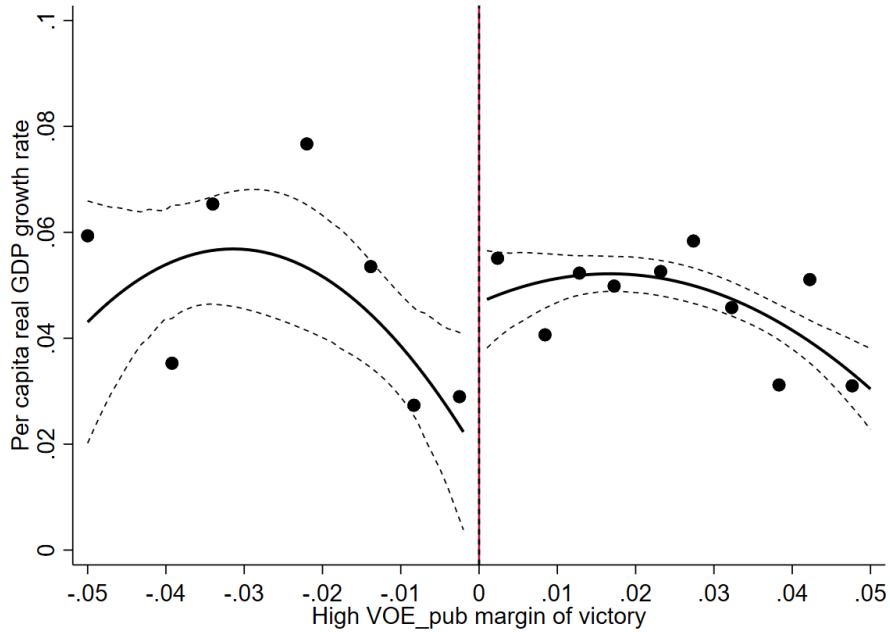
Notes: This figure plots the distribution of growth rates of per capita GDP with respect to the vote margin of the higher VOE_pub candidates. The 95 percent confidence intervals are reported.

(1970), Masayoshi Ohira to Zenko Suzuki in Japan (1980), and Georges Pompidou to Giscard d'Estaing in France (1974).

Table A.8 in the appendix presents the differences in growth rate in the 47 scenarios of leadership turnovers. In the 19 cases of transitions to a politician with a higher value of VOE_pub compared with the predecessor, the annual growth rate increased by 1.97 percent, with a significance level above 90 percent. By contrast, the growth rate did not register significant changes for transitions to leaders with lower or the same VOE_pub. Private-sector experiences also are not associated with significant changes in growth. We interpret the results as evidence consistent with the argument that the variety of leaders' public-sector experiences contributes to economic growth.

6. Quality of Growth

In this section, we investigate how the variety of public-sector experiences affect the quality of growth. We disentangle economic growth through growth accounting and estimate the effects of VOE_pub on separate channels. We employ several outcome variables that reflect the channels of economic growth from 1950 to 2010. We obtain the level of total factor productivity, capital stock, labor employment, and the share of government consumption in GDP at the country-year level from Penn World Table 9.0. Table 4 shows that leaders with a higher value of VOE_pub may have promoted growth by enhancing employment and total factor productivity growth, but not by increasing total investment. Meanwhile, leaders with more diverse backgrounds in the government are associated with a smaller fraction of government spending in GDP. We also make use of two indicators of economic crisis, obtained from the World Development Indicators respectively, that correspond to the scenario that the inflation rate is higher than 20 percent and the unemployment rate is higher than 20 percent. The regression results suggest that higher VOE_pub is associated with smaller probability of hyperinflation and severe economic recession. Overall, the results are consistent with a conjecture that more diverse political experiences of national leaders induce an endogenous growth in their governing capabilities. Consequently, they were able to manage economy more effectively.

A conventional wisdom in political economy holds that the institutional quality, as indicated by democracy, transparency, and political stability, is a key determinant of economic growth (Acemoglu et al., 2005). However, the literature rarely studies whether leaders' backgrounds shape institutions. To test those channels, we analyze the correlation between VOE_pub and a set of institutional variables for the countries from 1950 to 2010. Table 4 suggests that VOE_pub of political leaders is positively associated with the probability of democratization.[10]

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[10]The definitions and data source of democratization come from Cheibub et al. (2010).

Table 3: Channels of Growth

Dependent variable:	log(TFP)	log(k)	log(emp)	g/GDP	1(Inf>20%)	1(Unemp>20%)
	(1)	(2)	(3)	(4)	(5)	(6)
VOE_pub	0.003***	0.000	0.001**	-0.001**	-0.006*	-0.01*
	(0.001)	(0.001)	(0.000)	(0.0005)	(0.003)	(0.005)
Year fixed effects	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y	Y
Observations	4,171	5,926	5,422	5,926	5,926	2,074
R-squared	0.934	0.997	0.996	0.784	0.109	0.031
Number of countries	97	135	135	135	135	129

Notes: The sample covers 135 countries from 1950 to 2010. 1(Unemp>20%) is available from 1960 to 2010. The other dependent variables are available from 1950 to 2010. All results are based on within estimates. The control variables include the lagged dependent variable, leaders' age, gender, the level of education, major dummies, and the Polity Score. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Moreover, the variety of public-sector experiences by political leaders mitigates the incidence of social unrest and regime change.[11] In addition, we test for the correlation between VOE_pub and two indexes of public governance. The coefficient of VOE_pub is positive and significant for both transparency and the quality of governance index.[12] Although the results do not spell out a definite causality between VOE_pub and the institutional features, they are consistent with the idea that more diverse public-sector experiences of leaders contribute to economic growth through various institutional channels.

Democratization= 1 means a regime transition from autocracy to democracy. Democratization= −1 means a regime transition from democracy to autocracy.

[11] *1(Unrest)* is a dummy variable that indicates whether there were any social riots, which are registered by *domestic6* and *domestic7* in Banks and Wilson (2017). 1(Regime Change) is a dummy variable that indicates that there is increasing threat for regime survival in a given year. That variable is measured in two steps. First, we compute *Regime Durability* 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 by the length of time since the last regime transition, as defined by the Quality of Government dataset from (Teorell et al., 2016). Second, 1(Regime Change) is equal to one if the variable Regime Durability decreases from the preceding year.

[12] The *Transparency*, which we construct based on 16 indicators for the transparency in media, fiscal policies, and political institutions, comes from the Quality of Government data (Dahlberg et al., 2016). *ICRG_QOG* is a measure of political governance at the country level. It is computed by taking the average of three variables, *Corruption*, *Law and Order*, and *Bureaucracy Quality* in (Dahlberg et al., 2016).

Table 4: Quality of Governance

	Democratization	1(Unrest)	1(Regime Change)	Transparency	QOG
	(1)	(2)	(3)	(4)	(5)
VOE_pub	0.005*	-0.013*	-0.011***	0.226*	0.007*
	(0.003)	(0.007)	(0.003)	(0.132)	(0.004)
Year fixed effects	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y
Controls	Y	Y	Y	Y	Y
Observations	5,464	6,997	5,924	3,607	2,768
R-squared	0.027	0.104	0.021	0.736	0.184
Number of countries	135	135	135	135	113

Notes: The sample covers 135 countries from 1950 to 2010. Quality of government (QOG) is available for 1984-2010. Transparency is available for 1980-2010. The other dependent variables are available for 1950-2010. All results are based on within estimates. The control variables include leaders' age, gender, the level of education, major dummies, and the Polity Score. All the reported coefficients are multiplied by 100. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

7. Further Checks

We also implement several robustness checks on the growth effects of VOE_pub. First, to address the Nickell bias in dynamic regressions, we use the difference generalized method of moments (GMM) to estimate the baseline. The results in Table A.9 report a positive and significant coefficient for VOE_pub. Second, we account for the concern that executives may have persistent long-term impacts on growth. To deal with that 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.10 in the appendix report qualitatively similar results after controlling more lagged variables. Third, we address the non-linear impacts of VOE_pub on growth. Table A.11 in the appendix presents the estimates of the baseline results with an alternative binary measure for VOE_pub. The cutoff in the variety of experience makes a significant difference for VOE_pub between 2 and 4. For VOE_pub greater than 4 or less than 2, the variety of public-sector experiences does not have sufficient variation for us to precisely estimate the coefficient.

8. Concluding Remarks

Just as corporate CEOs are important for shaping firms' performance, political leaders matter for countries' prosperity. In this paper, we argue that diverse pre-tenure political experiences of national executives make a tangible contribution to economic performance. To test that argument empirically, we collect biographic information of national executives in 135 countries from 1950 to 2010. Using a measure of the VOE of national leaders 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, our empirical investigation finds that leaders' VOE from the public sectors has a positive effect on growth, but VOE from the private sectors does not. Moreover, leaders with more diverse public-sector experiences promote the quality of economic and political governance.

These findings shed new light on the debate over "institutions versus leadership" in the political economy of development. While a vast amount of literature maintains that political institutions play a fundamental role in shaping growth (Acemoglu et al., 2005; Claessens and Laeven, 2003; Flachaire et al., 2014; North and Weingast, 1989), an increasing amount of literature aims to switch the focus on how political leaders at national or subnational levels shape economic policies and performance (Besley et al., 2011; Li et al., 2020; Jones and Olken, 2005; Yao and Zhang, 2015). Our research reconciles the two other lines of research by finding that national leaders' diverse political experiences amount to a kind of general human capital that helps navigate the economy. Thus, democratic institutions may enhance economic performance by selecting politicians with richer political experiences as national executives.

Studying the growth effects of leaders' experiences sheds lights on the importance of political selection in a time of increasing 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, rising anti-establishment sentiments and right-wing populist movements pose a serious challenge to the conventional wisdom of political selection. Economic downturns popularize arguments that business tycoons, as political outsiders, may outperform veteran politicians in leading the economy. Our paper offers a cautious rebuttal to this claim.

References

Acemoglu, D., S. Johnson, and J. Robinson (2005). Institutions as a fundamental cause of long-run growth. *Handbook of economic growth 1*, 385–472.

Banks, A. and K. Wilson (2017). *Cross-National Time-Series Data Archive.* Databanks International.

Becker, G. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy 70*(5, Part 2), 9–49.

Besley, T. (2005). Political selection. *The Journal of Economic Perspectives 19*(3), 43–60.

Besley, T., J. Montalvo, and M. Reynal-Querol (2011). Do educated leaders matter? *The Economic Journal 121*(554), F205–227.

Blinder, A. and M. Watson (2016). Presidents and the us economy: An econometric exploration. *American Economic Review 106*(4), 1015–45.

Brockman, P., H. S. G. Lee, and J. Salas (2016). Determinants of ceo compensation: Generalist–specialist versus insider–outsider attributes. *Journal of Corporate Finance 39*, 53–77.

Burgess, R., R. Jedwab, E. Miguel, A. Morjaria, and G. Padró i Miquel (2015). The value of democracy: evidence from road building in kenya. *American Economic Review 105*(6), 1817–51.

Cheibub, J. A., J. Gandhi, and J. R. Vreeland (2010). Democracy and dictatorship revisited. *Public choice 143*(1), 67–101.

Claessens, S. and L. Laeven (2003). Financial development, property rights, and growth. *The Journal of Finance 58*(6), 2401–2436.

Cox, G. and M. McCubbins (2005). *Setting the agenda: Responsible party government in the US House of Representatives.* Cambridge University Press.

Cruz, C., J. Labonne, and P. Querubin (2017). Politician family networks and electoral outcomes: Evidence from the philippines. *American Economic Review 107*(10), 3006–37.

Custódio, C., M. Ferreira, and P. Matos (2013). Generalists versus specialists: Lifetime work experience and chief executive officer pay. *Journal of Financial Economics 108*(2), 471–492.

Dahlberg, S., S. Holmberg, B. Rothstein, A. Khomenko, and R. Svensson (2016). The quality of government basic dataset. *Version Jan18*.

Dewan, T. and D. Myatt (2008). Qualities of leadership: Communication, direction and obfuscation. *American Political Science Review 102*(3), 351–368.

Dreher, A., M. Lamla, S. Lein, and F. Somogyi (2009). The impact of political leaders' profession and education on reforms. *Journal of Comparative Economics 37*(1), 169–193.

Flachaire, E., C. García-Peñalosa, and M. Konte (2014). Political versus economic institutions in the growth process. *Journal of Comparative Economics 42*(1), 212–229.

Gibler, D. (2009). *International military alliances, 1648-2008.* CQ Press.

Gift, T. and D. Krcmaric (2017). Who democratizes? western-educated leaders and regime transitions. *Journal of Conflict Resolution 61*(3), 671–701.

Giuliano, P., P. Mishra, and A. Spilimbergo (2013). Democracy and reforms: Evidence from a new dataset. *American Economic Journal: Macroeconomics 5*(4), 179–204.

Glaeser, E., R. La Porta, F. Lopez-de Silanes, and A. Shleifer (2004). Do institutions cause growth? *Journal of Economic Growth 9*(3), 271–303.

Goemans, H., K. S. Gleditsch, and G. Chiozza (2009). Introducing archigos: A dataset of political leaders. *Journal of Peace Research 46*(2), 269–283.

Hamilton, A. (1788). The same subject continued, and re-eligibility of the executive considered (no. 72). In *The Federalist Papers*. Oxford University Press.

Hermalin, B. (1998). Toward an economic theory of leadership: Leading by example. *The American Economic Review*, 1188–1206.

Ingold, K. and P. Leifeld (2016). Structural and institutional determinants of influence reputation: A comparison of collaborative and adversarial policy networks in decision making and implementation. *Journal of Public Administration Research and Theory 26*(1), 1–18.

Iyer, L. and A. Mani (2012). Traveling agents: political change and bureaucratic turnover in india. *Review of Economics and Statistics 94*(3), 723–739.

Jones, B. and B. Olken (2005). Do leaders matter? national leadership and growth since world war ii. *The Quarterly Journal of Economics 120*(3), 835–864.

Lazear, E. (2009). Firm-specific human capital: A skill-weights approach. *Journal of Political Economy 117*(5), 914–940.

Lee, D., E. Moretti, and M. Butler (2004). Do voters affect or elect policies? evidence from the us house. *The Quarterly Journal of Economics 119*(3), 807–859.

Li, J., T. Xi, and Y. Yao (2020). Empowering knowledge: Political leaders, education, and economic liberalization. *European Journal of Political Economy 61*, 101823.

Murphy, K. and J. Zabojnik (2004). Ceo pay and appointments: A market-based explanation for recent trends. *The American Economic Review 94* (2), 192–196.

Nieman, M. and D. Gibler (2021). Peaceful neighborhoods and democratic differences. *Journal of Politics XX (X): XX–XX*.

North, D. and B. Weingast (1989). Constitutions and commitment: the evolution of institutions governing public choice in seventeenth-century england. *The journal of economic history 49* (4), 803–832.

Persson, P. and E. Zhuravskaya (2016). The limits of career concerns in federalism: Evidence from china. *Journal of the European Economic Association 14* (2), 338–374.

Pettersson-Lidbom, P. (2008). Do parties matter for economic outcomes? a regression-discontinuity approach. *Journal of the European Economic Association 6* (5), 1037–1056.

Przeworski, A. (2013). *Political Institutions and Political Events (PIPE): A Data Set.* New York University.

Saiegh, S. (2009). Political prowess or "lady luck"? evaluating chief executives' legislative success rates. *The Journal of Politics 71* (4), 1342–1356.

Shugart, M. and J. Carey (1992). *Presidents and assemblies: Constitutional design and electoral dynamics.* Cambridge University Press.

Spilimbergo, A. (2009). Democracy and foreign education. *American economic review 99* (1), 528–43.

Teorell, J., S. Dahlberg, H. Sören, B. Rothstein, A. Khomenko, and R. Svensson (2016). *The Quality of Government Standard Dataset, version 2016.* University of Gothenburg: The Quality of Government Institute.

Xu, G. (2018). The costs of patronage: Evidence from the british empire. *American Economic Review 108*(11), 3170–98.

Yao, Y. and M. Zhang (2015). Subnational leaders and economic growth: evidence from chinese cities. *Journal of Economic Growth 20*(4), 405–436.

Table A.1: VOE_pub and Educational Background

Dependent variable:	Education Years	Science	Business	Law	Social Science	Military
	(1)	(2)	(3)	(4)	(5)	(6)
VOE_pub	0.024	-0.007	-0.010	0.014	0.007	-0.016*
	(0.097)	(0.006)	(0.012)	(0.013)	(0.010)	(0.009)
Country fixed effects	Y	Y	Y	Y	Y	Y
Observations	1,072	1,073	1,073	1,073	1,073	1,073
R-squared	0.336	0.141	0.185	0.220	0.197	0.333

Notes: This table presents the correlation between VOE_pub and the educational background of national leaders. The sample covers 135 countries from 1950 to 2010. All results are based on within estimates. 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.2: Summary Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
	Panel A: Leaders' Characteristics				
VOE_pub	5,779	2.42	1.21	0	7
VOE_pub_hhi	5,952	0.253	0.267	0	0.998
Voe_presidency	5,951	3.082	1.214	0	7
Voe_private	5,736	0.76	0.97	0	4
$\overline{VOE\_pub}_A$	5,920	2.097	0.877	0	5
$\overline{VOE\_pub}_N$	5,920	1.947	0.619	0.537	3.727
$\overline{VOE\_pub}_C$	5,952	2.322	0.671	0.75	5
Age	5,777	56.81	11.10	18	91
1(Female)	5,779	0.02	0.15	0	1
1(College)	5,779	0.31	0.46	0	1
1(Grad School)	5,779	0.67	0.47	0	1
Public_years	5,772	20.15	12.60	0	67
Education years	1,103	15.977	3.610	0	27
Science	1,156	0.027	0.162	0	1
Business	1,156	0.153	0.360	0	1
Law	1,156	0.233	0.423	0	1
Social Science	1,156	0.090	0.286	0	1
Military	1,156	0.126	0.332	0	1
	Panel B: Country Characteristics				
log(GDP per Capita)	5,779	8.30	1.26	5.32	11.82
growth	5,779	0.022	0.064	-0.671	0.926
Polity Score	5,774	1.48	7.47	-10	10
log(K per Capita)	5,779	9.29	1.36	5.63	12.24
log(TFP)	4,130	-0.07	0.26	-1.44	1.67
Share of G in GDP	5,779	0.20	0.11	0.02	1.56
1(Inf> 20%)	5,952	0.024	0.152	0	1
1(Unemp> 20%)	2,385	0.034	0.180	0	1
1(Unrest)	5,952	0.427	0.495	0	1
QOG quality of government	2,791	0.564	0.223	0.056	1
Democratization	5,485	0.007	0.150	-1	1
Transparency	3,742	46.801	20.799	5	83
Regime Durability	5,779	23.09	28.84	0	201
1(Regime Collapse)	5,952	0.037	0.190	0	1

Table A.3: Horse Race Regressions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Log(Per capita real GDP)						
VOE_pub	0.353***	0.342***	0.381***	0.359***	0.340***	0.353***	0.348***
	(0.108)	(0.112)	(0.106)	(0.111)	(0.109)	(0.108)	(0.110)
Public years		0.004					
		(0.011)					
VOE_private			-0.010				
			(0.142)				
Private years				0.015			
				(0.017)			
Age					0.010		
					(0.012)		
1(College)						0.523	
						(0.679)	
1(Grad school)						0.287	
						(0.656)	
Education Years							-0.004
							(0.031)
Year fixed effects	Y	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y	Y	Y
Controls	N	N	N	N	N	N	N
Observations	5,954	6,009	6,130	5,996	6,134	6,245	5,931
R-squared	0.980	0.981	0.980	0.981	0.980	0.980	0.981
Number of countries	135	135	134	135	135	136	135

Notes: The sample covers 135 countries from 1950 to 2010. All results are based on within estimates. 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.4: Disentangling the Variety of Experiences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Dependent Variable: Log(GDP Per Capita)					
Vice executive	0.270							
	(0.368)							
Minister		0.620**						
		(0.260)						
Legislator			0.571*					
			(0.292)					
Governor				0.421				
				(0.394)				
Party					-0.136			
					(0.270)			
Central						0.744***		
						(0.205)		
Military							-0.019	
							(0.366)	
Private								0.330
								(0.237)
Controls	Y	Y	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
R-squared	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981
Number of countries	135	135	135	135	135	135	135	135
Observations	6,060	6,005	5,986	6,009	5,990	6,067	5,968	5,966

Notes: This table presents the effects of specific public-sector experiences on economic performance. The sample covers 135 countries from 1950 to 2010. The control variables include the lagged dependent variable, leaders' age, gender, the level of education, major dummies, and the Polity Score. All results are based on within estimates. 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.5: Spatial Lags as Instrumental Variable

Dependent variable:	First stage VOE_pub			Second stage log(GDP Per Capita)		
	(1)	(2)	(3)	(4)	(5)	(6)
$\overline{Voe\_pub}_A$	1.127***					
	(0.059)					
$\overline{Voe\_pub}_N$		2.000***				
		(0.003)				
$\overline{Voe\_pub}_C$			1.845***			
			(0.019)			
VOE_pub				0.485***	0.370***	0.509***
				(0.131)	(0.108)	(0.118)
Controls	Y	Y	Y	Y	Y	Y
Year fixed effects	Y	Y	Y	Y	Y	Y
Kleibergen-Paap rk Wald F statistic				4283	3.1e+06	6.3e+04
Observations	5,893	5,925	5,925	5,893	5,925	5,925
Number of countries	135	135	135	135	135	135

Notes: The sample covers 135 countries from 1950 to 2010. The instrumental variable in Column (1) is the average VOE_pub of the country's alliance in the Correlates of War (COW) data set. The instrumental variable in Columns (2) is the average VOE_pub of the country's geographic neighbors. The instrumental variable in Column (3) is the average VOE_pub of the other countries on a country's continent. The control variables include the lagged dependent variable, leaders' age, gender, the level of education, major dummies, and the Polity Score. Columns (4)-(6) report the second-stage results, which use the instruments presented in Columns (1)-(3). All the reported coefficients are multiplied by 100. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A.6: Do Economic Trends Affect Winner's VOE_pub?

Dependent variable: Candidate with Higher VOE_pub Won the Election

	(1)	(2)	(3)	(4)
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)
p-value for F-test	0.543		0.266	
Country Fixed Effects	Y	Y	Y	Y
Election Year Fixed Effects	Y	Y	Y	Y
R-squared	0.459	0.456	0.477	0.472
Observations	376	376	391	391

Notes: The estimates are based on contested national elections in democratic countries from 1990 to 2010. Standard errors clustered at the country level are reported in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

Table A.7: Close Elections: Regression Results

	log(Per capita real GDP)		Growth rate	
	Margin<5%	Margin<3%	Margin<5%	Margin<3%
	(1)	(2)	(3)	(4)
1(Higher VOE_pub won)	0.081**	0.101*	0.054***	0.078***
	(0.030)	(0.050)	(0.016)	(0.018)
Year fixed effects	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y
R-squared	0.909	0.944	0.614	0.659
Observations	219	124	219	124
Number of countries	40	31	40	31

Notes: This table presents regression analysis for all country-years in which democratically elected leaders won a relatively small vote margin. The control variables include the lagged dependent variable, leaders' age, gender, the level of education, major dummies, and the Polity Score. In all regressions, second-order polynomial is controlled for. 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.8: Leadership Turnovers Due to Death in Office

	Variable of Interest: Difference in the Growth Rate		
Growth	VOE_pub Increases	VOE_pub Decreases	VOE_pub Unchanged
Post-Pre	0.0197	-0.0049	-0.0025
P-value	0.070	0.148	0.975
Number of Turnovers	19	12	16
Number of Observation	6,264	6,264	6,264

	Variable of Interest: Difference in the Growth Rate		
VOE_private Increases	VOE_private Decreases	VOE_private Unchanged	
Post-Pre	0.0028	0.0076	-0.0007
P value	0.253	0.253	0.126
Number of Turnovers	7	12	28
Number of Observation	6,264	6,264	6,264

Notes: This table presents the difference in the average growth rates between the leaders dying in office and their successors in a similar fashion as in Jones and Olken (2005). For each type of leadership turnover, the table reports the p-value for the Wald test that cross-leader correlation does not matter for the value of Post-Pre.

Table A.9: Difference GMM Estimates

	Dependent variable: Log(GDP Per Capita)		
	(1)	(2)	(3)
VOE_pub	0.010***	0.005***	0.005***
	(0.002)	(0.001)	(0.001)
Age		0.000	0.000
		(0.000)	(0.000)
1(Female)		0.009	0.004
		(0.009)	(0.008)
1(College)		-0.004	-0.007
		(0.008)	(0.008)
1(Grad School)		0.002	0.004
		(0.004)	(0.004)
Lag Polity Score			-0.000
			(0.000)
Lag log(GDP Per Capita)	0.949***	0.964***	0.964***
	(0.010)	(0.008)	(0.008)
Year fixed effects	Y	Y	Y
Country fixed effects	Y	Y	Y
Observations	5,819	5,800	5,772
Number of countries	135	135	135

Notes: The sample covers 135 countries from 1950 to 2010. All results are based on within estimates. The control variables include the lagged dependent variable, leaders' age, gender, the level of education, major dummies, 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.10: Accounting for More Lags of GDP

	Dependent variable: Log(GDP Per Capita)			
	Lag 1	Lag 1-2	Lag 1-4	Lag 1-8
	(1)	(2)	(3)	(4)
VOE_pub	0.376***	0.231***	0.243***	0.227***
	(0.107)	(0.087)	(0.081)	(0.081)
Year Fixed Effects	Y	Y	Y	Y
Country Fixed Effects	Y	Y	Y	Y
Observations	5,924	5,797	5,537	5,016
R-squared	0.981	0.982	0.982	0.981
Number of countries	135	135	135	134

Notes: All results are based on within estimates. The sample covers 135 countries from 1950 to 2010. The control variables include the lagged dependent variable, leaders' age, gender, the level of education, major dummies, 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.11: Non-linear Effects of VOE_pub

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Log(GDP Per Capita)					
$VOE\_pub \geq 1$ (96.23%)	0.015					
	(0.594)					
$VOE\_pub \geq 2$ (71.9%)		0.679**				
		(0.265)				
$VOE\_pub \geq 3$ (41.74%)			0.690***			
			(0.227)			
$VOE\_pub \geq 4$ (18.7%)				0.573*		
				(0.296)		
$VOE\_pub \geq 5$ (3.78%)					0.037	
					(0.460)	
$VOE\_pub \geq 6$ (0.01%)						-0.294
						(0.386)
Year fixed effects	Y	Y	Y	Y	Y	Y
Country fixed effects	Y	Y	Y	Y	Y	Y
Observations	6,106	6,106	6,106	6,106	6,106	6,106
R-squared	0.981	0.981	0.981	0.981	0.981	0.981
Number of countries	135	135	135	135	135	135

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