

Explaining the Oil Advantage: Effects of Natural Resource Wealth on Incumbent Reelection in Iran

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Abstract

Why does natural resource wealth prolong incumbency? Using evidence from parliamentary elections in the Islamic Republic of Iran, I show that natural resource revenues boost incumbent reelection rates because this revenue is used to provide public or private goods to constituents, incentivizing voters to reelect incumbents over challengers. To test this hypothesis, I employ originally assembled data on five parliamentary elections in Iran (1992-2008) in longitudinal hierarchical regression analysis at the district and province level. By leveraging Iran's mixed-member electoral system, I am able to show that the resource-incumbency mechanism works primarily in single-member districts with little evidence of an incumbency advantage for politicians in resource-rich multi-member districts. Building on the *rentier* theory of natural resource wealth, my results suggest that voting for the incumbent is attributable to patronage and public goods distribution. My findings offer new insights into the understudied context of Iranian legislative elections, illustrate the mechanisms driving the relationship between resource wealth and incumbency advantage at the sub-national level in a non-democratic setting, and highlight the mediating effects of electoral institutions on the resource-incumbency relationship.

Keywords: Resource curse, Iran, electoral authoritarianism, incumbency advantage

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God willing, the outcome of the elections will be what the people want
– Former Iranian President Akbar Hashemi-Rafsanjani¹

In Iranian parliamentary elections since 1980 – the first year of legislative elections in the nascent Islamic Republic – less than 30% of incumbents running again for office retained their seats. Yet, incumbent members of parliament (MPs) running in districts rich in oil and natural resources have seen better results: on average, 40% of resource-rich incumbents were reelected.² What explains this divergence in electoral fortunes? Why do incumbent Iranian MPs from resource-rich³ districts have an electoral advantage at the polls?

In this study, I argue that deputies in oil-rich districts are more likely to get reelected because oil revenue – distributed by the central government using a derivation formula based in part on provincial oil production levels, and allocated at the discretion of MPs – is used to provide public or private goods to their constituents, incentivizing voters to reelect incumbents over challengers. In other words, an incumbent spends oil money on voters in order to boost her chances of staying in office. Results from statistical analysis of five legislative elections indicate that a 1% increase sub-national resource wealth (a measure which I discuss in more detail in the coming pages) improves an incumbent’s likelihood of reelection by 3.5% in single-member districts. Though this is an “oil effect” in the context of Iran, in general an incumbent should benefit from any source of exogenous, discretionary revenues she can use to distribute funds to her district.

I test my argument in the period of five parliamentary elections in Iran, from 1992 to 2008, with elections held every four years. In addition, despite the non-democratic characteristics of Iranian politics, I show that parliamentary elections in Iran are meaningful and semi-competitive, and are the primary means for citizens to evaluate and reward (or punish) politicians for policy at the local and provincial levels.⁴

This paper makes three contributions to the literature. First, this study offers a systematic empirical analysis of legislative elections in Iran. Though excellent case studies of Iranian legislative politics present careful descriptions of the electoral process in Iran, no

work to date has analyzed electoral patterns or the behavior of political actors before and during elections.⁵ Here I offer a deeper look into how incumbent MPs are able to increase their chances of reelection by investigating the channels of incumbent accountability.

Second, while the oil-incumbency link has been analyzed by previous research in democratic systems,⁶ this study explores the micro-mechanisms driving this relationship in a developing and non-democratic context, thereby contributing to the growing field of literature on electoral authoritarianism in countries such as Egypt, Jordan, Lebanon, Mexico, and the post-communist states of Eastern Europe.⁷ While prior scholars provide sub-national evidence in favor of a relationship between resources and incumbency retention in democracies, I examine why this pattern exists in the context of legislative elections in a non-democratic setting. Importantly, I highlight the role of electoral institutions by providing evidence that the oil-incumbency relationship is stronger in single-member districts than in multi-member districts, consistent with theories of increased visibility and incumbent accountability when there is a district magnitude of one.⁸

Third, the results shown here corroborate with what Michael Ross calls “the spending effect” of the resource curse, whereby incumbent leaders use resource revenues to buy popular acquiescence in exchange for the loss of property rights and democratic freedoms.⁹ In line with the work of early “*rentier* state” theorists, resource-rich rulers are expected to distribute broad benefits to their subjects in order to buy their support.¹⁰ I show that this is the case for Iranian deputies: controlling for initial levels, MPs provide *more* public goods and patronage in resource-rich districts than their counterparts in resource-poor districts. Yet scholars have recently raised doubts about the idea of a political resource curse, suggesting that reverse causality may account for the observed correlations because political actors can influence production levels in order to benefit from resource wealth.¹¹ In this context, the innovation that this paper provides is a rudimentary solution to this concern. As I elaborate below, incumbent deputies have *no* discretion over production levels or even how much resource revenue can be allocated to their districts; they can only influence how this money is spent

within their districts. In this way, the resource revenues an incumbent MP is allocated are discretionary and, more importantly, exogenous.

One worthy note of consideration before moving forward is that data on Iranian elections are exceptionally scarce, which places sharp limits on what we can infer — a problem that is characteristic of research in authoritarian states, especially at the local level. Importantly, there are no individual-level data for candidates, but rather information only exists for those who have won a given election, with no data on challengers. Further, data only exist for the net reelection rate, as opposed to the gross reelection rate which accounts for incumbents not choosing to run again for reelection.¹² In this light, this paper goes to great lengths to leverage the scarce data that are available in Iran by combining information on incumbent-level biographies, district-level electoral institutions, and province-level resource wealth, economic indicators, and public goods distribution. Still, while studying Iranian politics lacks the statistical rigor and level of detail found in other studies, it can provide us insight into a case relatively unstudied by students of electoral politics and the political economy of discretionary resources.

This paper is organized as follows. I begin by briefly describing the Iranian political system and the rules of subnational revenue allocation. Following this discussion I review in a comparative context the literatures on the resource curse, electoral authoritarianism, and incumbency effects, and derive testable hypotheses for the case of Iranian legislative elections. Next, I describe the data and methods employed and then show statistical evidence for the resource-incumbency relationship, along with tests of mechanisms underlying this correlation. Before concluding, I consider alternative explanations which are not readily statistically testable because of data availability issues. Finally, I leave the reader with a discussion of the implications of my results and potential avenues for future research.

Parliament in Iranian Politics

Since the Islamic Revolution of 1979, Iran has been a highly factionalized, theocratic republic with multiple levels of decision-making authority.¹³ At the top of the chain is the unelected Supreme Leader, whom the popularly-elected Assembly of Experts appoints and monitors. Currently represented by Ayatollah Ali Khamenei, the Supreme Leader has constitutional authority over all levels of government as well as the military and media. Below the Supreme Leader lie the judicial, executive, and legislative branches, of which the latter two are popularly elected. However, the unelected Guardian Council – appointed by the Supreme Leader and the Assembly of Experts – monitors legislation and, more importantly, vets candidates for the presidency and parliament.

There is some debate as to whether parliament is weaker than the executive branch, but parliament is endowed with broad prerogatives: MPs ratify international treaties and foreign loans, draft legislation, approve state-of-emergency declarations, approve cabinet ministers, draft and approve annual budgets, and perhaps most controversially, have the power to remove the president “on the basis of political incompetence.”¹⁴ Because of their control over the annual budget, MPs determine how money is spent in their districts (nested in provinces). Iran is a centralized state – very little autonomy is given to political actors at the local and state level. Though provincial governors exist in Iran, historically they have been unelected and wield very little power over spending decisions; similarly, mayors and village leaders have little control over their districts’ finances, though this trend is changing as local politicians are now popularly elected (prior to 2005 they were appointed).¹⁵ For this reason, I focus only on politics at the parliamentary level, where MPs from resource-rich provinces have authority in how this money is spent despite having no authority over how much revenue their districts receive. I discuss the subnational revenue allocation mechanism in more detail in the section on data and methods, but simply put, a small portion of resource revenues is re-allocated to resource-producing provinces through annual budgets passed in parliament, written and approved by MPs themselves. Deputies are thus an appropriate

unit of analysis given Iran’s political structure and parliament’s power over the purse.

In terms of electoral rules, legislative elections in Iran are held every four years and follow a plurality two-round runoff system. In recent elections, the majority of candidates have been elected in the first round of elections: for example, 75% of those who won office were elected in the first round in 2008. In terms of districting, the country is divided into multi-member and single-member constituencies; most provinces have more than one district, with an average of seven districts per province. For example, Esfahan province contains fifteen districts with a total of nineteen seats in parliament, while the Kohgiluyeh & Boyerahmad province only has three districts with a total of three seats (each district is single-member). In multi-member districts, the voting rules are similar to that of the block vote: voters can vote for as many candidates as there are seats.¹⁶ In the results that follow, my findings are expectedly stronger in single-member districts than in multi-member districts, for reasons I explain below.

It should be noted that in the context of electoral institutions, Iran lies in between the two extremes that exist in the Middle Eastern states with parliamentary elections. Whereas post-1997 Algeria, pre-1990 Egypt, Jordan, and post-1994 Tunisia have high district magnitudes, pre-1997 Algeria, Morocco and pre-1994 Tunisia have district magnitudes of one. Iran’s average district magnitude is 1.5, putting it closer to Kuwait and post-1990 Egypt, where the average district magnitude is two.¹⁷

As of 2008 – the most recent parliamentary election considered in this study – there are 285 seats in parliament, with five additional seats reserved for candidates from Zoroastrian, Jewish, Assyrian, Chaldean, and Armenian religious minorities. Speakers are elected for one-year terms and all deputies serve four-year terms with no term limits. Table 1 shows the distribution of seats per province for select years, and the number of districts per province in 2008.

[Table 1 about here]

The issue of candidate vetting is the biggest challenge to democratic elections in Iran. Many qualified candidates, numbering sometimes in the thousands, are disqualified from running in parliamentary elections on the basis that they might be a threat to the stability of the Islamic Republic.¹⁸ Vetting of candidates has increased dramatically since the first elections in 1980, as shown in Figure 1. Initially, Ayatollah Khomeini and the Islamic Republican Party (IRP) used vetting as a means of disqualifying candidates who did not support Khomeini’s vision of *velāyat-e faqih*, or rule of the jurisprudent. This allowed Khomeini to restrict access to the political sphere in the early years of the Islamic Republic – specifically targeting liberals and communists – though on the whole, most candidates were allowed to run for office.

[Figure 1 about here]

After Khomeini’s death in 1989, the newly appointed supreme leader, Ayatollah Khamenei, sharply expanded the use of vetting and targeted specific factions that formed in lieu of strong political parties, with the most targeted faction being the radical left. In 1996, the second legislative elections after Khomeini’s death, vetting reached new heights: of 5,359 registered candidates, 2,131 were disqualified. Mehdi Moslem posits that this was the Guardian Council’s response to the left’s success in forming a broad coalition. After the left-wing Crusaders of the Islamic Revolution (MII) and Association of Combatant Clergy (MRM) groups joined under the banner of former president Rafsanjani’s Executives of Construction Party, the right-wing Society for Combatant Clerics (JRM) campaigned the Guardian Council to disqualify many liberals for their “anti-regime” beliefs. As one prominent member of the conservative press, Morteza Navabi, put it, “The Guardian Council should not allow those who under the pretext of democracy strive to degenerate the revolution and Islam.” These calls were heeded by the Council and the end result was a dramatic and highly controversial victory for the right-wing factions.¹⁹

This practice was eased in the 2000 elections as most candidates who were nominated

were allowed to run. But in 2004, and again in 2008, vetting increased to its highest levels in the history of the republic. In 2004, of 8,145 registered candidates, only 4,561 were approved to run in the election. This “controversial interference,” as noted Iranian historian and political scientist Ali Gheissari argues, “helped to reinstate a conservative parliamentary majority that had been missing since the 2000 elections.”²⁰ In an online appendix, I address the issue of candidate vetting in more detail, specifically the effects of vetting on incumbents running in resource-rich districts. Yet it should be stressed that given the challenges of data collection and on-site research regarding elections in Iran, it is inherently difficult to make strong conclusions about the effects of controversial factors such as vetting and other electoral irregularities.

Explaining the Oil Advantage

This study navigates across three different but inherently connected literatures on the resource curse, electoral authoritarianism, and incumbency advantage. In this section, I discuss each branch separately but draw collective hypotheses from all three literatures.

Oil, Incumbency, and the Resource Curse

At the national level, scholars of the so-called political resource curse find that resource wealth promotes authoritarian governance, in part because incumbents are advantaged through how these discretionary rents are allocated.²¹ This mechanism is itself derived from the classical “*rentier* state” theory, first propagated by Hussein Mahdavy and refined later by Hazem Beblawi and Giacomo Luciani.²² Where other governments must tax their citizens to support the state’s role as public goods provider, a *rentier* state — that is, a state that generates income by collecting an external rent, whether it be foreign aid or revenue generated by natural resource sales — has no need for taxing its citizens. This type of state plays the role of *l’état providence*: political leaders buy support using these rents by spending it on public

goods and patronage, buying off more people with larger packages of money than their non-*rentier* state counterparts. As Mahdavy elaborates, “The oil industry’s major contribution is that it enables the governments of the oil producing countries to embark on large public expenditure programmes without resorting to taxation.”²³

Scholars such as Michael Ross and Benjamin Smith adapted this theory for explaining the relationship between oil wealth and regime stability among autocracies, crediting *rentierism* as a potential causal mechanism driving this pattern.²⁴ The seeming exogeneity of oil rents lent credibility to the resource curse as a causal argument, that indeed natural resource wealth (or any non-tax revenue source²⁵) increases regime durability and, in authoritarian states, prevents democratization.

In contrast, Stephen Haber and Victor Menaldo argue that leaders have authority over the creation of these rents via decisions regarding exploration and production contracts.²⁶ As such, though resource rents can be discretionary they are not exogenous, which is potentially problematic if stronger rulers (and more durable states) are more likely to engage in successful contracts that lead to mass production of oil and other minerals.

To advance the debate, scholars turned to sub-national analysis to capture more refined causal pathways between oil and political stability. Two analyses of oil’s pernicious effects on local politicians, one on the U.S. by Ellis Goldberg and co-authors and the other on Brazil by Juan Monteiro and Claudio Ferraz, show relationships between oil wealth and local corruption.²⁷ Building off of work by Francesco Caselli and Guy Michaels, Monteiro and Ferraz look at the effects of oil windfalls on local politicians to find that windfalls tend to make mayors more corrupt and also more likely to stay in office.²⁸

Ideally, scholars would also be able to analyze the oil-incumbency relationship at the sub-national level in non-democracies because resource wealth may have differing effects conditional on regime type.²⁹ Yet analyzing the effect of oil and minerals on local politicians in a full autocracy such as Saudi Arabia or Zimbabwe may be fruitless because of little variation in electoral turnover or even the lack of outright elections. Hence we can

find an in-between case in Iran, a hybrid authoritarian regime, to analyze the relationship between resource wealth and incumbency, political accountability, and turnover. While the analysis presented here does not resolve the resource curse debate, it can contribute to this controversial issue. Since Iranian MPs have authority over spending resource wealth but no authority over producing or generating resource rents, the connection between resource wealth and incumbency can be analyzed without concerns of reverse causality.

Electoral Authoritarianism

Studies on elections in authoritarian states such as Iran ponder the overlapping puzzles of why citizens bother to vote and why candidates run for election in a context where elected office is typically meaningless and irrelevant to policy outcomes given the strong powers held by unelected branches of government.

Harold Crouch's classic study on Indonesia was one of the first to consider the mechanisms of patronage in the context of subnational authoritarian elections.³⁰ Elected office was effectively "handed out" by the military regime to coopt non-military elites, where the value of holding office was the ability to deliver spoils to one's in-group. In more recent work, Lust-Okar (2006) answers the puzzle of why candidates run for office in the Jordanian context, in which elected officials are by and large superseded on political decisions by the unelected monarchy. The answer, according to Lust-Okar, is driven by the same logic that drives citizens to vote in autocracies: elected positions in Jordan are valuable in their access to benefits and entrepreneurial networking.³¹ While they have little effect on domestic and foreign policy, MPs have the power to deliver pork and patronage to their constituents. Not unlike elections in developing democracies, votes are used in exchange for goods and services from the state, and local clout can be derived by being in a position of discretionary power.

The extent to which an incumbent can retain an advantage in this context would thus depend on the depth of his pockets — with more resources at his disposal, an incumbent can satisfy voters' desires for targeted spending and win reelection. Conversely, voters will

be disappointed with incumbents who are unable to deliver pork and instead choose to elect challengers instead of incumbents. Indeed, this is precisely what occurred in the mid-1990s in Eastern Europe and Russia, where poor economic conditions broke down the patronage networks of old regime parties, and in turn, voters ousted incumbents in favor of less mainstream parties.³²

In Lebanon, Daniel Corstange shows using survey evidence that elections are not conduits for accountability on policy or government effectiveness, but rather that elections are “a ‘season for money’ in which ballots go to the highest bidder.”³³ Similarly in Mexico under the PRI and Egypt under Mubarak, incumbent legislators distributed targeted benefits to their constituents to buy votes, so much so that in Egypt, targeted spending increased national inflation prior to elections.³⁴ In Vietnam and China, on the other hand, clientelism takes on the form of legislators representing class interests where votes can be bought by making promises to grant special economic privileges to certain groups of voters.³⁵

A corollary to this work is the perception in developing democracies such as India and Benin that incumbents are more likely to be reelected in “backward” districts where voters care more about patronage and vote-selling and are less able to monitor other aspects of candidate performance.³⁶ These voters are more impressionable and more likely to reward incumbents who in turn have rewarded voters with private benefits and vote-buying.³⁷ Patronage should be higher in backward districts because, again, voters care more about patronage in these districts than they care about anything else.

In none of these cases does a legislator have substantial policy influence, nor can opposition members typically run for office. Instead, being an incumbent means access to state resources which can then be funneled to selected groups or constituents. Iranian parliament is no different. As with patronage-based electoral authoritarianism, we would expect that incumbents with access to greater resources would perform better at the polls. With more money to spend on buying votes, it is no surprise that incumbents running in oil-rich districts — with discretion on how resource revenues are spent — would be more likely to stay in

office than those incumbents with emptier coffers. In this respect, legislative elections in Iran should differ little from elections in other non-democratic contexts in the Middle East such as in Lebanon, Jordan, and Egypt, or even beyond the region as illustrated by the literature on Mexico, Indonesia, China, Vietnam, and the post-Soviet states.

The Incumbency Advantage

While the study of what drives incumbency reelection in the developing world is in its infancy, there is much consensus on the existence of an incumbency advantage in developed democracies. American and comparative politics studies emphasize that seniority matters: politicians higher up in the party or with more experience are more likely to win so that electoral competitiveness depends on candidate experience.³⁸ Beyond seniority, there is the intuitive relationship between economics and incumbency, captured by retrospective and “pocketbook” voting models popular in studies of advanced democracies, most notably in the United States.³⁹ When national economic conditions are good, incumbents win; a corollary to this hypothesis is that the same is true for local elections based on the performance of the local economy. Another alternative is that ethnically diverse districts are more likely to be competitive than homogeneous districts.⁴⁰ On the other hand, research on new democracies shows stabler voting patterns where ethnic parties are allowed. If this were the case, then districts with ethnic parties would be *less* competitive than otherwise since ethnic identity would be serving as an information cue for political choices.⁴¹

Electoral institutions play an important role in the current study, given Iran’s mixed-member electoral system. Roughly 60% of districts are single-member and 40% are multi-member districts ranging from two seats in Qazvin, three in Ahvaz, to six in Tabriz (Tehran district is an outlier with thirty seats). Legislative institutions scholars have shown that credit-claiming is easier and politicians are more accountable in single-member district systems.⁴² If the *rentier* theory on state spending for constituent support is correct, at the sub-national level this relationship should be strongest where targeted spending is most vis-

ible to voters. Though this has yet to be shown empirically in the context of resource-rich states, theoretically this should be most true in single-member districts where incumbents can clearly claim credit for the provision of benefits; conversely, it should not necessarily be the case that spending is targeted to multi-member districts. In Iran, accountability and visibility is somewhat muddled by the strong fiscal centralization of the state and the existence of quasi-state organizations (*bonyād*) that provide public and private goods.⁴³ Still, all else equal, incumbents with access to resource revenues should fare better in single-member districts than in multi-member districts. This would suggest that there is a mediating effect of electoral institutions on oil's incumbency-increasing effects.

The studies considered so far all point to the potential for incumbency advantages in developing and hybrid democracies. Yet, empirically this is not the case: incumbent legislators and mayors in India, the Philippines, Egypt, Jordan, and the post-communist states are faced with low incumbency retention rates.⁴⁴ The same is true for the case of Iran: as noted in the introduction, less than 30% of incumbent MPs win reelection on average. While this empirical pattern has been described in several developing contexts, there is still an ongoing debate in current research as to why we observe an incumbency disadvantage.⁴⁵

The present study does not address this phenomenon directly, though it is noteworthy that despite an advantage over non-oil-rich incumbents, more than half of all oil-rich deputies in Iran are not reelected. It is likely that the problems incumbents face in Iran are no different from those in other authoritarian and developing contexts. Like their counterparts in Jordan, Lebanon, and Egypt, Iranian MPs operate in a weak party system where voting is effectively based on individual candidate attributes and confusing factional ties.⁴⁶ Further, despite the large influx of money to provinces and districts from oil and minerals, the amount of money retained by the central government is substantially higher. Less is spent on a percentage basis on local infrastructure and development in provincial Iran when compared to advanced and developing democracies such as the U.S. and Brazil, where incumbents maintain a sizable advantage over challengers. Though state expenditures in Iran are still

higher than in resource-poor authoritarian states, as *rentier* theorists would expect, public development spending is not enough to deter the overall decline in the quality of health and education infrastructure.⁴⁷ MPs could be taking the electoral fall for these failures, as provincial and district spending is attributed to the legislature, though this point remains open for future research on incumbency disadvantage within electoral authoritarianism.

Derived Hypotheses

Building from the above work on the resource curse, electoral authoritarianism, and incumbency advantage, I develop three testable implications in the context of Iranian legislative elections.

First, if more discretionary revenues increase incumbency retention, we should expect to observe Iranian MPs from oil-rich districts with higher reelection rates than MPs in oil-poor districts. Importantly, the oil-incumbency relationship should be higher in single-member districts as opposed to multi-member districts.

Hypothesis 1 *Incumbents running in resource-rich districts are more likely to win reelection than incumbents in resource-poor districts. This effect should be more pronounced in single-member districts than in multi-member districts.*

Second, more public goods should be provided in oil-rich districts, controlling for other factors. This follows from the argument that given higher levels of discretionary spending, incumbents will need to provide benefits to be reelected if constituents vote retrospectively. On this latter point there is evidence from case studies on Iranian elections to suggest that voters do indeed reward politicians for past behavior.⁴⁸ Furthermore, targeted spending by incumbent deputies is high in Iran's parliament. This was particularly problematic during the early 1990s when spending was increasing in a time of post-war economic recession, prompting then-president Rafsanjani to implore deputies to reduce pork-barrel spending during his inaugural address to the incoming fourth Majlis (1992-1996): "The esteemed deputies should consider their actions when the government has no budget for a project

because they themselves have not approved a budget for it. They should not question it 10, 15, 20 times every morning, saying do this for that road, do that for this mine.”⁴⁹ A second testable hypotheses summarizing this logic is as follows:

Hypothesis 2 *Public goods levels – specifically school and hospital provisions – in resource-rich districts will be higher than in resource-poor districts.*

Third, deputies in resource-rich districts should provide more patronage and private benefits than otherwise. This can be accomplished both on and off the books. Deputies can extend state jobs to supporters and appoint their allies in prestigious government positions both locally and nationally, or deputies can offer illicit transfers in exchange for votes. A study of one district in East Azerbaijan exposed numerous channels of client-patron behavior by one MP (who remains anonymous) to secure votes for his successful reelection in 2008. Among them, there was the selling of monopoly rights to purchasing low-cost rice from the Ministry of Commerce in exchange for campaign financing, and the provision of employment opportunities using the MP’s power in Tehran in exchange for votes.⁵⁰ In resource-rich Khuzestan province, alleged clientelism helped secure reelection in 2000 for two-term incumbent MP Seyyed Jasem Sa’edi in the city of Shush, despite violence after the election by protesters accusing Sa’edi of “vote-buying and bribery.”⁵¹ In terms of an observable implication based on this patronage-resource conjecture, a third testable hypothesis can be stated as follows:

Hypothesis 3 *Controlling for initial values, patronage through public employment will be higher in resource-rich districts than in resource-poor districts.*

Though not mutually exclusive with the three hypotheses stated above, it should also be true that voters reward deputies who have provided public/private goods to their districts. This step is an intuitive implication – if MPs get no political benefit from providing goods, then we should not expect incumbents to provide goods in the first place.

Data and Methods

To test these three hypotheses, I have compiled cross-sectional time-series data on legislative elections in Iran. Since the first parliamentary election in 1980 (in which there were no incumbents), there have been seven elections: 1984, 1988, 1992, 1996, 2000, 2004, and 2008. Given data constraints for the first three elections, the statistical analysis conducted here includes deputy-level and provincial-level variables for the last five elections: for the first set of models the unit of analysis is deputy-years, and for all other models the unit of analysis is province-years. The evidence is drawn from three sources.⁵² (1) Parliamentary biographies since 1980 for information on deputies' names, prior terms served, winning vote shares, and electoral district and province.⁵³ (2) Share of national GDP produced at the province level from mining and natural resources since 1992, available from the Iranian Ministry of Petroleum and Ministry of Interior. (3) A list of control factors at the provincial level available from the Ministry of the Interior, published annually.⁵⁴

The outcome of interest is the probability that an incumbent is reelected, along with his/her winning vote share. The predictor of interest is discretionary revenue from the sale of natural resources allocated to each district. This is captured by the variable “oil and minerals value added to GDP” or simply “resources”: it is a measure of total revenue produced at the provincial level from the sale of oil, gas, and other minerals, divided by the amount of resource revenue nationally.⁵⁵ The denominator in this ratio is essentially the national “Resource GDP” of Iran in a given year; that is, the total amount of revenue produced from the sale of all hydrocarbons and minerals across the country. In Figure 2, I show the geographic distribution of resource wealth by province in 2008.

[Figure 2 about here]

This measure is quite close to how much revenue the province is allocated by the central government, which depends on the province's level of resource wealth. Iran's provincial

revenue distribution is constitutionally mandated, as Article 48 requires “just distribution of national incomes among provinces and distribution of economic projects on the basis of needs and potentials of each area”.⁵⁶ On top of this mostly population-based redistribution formula, each province will be allocated two percent of the gross domestic product that it generates for the country. Formally this is calculated as two percent of the value-added GDP produced by a given province, as measured by the Statistical Centre of Iran (*Markaz-e Amar*). The revenue is allocated to each province as it is stated in the national budget (in the form of “Development Plans”), which the parliament passes every five years but revises annually. As mentioned above, MPs are the primary authors of budget bills and only rarely do other branches of government override budgetary allocations made to provinces.⁵⁷ For example, in 2006 the oil-rich province of Khuzestan added 370 trillion rials to total national income from natural resources (“Resource GDP”) of 2,300 trillion rials, so that on top of its existing revenue distribution based on its population, the provincial government was allocated 7.4 trillion rials (2% of its value added to Resource GDP). In this sense, oil revenue that the province receives is exogenous since individual legislators cannot change the formula (that is, they cannot change it without super-majority parliamentary approval), while they do have discretion over how this money is spent within their districts.

There are two caveats to note with this measure. The first is that the 2% rule is not necessarily followed in practice over time. Especially during the Ahmadinejad administration (2005–2013), the president and cabinet effectively cut the discretionary spending powers of MPs, so that the distribution of public and private goods was determined more by the executive and by *bonyād* organizations than by parliament. This has continued under new president Rouhani, to the point that all eighteen MPs from Khuzestan have resigned in protest against budget cuts to their province.⁵⁸ However, this was not the case prior to 2005, when MPs maintained their power over the purse. Ever since Rafsanjani’s creation of five-year plans in 1988–89, for instance, MPs have been able to direct government revenues to their districts.⁵⁹ This period coincides with most of the data in this paper, as I analyze

incumbency patterns across the five elections from 1992 to 2008, effectively covering MP behavior from 1988 to 2008. Expectedly, the results from models just using data from the 2008 election show a positive but not significant effect of oil on incumbency, reflective of diminished discretionary powers by MPs ever since Ahmadinejad took office in 2005.⁶⁰

The second caveat of the measure is to note that resource wealth is measured at the province level, while incumbent reelection is at the district level. Yet it is precisely because resource revenues are distributed to the province and not to the district directly that provincial resource revenues are used in the empirical analysis. Thus voters reward MPs in their specific district for revenues that are given to their entire province. There is no bargaining process between MPs in the same province, aside from the allocation of funds that are made on the basis of population and needs (for example, in Khuzestan province, Abadan will get more money than Ramhormoz because it is larger and requires more public services). What is happening at the district level is that MPs are the only politicians who can reasonably claim credit for what each district ends up receiving since decisions on the economic planning and distribution of government expenditures are ultimately made by the parliament, and not by governors (*ostāndārs*) or council members at the city or village level (in the results section, I offer a brief vignette on how this is done in the Shadegan district of Khuzestan province).

To support the second implication of my argument, that is, to show that resource-rich areas have more public goods, I use provincial-level evidence across both resource-rich and resource-poor areas. Specifically, I use proxy measures of education and health spending – levels and four-year changes in student-teacher ratios and changes in the number of hospital beds per 100,000 persons – at the provincial level to show that resource-rich areas have higher levels of both types of public goods provision than resource-poor areas. It is important to show that these public goods are not just those that are needed by the oil and minerals industries. For this reason, I avoid measures such as percentage of paved roads or electricity usage per capita, given that the oil and minerals industry is itself energy-intensive and

requires functional transportation infrastructure.⁶¹ While these indicators are somewhat crude measures of parliament-approved education and health spending – unfortunately more detailed measures are not publicly available at the district or even provincial level in Iran – both represent factors on which MPs have an influence through approval and amendments of annual budgets.

The third implication of my argument – patronage levels are higher in oil-rich provinces – is tested at the provincial level as well. Because details on patronage distribution through illicit transfers are especially difficult to quantify, I focus on how parliamentarians distribute targeted benefits through the provision of government and public-sector employment. This is measured at the provincial level as the total number of workers employed in the non-oil public sector divided by total employed persons. I also use a measure of public sector employment per capita to account for the possibility that public employment levels are correlated with total employment levels – provinces with low absolute employment levels may be targeted by the central government with more public employment.⁶² It is important to note that using public employment as a proxy for patronage is to a certain extent problematic. There are several other factors driving the level of public employment – for example, economic ideology or the sectoral labor makeup of a given province – so public employment may not be only measuring how deputies distribute patronage. However, given data constraints at the Iranian provincial level, this measure is the closest proxy to patronage that is currently available.

In order to prove the validity of my argument against other rivals, I control for the following factors: (1) MPs who are clerics, which serves as a proxy for elite status and closeness to the regime; (2) number of terms served prior to election, which measures seniority⁶³ and experience; (3) provincial economic indicators, as measured by unemployment levels; (4) provincial development levels, as captured by gross provincial product per capita excluding natural resource production; and (5) ethnic voting, using a dummy for whether ethnic non-Persians collectively make up more than 50% of a province’s population.⁶⁴ In all models I

also include a time trend to capture changes in the political and economic environment not reflected in the above control variables, such as the reconstruction of the country after the end of the Iraq war in 1988, the changes in oil revenues in Iran during the period 1992-2008, and general ideological trends reflected in successive presidencies, moving from economic liberalism (Rafsanjani) to pragmatic reform (Khatami) to conservatism (Ahmadinejad). These factors may or may not affect incumbency or public goods provisions, but are nonetheless included in a simple time trend.⁶⁵ My aim is to show that even after controlling for these factors, the relationship between resource wealth and incumbency reelection rates will still hold.

The statistical method I employ is the Restricted Maximum Likelihood (REML) Random Intercept model with district and province random effects for binary longitudinal (panel) data. Because longitudinal data in general have non-zero correlations across observations of the same subject over time, these correlations must be included when modeling the data. A deputy's reelection chances in one year are likely to be highly correlated with his reelection chances in past elections and in future years. This is also the case in the analysis of mechanisms at the provincial level: for example, provincial health or education spending in one year is expected to be correlated with spending in prior years and in future years. For these reasons, I use the Random Intercept covariance model to account for temporal correlation within subjects.⁶⁶ I use district and province random effects because incumbents within the same province have correlated reelection rates, and incumbents running in multi-member districts have correlated reelection rates with others in the same district.

The convention in the study of longitudinal analysis in the social sciences is to include time and/or spatial (e.g. region, country, province, municipality, etc.) fixed effects in the regression model. Instead, I use covariance modeling and spatial random effects for two reasons. First, using time and/or spatial fixed effects can over-fit the regression model. Adding up to 186 (31 provinces, 6 time periods) different fixed effects in one model can be quite tenuous if we want to properly allow for correlation across time, correlation across

space, and correlation within spatial units over time. Further, we forfeit the very richness of longitudinal data because we lose the ability to measure how specific units change over time.⁶⁷ Third, standard errors can be biased. The problem here is that standard errors for the province fixed effects are potentially biased by the temporal correlation among observations within a province over time.⁶⁸

These concerns notwithstanding, to ensure that the empirical results are not dependent on model specifications, in the appendix I present results from fixed effects models using OLS with clustered standard errors, logistic regression, and REML with province fixed effects and time random effects.⁶⁹

Results

Statistical results, presented in Table 2, support the relationship between resource revenues and incumbency advantage in single-member districts across four parliamentary elections for which there is resource revenue data (1996, 2000, 2004, 2008). Controlling for the factors identified above, the effect of resources on the likelihood of reelection is quite substantively significant: in single-member districts, a 1% increase in resource value added increases the chances of reelection by 3.7%.⁷⁰ Consider a deputy running in a province whose minerals contribute 0.1% to national resource GDP. Were her province to discover a new oil field and were to account for 5% of national resource GDP, her chances of being elected would increase by 15%. In a context where incumbents are only reelected 30% of the time, such an increase in reelection probability is considerably valuable, though still modest when compared to developed democracies.

[Table 2 about here]

As the mechanisms discussed above suggest, deputies should be using resource revenues to buy support and gain an advantage over their rivals. This should only be the case in contexts

where deputies can take credit for the provision of benefits; thus, the resource-incumbency relationship should be strongest in single-member districts. The first five models include interactions between resource revenues and a single-member district dummy, while the last two models split the data into single-member districts and multi-member districts. In the latter two models, the effect of resources on incumbency reelection is positive and statistically significantly different from zero only in single-member districts, while there is no effect in multi-member districts.⁷¹ This result is best interpreted visually: in Figure 3, I present a predicted probability plot of the likelihood of incumbency reelection based on resource revenues for incumbents in single-member districts (SMD) and multi-member districts (MMD). While there is a null effect of resource revenues on incumbency reelection in MMD, there is a clear positive statistical relationship between resource wealth and incumbency reelection chances in SMD. These findings lend support to the theorized mediating effect of electoral institutions on the oil-incumbency relationship: oil wealth does not unconditionally improve reelection chances, but rather these effects are only present when electoral rules help to increase visibility of the incumbent.

[Figure 3 about here]

If using vote shares as a measure of incumbency retention, the results show a similarly positive and significant effect for natural resource wealth. Data is only available for the 2000, 2004, and 2008 elections, but the findings shown in Figure 4 indicate that, controlling for other factors, incumbents from resource-rich provinces win with larger vote shares than their counterparts. Note that this result is for incumbents only; that is, the graph shows the effect of resources on vote shares for seats won by incumbents. It does not provide evidence for a broader argument of incumbent vote shares since data on the vote shares of incumbents who lost is not available.

[Figure 4 about here]

Turning now to the mechanisms of the resource-incumbency relationship, statistical results from regressions based on the observable implications described above are presented in Table 3. These models are run using REML with province fixed effects and time random effects to capture over-time shifts in public goods provisions.⁷²

In the first column, the results of a regression with public employment as a share of total employment are shown. Provinces with more natural resources tend to have more public employees. The coefficient estimate of 0.29 indicates that a 10 percentage-point change in resources — roughly equivalent to the change in Kohgiluyeh & Boyer-Ahmad province from 1996 to 2000 (a 0.5-unit change in logged resources) — corresponds to a 14.5 percentage-point increase in public employment.

When looking at four-year changes in public employment, we see that resource-rich provinces also show higher changes in public employment than resource-poor provinces. It is interesting to note, however, that public employment as a share of total employment is decreasing over time across all provinces, with resource-rich provinces showing a smaller decline than resource-poor provinces.⁷³

[Table 3 about here]

In the third and fourth columns of Table 3, we see that resource-rich provinces have higher levels of and greater four-year changes in public hospital beds (per 100,000 persons), though the latter finding is not strongly robust to different model specifications.⁷⁴ We see the same pattern for education provision. Using student-teacher ratios and four-year changes in student-teacher ratios as measures of education spending, the results from columns five and six show that provinces with more resources also tend to have lower student-teacher ratios (i.e. better education provisions) and lower changes in student-teacher ratios. These effects are visualized in Figure 6 using partial regression plots. Not only do resource-rich provinces have higher levels of education provisions, but the growth in provisions is higher than in non-resource provinces.

[Figure 5 about here]

The last model (column 7) tests the implication that when deputies spend more on targeted benefits such as government employment, they are more likely to be reelected. Controlling for other factors, incumbents are more likely to be reelected when they provide more public employment and more education spending. Substantively, a 10 percentage-point increase in public employment corresponds to a 6.1% increase in the probability of reelection, while for every one unit improvement (decrease) in the student-teacher ratio, there is a corresponding 1.2% improvement in reelection chances. Surprisingly, the coefficient for hospital beds is negative and significant, suggesting a reverse effect – incumbents who provide more hospital beds seem to do worse at the polls — though the effect is rather small in substantive terms. While these findings corroborate with existing distributive politics studies that incumbents who provide more to their districts have higher reelection rates, the data are not refined enough to make strong claims about reelection prospects and public goods provisions. With more detailed measures of goods provisions on public employment, health, and education spending, specifically at the district level instead of the province level, further studies could identify the exact links between incumbency and goods distribution in Iran.

Though not necessarily representative of all other elections, the outcomes of two specific incumbents seeking reelection can help to view the mechanisms discussed above at a more refined level than large- N statistical analysis. Consider the districts of Shadegan, Khuzestan and Borujen, Chahar-mahal & Bakhtiari during the 2008 parliamentary elections. Both are single-member districts in southwest Iran on opposite sides of the Zagros mountains with populations of approximately 50,000 each. Both cities are ethnically heterogeneous: Shadegan is composed of Arabs (the majority), Lurs, and Persians, while Borujen is home to Bakhtiari Lurs (the majority), Qashqa'i, Kurds, and Persians. Shadegan is located just east of the Shadegan oil field discovered in 1989 and producing roughly 47 thousand barrels per

day (equivalent to 1.2% of Iran’s oil production). Borujen, on the other hand, is oil-poor, with the economy dependent on small industry and agriculture. In Shadegan, local-born Majid Naserinezhad was running for reelection after his first term in office (he won an open seat in the 2004 election) against three other candidates. Riding a small wave of economic success with annual growth in his province of 4% and cutting youth unemployment from 45% to 23% (relatively low for Iran’s standards), Naserinezhad ultimately maintained his seat with 43.4% of the vote in the first round, with no need of competing in a second round run-off. Borujen’s Gholamreza Mirzaei was not so lucky – the incumbent MP was also running for reelection after one term in office but lost to Cyrus Barna Baldaji whose vote share of 32.6% in the first round was enough to win the district’s only seat.

Naserinezhad’s success was in part due to his ability to secure and to take advantage of the province’s resource revenues allocated by the central government, as illustrated by the following transcript from local Khuzestan Provincial TV:

At the session meant to distribute annual finances among provincial cities and executive institutions, Zangeneh who represents Ahvaz [in parliament], Abadan representatives Ansari and Ka’abi and Shadegan’s deputy in the chamber Naserinezhad stressed the need for the government to release both the 2 per cent of oil revenues allocated to the province and [the province’s] annual finances.

...

The deputy governor-general and head of the provincial management and planning department of the province [responded] there has been a 39 per cent increase in the development finances of the province. He added at today’s session 518bn tumans (520mn USD) in current finances and 498bn tumans (500mn USD) in development finances were distributed among executive institutions and different provincial cities.⁷⁵

Reports from one year later (during the election year) indicated this money had been spent across nine districts, Shadegan among them, on projects related to “pressurized water irrigation, three lines of ready concrete production, a tar production factory, weather forecast stations, 14 educational units, four dairy farms, four BTS cell phone centres, drilling three wells, a medical centre in a village, 55 residential units, road construction and five water supply projects.”⁷⁶

Meanwhile, MP Mirzaei faced an uphill battle in his district because of the inability to provide funding for his constituents. A report one and a half years prior to the election noted that “15 villages in this area (Borujen and Lardogen) with a population of 8,000 do not have public baths and it would cost only 500 million tomans (500k USD) to solve this problem using the best building materials.”⁷⁷ The funding was never received, and Mirzaei could not address the poor water and health standards in his district. In line with the hypotheses tested above, Naserinezhad was expected to retain his seat while Mirzaei, running in an oil-poor district, was disadvantaged due to his inability to target spending to his constituency.

The statistical evidence, along with a brief two-district analysis, supports the three hypotheses stated in the previous section. (1) Deputies running in resource-rich districts have higher incumbency reelection rates than in resource-poor districts, consistent with deputies providing (2) more health and education provisions, and (3) more patronage jobs in resource-rich provinces than in resource-poor provinces. I have also shown weaker evidence that deputies in provinces with more public goods and patronage levels have higher incumbent reelection rates.

Discussion

What other factors could be driving the pattern between resources and incumbent reelection? In this section, I discuss one possible alternative explanation based on ethnic politics and post-war reconstruction efforts; in the appendix I address two other alternatives based on the issues of candidate vetting and challenger characteristics.

Given that some resource-rich provinces are also ethnically heterogeneous, it could be the case that these provinces have higher incumbent reelection rates for reasons relating to ethnic politics and not because they contain natural resources. For example Khuzestan province is more than 50% ethnically Arab, and Ilam province is composed of Kurds, Lurs, and Laks. Ethnic minorities in resource-rich regions could be voting along co-ethnic lines.⁷⁸

If this were the case, these districts should be expected to have higher incumbent reelection rates for reasons unrelated to natural resource wealth, but rather related to co-ethnic voting patterns. Though the regressions above contain a dummy variable for provinces that are more than 50% ethnically non-Persian, the crudeness of this measure may not be capturing the subtleties of the impact of ethnicity on legislative elections, nor can it capture the degree of ethnic heterogeneity.

One way to address this issue is with a detailed comparison of incumbent reelection rates within a resource-rich province between districts with high concentrations of ethnic minorities and districts predominantly made up of ethnic Persians. The most resource-rich province in Iran is undoubtedly Khuzestan, which is comprised of ethnic Arabs, Lurs, Persians, and various smaller tribes. If ethnic politics is an explanation for the resource-incumbency relationship, then we should expect to see that within Khuzestan predominantly Arab districts should have higher incumbent reelection rates than the predominantly Persian districts. Looking at six elections between 1988 and 2008, there is no empirical support for this pattern: on average, Persian districts⁷⁹ actually have *higher* incumbent reelection rates (42.9%) than Arab districts⁸⁰ (39.7%), though this difference is not statistically significant in a simple two-sample *t*-test.⁸¹ A more conservative conclusion is that incumbent reelection rates are the same on average across both groups.⁸²

A second issue is ethnic fragmentation caused by the eight-year war with Iraq and post-war emigration patterns. Regarding Khuzestan specifically, Kaveh Ehsani's work has shown that many of the ethnic Persians currently in the province immigrated there after the war, with some allegations that the government sponsored this migration to dilute the predominance of indigenous Arabs in the province.⁸³ The resulting socio-ethnic fragmentation can have a complex effect on electoral politics, with specific ethnic groups choosing to reelect their co-ethnic incumbents in order to prevent outright dominance by any one ethnic faction.⁸⁴ Further, the state embarked on a plan to reconstruct war-damaged areas by sending financial resources and building infrastructure to the localities hit hardest by Saddam's forces.

Yet this alternative hypothesis does not necessarily imply that public goods distribution by MPs as argued in this paper is conflated with public goods distribution by the central government for reconstruction. Because resource-rich provinces in Iran are also the same provinces that are ethnically fragmented because of the war, notably Khuzestan and Bushehr, it may be difficult to differentiate between these mechanisms. However, after removing Khuzestan and Bushehr from the statistical analysis, the results still suggest a relationship between resources and incumbency reelection, albeit now at the 10-percent level of statistical significance.⁸⁵

Additionally, Hooshang Amirahmadi's economic estimates of the war reconstruction effort suggest that state expenditures for reconstruction (roughly \$57bn USD by 1990) were targeted in proportion with the estimated war damages to specific sectors: 55% of the war's \$310bn damages related directly to petroleum infrastructure, while only four percent of damages related directly to housing, roads, telecommunications, and education combined.⁸⁶ This was strategically in line with state reconstruction plans which prioritized rebuilding war-damaged oil assets.⁸⁷ This would imply that while Khuzestan was indeed getting the lion's share of national spending on war reconstruction — given its prominent role in the petroleum industry — state spending on public goods was directed not toward goods that would affect the general voting public but rather toward goods that would benefit the non-labor-intensive petroleum sector. In other words, it is not clear why voters would reward MPs at the ballot box for centrally-planned state expenditures that are largely irrelevant to the average Khuzestani voter.

As for socio-ethnic fragmentation due to migration patterns, if this phenomenon were the root cause of incumbent reelection instead of the natural resources argument advanced here, we should expect other areas experiencing mass migration as a result of the war to also exhibit higher-than-average incumbency rates. While the war undoubtedly altered the demography of Khuzestan, the same can be said of the city of Mashhad. Whereas Persians migrated to Khuzestan after the war, non-Persians from the war-front migrated to Mashhad given that

it is the biggest city farthest from the Iraqi border. The outcome for Mashhad was ethnic heterogeneity where there was once homogeneity: prior to the war, ethnic Persians made up nearly all of the city's population. Now, the city is a mix of Persians, Kurds, Arabs, and Turks. If indeed socio-ethnic fragmentation caused by post-war migration were to increase incumbent reelection prospects, we should expect electoral success for incumbent *Mashdi* MPs. The data show the opposite pattern: since the 1992 elections, only five incumbents have been reelected out of a possible twenty-five seats (five seats per election, over five elections). Three of these incumbents — Shari'ati-Kuh-Banāni, Ārin-Manesh, and Fāker — only recently held their seats in the 2008 elections, meaning that of the twenty previous opportunities for incumbents to hold their seats, only two were successful (Bi-Hāshemi in 1992, and Seyyedi-Alavi in 1996). This is all the more surprising considering the mass influx of state expenditures into the city since 1988, given its stature as the only Iranian city enshrining one of the twelve Shi'a Imams. Yet, like the case of war reconstruction funding in Khuzestan, this money goes from the central state into developing the Imam Reza Shrine and the airport, with little funding targeted by the center towards education, health, and housing. Viewed in this light, it is no surprise that MPs from Mashhad cannot retain office; with more discretionary revenue at their disposal, perhaps their electoral fortunes would be altered.

Still, because of the lack of reliable data on socio-ethnic fragmentation and district-level war reconstruction spending in Iran, it is difficult at this point to make strong claims to refute rival explanations based on ethnic politics and the eight-year war with Iraq. In particular, restricting an analysis of ethnic politics into one of being ethnically Persian versus non-Persian ignores the rich complexity of ethnic heterogeneity. Unfortunately, data are not available on the degree of ethnic heterogeneity within districts or even provinces, so a proper analysis of socio-ethnic politics in the context of incumbent reelection remains to be seen.⁸⁸ Further research on ethnic politics in Iranian parliamentary elections is needed before reaching a meaningful conclusion on how ethnicity affects incumbent reelection in

resource-rich provinces.

Conclusion

In this study, I show that incumbent parliamentarians in a developing, authoritarian regime use oil and mineral wealth to prolong their tenures in office. By testing mechanisms proposed by resource curse scholars within a sub-national non-democratic context, this work provides insights into the study of electoral authoritarianism within a resource-rich setting. Specifically I show that by using discretionary funds in the form of natural resource revenues, Iranian MPs distribute public and private goods to constituents in order to increase their probability of reelection. The strongest effects of resources on incumbency reelection are observed in single-member districts, with little evidence of a statistical relationship in multi-member districts. Thus, one mechanism driving the resource-incumbency relationship is based on electoral institutions that foster personal connections with voters: by spending on patronage appointments and delivering targeted public spending to their constituents, incumbent MPs in resource-rich single-member districts perform better at the polls than incumbents in resource-poor districts or multi-member districts.

Methodologically, I analyze the effects of resource wealth on incumbency reelection chances in a way that is not susceptible to claims of reverse causality, as has been the case in much of the resource curse literature linking resource wealth to incumbency durability. Because Iranian deputies have no authority over production decisions nor over how much resource revenue their districts will receive, deputies' decisions on how to spend the money to their advantage cannot affect how much revenue they will be allocated from natural resource production in the future.

Yet studying Iranian politics presents many challenges to making refined inferences. Throughout the paper, I highlight several weaknesses, either based on data availability at the micro-level of analysis or simply based on how little we know about the intricacies of the

Iranian political system. Important questions remain on how ethnic heterogeneity can affect politics at the local level, and how individual voters in Iran perceive the responsibilities of politicians at differing levels of government.

Nearly all scholars of Iranian government stress the parallel nature of politics in the Islamic Republic.⁸⁹ On one side there is the “known” structure of authority based on the hierarchies of the system, from the Supreme Leader to the Guardian Council and Judiciary to MPs and the President and on down to village councilmen. On the other side there is the “unknown”, where scholars can only make speculations about the power dynamics of groups such as the Revolutionary Guards, paramilitary forces (*basisj*), and the all-encompassing *bonyād* organizations. The present study is an attempt to understand politics within the framework of the “known” Iranian political system, but its weaknesses derive largely from the inability to refute rival explanations stemming from the “unknown,” such as the true fiscal power of parliament when compared to the *bonyād* system. Future research on Iranian politics will need to better understand the unelected tiers of government in Iran and the many quasi-state organizations that make up the fabric of Iranian political society.

Notes

¹Quoted by BBC news, <http://www.bbc.co.uk/news/world-middle-east-17229164>.

²These low incumbency retention rates follow the pattern of what has been termed “incumbency disadvantage” by the literature on subnational politics in the developing world. See Aidt, Golden and Tiwari (2011); Klašnja (2013); Myerson (2006); Svulik (2012).

³Throughout this paper, I use the terms “oil”, “minerals”, and “resources” interchangeably. While Iranian provinces produce minerals such as iron ore, copper, and marble, oil accounts for roughly 90% of all resource-related revenue.

⁴Note that the nature of local politics in Iran is changing, as the first mayoral and city council elections began in 1999 and 2003, with the first nation-wide local elections held in 2005.

⁵Baktiari (1996); Moslem (2002); Namazi (2000); Sanandaji (2009); Parsons (2010).

⁶Goldberg, Wibbels and Mvukiyehe (2008); Monteiro and Ferraz (2010); Ross (2012).

⁷Blaydes (2011); Corstange (2012); Lust-Okar (2006); Magaloni (2006); Pop-Eleches (2010); Tucker (2002).

⁸Powell (2000); Moser and Scheiner (2012).

⁹Ross (2001, 2009, 2012).

¹⁰Mahdavy (1970); Beblawi and Luciani (1987).

¹¹See Haber and Menaldo (2011) and Menaldo (2013).

¹²Gross reelection rates take into account incumbents who choose not to run again and do not count these as cases where the incumbent lost, while net reelection rates do not account for incumbents who do not run again.

¹³Keshavarzian (2005).

¹⁴Robin Wright (ed.), *The Iran Primer: Power, Politics, and U.S. Policy* (Washington, DC: Woodrow Wilson International Center for Scholars, 2010).

¹⁵Baktiari (1996).

¹⁶Alem (2011).

¹⁷As Lust-Okar and Jamal (2002) point out, however, these institutional decisions are not exogenous, with majoritarian rules intended to favor the division of political power in monarchies (as in Kuwait) and more proportional rules intended to promote single-party parliamentary monopolies (as in Algeria).

¹⁸It is worth noting that the Guardian Council vets on ideological grounds. Though the exact data is never released, there is good reason to believe that disqualifications are distributed evenly across regions, with the exception of those running in Tehran, the center of government, where candidates are vetted at much higher rates. See Moslem (2002).

¹⁹Moslem (2002, 227-40). The quotation from Morteza Navabi is cited on page 238.

²⁰Gheissari (2009, 275).

²¹Jensen and Wantchekon (2004); Ulfelder (2007); Ross (2012).

²²Mahdavy (1970); Beblawi and Luciani (1987).

²³Mahdavy (1970, 432).

²⁴Ross (2001); Smith (2004).

²⁵Morrison (2009).

²⁶Haber and Menaldo (2011); Menaldo (2013).

²⁷Goldberg, Wibbels and Mvukiyehe (2008); Monteiro and Ferraz (2010). Additionally, work by Cruz and Schneider (2012) in the Philippines examines the connection between incumbency advantage and foreign aid, similar to natural resource wealth in its volatility and non-tax revenue characteristics.

²⁸Caselli and Michaels (2009).

²⁹Dunning (2008).

³⁰Crouch (1979).

³¹Lust-Okar (2006, 459).

³²Pop-Eleches (2010); Tucker (2002).

³³Corstange (2012, 483).

³⁴Magaloni (2006); Blaydes (2011).

³⁵Malesky, Abrami and Zheng (2011).

³⁶Aidt, Golden and Tiwari (2011); Wantchekon (2003).

³⁷Grossman and Helpman (2001).

³⁸See Cain, Ferejohn and Fiorina (1987); Austen-Smith and Banks (1988).

³⁹See Fiorina (1978); Kinder and Kiewiet (1979).

⁴⁰Fenno (1978).

⁴¹Birnir (2007).

⁴²Powell (2000); Moser and Scheiner (2012).

⁴³See Karshenas and Malik (2011).

⁴⁴Uppal (2009); Lust-Okar (2006); Bernhard and Karakoc (2011); Cruz and Schneider (2012). See Table B.18 for incumbency turnover rates in selected countries.

⁴⁵Uppal (2009) argues that incumbents in India are disadvantaged due to a lack of public goods provision and a general lack of economic development in most legislative districts. As such, voters are routinely dissatisfied with incumbent politicians who fail to improve economic circumstances, only to elect new incumbents who seem to fall in the same trap. (On this point, see also the work by Svobik (2012).) Work by Titunik and Klačnjak (2009)

stresses that incumbents in developing contexts are disadvantaged due to the weakness of political parties, where elections become solely based on individual candidate attributes.

⁴⁶Baktiari (1996); Moslem (2002).

⁴⁷Karshenas and Malik (2011).

⁴⁸Baktiari (1996); Chehabi (1990).

⁴⁹Quoted in Baktiari (1996, 221).

⁵⁰Muhammad Ali Qasemi, Bahram Sarmast, and Ali Kiani (2011), “Clientelism in provincial Iran: evidences from some constituencies in Iranian Azarbayjan,” Unpublished Manuscript.

⁵¹“Reformers Win in Parliamentary Polls”, *Keyhān* [Iranian newspaper] February 21, 2000.

⁵²Summary Statistics for all variables discussed are presented in Table B.3 in the appendix.

⁵³Islamic Consultative Assembly (Parliament) of Iran, “Mo’arefi-ye Namāyanegān-e Majles-e Shuri-ye Eslāmi: Dowre-ye Hashtom [Biographies of Members of the Islamic Consultative Assembly: 8th Session]” (Tehran: Central Library of the Islamic Consultative Assembly, 2008). These biographies are available online on the parliament’s website for the last two elections; prior years’ biographies are available in Persian from the Princeton Data Portal, <http://www.princeton.edu/irandataportal/elections/>

⁵⁴Ministry of Interior: Management and Planning Organizations, *Iran Statistical Yearbook*, (Tehran: Statistical Centre of Iran, multiple volumes).

⁵⁵As a robustness check for the first set of models, I include two alternative measures of provincial resource wealth. The first is “oil income per capita” in 10,000s of rials (equivalent to roughly one dollar). The second is “oil share of province-level GDP” which captures resource reliance at the province level. Results from regressions using these measures are presented in Tables B.4 and B.5.

⁵⁶An English translation and analysis of the Constitution can be found in Rouhollah

Ramezani, "Constitution of the Islamic Republic of Iran," *Middle East Journal* 34(Spring 1980): 181-204.

⁵⁷On the other hand, allocations for defense and other national-level expenditures are closely monitored by the executive branch and the unelected tiers of government.

⁵⁸Ehsan Keivani, "Southeastern province MPs expect bigger budget for new year," Press TV, Tehran (Dec 11, 2013).

⁵⁹Moslem (2002).

⁶⁰See Table B.11.

⁶¹It is also useful to note that the oil industry is not labor-intensive, implying that *ceteris paribus* oil areas should not have more well-paid employment or higher employment levels on average. In fact, according to the Ministry of Labor in 2008, the oil areas in Iran tend to have higher than average levels of unemployment. This is consistent with findings in the resource curse literature: economically, oil sectors tend to lower average wages, increase unemployment, and increase inflation.

⁶²Both measures control for those employed in the national oil industry, since oil areas irrespective of backwardness will appear to have higher percentages of state employment due to the simple fact that the oil sector is run by the state. One could argue that employment in NIOC, Iran's national oil company, may be considered patronage in and of itself, as is the case for Petroleos Mexicanos in Mexico. However, these employment decisions are not made by deputies but rather are made by the president through the Minister of Petroleum. See Mahdavi (2012).

⁶³We could also roughly translate seniority to being a member of the clergy, since clerics have several institutional advantages in Iranian elections: they are rarely vetted, have access to voters through social networks such as Mosques and the routine Friday Prayers, and they are generally the only political actors who can serve at higher levels of government.

⁶⁴Turnout is not included as a control, but it is important to note that there is no correlation between turnout and resources or incumbency at the province level. See Appendix Table B.17.

⁶⁵Models are also tested using time fixed effects and time random effects instead of a trend variable, with similar results. See Tables B.6, B.7, and B.8. As a reference, the change in government revenues from oil (in real year-2000 trillion rials) is as follows: 1980: 41.0; 1988: 9.1; 1992: 30.0; 2000: 59.4; 2008: 155.9. Source: Central Bank of Iran.

⁶⁶For the analysis presented below, I assume equicovariance and fixed slopes given the difficulty in employing non-constant variance covariance models for discrete longitudinal outcomes. For the models with continuous dependent variables, I fit a variety of different covariance models but profile plots of outcome over time and within-subject residuals, correlation matrices, likelihood ratio tests, and AIC/BIC indicate the Random Intercept model is the best fit.

⁶⁷In these cases, we are simply comparing all province- or country-year units to each other as if each is an individual unit. Instead, by estimating the residual covariance structure, we again avoid the use of year and province/district dummies in the model. And in using spatial random effects (modeling varying intercepts) we take advantage of partial pooling. See Bafumi and Gelman (2006, 4).

⁶⁸On this point, see Weiss (2005).

⁶⁹See Tables B.6–B.8, and for public goods regressions, Tables B.12–B.14. Further, a Hausman Test comparing the fixed effects model to the random effects model gives a Chi-squared value of 2.7708 with six degrees of freedom for a p -value of 0.837; thus we cannot reject the null hypothesis that the random effects assumptions hold. This test was run in R 3.0 using the “phtest” command from the “plm” package.

⁷⁰This estimate is calculated by adding the coefficient for resources (-0.004) to the coefficient for the interaction term (0.041). Note that this is at the mean value of *logged* oil and

minerals value added.

⁷¹In Table B.10, I break down the results into two-, three-, and four-member districts or more in order to show that the null effect in multi-member districts is constant across district magnitude.

⁷²Alternative model specifications are presented in Tables B.12–B.14. In Table B.15, I show the results of the regressions in Table 3 plus a control for provinces that contain only single-member districts (see Table 1). Though I do not have data for public goods provisions at the district level, these results suggest that there is less public goods provision in provinces with multi-member districts, with weaker evidence that this pattern holds for health provisions.

⁷³This is due to the growing denominator — total employed persons — over time, because private-sector jobs are increasing faster than public-sector jobs from 1996 to 2008. See Table B.16.

⁷⁴See specifically Table B.12.

⁷⁵“New governor-general of Khuzestan Province to be named soon - Iranian official.” Vision of the Islamic Republic of Iran Khuzestan Provincial TV (19 May 2007). Text recorded by BBC Monitoring Middle East (May 20, 2007). Date Accessed: 01/21/2014.

⁷⁶“Various projects exploited in Khuzestan Province.” Vision of the Islamic Republic of Iran Khuzestan Provincial TV (26 August 2008). Text recorded by BBC Monitoring Middle East (August 26, 2008). Date Accessed: 02/11/2014.

⁷⁷“Iran press: Discretionary spending of president, provincial trips criticised.” BBC Monitoring Middle East - Political (May 16, 2006). Date Accessed: 01/21/2014.

⁷⁸Birnir (2007, 10).

⁷⁹Persians make up the plurality in these districts: Dezful, Andimashk, Bagh-e Molk, Masjed Soleiman, Lali, Haftgol, Andika, Dasht-e Azadegan, Havize, Behbahan, Ramhormoz,

Ramshir, Shush, and Ideh.

⁸⁰Arabs make up the plurality in the following districts: Abadan, Ahvaz, Bandar Mahshahr, Omidie, Hendijan Shushtar, Gatunad, Shush Danial, Khoramshahr, Shadegan.

⁸¹The national average over this period is 31.8%.

⁸²A second pattern we should expect to see if ethnic Arab politics are driving high incumbent reelection rates is that predominantly Arab districts in resource-poor provinces should have similarly high reelection rates as the ones in resource-rich Khuzestan. In Hormozgan province, Arabs makes up the majority in the Bandar Langeh and Haji Abad districts. Hormozgan is not resource-rich — it does not receive resource revenue allocations for offshore petroleum fields. Though the sample size is quite small, incumbents in resource-poor Arab districts (in Hormozgan) are reelected on average only 29.2% of the time, while incumbents in resource-rich Arab districts (in Khuzestan) are reelected 40.0% of the time.

⁸³Ehsani (2003, 2009).

⁸⁴Tohidi (2009) and Sanasarian (2000) make this case for why incumbent Azeris and Kurds fare better than Persians in the western and northwestern provinces.

⁸⁵These results are presented in Table B.9.

⁸⁶Calculated based on Amirahmadi (1990, 31).

⁸⁷Ibid., 32-34.

⁸⁸The works of Kaveh Ehsani, Nayereh Tohidi, and Eliz Sanasarian similarly find this issue frustrating within the Iranian context; even specific analyses of Iranian presidential elections, such as the work by Ali Gheissari and Kaveh-Cyrus Sanandaji, can do no better than dividing districts and provinces into Persian vs. non-Persian.

⁸⁹Baktiari (1996); Moslem (2002); Keshavarzian (2005); Gheissari (2009).

References

- Aidt, Toke, Miriam A. Golden and Devesh Tiwari. 2011. "Incumbents and Criminals in the Indian National Legislature." Manuscript, UCLA.
- Alem, Yasmin. 2011. *Duality by Design: The Iranian Electoral System*. Washington, DC: IFES.
- Amirahmadi, Hooshang. 1990. "Economic Reconstruction of Iran: Costing the War Damage." *Third World Quarterly* 12(1):26–47.
- Austen-Smith, David and Jeffrey Banks. 1988. "Elections, Coalitions, and Legislative Outcomes." *American Political Science Review* 82(2):405–422.
- Bafumi, Joseph and Andrew Gelman. 2006. "Fitting Multilevel Models When Predictors and Group Effects Correlate." Paper presented at the annual meeting of the Midwest Political Science Association, Chicago, April 20–23.
- Baktiari, Bahman. 1996. *Parliamentary Politics in Revolutionary Iran: The Institutionalization of Factional Politics*. Gainesville, FL: University Press of Florida.
- Beblawi, Hazem and Giacomo Luciani. 1987. *The Rentier State*. London: Croom Helm.
- Bernhard, Michael and Ekrem Karakoc. 2011. "Moving West or Going South?: Economic Transformation and Institutionalization in Postcommunist Party Systems." *Comparative Politics* 44(1):1–20.
- Birbir, Johanna K. 2007. *Ethnicity and Electoral Politics*. Cambridge, UK: Cambridge University Press.
- Blaydes, Lisa. 2011. *Elections and Distributive Politics in Mubarak's Egypt*. New York: Cambridge University Press.
- Cain, Bruce, John Ferejohn and Morris Fiorina. 1987. *The Personal Vote: Constituency Service and Electoral Independence*. Cambridge, MA: Harvard University Press.
- Caselli, Francesco and Guy Michaels. 2009. "Do Oil Windfalls Improve Living Standards? Evidence from Brazil." *American Economic Journal: Applied Economics* 5(1):208–38.
- Chehabi, Houchang E. 1990. *Iranian Politics and Religious Modernism*. Ithaca, NY: Cornell University Press.
- Corstange, Daniel. 2012. "Religion, Pluralism, and Iconography in the Public Sphere: Theory and Evidence From Lebanon." *World Politics* 64(1):116–60.
- Crouch, Harold. 1979. "Patrimonialism and Military Rule in Indonesia." *World Politics* 31(4):571–87.
- Cruz, Cesi and Christina J Schneider. 2012. "The (Unintended) Electoral Effects of Foreign Aid Projects." Manuscript, UCSD.

- Dunning, Thad. 2008. *Crude Democracy*. New York: Cambridge University Press.
- Ehsani, Kaveh. 2003. "Social Engineering and the Contradictions of Modernization in Khuzestan's Company Towns: A Look at Abadan and Masjed-Soleyman." *International Review of Social History* 48(3):361–399.
- Ehsani, Kaveh. 2009. The Urban Provincial Periphery in Iran: Revolution and War in Ramhormoz. In *Contemporary Iran: Economy, Society, Politics*, ed. Ali Gheissari. Oxford, UK: Oxford University Press.
- Fenno, Richard. 1978. *Home Style: House Members in Their Districts*. Boston: Little and Brown.
- Fiorina, Morris. 1978. "Economic retrospective voting in American national elections: A micro-analysis." *American Journal of Political Science* 22:426–443.
- Gheissari, Ali, ed. 2009. *Contemporary Iran: Economy, Society, Politics*. Oxford, UK: Oxford University Press.
- Goldberg, Ellis, Erik Wibbels and Eric Mvukiyehe. 2008. "Lessons from Strange Cases: Democracy, Development, and the Resource Curse in the U.S. States." *Comparative Political Studies* 41(4):477–514.
- Grossman, Gene and Elhanan Helpman. 2001. *Special Interest Politics*. Cambridge, MA: The MIT Press.
- Haber, Stephen and Victor Menaldo. 2011. "Do Natural Resources Fuel Authoritarianism? A Reappraisal of the Resource Curse." *American Political Science Review* 105(1):1–26.
- Jensen, Nathan and Leonard Wantchekon. 2004. "Resource wealth and political regimes in Africa." *Comparative Political Studies* 37(7):816–841.
- Karshenas, Massoud and Adeel Malik. 2011. Oil in Iran: Dependence, Distortions, and Distribution. In *Plundered Nations?*, ed. Paul Collier and Anthony Venables. New York: Palgrave MacMillan.
- Keshavarzian, Arang. 2005. Contestation Without Democracy: Elite Fragmentation in Iran. In *Authoritarianism in the Middle East*, ed. Marsha Posusney and Michele Angrist. Lynne Reinner.
- Kinder, Donald and D. Roderick Kiewiet. 1979. "Economic discontent and political behavior: The role of personal grievances and collective economic judgments in congressional voting." *American Journal of Political Science* 23(3):495–527.
- Klašnja, Marko. 2013. "Increasing Rents and Incumbency Disadvantage." Manuscript, NYU.
- Lust-Okar, Ellen. 2006. "Elections under authoritarianism: Preliminary lessons from Jordan." *Democratization* 13(3):456–471.

- Lust-Okar, Ellen and Amaney A. Jamal. 2002. "Rulers and Rules: Reassessing the Influence of Regime Type on Electoral Law Formation." *Comparative Political Studies* 35(3):337–66.
- Magaloni, Beatriz. 2006. *Voting for Autocracy: Hegemonic Party Survival and its Demise in Mexico*. New York: Cambridge University Press.
- Mahdavi, Paasha. 2012. Oil, monarchy, revolution, and theocracy: a study on the National Iranian Oil Company (NIOC). In *Oil and Governance*, ed. Mark C. Thurber, David Hults and David G. Victor. Cambridge, UK: Cambridge University Press.
- Mahdavy, Hussein. 1970. The Patterns and Problems of Economic Development in Rentier States: the Case of Iran. In *Studies in Economic History of the Middle East*, ed. M. A. Cook. London: Oxford University Press.
- Malesky, Edmund, Regina Abrami and Yu Zheng. 2011. "Institutions and Inequality in Single-Party Regimes: A Comparative Analysis of Vietnam and China." *Comparative Politics* 43(4):401–21.
- Menaldo, Victor. 2013. "The Institutions Curse: The Theory and Evidence of Oil in Weak States." Manuscript, University of Washington.
- Monteiro, Juan and Claudio Ferraz. 2010. "Does Oil Make Leaders Unaccountable? Evidence from Brazil's Offshore Oil Boom." Manuscript, PUC-Rio.
- Morrison, Kevin M. 2009. "Oil, Nontax Revenue, and the Redistributive Foundations of Regime Stability." *International Organization* 63(1):107–38.
- Moser, Robert G. and Ethan Scheiner. 2012. *Electoral Systems and Political Context: How the Effects of Rules Vary Across New and Established Democracies*. New York: Cambridge University Press.
- Moslem, Mehdi. 2002. *Factional Politics in Post-Khomeini Iran*. Syracuse, NY: Syracuse University Press.
- Myerson, Roger. 2006. "Federalism and Incentives for Success in Democracy." *Quarterly Journal of Political Science* 1(1):3–23.
- Namazi, Siamak. 2000. "The Sixth Majles Elections in Iran: What Happened and What Can We Expect." *Journal of Iranian Research and Analysis* 16(1):14–22.
- Parsons, Nigel. 2010. "Electoral Politics in Iran: Rules of the Arena, Popular Participation, and the Limits of Elastic in the Islamic Republic." *The Middle East Institute Policy Brief* 30:1–13.
- Pop-Eleches, Grigore. 2010. "Throwing Out the Bums: Protest Voting and Unorthodox Parties after Communism." *World Politics* 62(2):221–60.
- Powell, G. Bingham. 2000. *Elections as Instruments of Democracy*. New Haven: Yale University Press.

- Ross, Michael L. 2001. "Does Oil Hinder Democracy?" *World Politics* 53(3):325–361.
- Ross, Michael L. 2009. "Oil and Democracy Revisited." Manuscript, UCLA.
- Ross, Michael L. 2012. *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations*. Princeton, NJ: Princeton University Press.
- Sanandaji, Kaveh-Cyrus. 2009. "The Eighth Majles Elections in the Islamic Republic of Iran: A Division in Conservative Ranks and the Politics of Moderation." *Iranian Studies* 42:621–648.
- Sanasarian, Eliz. 2000. *Religious Minorities in Iran*. Cambridge, UK: Cambridge University Press.
- Smith, Benjamin. 2004. "Oil Wealth and Regime Survival in the Developing World, 1960–1999." *American Journal of Political Science* 48(2):232–46.
- Svolik, Milan. 2012. "Learning to Love Democracy: Electoral Accountability and the Success of Democracy." *American Journal of Political Science* 57(3):1–18.
- Titunik, Rocio and Marko Klačnja. 2009. "Incumbency Disadvantage in Weak Party Systems: Evidence from Brazil." Manuscript, University of Michigan.
- Tohidi, Nayereh. 2009. Ethnicity and Religious Minority Politics in Iran. In *Contemporary Iran: Economy, Society, Politics*, ed. Ali Gheissari. Oxford University Press.
- Tucker, Joshua. 2002. "The first decade of post-communist elections and voting: what have we studied, and how have we studied it?" *Annual Review of Political Science* 5(1):271–304.
- Ulfelder, Jay. 2007. "Natural-Resource Wealth and the Survival of Autocracy." *Comparative Political Studies* 40(8):995–1018.
- Uppal, Yogesh. 2009. "The disadvantaged incumbents: estimating incumbency effects in Indian state legislatures." *Public Choice* 138(1-2):9–27.
- Wantchekon, Leonard. 2003. "Clientelism and Voting Behavior: Evidence from a Field Experiment in Britain." *World Politics* 55(3):399–422.
- Weiss, Robert E. 2005. *Modeling Longitudinal Data*. New York: Springer.

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Tables and Figures

	1988	<i>Seats</i> 1996	2008	<i>Districts</i> 2008
Ardebil		6	7	5
East Azerbaijan	24	17	17	13
West Azerbaijan	11	11	12	9
Bushehr*	3	3	3	3
Chahar Mahal & Bakhtiari*	2	3	3	3
Esfahan	19	19	19	15
Fars	16	17	18	15
Gilan	13	13	13	11
Golestan			7	6
Hamedan	9	9	9	7
Hormozgan	4	4	5	3
Ilam	2	2	3	2
Kerman	10	10	10	9
Kermanshah	8	8	8	6
Khorasan	24	24		
North Khorasan			4	3
Khorasan-e Rezavi			17	12
South Khorasan*			4	4
Khuzestan	17	17	18	14
Kohgiluyeh & Boyerahmad*	2	2	3	3
Kordestan	6	6	6	5
Lorestan	7	7	9	7
Markazi	7	5	7	6
Mazandaran	17	18	12	9
Qazvin			4	3
Qom		2	3	1
Semnan*	4	4	4	4
Sistan & Baluchestan	7	7	8	6
Tehran	41	37	38	8
Yazd*	3	3	4	4
Zanjan	9	6	5	4
Total number of seats	265	265	285	200

(*) denotes a province with only single-member districts as of 2008.

(**bold**) denotes a resource-rich province (> 1% share of national GDP generated by resources)

Table 1: Seat distribution in the Iranian parliament by province, select years, and districts per province, 2008. Source: Ministry of Interior. Note: Ardebil split from West Azerbaijan in 1994; Qazvin split from Tehran in 1993 (with seats first being added in the 2000 election); and Golestan split from Mazandaran in 1997. Khorasan was split into three provinces in 2004. This list does not include at-large seats constitutionally allocated to religious minorities. The increasing seat numbers reflect growing population trends by province.

	1	2	3	4	5	6	SMD	MMD
Intercept	0.226** (0.114)	0.209* (0.111)	0.207* (0.111)	0.032 (0.238)	0.520* (0.283)	0.511* (0.304)	0.636 (0.391)	0.790* (0.447)
Resources (log)	-0.009 (0.013)	-0.011 (0.012)	-0.011 (0.012)	-0.013 (0.012)	-0.004 (0.013)	-0.004 (0.013)	0.035*** (0.010)	0.000 (0.014)
SMD Dummy	0.276*** (0.100)	0.278*** (0.097)	0.272*** (0.098)	0.279*** (0.098)	0.278*** (0.098)	0.278*** (0.098)		
Resources (log) \times SMD	0.040*** (0.015)	0.041*** (0.015)	0.040*** (0.015)	0.041*** (0.015)	0.041*** (0.015)	0.041*** (0.015)		
Session (time)	-0.001 (0.013)	-0.005 (0.012)	-0.005 (0.012)	-0.027 (0.029)	-0.014 (0.029)	-0.015 (0.032)	-0.067 (0.045)	0.067 (0.048)
Number of prior terms		0.095*** (0.017)	0.093*** (0.017)	0.093*** (0.017)	0.092*** (0.017)	0.092*** (0.017)	0.081*** (0.023)	0.109*** (0.027)
Cleric dummy			0.025 (0.039)	0.023 (0.039)	0.019 (0.039)	0.019 (0.039)	0.033 (0.050)	0.003 (0.061)
GDP per capita (log)				0.033 (0.039)	-0.005 (0.041)	-0.004 (0.046)	0.048 (0.064)	-0.087 (0.067)
Unemployment rate					-0.013*** (0.004)	-0.013*** (0.004)	-0.014*** (0.005)	-0.011* (0.007)
Ethnic minority dummy						0.002 (0.031)	0.045 (0.039)	-0.078 (0.052)
N Observations	1075	1075	1075	1075	1075	1075	627	448
Groups(Districts)	200	200	200	200	200	200	167	33
Groups(Provinces)	31	31	31	31	31	31	30	25
AIC	1405	1383	1389	1395	1396	1404	841	600
BIC	1445	1428	1439	1449	1446	1468	890	645
-2log L	-695	-682	-685	-686	-686	-689	-410	-289

Standard errors in parentheses

* significant at $p < .10$; ** $p < .05$; *** $p < .01$

Table 2: REML Random Intercept model of incumbent reelection chances, 1996-2008. Dependent variable is binary, whether incumbent is reelected or not. SMD and MMD models refer to model 6 re-run for just Single-Member Districts (SMD) and re-run including only Multi-Member Districts (MMD). Session is a time covariate, numerical value of given parliamentary session. Resources (log) is the share of national GDP generated by minerals and petroleum production for each province, logged. Prior terms is the number of parliamentary sessions held by a given deputy, not including the term held prior to a given election. Cleric dummy is a binary variable for whether the deputy is a cleric or not. GDP/capita is the provincial GDP per capita in ten-million nominal rials, not including GDP generated from the production of minerals and petroleum. Unemployment rate is for population aged 10 and over at the provincial level. Ethnic minority dummy is a binary indicator of whether a province is composed of more than 50% ethnic non-Persians. All covariates are lagged one year. See text for data sources.

	1	2	3	4	5	6	7
Resources (log)	0.290** (0.136)	0.927*** (0.291)	5.139*** (0.837)	0.068*** (0.015)	-0.511*** (0.117)	-0.034*** (0.004)	
GDP/cap (log)	-2.839*** (0.132)	-22.789*** (2.036)	56.832*** (5.882)	-0.410*** (0.100)	-3.974*** (0.454)	0.143*** (0.027)	0.033 (0.058)
Pub. emp.		-0.027*** (0.004)					0.605** (0.267)
Hospital beds				0.000 (0.000)			-0.002* (0.001)
S-T ratio						0.039*** (0.001)	-0.012*** (0.004)
AIC	3197	4090	5935	-910	2870	-2644	1406
BIC	3360	4258	6099	-758	3034	-2476	1461
-2 log L	-1563	-2009	-2932	491	-1400	1358	-692

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3: REML Random Intercept models of public good provision and patronage with province fixed effects and time random effects (31 provinces, 4 time periods). Dependent variables for each model: (1) Public Employment as a share of total province employment; (2) Four-year changes in public employment; (3) Hospital beds per 100,000 persons; (4) Four-year changes in hospital beds; (5) Student-teacher ratio; (6) Four-year changes in student-teacher ratio. The last regression (7) models determinants of incumbency reelection using REML with province random effects (31 provinces, 200 districts, 4 time periods), controlling for time, logged population, prior terms, and a single-district dummy (coefficients omitted). Covariates, unabbreviated: resources value-added per province (logged), non-resource GDP per capita (logged), public employment as share of total province employment, hospital beds per 100,000 persons, student-teacher ratio.

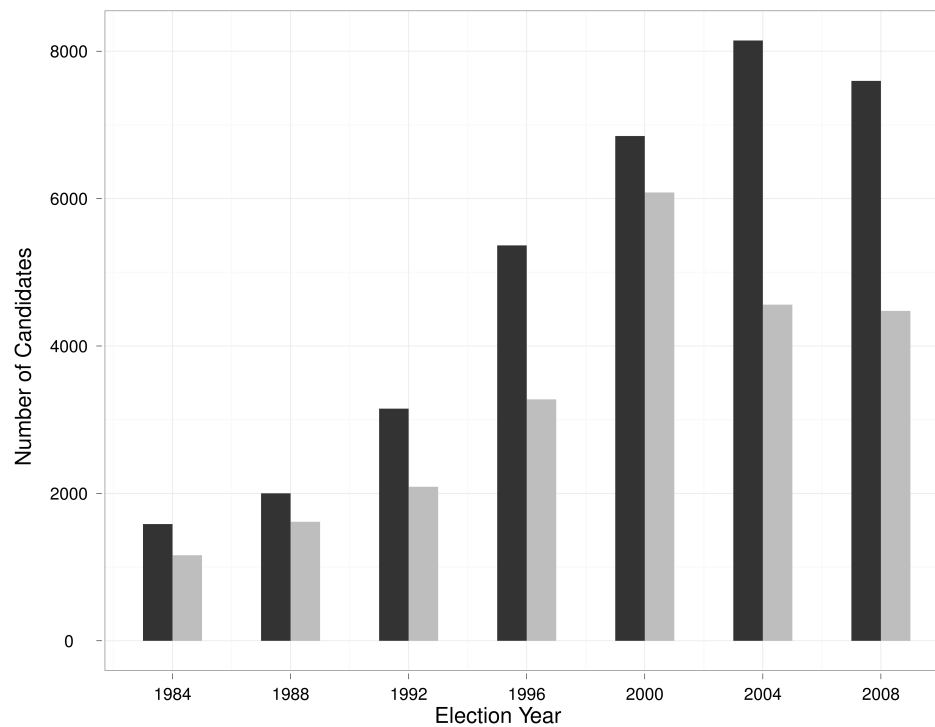


Figure 1: Candidate entry and vetting. Black bars indicate the total number of candidates nominated, gray bars indicate the number of candidates approved for election. The number of seats up for election range from 270 in 1980 to 290 in 2008 (including 5 permanent seats for ethnic minorities). Source: Parsons (2010).

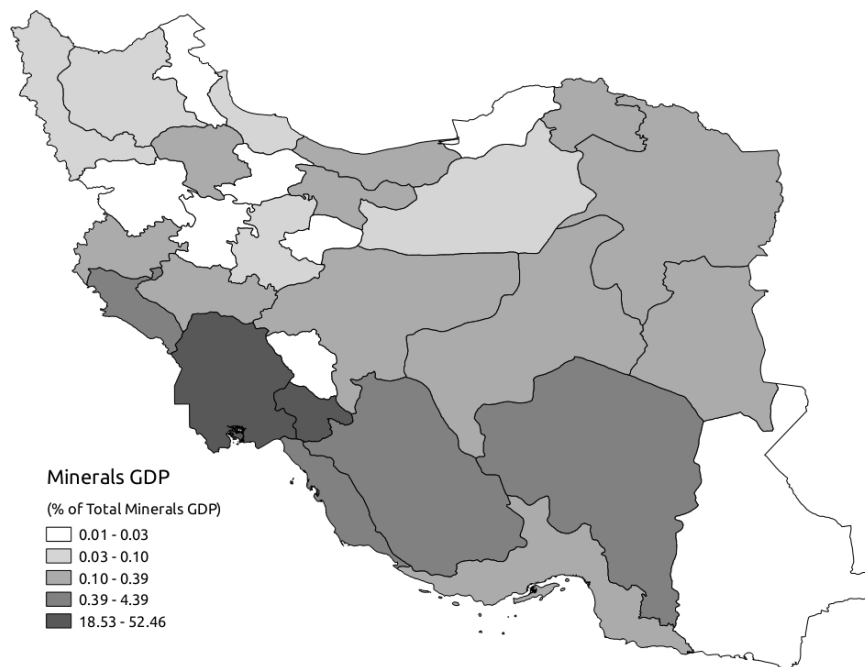


Figure 2: Geographic distribution in 2008 of natural resource wealth by province as percent of national natural resource GDP. Source: Ministry of Interior.

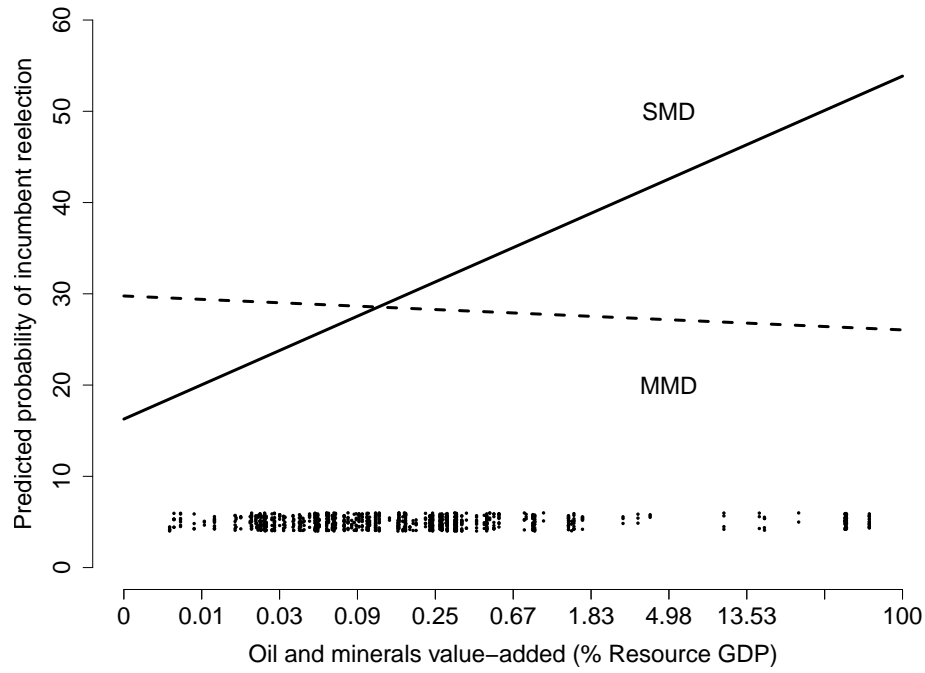


Figure 3: Predicted probability plot of likelihood of incumbency reelection for Iranian MPs based on oil and minerals value added (% resource GDP), for single-member districts (solid line) and multi-member districts (dotted line). The distribution of oil and minerals value added is given by the horizontal bar of points at $y=5$. Note the x -axis is in the logarithmic scale, with nominal values printed for ease of interpretation.

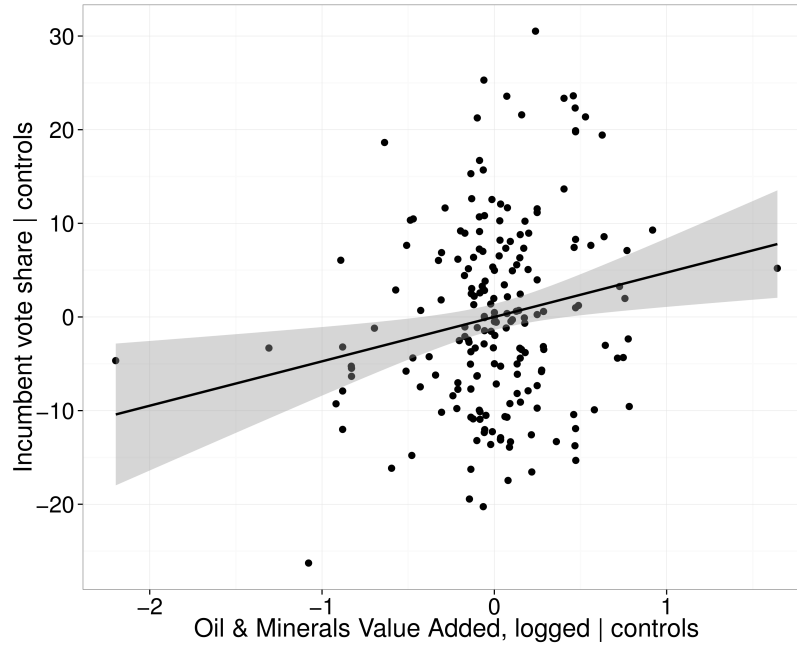


Figure 4: Effect of resources on incumbent vote shares: 2000, 2004, and 2008 parliamentary election. Partial effects are shown from ordinary least squares regression, controlling for unemployment levels, GDP/capita, GDP growth, cleric dummy, number of prior terms served, and time. Sample is restricted to incumbents only and single-member districts only, so $N = 196$ instead of 1096. The effect shown here is for incumbents in single-member districts; the effect of resources on vote shares in multi-member districts is not plotted here. See Table 2 notes for variable definitions. Slope for resource variable is 4.74 with standard error 1.88 (p -value: 0.013).

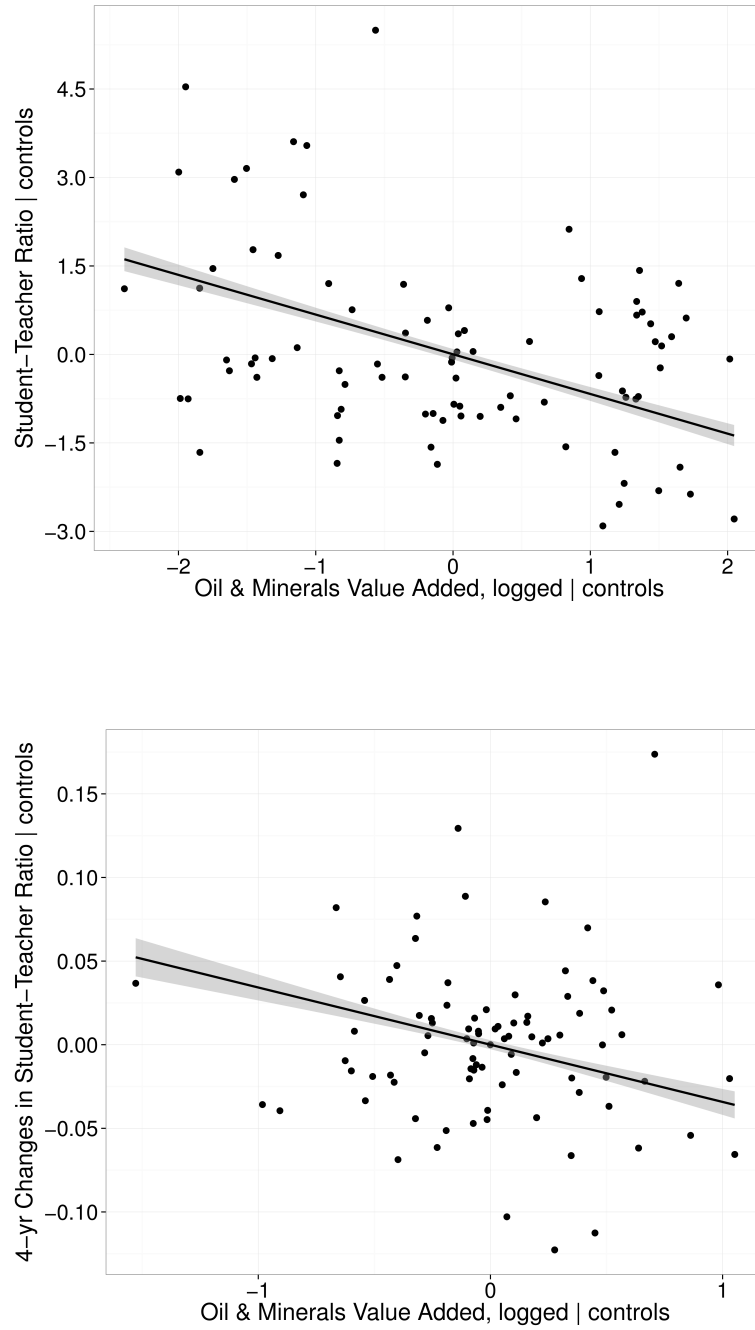


Figure 5: Resource allocation and student-teacher ratios: 1996, 2000, 2004, 2008 elections. Top graph shows a partial regression plot for resources and student-teacher ratios using estimates from Table 3, column 5. Resources coefficient: $-0.511(0.117)$. Bottom graph shows a partial regression plot for resources and four-year changes in student-teacher ratios using estimates from Table 3, column 6. Resources coefficient: $-0.034(0.004)$.

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Appendix

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1 Appendix A

In this Appendix section, I discuss alternative hypotheses that could be driving the resource-incumbency relationship presented in the main text. The first captures the idiosyncratic vetting process in Iran whereby the Guardian Council vets parliamentary (and presidential) candidates prior to the election. Second, I comment on the issue of challenger characteristics and their role in deciding incumbent reelection prospects.

Vetting and unfair elections

The results presented above could be capturing the importance of vetting and undemocratic candidate selection. It could be the case that the Guardian Council, which vets candidates for parliamentary elections, determines eligibility based on district-level satisfaction with the regime. This alternative explanation follows this line of reasoning: resource revenues are used for transfers of public and private goods which make voters content. When voters are content, the Council maintains the status quo to prevent popular opposition to the regime and does not disqualify the incumbent deputy. Allowed to run again, the deputy has a non-negative probability of reelection versus a deputy who is disqualified because the Council perceives the deputy's constituents being unhappy. If this were the case, then incumbent deputies from resource-rich districts are more likely to be reelected primarily based on favorable vetting and only indirectly because of deputy responsiveness to voter demands for benefits. In other words, the pattern of "higher resources, higher likelihood of reelection" is explained by vetting and not necessarily resources.

Given the opacity of Iranian elections, this could very well be the case. Yet, there are two strands of evidence that suggest otherwise. The first is qualitative evidence from case studies and speeches by the unelected clerical leaders that shows that vetting is based on ideological grounds and not based on responsiveness to voters. Since the first parliamentary elections in 1980, candidates have been disqualified on the basis of not being "loyal to the imam." This is vague language indeed but the phrasing was used to keep out communists and pragmatists who had not supported Khomeini's *velāyat-e faqih* (rule of the jurisprudent) system of governance. However, it was not until 1992 that some incumbents were disqualified from running again. (Figure 1 above shows the trend of increasing incumbent vetting.)

If the above alternative explanation were true, then it should be the case that vetted incumbents should have been disqualified on the grounds that voters in their districts were unhappy with the regime. It should not be the case that some incumbents in a given district were disqualified, while others in that same district were not. However, this is the opposite of what we have seen since the 1992 elections. The vetting that has occurred has been overwhelmingly on ideological grounds: in 1992 and 1996, incumbents were vetted if they were close to the "radical" factions.¹ Ideological vetting was particularly evident during the lead-up to the 1996 elections, when the speaker of the Guardian Council, Imami-Kashani, declared that "The basis for the approval or rejection of candidates would be their total and true allegiance to Islam, the system, and *velāyat-e faqih*."² In 2000 and 2004, incumbents who were reformists and tightly affiliated with Khatami were disqualified from

¹Milani (1993); Baktiari (1996).

²Quoted in Moslem (2002, 238).

running again; in 2008 and 2012, those incumbent deputies who were either reformists or hardliners close with Ahmadinejad were not allowed to defend their seats.³ This evidence makes it difficult to accept the premise that the Guardian Council is vetting candidates based on their performance in maintaining populace complacency and stability in their districts. Overwhelming support from case studies indicates that candidate ideology and factional alignment is the primary reason why some candidates are allowed to run while others are disqualified.

Province	<i>Percent of seats held by</i>						Total seats
	Indep.	Reform	Left	Moderate	Right	Radical	
Bushehr	25	75	0	0	0	0	3
Fars	28	17	0	5	17	33	18
Ilam	33	0	33	33	0	0	3
Kerman	0	30	30	10	0	30	10
Kohgiluyeh & Boyerahmad	0	0	0	0	67	33	3
Khuzestan	28	5	0	39	11	17	18

Table A.1: 2008 Majles election results by faction in resource-rich provinces. Resource-rich deputies are those from the top-six resource-producing provinces: Khuzestan, Kohgiluyeh & Boyerahmad, Kerman, Bushehr, Fars, Ilam. The threshold for inclusion as resource-rich for this table is producing at least 1% of total minerals value add to gross national resource product. Numbers indicate the percentage of seats held by deputies of a given faction in a given province. The last column provides a reference for the total number of seats in each province. Source: Sanandaji (2009); Parsons (2010)

Faction	Total Seats	Seats held by resource-rich deputies	Percent of seats held by resource-rich deputies
Independents	63	12	19.0
Reformists	38	10	26.3
Left Coalition	11	4	36.4
Moderates	48	10	20.8
Radicals/Right Coalition	125	20	16.0
Total	285	62	

Table A.2: 2008 Majles election results by faction. Resource-rich deputies are those from the top-six resource-producing provinces: Khuzestan, Kohgiluyeh & Boyerahmad, Kerman, Bushehr, Fars, Ilam.

The second piece of evidence is that resource-rich districts in particular are not benefiting from vetting because of the ideological slants of their deputies. Tables A.1 and A.2 show that the top six resource-rich provinces are represented by all different factions and that no faction is over-represented by resource-rich provinces. In fact, four of these provinces are majority non-radical and non-right: of the six provinces, the only ones where members of the radical right or the right coalition make up at least half of a province's seats in parliament are Fars and the small, three-district province of Kohgiluyeh & Boyerahmad. Of the 18 parliamentary seats up for grabs in the most resource-rich province, Khuzestan,

³The vetting of the 2000 and 2004 elections are discussed in Maloney (2000), Moslem (2002), and Afroneh (2008). Candidate vetting for the 2008 and 2012 elections is analyzed by Gheissari (2009), Sanandaji (2009), and Alem (2011).

seven were won by moderates, one by a reformist, and five by independents; radicals and right-wingers combined only won five seats (28%) in Khuzestan. Given that the radicals and right-wing candidates are the least likely to be vetted, the fact that resource-rich provinces are mostly represented by independents, reformists, leftists, and moderates implies that vetting is working *against* incumbents resource-rich districts. That incumbents are successful in these districts (as the statistical evidence above shows) suggests that the resource-incumbency relationship would be even stronger were it not for unfavorable vetting.

There is an additional explanation based on vetting that is currently untestable and difficult to refute even with currently available qualitative evidence. Suppose it is the case that the Guardian Council does not want to induce instability in resource-rich regions that are vital to Iran’s economy, so the regime favors these provinces with extra campaign resources and does not vet popular incumbents. If this were true, this would explain the result in Table A.1 that resource-rich provinces are often represented by non-right candidates who are not vetted, and more importantly, explain the relationship between resources and incumbency advantage. Unfortunately, as noted elsewhere in this paper, there is limited data available on candidate ideology (and there is weak individual-level data on which factions a candidate belongs to) to be able to find a relationship between resource-rich districts and representation by non-right deputies.

The evidence in Table A.1 also provides support against the rival hypothesis that resource-rich districts are ideologically conservative and therefore support the status quo and reject change. This would imply that the resource-incumbency relationship is driven more by ideology than by resource wealth and public goods provision, given conservative voters’ opposition to representative changes. Ideally, survey data could be used to test whether or not individuals at the district level are ideologically conservative; in the absence of these data, the information on the factional affiliations of incumbent winners in resource-rich provinces suggests the opposite pattern. That is, resource-rich provinces are not overly represented by conservative MPs, with the lone exception being the small, three-seat province of Kohgiluyeh & Boyerahmad.⁴

Challenger characteristics

One weakness of the data used for this analysis is that we have no information about the characteristics and quality of challenger candidates. The *Majles* only publishes information on winners and not challenger vote shares and personal characteristics, so it is not possible to control in the above regressions for challenger quality or even the number of challengers in a race. Any student of electoral politics will know that incumbency reelection chances are determined in part by the quality and number of opponents. It could be the case that the resource-incumbency relationship simply reflects a scenario in which resource-rich districts attract a small number of challengers and thus the incumbent is at an advantage compared to districts with more challengers, particularly high quality challengers. However, this could just as easily run in the opposite direction: because the spoils of office are greater in resource-rich districts – because deputies will receive more money to allocate to their districts based on resource wealth – then the quality and number of challengers will be higher than in resource-

⁴I thank an anonymous reviewer for raising this alternative hypothesis.

poor districts. In other words, the rewards from being a deputy in an oil- or minerals-rich district are so high that strong competition will pose a threat to incumbents, reducing the likelihood of incumbent reelection.

Given the lack of data on challengers, it is not currently possible to determine which is the case in Iranian parliamentary elections. Better data collection or on-site research will have to be conducted to properly address this alternative explanation. Yet relying on rational choice theory, we can make two claims. The first is that if resource-rich provinces have lower quality challengers (the first case above), then this might simply be the result of potential challengers rationally anticipating the low chances of being elected and avoiding the election all together. This would reinforce the resource-incumbency relationship above, since potential challengers are making the decision to stay away based on anticipating higher incumbency reelection rates in resource-rich districts. The second claim we could make is that if the pattern were reversed – that there are more and higher-quality challengers in resource-rich districts – then the statistical findings above are underestimating the incumbency advantage in resource-rich districts, since these incumbents are still getting reelected in the face of stiffer competition from challengers.

References

- Afroneh, Ali. 2008. “Iran’s Parliamentary Elections and the Revolutionary Guards’ Creeping Coup d’Etat.” *American Enterprise Institute for Public Policy Research, Middle Eastern Outlook* 2.
- Alem, Yasmin. 2011. *Duality by Design: The Iranian Electoral System*. Washington, DC: IFES.
- Baktiari, Bahman. 1996. *Parliamentary Politics in Revolutionary Iran: The Institutionalization of Factional Politics*. Gainesville, FL: University Press of Florida.
- Gheissari, Ali, ed. 2009. *Contemporary Iran: Economy, Society, Politics*. Oxford, UK: Oxford University Press.
- Maloney, Suzanne. 2000. “Elections in Iran: A New Majlis and a Mandate for Reform.” *Middle East Policy* 7(3):59–67.
- Milani, Mohsen. 1993. “Power Shifts in Revolutionary Iran.” *Iranian Studies* 26(3-4):359–374.
- Moslem, Mehdi. 2002. *Factional Politics in Post-Khomeini Iran*. Syracuse, NY: Syracuse University Press.
- Parsons, Nigel. 2010. “Electoral Politics in Iran: Rules of the Arena, Popular Participation, and the Limits of Elastic in the Islamic Republic.” *The Middle East Institute Policy Brief* 30:1–13.
- Sanandaji, Kaveh-Cyrus. 2009. “The Eighth Majles Elections in the Islamic Republic of Iran: A Division in Conservative Ranks and the Politics of Moderation.” *Iranian Studies* 42:621–648.

2 Appendix B

	Mean	Std. Dev.	Min	25%ile	Median	75%ile	Max	Num. missing
Incumbent	0.32	0.47	0.00	0.00	0.00	1.00	1.00	67
Resources	0.04	0.13	0.00	0.00	0.00	0.00	0.65	636
Resources (log)	-6.22	1.97	-9.41	-7.53	-6.47	-5.66	-0.43	636
SMD dummy	0.59	0.49	0.00	0.00	1.00	1.00	1.00	97
Prior terms served	0.34	0.72	0.00	0.00	0.00	0.00	5.00	67
Cleric dummy	0.19	0.39	0.00	0.00	0.00	0.00	1.00	67
GDP per cap (log)	9.19	0.82	7.43	8.60	9.22	9.85	10.63	636
Unemployment	12.52	3.91	5.00	10.19	11.62	14.33	24.42	636
Ethnic dummy	0.48	0.50	0.00	0.00	0.00	1.00	1.00	97
Public emp. (%)	0.26	0.07	0.08	0.21	0.25	0.30	0.46	134
Δ public emp. (%)	-0.05	0.11	-0.34	-0.08	-0.07	-0.03	0.66	162
Hospital beds	113.11	23.72	49.06	97.59	114.36	128.76	243.46	59
Δ beds (%)	0.07	0.16	-0.36	-0.04	0.07	0.17	0.75	87
S-T ratio	24.72	4.24	16.88	21.78	24.28	27.55	39.04	131
Δ S-T ratio (%)	0.05	0.18	-0.22	-0.11	0.00	0.25	0.51	158

Table B.3: Summary statistics for variables used in Table 2 (top) and Table 3 (bottom). Variables measured at the candidate level: incumbent reelection, cleric dummy, prior terms served. Variables measured at the district level: single-member district (SMD) dummy. Variables measured at the province level: resources, non-resource GDP per capita, unemployment rate, ethnic dummy, public employment, change in public employment, hospital beds per 100k persons, change in hospital beds, student-teacher ratio, change in student teacher ratio.

	1	2	3	4	5	6
Intercept	0.327*** (0.095)	0.330*** (0.092)	0.324*** (0.093)	0.146 (0.213)	0.580** (0.259)	0.574** (0.284)
Oil	-0.014 (0.013)	-0.011 (0.012)	-0.010 (0.012)	-0.010 (0.012)	0.000 (0.012)	0.000 (0.013)
SMD Dummy	0.031 (0.030)	0.022 (0.029)	0.022 (0.029)	0.026 (0.029)	0.019 (0.029)	0.019 (0.029)
Oil \times SMD	0.034** (0.014)	0.031** (0.014)	0.030** (0.014)	0.029** (0.014)	0.029** (0.014)	0.029** (0.014)
Session (time)	-0.009 (0.014)	-0.013 (0.014)	-0.013 (0.014)	-0.036 (0.028)	-0.037 (0.028)	-0.038 (0.030)
Prior terms		0.094*** (0.017)	0.092*** (0.017)	0.091*** (0.017)	0.091*** (0.017)	0.091*** (0.017)
Cleric dummy			0.027 (0.039)	0.025 (0.039)	0.021 (0.039)	0.021 (0.039)
GDP per capita (log)				0.036 (0.038)	0.006 (0.039)	0.008 (0.044)
Unemployment rate					-0.012*** (0.004)	-0.012*** (0.004)
Ethnic dummy						0.002 (0.032)
AIC	1410	1389	1395	1401	1404	1411
BIC	1450	1434	1445	1456	1463	1475
$-2 \log L$	-697	-685	-688	-690	-690	-692
Num. obs.	1075	1075	1075	1075	1075	1075
Groups(Districts)	200	200	200	200	200	200
Groups(Provinces)	31	31	31	31	31	31

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.4: Replication of Table 2, replacing provincial resource wealth as percentage of national resource GDP with oil income per capita (in 10,000s of rials, roughly equivalent to 1 USD), which is denoted above as “oil”. See Table 2 for descriptions of other control variables and model specifications.

	1	2	3	4	5	6
Intercept	0.147 (0.116)	0.162 (0.113)	0.161 (0.113)	0.032 (0.214)	0.403 (0.245)	0.372 (0.271)
Oil share	-0.031** (0.015)	-0.026* (0.014)	-0.026* (0.014)	-0.024 (0.014)	-0.012 (0.015)	-0.013 (0.015)
SMD Dummy	0.294*** (0.092)	0.273*** (0.090)	0.267*** (0.091)	0.259*** (0.091)	0.256*** (0.091)	0.260*** (0.092)
Oil share \times SMD	0.055*** (0.018)	0.053*** (0.018)	0.051*** (0.018)	0.049*** (0.018)	0.050*** (0.018)	0.051*** (0.018)
Session (time)	-0.004 (0.013)	-0.008 (0.012)	-0.007 (0.012)	-0.026 (0.029)	-0.029 (0.028)	-0.033 (0.031)
Prior terms		0.093*** (0.017)	0.091*** (0.017)	0.091*** (0.017)	0.091*** (0.017)	0.091*** (0.017)
Cleric dummy			0.023 (0.039)	0.022 (0.039)	0.016 (0.039)	0.017 (0.039)
GDP per capita (log)				0.028 (0.040)	0.013 (0.039)	0.018 (0.043)
Unemployment rate					-0.012*** (0.004)	-0.012*** (0.004)
Ethnic dummy						0.008 (0.032)
AIC	1406	1385	1392	1398	1401	1408
BIC	1446	1430	1441	1452	1460	1472
$-2 \log L$	-695	-684	-686	-688	-688	-691
Num. obs.	1075	1075	1075	1075	1075	1075
Groups(Districts)	200	200	200	200	200	200
Groups(Provinces)	31	31	31	31	31	31

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.5: Replication of Table 2, replacing provincial resource wealth as percentage of national resource GDP with resource share of province GDP, which is denoted above as “oil share”. See Table 2 for descriptions of other control variables and model specifications.

	1	2	3	4	5	6
Resources (log)	−0.063 (0.053)	−0.058 (0.048)	−0.058 (0.048)	−0.059 (0.048)	−0.059 (0.048)	−0.059 (0.048)
SMD dummy	0.279*** (0.048)	0.274*** (0.049)	0.275*** (0.049)	0.274*** (0.048)	0.277*** (0.048)	0.277*** (0.048)
Resources (log) × SMD	0.038*** (0.008)	0.039*** (0.008)	0.039*** (0.008)	0.039*** (0.008)	0.040*** (0.008)	0.040*** (0.008)
Prior terms		0.089*** (0.020)	0.090*** (0.020)	0.090*** (0.021)	0.090*** (0.020)	0.090*** (0.020)
Cleric dummy			−0.007 (0.034)	−0.008 (0.034)	−0.007 (0.034)	−0.007 (0.034)
GDP per capita (log)				−0.099 (0.089)	−0.095 (0.095)	−0.095 (0.095)
Unemployment rate					−0.007 (0.006)	−0.007 (0.006)
Ethnic dummy						−0.272 (0.185)
R ²	0.35	0.36	0.36	0.36	0.37	0.37
Adj. R ²	0.32	0.34	0.34	0.34	0.34	0.34
Num. obs.	1084	1084	1084	1084	1084	1084

Clustered standard errors (by province) in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.6: Replication of Table 2, using OLS regressions with province and time fixed effects, standard errors clustered by province. The constant is excluded from regressions to avoid multicollinearity with the unit and time fixed effects.

	1	2	3	4	5	6
Resources (log)	-0.288*	-0.273	-0.273	-0.281	-0.284	-0.284
	(0.174)	(0.177)	(0.177)	(0.178)	(0.178)	(0.178)
SMD dummy	1.327**	1.351**	1.356**	1.346**	1.376***	1.376***
	(0.522)	(0.528)	(0.529)	(0.528)	(0.532)	(0.532)
Resources (log) \times SMD	0.180**	0.191**	0.192**	0.191**	0.196**	0.196**
	(0.079)	(0.080)	(0.080)	(0.080)	(0.080)	(0.080)
Prior terms		0.414***	0.416***	0.418***	0.417***	0.417***
		(0.083)	(0.085)	(0.085)	(0.085)	(0.085)
Cleric dummy			-0.032	-0.037	-0.036	-0.036
			(0.200)	(0.200)	(0.200)	(0.200)
GDP per capita (log)				-0.506	-0.507	-0.507
				(0.579)	(0.579)	(0.579)
Unemployment rate					-0.042	-0.042
					(0.033)	(0.033)
Ethnic dummy						-1.408
						(1.016)
AIC	1322	1299	1301	1302	1303	1303
BIC	1507	1488	1495	1502	1507	1507
$-2\log L$	-624	-611	-611	-611	-610	-610
Deviance	1248	1223	1223	1222	1221	1221
Num. obs.	1084	1084	1084	1084	1084	1084

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.7: Replication of Table 2, using Logit regressions with province and time fixed effects. The constant is excluded from regressions to avoid multicollinearity with the unit and time fixed effects.

	1	2	3	4	5
Resources (log)	−0.059 (0.034)	−0.054 (0.033)	−0.054 (0.033)	−0.059 (0.034)	−0.059 (0.034)
SMD dummy	0.280** (0.103)	0.275** (0.102)	0.276** (0.102)	0.275** (0.102)	0.278** (0.102)
Resources (log) × SMD	0.038* (0.015)	0.039* (0.015)	0.039* (0.015)	0.039* (0.015)	0.040** (0.015)
Prior terms		0.089*** (0.017)	0.089*** (0.017)	0.090*** (0.017)	0.089*** (0.017)
Cleric dummy			−0.005 (0.040)	−0.006 (0.040)	−0.006 (0.040)
GDP per capita (log)				−0.050 (0.057)	−0.056 (0.055)
Unemployment rate					−0.008 (0.006)
AIC	1501	1482	1489	1494	1503
BIC	1679	1666	1677	1687	1701
−2 log L	−714	−704	−706	−708	−711
Num. obs.	1084	1084	1084	1084	1084
Groups (time)	4	4	4	4	4

Standard errors in parentheses

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table B.8: Replication of Table 2, using REML regressions with province fixed effects and time random effects. Model 6 from Table 2 was not replicable due to colinearities between the ethnic minority dummy, province fixed effects, and the time random intercept.

	1	2	3	4	5	6
Intercept	0.211 (0.157)	0.203 (0.151)	0.202 (0.151)	-0.057 (0.284)	0.382 (0.319)	0.459 (0.333)
Resources (log)	-0.017 (0.021)	-0.017 (0.020)	-0.017 (0.020)	-0.023 (0.020)	-0.018 (0.020)	-0.022 (0.021)
SMD Dummy	0.300* (0.167)	0.287* (0.160)	0.278* (0.161)	0.300* (0.162)	0.301* (0.162)	0.296* (0.162)
Resources (log) \times SMD	0.042* (0.024)	0.042* (0.023)	0.041* (0.024)	0.044* (0.024)	0.044* (0.024)	0.044* (0.024)
Session (time)	-0.008 (0.013)	-0.011 (0.013)	-0.010 (0.013)	-0.042 (0.031)	-0.031 (0.031)	-0.021 (0.033)
Number of prior terms		0.090*** (0.018)	0.089*** (0.018)	0.088*** (0.018)	0.087*** (0.018)	0.088*** (0.018)
Cleric dummy			0.019 (0.040)	0.018 (0.040)	0.016 (0.040)	0.014 (0.040)
GDP per capita (log)				0.046 (0.041)	0.011 (0.042)	-0.006 (0.047)
Unemployment rate					-0.013*** (0.004)	-0.013*** (0.004)
Ethnic minority dummy						-0.030 (0.037)
<i>N</i> Observations	990	990	990	990	990	990
Groups(Districts)	183	183	183	183	183	183
Groups(Provinces)	29	29	29	29	29	29
AIC	1287	1269	1276	1281	1283	1290
BIC	1326	1314	1325	1335	1342	1353
$-2 \log L$	-635	-626	-628	-630	-630	-632

Standard errors in parentheses

* significant at $p < .10$; ** $p < .05$; *** $p < .01$

Table B.9: Replication of Table 2, removing all districts in Khuzestan and Bushehr from the data. See Table 2 for variable descriptions and model specifications.

	1	2	3	4
Resources (log)	0.035*** (0.010)	-0.002 (0.030)	0.014 (0.022)	-0.148 (0.094)
Session (time)	-0.067 (0.045)	0.045 (0.080)	0.060 (0.158)	0.604*** (0.202)
Number of prior terms	0.081*** (0.023)	0.082* (0.050)	0.036 (0.067)	0.109*** (0.037)
Cleric dummy	0.033 (0.050)	0.059 (0.111)	-0.110 (0.139)	-0.016 (0.088)
GDP per capita (log)	0.048 (0.064)	-0.061 (0.111)	-0.065 (0.232)	-0.961*** (0.289)
Unemployment rate	-0.014*** (0.005)	-0.006 (0.009)	-0.021 (0.017)	-0.059 (0.050)
Ethnic minority dummy	0.045 (0.039)	-0.067 (0.079)	-0.008 (0.143)	-0.567 (0.524)
AIC	842	251	161	257
BIC	891	285	188	292
$-2 \log L$	-410	-115	-70	-118
Num. obs.	627	168	96	184
Groups (provinces)	30	20	9	5

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.10: Replication of Table 2, with models broken down by the number of members per district (intercept coefficient is omitted). Incumbent reelection in (1) single-member districts only, (2) two-member districts only, (3) three-member districts only, and (4) four-member districts or greater. Note that this last model is effectively a regression of incumbent reelection in Iran's biggest cities, namely Tehran, Mashhad, Tabriz, Esfahan, and Shiraz.

	1	2	3	4	5	6
Intercept	0.526*** (0.175)	0.486*** (0.173)	0.492*** (0.173)	-0.721 (0.915)	-0.329 (0.988)	-0.106 (1.141)
Resources (log)	0.014 (0.025)	0.014 (0.025)	0.016 (0.025)	0.011 (0.025)	0.017 (0.026)	0.017 (0.026)
SMD Dummy	0.022 (0.207)	-0.015 (0.204)	-0.037 (0.208)	-0.014 (0.209)	-0.029 (0.209)	-0.034 (0.210)
Resources (log) \times SMD	0.022 (0.030)	0.017 (0.029)	0.013 (0.030)	0.014 (0.030)	0.012 (0.030)	0.012 (0.030)
Number of prior terms		0.097*** (0.030)	0.095*** (0.031)	0.092*** (0.031)	0.090*** (0.031)	0.092*** (0.031)
Cleric dummy			0.043 (0.080)	0.034 (0.081)	0.032 (0.081)	0.029 (0.081)
GDP per capita (log)				0.117 (0.086)	0.096 (0.089)	0.076 (0.102)
Unemployment rate					-0.013 (0.012)	-0.014 (0.013)
Ethnic minority dummy						-0.026 (0.065)
<i>N</i> Observations	280	280	280	280	280	280
Groups(Provinces)	30	30	30	30	30	30
AIC	409	406	411	414	422	428
BIC	431	431	440	447	458	467
$-2 \log L$	-198	-196	-198	-198	-201	-203

Standard errors in parentheses

* significant at $p < .10$; ** $p < .05$; *** $p < .01$

Table B.11: Replication of Table 2, using data from only the 2008 parliamentary election. See Table 2 for variable descriptions and model specifications.

	1	2	3	4	5	6
Session (time)	-0.109 (0.507)	7.155*** (0.966)	-42.896*** (2.741)	0.068** (0.027)	1.342*** (0.395)	0.228*** (0.024)
Resources (log)	0.379** (0.150)	0.927*** (0.289)	5.449*** (0.811)	0.009 (0.006)	-0.490*** (0.117)	-0.050*** (0.007)
GDP per capita (log)	-2.638*** (0.883)	-14.464*** (1.677)	73.216*** (4.780)	-0.051 (0.040)	-5.997*** (0.688)	-0.522*** (0.044)
Pub. emp.		-0.020*** (0.003)				
Hospital beds				0.000 (0.000)		
S-T ratio						0.045*** (0.002)
AIC	3335.145	4302.303	6182.013	-1017.626	2993.796	-1607.482
BIC	3363.305	4335.060	6210.290	-987.716	3022.074	-1574.500
$-2\log L$	-1661.573	-2144.152	-3085.006	515.813	-1490.898	810.741
Groups (provinces)	31	31	31	31	31	31
Sessions	4	4	4	4	4	4

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.12: Replication of Table 3, using REML model with province random intercepts and time trend (intercept coefficient omitted).

	1	2	3	4	5	6
Resources (log)	0.272* (0.157)	0.948*** (0.291)	5.081*** (0.838)	0.070*** (0.015)	-0.464*** (0.122)	-0.034*** (0.004)
GDP per capita (log)	-2.875** (1.115)	-23.189*** (2.055)	57.995*** (5.940)	-0.431*** (0.103)	-4.756*** (0.867)	0.146*** (0.027)
Pub. emp.		-0.027*** (0.004)				
Hospital beds				0.000 (0.000)		
S-T ratio						0.039*** (0.001)
R ²	0.996	0.936	0.995	0.581	0.998	0.956
Adj. R ²	0.996	0.933	0.995	0.551	0.997	0.954
Provinces	31	31	31	31	31	31
Sessions	4	4	4	4	4	4

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.13: Replication of Table 3, using OLS with province and time fixed effects (coefficients omitted).

	1	2	3	4	5	6
Session (time)	−0.085 (0.525)	7.720*** (0.995)	−44.579*** (2.852)	0.307*** (0.066)	1.545*** (0.411)	0.245*** (0.025)
Resources (log)	0.277* (0.156)	1.076*** (0.299)	5.577*** (0.847)	0.070*** (0.015)	−0.507*** (0.122)	−0.051*** (0.007)
GDP per capita (log)	−2.692*** (0.915)	−15.406*** (1.726)	76.224*** (4.976)	−0.431*** (0.103)	−6.360*** (0.718)	−0.551*** (0.046)
Pub. emp.		−0.023*** (0.004)				
Hospital beds				0.000 (0.000)		
S-T ratio						0.045*** (0.002)
R ²	0.996	0.933	0.995	0.581	0.997	0.824
Adj. R ²	0.996	0.929	0.994	0.551	0.997	0.816
Provinces	31	31	31	31	31	31
Sessions	4	4	4	4	4	4

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.14: Replication of Table 3, using OLS with province fixed effects (coefficients omitted) and time trend.

	1	2	3	4	5	6
Resources (log)	0.344** (0.135)	1.219*** (0.250)	5.167*** (0.841)	0.068*** (0.015)	-0.549*** (0.117)	-0.034*** (0.004)
GDP per capita (log)	-2.831*** (0.131)	-19.723*** (1.750)	56.975*** (5.900)	-0.410*** (0.101)	-4.029*** (0.462)	0.146*** (0.027)
SMD-province dummy	3.427*** (0.910)	39.552*** (2.358)	1.570 (4.634)	-0.001 (0.063)	-1.900*** (0.672)	0.026 (0.021)
Pub. emp.		0.002 (0.003)				
Hospital beds				0.000 (0.000)		
S-T ratio						0.039*** (0.001)
AIC	3182.984	3848.856	5931.784	-904.152	2863.134	-2637.615
BIC	3350.580	4020.579	6100.114	-748.211	3031.464	-2464.657
-2 log L	-1555.492	-1887.428	-2929.892	489.076	-1395.567	1355.808
Groups (time)	4	4	4	4	4	4
Provinces	31	31	31	31	31	31

Standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B.15: Replication of Table 3, using REML model with province fixed effects (coefficients omitted) and time random effects, adding single-prov dummy.

	1996	2000	2004	2008
Public-sector employees	4218	4415	5958	5398
Private-sector employees	10354	11855	18744	17268
Total employed persons	14572	16269	24703	22666

Table B.16: Public, private, and total employment over time, 1996-2008, in thousands of employed persons. Source: Statistical Center of Iran, Statistical Yearbooks.

	Resources (log)	Incumbent Reelection
Correlation	0.274	0.108
OLS coefficient	2.695 (2.792)	8.683 (9.505)
Standard errors in parentheses		

Table B.17: Correlations between turnout and resources, and turnout and incumbent reelection, along with estimated coefficients from OLS regression with province fixed effects. Data at province level for 2000, 2004, and 2008 elections. Source: Ministry of Interior.

	Election	Turnover (%)
Post-Communist States	Legislative, Executive	84
Jordan	Legislative	81
Egypt	Legislative	70
Latin America & Caribbean	Legislative, Executive	68
India	Legislative	50
The Philippines	Mayoral	41
United States	Legislative	10
Iran	Legislative	65

Table B.18: Incumbency Reelection Rates in Select Countries and Regions. Turnover refers to the percentage of incumbents who ran again for office but did not win. Post-Communist states: average from 42 elections in Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Poland, Romania, Russia, Slovakia, and Slovenia. Latin America & Caribbean: average from 52 elections in Argentina, Bolivia, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Peru, Uruguay, Venezuela, Barbados, Belize, Jamaica, and Trinidad and Tobago. Sources: Post-communist states – Bernhard and Karakoc (2011); United States – Lee (2008); Latin America – Molina (2001); The Philippines (2005) – Cruz and Schneider (2013); Egypt (avg. 1987-2005) – Blaydes (2011); Jordan (1993, 2003)– Lust Okar (2006); India – Uppal (2009).