Draft, Not for Quotation

Voting for Populism:
An Analysis of Iran's 2005 Presidential Election*

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August 2008

Abstract

The 2005 upset election of President Ahmadinejad and the defeat of the reformists have generated much commentary about voter concerns and political behavior in Iran. We employ the district-level results of this election to shed light on the socio-economic factors that contributed to Ahmadinejad's popularity among Iranian voters. Since the Islamic Revolution of 1979 there have been on average about one nation-wide election per year. The last two presidents were surprise landslide winners, highlighting the fact that there is little is known about Iran's complex electoral politics. Both elections significantly changed the dynamics of domestic politics and economic policy and reshaped the regional and international political landscape. In particular, the 2005 election brought into question the reformist agenda of the previous eight years and reaffirmed poverty reduction, equality, and religious observance as central factors that shape political behavior in Iran. Our statistical results show that both social and economic factors played important roles in the electoral participation and voting patterns. In particular, all candidates realized that the large young cohorts will be determining the outcome of elections and appealed to them. However, all but Ahmadinejad were of older generations and lacked his record of delivering benefits directly to this group. Ahmadinejad also benefited from reduction in unemployment and expenditure growth, which dampened the demands for economic growth at the cost of redistribution, implicit in Rafsanjani's approach to economic policy. Despite Ahmadinejad's declarations to attend provincial and minority populations, his main appeal was at the populous heartland of the country where he was better known and associated with institutions identified with a strong central government based on Shia and Persian identities.

JEL Classification: D72, P16, O1
Key words: Political Economy, Iran

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1. Introduction

Elections play an important role in the political system of the Islamic Republic of Iran. In particular, presidential elections in the past two decades have had major consequences for the country's policies, going well beyond its borders. Despite its significance, little is known about the workings of the election system in Iran. Indeed, two presidential elections in 1997 and 2005 have produced landslide victories for candidates who were widely deemed as unlikely winners until immediately before the election. The landmark nature of those surprise outcomes has underscored the need for better understanding of the electoral process and voter behavior in Iran. There is, of course, a large literature commenting on the country's electoral politics and describing its institutional structure.[1] However, systematic analyses discerning the role of different factors in the process based on harder evidence are rare, the exceptions being Mehryar (1998) and Tabibian (2005). The present paper takes a step towards filling this gap by using the available data on vote results and population characteristics at the district-level to examine the socio-economic determinants of voter behavior during the 2005 presidential election.

Statistical analysis of voter behavior in Iran may be viewed with skepticism because a non-elected body, the Council of Guardians of the Constitution, curbs political competition in national elections by vetting candidates who can run. However, the actual system is complex and political pressure from heterogeneous groups with access to power ensures that a variety of candidates are approved, enabling voters to choose from a range of platforms. This range was relatively narrow until the early 1990s and election outcomes were rather predictable, especially while Ayatollah Khomeini was alive and dominated the political space. Political competition intensified after his death as his factionalized followers rose through the ranks and began competing for high office (Moslem, 2002). Some members of the political elite were in better positions to rise to prominence through non-elected offices, such as membership in the Guardian Council, while others pursued the electoral route, taking advantage of the democratic promise of the Revolution that had helped establish elections as a source of political legitimacy.

Electoral politics received high levels of mass attention first in 1997, when the second and final term of Rafsanjani ended with no clear successor and Mohammad Khatami bust into Iran's political scene. To be sure, there had been several presidential elections before that, but their results were predictable and they were hardly publicly debated. This may partly explain why systematic studies of election results in

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[1] For reviews of the literature and extensive descriptions of Iran's electoral system see Bakhtiari (1996) and Moslem (2002). For analysis of national and local elections, especially the 1997 presidential election, a good source is a series of papers produced in Persian at the Majles Research Center, www.majlis.ir/mhtml/.

Iran are lacking. The surprise landslide victory of Khatami in the 1997 presidential election led to a few empirical studies of election results that are unpublished. Subsequent victories by Khatami and his reformist followers in parliamentary (2000), presidential (2001), and municipal (2002) elections produced strong support for the reformists (about 70-80% with turnout rates of over 60%), giving rise to assumptions that, first, voter sentiments in Iran favored the reformist agenda, and, second, that predictability had returned to Iran's electoral system. These assumptions came into question first in 2003 local elections, when the reformists lost ground and participation rates went down sharply, dropping below 20 percent in some major cities (Tajbakhsh, 2003). Further sign of change came to the fore in the 2004 parliamentary elections, in which increase disqualifications and rifts among reformists undermined their political support and led to a low turnout (about 50 percent) and a conservative victory. Still, the landslide victory of Mahmoud Ahmadinejad in 2005 against prominent reformist and conservative candidates came as a major surprise. His election raises more than ever the question of the connection between election results and popular feelings about social, economic and political issues that face the country. As the 2009 presidential election nears, the most important question on the minds of many is to what extent President Ahmadinejad's performance in office will affect his chances of reelection. Our analysis of electoral and socio-economic data in this paper helps shed light on this question.

One concern over using the official election results for understanding voter behavior in a country like Iran is that fraud may play a major role in the results. Indeed, the 2005 election was followed by numerous claims of irregularities (Naji, 2008: Ch. 2). While there may be truth in some of these accusations, we do not believe that fraud explains Ahmadinejad's victory, at least not in round 2. We have a number of reasons for taking this view. First, the stories about fraud cannot nearly explain the size of Ahmadinejad's lead over his opponent in round 2. Even if fraud had played a role, he is likely to have easily won without it. Second, the process of election was managed by the reformist Khatami administration, which did not have any incentive to make it easy for Ahmadinejad to win. Third, there are numerous reports and evidence of enthusiastic crowds receiving Ahmadinejad shortly before the election, between the two rounds, and in the weeks following the election, much warmer than the reception in Rafsanjani's electoral appearances (Naji, 2008: Ch. 2). Finally, some stories of fraud do not add up or contradict each other. For example, some have argued that most voters supported reform, but intense campaigning by revolutionary organizations that preferred to turn back the clock persuaded them to vote for Ahmadinejad. But, if in fact the public wanted to see a move away from the ideals of those organizations, the campaign should have been counterproductive. In any event, we do not rule out the possibility fraud, but work under the assumption that it was largely a random factor that did not dominate the outcome. We show that under this assumption, one can indeed discern reasonable patterns in voting behavior across districts.

President Ahmadinejad's election has proved an event of global significance. It has reshaped Iran's internal politics (some have called it "the Second Wave of the Islamic Revolution"). It has also influenced the regional and international political landscape. The election's significance has fueled much speculation about the causes of its surprise outcome, with most of the comments seeing Ahmadinejad's election and the defeat of the reformist movement in Iran as a consequence of the rise of populism in Iran brought about mostly as a result of widespread poverty and rising inequality.[2] There is no doubt that economic issues in general, and distributional issues in particular, were on the voter's minds. It is also true that the two candidates in the final round of election in 2005 did offer rather contrasting positions on economic challenges facing Iran. While Ahmadinejad emphasized corruption and rising inequality and was clearly identified as the candidate who came from a humble background to take care of the common person, his rival—Ali-Akbar Hashemi Rafsanjani—emphasized economic growth.

Both candidates had a fairly consistent record of their positions on issues, though Ahmadinejad was by far the lesser known candidate. As Mayor of Tehran during 2003-05, he had pushed populist policies with a national appeal, such as loans for youth marriage and housing. In contrast, Rafsanjani was well known for the pro-market and pro-growth policies during his eight years as president (1989-97). The sharp contrast in their rhetoric extended to their background and personal lifestyles: Rafsanjani was viewed as a wealthy individual while Ahmadinejad flaunted his modest background (ordinary house in eastern Tehran and cheap Iranian-made car). However, it is not at all clear how these differences had influenced voters and whether growth vs. redistribution had dominated other concerns, such as gender relations and the roles of different ethnic and religious identities. Indeed, the populist hypothesis has been challenged by Salehi-Isfahani (2008) who shows declining poverty and no tendency for rising inequality across Iran in years prior to the election. This hypothesis is also contradicted by the simple correlation coefficient between poverty rates and Ahmadinejad's vote shares across Iran's provinces ($\rho = -0.20$; see also Figure 1 and Tabibian, 2005). Besides the redistribution issue, there were many other factors that may have mattered for the voters. Rafsanjani belongs to the older generation of Iranian leaders and has long been a central figure in the political system. He is also perceived as socially relatively liberal and also tolerant of bending the rules to get tasks done. Ahmadinejad, on the other hand, is part of a younger generation that has risen through the ranks of revolutionary institutions and shows concern about corruption and slackening of social and religious rules established after the Revolution. The juxtaposition

[2] For a sample of comments on the election see Michael Ignatieff, "Iranian lessons," *New York Times*, July 17, 2005; Abbas Milani, "Regime change", *Wall Street Journal*, October 31, 2005; Amuzegar (2005), Ghamari (2005), Sazgara (2006), and Afshin Molavi, *New York Times*, November 3, 2005.

of such issues with economic concerns makes it difficult to discern the role of each through simple correlations and calls for more careful statistical analysis.

Election outcomes generate a wealth of information about political behavior and there is an extensive literature that uses statistical techniques to identify the underlying factors in a variety of countries.[3] In this paper, we combine election results at the district (*shahrestan*) level with data from census and survey results to examine the effects of a range of variables on the 2005 election in Iran. We analyze the results of both rounds of election using a multinomial logit approach to derive vote share equations. We apply Zellner's method of seemingly unrelated regressions (SUR) to estimate the equations for both rounds as a system and deal with covariances among their error terms. We treat all the voter choices the election process—the candidates, casting invalid ballots, and refraining from participation—as a joint decision. As we show below, participation and invalid vote casting have systematic relationships with the characteristics of the electorate and needs to be analyzed jointly with the assessment of the candidates.

Our analysis casts doubt on simple populist theses. We do find that support for Ahmadinejad across districts was associated with higher incidence of poverty and lower per capita expenditure. But, ironically, these effects by themselves are likely to have worked against his platform at the country level because poverty was declining and per capita expenditures were rising for several years prior to the election. There is also no evidence that inequality had been increasing or had affected Ahmadinejad's vote share in any tangible way. Rather, the increased demand for redistribution seems to have been a backlash against the expansion of the private sector and the presence of increasing resource rents that could have been used for alleviating economic uncertainties. Spending large resource rents while relying on markets to rewards for investment and enhance growth can actually exacerbate the risks facing individuals and induce them to seek greater redistribution as insurance. Indeed, we find that Ahmadinejad's vote share tends to be higher in districts with faster growth and greater private employment in industry and services. This view is further supported by the stronger backing that, according to our estimates, Ahmadinejad had received from younger voters, especially those living in smaller, less established households. Perception of possible corruption and unfair distribution of rents under Rafsanjani may have further prompted the voters to opt for Ahmadinejad, hoping to receive larger shares of the rents with less uncertainty.

To discern the role of economic factors in the election, our analysis controls for a host of other elements as well. Province of origin matters for the voters and distance from Tehran clearly reduces

[3] For a survey, see Lewis-Beck and Martin Paldam (2000) as well as other articles in the special issue of *Electoral Studies* (2000, volume 19, issues 2-3).

Ahmadinejad's vote shares. His electoral support seems to have been positively correlated with the activities of conservative organizations that provide social services, but not with the presence of veterans of revolutionary militia. Also, there is no evidence that activities of similar organizations associated with the reformists have benefited Rafsanjani. Finally, we find that religious and ethno-linguistic minorities have tended to participate less and to vote against Ahmadinejad, possibly because of his relative social and religious conservatism compared to Rafsanjani. An important exception in this regard is the Azeri (Turkish-speaking) minority, whose voting behavior for the most part is not distinguishable from that of the Persian-speaking majority.

The rest of this paper is organized as follows. In section 2 we discuss the political and economic context of the election. This section also introduces Rafsanjani as a central figure in Iranian politics and the 2005 presidential election. The backgrounds and political campaigns of the rest of the candidates and an overview of the election results are presented in Section 3. Section 4 discusses the hypotheses that we examine in our empirical work. Sections 5 and 6 explain the methodology and the data. Section 7 discusses the estimation results, Section 8 offers concluding remarks.

2. Political and Economic Context

The political system under the Islamic Republic in Iran has some unique features that are central to its performance and dynamics. It combines a set of theocratic institutions that are not directly responsible to the public with democratic institutions for electing a president, a parliament, and local councils. Also, it has filtering mechanisms on the theocratic side that restrict entry into the ranks of the elite and positions of power. At the same time, the elite are quite factionalized and represent a wide range of political and economic views (Moslem, 2002). These features are rooted in the Revolution of 1979 and the early years of the Islamic Republic.

The Revolution was the culmination of a broad-based movement coordinated by the population's wide ranging resentment against the Shah and the faith in Ayatollah Khomeini's religious and political leadership. A host of small religious activist groups that had direct or indirect relations of trust with the Ayatollah facilitated the process and came to form Iran's new elite. While members of this elite were committed to follow Ayatollah Khomeini's idea of establishing an *Islamic Republic*, they represented different social strata and had different perceptions about the idea, which was not specific at the time. As a result, they had to come to terms with each other, define the system, establish its legitimacy, and ward off challenges to the regime. Through debates about the nature of the new system and day-to-day political interactions, they ended up with a constitution that established the office of the Leader, to be occupied by a Shia jurisconsult, to oversee the entire system and ensure its continuity. An elected body of Islamic jurists, Assembly of Experts, selects the Leader for life and supervises his activities. The Leader in turn

controls the armed forces, the judiciary, and the Guardian Council, which is in charge of constitutional review and vetting of candidates for nationally elected offices—the President, the Parliament, and Assembly of Exports. The latter offices are the democratic pillars of the system, meant to ensure its legitimacy and connection with the public (Schirazi, 1997). They are in charge of designing and implementing economic and social policies, though subject to approval by the Leader, especially via the Guardian Council. Also, some of their responsibilities are discharged through councils formed by representatives of the main organs of the state under the auspices of the Leader. In particular, major security and foreign policy matters are decided by the Supreme National Security Council and major disputes among the high level bodies of the state—particularly the conflicts between the Parliament, the President, and the Guardian Council—are resolved in the Expediency Council. The Leader also has some leverage over economic matters through large foundations that deliver social services to various segments of the population, financed partly by the government and partly by profits from their own production activities (Maloney, 2000; Saeidi, 2004; Esfahani, 2006). This complex setup has allowed the elite to maintain their ruling position while remaining diverse in terms of interests and perspectives. Indeed, partly due to their varied backgrounds and personal connections and partly due to their positions in the system, they have developed divergent views about policies, specific meanings, and goals of the Islamic Republic (Moslem, 2002).

The Iranian political elite differ along several dimensions. A key dimension in the political sphere is their preference for the relative power of the President and the Parliament vs. the Supreme Leader. Conservatives seem to favor the Supreme Leader, while reformists prefer a greater role for elected offices. In the social sphere, conservatism has meant greater emphasis on extensive enforcement of Shia religious norms, segregation and maintenance of relative status of genders, and opposition to Western culture, whereas reformist have advocated individual rights, tolerance of diversity, and improvements in women's relative status. In the economic arena, the issues have been reliance on markets vs. the state and the extent of emphasis on redistribution vs. growth. There are also very diverse attitudes towards pragmatism vs. ideology, recruiting based on expertise vs. loyalty to the system and the elite, and bending the rules and tolerating corruption to achieve goals vs. focusing on rules and fighting corruption. Various groups have combined different positions on these issues and have generated a relatively broad agenda for public debates. These debates have in turn influenced the choices of those occupying positions on the theocratic side of the regime as well as those seeking elected offices. Of course, it is important to keep in mind that the diversity of views among the Iranian elite has important limitations. They are all Shia believers and do not include many representatives from most religious and ethno-linguistic minorities such as Arabs, Baluchis, Kurds, and Turkmen. An important exception is the large Azeri minority, which is better represented in the government and among the elite.

Although the role of president in Iran's political system is subordinate to the Leader, presidents have gained considerable power over political and economic outcomes of the country through control of the budget and administration. This power was limited until 1989 because of predominance of Khomeini over political process. In addition, the constitution prevailing at the time split executive power between two offices—a president and a prime minister. Also, political parties had been banned in the early 1980s, leaving the individual politicians without formal organizations to back them and muster political power. As a result, as long as Khomeini was alive, given his preeminent position in the revolutionary regime, all key decisions were referred to him and a high council he had formed for resolving disputes within the regime, the Expediency Council, headed by Rafsanjani.

After Ayatollah Khomeini's death in 1989, his successor, Ayatollah Ali Khamenei who at the time served as president, was selected by the Council of Experts. At about the same time, a new constitution went into effect that eliminated the office of prime minister and left the president in control of the executive. A few months later, Rafsanjani easily won the presidential election and began to act a powerful executive in charge of all policy aspects. Although that level of dominance by a president has faded over time as the constitutional powers endowed in the office of the Leader have gained time to manifest themselves, the tone set by Rafsanjani's presidency and the need to ensure the legitimacy of the regime have institutionalized the division of labor and the boundaries between the Leader and the president. Also, gradually political parties have been allowed to form, enabling politicians to pursue collective goals in more organized ways.

The relatively underdeveloped conditions of political parties in Iran implies that more than in other countries the policies that presidential candidates are expected to follow once in office are judged largely based on their personalities rather than their platforms and promises. In this sense, the second round of 2005 presidential election in Iran could not have produced a greater contrast between Rafsanjani, with the reputation of a powerful politician whose family is believed to have benefited financially from his political power,[4] and Ahmadinejad who very successfully projected an image of a common man driving an old car and living in a middle class neighborhood. Ahmadinejad's campaign promises to fight corruption ("the oil mafia") and to "take the oil money to people's dinner table" fit his symbolism well and made his message very effective. This is the primary reason why commentators have gravitated toward poverty and inequality as explanations for his election success.

In addition to issues of lifestyle, Rafsanjani entered the race with a combination of revolutionary credentials and a mixed record of economic management in his two terms as president during 1989-1997.

He was viewed as a leading figure in the Revolution and one of the clerics closest to the founder of the Islamic Republic, Ayatollah Khomeini. He had served as the Speaker of the Parliament during 1980-1989. He was seen as the most important political power broker in the country with elitist tendencies and relatively liberal social views. When he took office as President in 1989, Iran's economy had endured a significant decline during the Revolution and Iran-Iraq War. Markets were under extensive government controls and trade had declined to historically low levels. He embarked on a liberalization policy, which initially produced a rapid recovery (see Table 2). His reforms coincided with an increase in oil revenues that helped imports expand quickly and supported investment, infrastructure development, and recovery. However, the liberalization was quickly extended to risky areas, such as the opening of capital account with inadequate supervision, soon leading the economy into a major macroeconomic crisis in 1993-1994. The result was high inflation and a sharp slowdown during Rafsanjani's second term, 1993-1997 (Table 2). Meanwhile, the country's high economic and political risks limited private sector activity and investments were largely confined to projects controlled by individuals and organizations close to the centers of power. Naturally, Rafsanjani was associated with unequalizing market liberalization and with limited concern for the plight of the lower income groups. It is interesting to note that the poverty rates and income distribution measures such as the Gini coefficient and the income ratio of richest 10% to poorest 10% all indicate a declining trend during Rafsanjani's presidency (Table 2 below and Salehi-Isfahani 2008). Nevertheless, the perception of increasing inequality, poverty, and corruption seemed to be rather widespread and some of Rafsanjani's appointees who had been instrumental in his reconstruction effort were later convicted for corruption.[5] Further blame was placed on Rafsanjani's reforms in the late 1990s after the end of his term when a major slump in oil prices and President Khatami's initial focus on political reform prolonged the economic slowdown (Table 2) and delayed the fruition of some of Rafsanjani's policies, especially in infrastructure development.

The recovery of oil prices after 2001 helped the Iranian economy grow much faster in the subsequent years, though inflation and inequality also increased (see Table 2). At the same time, being frustrated in its political reform effort, Khatami's administration turned its attention towards economic matters and became more interested in market-oriented policies. This contributed to the liberalization of the economy and possibly to higher growth, inflation, and inequality. However, after 2003 the government managed to control inflation and reduce inequality. Economic growth slowed down, but poverty rates continued to fall (Table 2).

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[4] In 2005, the Fortune magazine listed his name as one of the world's richest men.

An important dimension of inequality in Iran is regional, between the high-income cities such as Tehran, Isfahan, and Mashhad, compared to smaller cities, especially in minority regions, and rural areas. Ahmadinejad's pledge—which he subsequently carried out—to visit all of Iran's provinces during his first year of presidency and address the concerns of people in every region of the country, may have played well with voters in poorer, more distant regions. In this context, it is interesting to note that regional inequality seems to have been generally on the decline since the 1980s, except perhaps during the 1990s, when the evidence of convergence is weak.[6] Figure 2 provides a glimpse of this process during the four years prior to the 2005 election, showing that there is no evidence of divergence among regions as a whole. Indeed, there may have been some tendency towards convergence. However, there are a few low income provinces, particularly Sistan, and North and South Khorasan that have been falling behind the rest of the country.

Another important consideration regarding regional economic growth is its impact on minority groups. Ethnolinguistic diversity has long been a major issue in Iranian politics, often seen as an asset, but at times serving as a potential source of tension (Towhidi, 2006). Although members of these groups typically perceive their ethnic identity as a complement to their Iranian national identity, the highly centralized nature of government and the dominance of Persian speaking part of the population have at time become sources of grievance. Indeed, such issues have gained prominence in Iranian politics in recent years and seem to have mattered in elections, with some candidates even breaking some of the long-lived taboos around ethnic minorities (Bradley, 2006; Derakhshan, 2005). To shed some light on the economic dimension of the issue, in Figure 2 we highlight the provinces with minority population, defined here as provinces with less than 50 percent of population speaking Persian dialects. These also cover provinces with a large religious minority population, defined as provinces with less than 50 percent Shia population, except Hormozgan that has a large Persian-speaking Sunni population. The highlighting reveals the historical fact that some minority regions tend to be among the poorest. They also have had lower literacy and higher poverty rates, though they tend to be characterized by greater expenditure equality. However, as discerned from Figure 2, in recent years most minority regions have experienced higher per capita expenditure growth than the rest of the country.

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[5] The best known case is that of former Mayor of Tehran, Gholamhussein Karbaschi, who admitted to illegal donations (*New York Times*, "Mayor of Teheran Says Donations Were Legal," July 6, 1998).

[6] This observation is based on our preliminary analysis of household expenditure data during 1984-2005.

3. Campaign Promises and Electoral Outcomes

We now turn to the description of the backgrounds and campaign strategies of the presidential candidates in the context of Iran's political and economic conditions in 2005. Rafsanjani's case has already been discussed in detail. We next discuss Ahamdinejad and then proceed with brief descriptions of the other five candidates. We end the section with a discussion of the election outcomes for the candidates in the two rounds.

Ahmadinejad had started as a student activist before the Revolution and had accumulated revolutionary credentials via his activities among the Basij Militia during Iran-Iraq war. He then rose through administrative ranks by serving as district governor in West Azerbaijan the late 1980s and, after an interlude at the Ministry of Higher Education, as Governor of Adabil province in the 1990s. He also served as faculty member at the Science and Technology University in Tehran. He helped form a coalition of conservative groups, Alliance of Builders of Islamic Iran, which included many war veterans with technocratic backgrounds and was mostly active in Tehran. The group aimed at supporting economic development with a focus on social justice based on Islam. It won the 2003 local elections in Tehran, selected Ahmadinejad as the Mayor of Tehran, and went on to win almost all of Tehran's seats in the parliamentary elections of 2004. As mayor, Ahmadinejad emphasized keeping the City of Tehran clean, implementing conservative social rules, and providing for and standing by the poor. His populism, which became the hallmark of his presidential bid, could be seen in occasions when he joined street sweepers, saying he was "proud of being the Iranian nation's little servant and street sweeper." (Vick, 2005).

Another candidate Mehdi Karrubi, who came third in round 1 of the 2005 election, had similarities with both Rafsanjani and Ahmadinejad. Like Rafsanjani, he was from an older generation of clerics close to the leadership of the Revolution and followed Rafsanjani's footsteps to become Speaker of Parliament in 1989 until 2004, when he failed to win in the first round of parliamentary elections in Tehran and decided not to run in the second round. Though politically moderate and often identified with reformists, on the economic policy, Karrubi was closer to Ahmadinejad and adopted a relatively populist and redistributive platform.

Of the remaining four candidates, two were reformist technocrats, Mostafa Moeen and Mohsen Mehralizadeh, who had served in high positions under President Khatami. Both candidates faced uphill battle securing approval from the Guardian Council to be able to run in the presidential election. About a month before the election, the Council rejected them, but the next day reversed itself after Ayatollah Khamenei directly intervened and asked for their approval. Moeen had risen to prominence soon after the Revolution by being appointed the President of Shiraz University when he was only 28 years old. In 1982, he was elected to the Parliament and later on served in ministerial positions during both Rafsanjani

and Khatami administrations. Moeen represented the political organizations that emphasized political reform towards greater openness. Mehralizadeh had served as Governor of Khorasan and Vice-President and Head of National Sports Organization. Mehralizadeh's platform focused on providing better opportunities for Iran's younger generations.

The two conservative candidates besides Ahmadinejad were also viewed as competent technocrats with pragmatic approaches to economic and social policy. They seemed closer to the Leader, Ayatollah Khamenei, and had been appointed by him to major offices. One was Mohammad Bagher Ghalibaf, a former Commander of the Police Forces of the Islamic Republic of Iran, who was known for his efforts to reform the police and make it more accessible to the general public. He also received credit for peaceful handling of student protests in 2003. The other was Ali Larijani, who seemed to have the strongest credentials among conservative candidates. He was the son of a prominent ayatollah and had close ties and family connections with leading figures of the 1979 Revolution. He had served as one of the top commanders of Revolutionary Guards in the 1980s and as Minister of Culture and Islamic Guidance under Rafsanjani. Later, the Leader appointed him as the Director of Islamic Republic of Iran Broadcasting and a member of the country's Supreme National Security Council.

Besides diversity in their political and economic orientations, the seven candidates had very different regional, ethnic, and religious appeals. Province of origin seemed particularly important in round 1 of the election. Rafsanjani came from Kerman in the south and dominated the race there. This was clearly the case for Karrubi in Lorestan in southwest, Qalibaf in Khorasan in the northeast, and Larijani in Mazandarn in the north (Table 3).[7] Mehralizadeh is an ethnic Azerbaijani and was ranked first in all three Azeri-speaking northwestern provinces. Ahmadijenad grew up in Tehran and captured the lead in all central provinces (Tehran, Markazi, Qom, Isfahan, Yazd, and Semnan).

Overall, Rafsanjani who had the broadest name recognition among the candidates, won the first round but with a much smaller share than he had expected, 22 percent of the votes, followed by Ahmadinejad 20.3 percent. Karrubi, who won third place with 18 percent of the votes, cried foul but was unable to mount a serious appeal. Moeen and Qalibaf ran neck and neck with 14.5 percent of the vote and Larijani and Mehralizadeh trailed them by a large margin. A simple calculation based on the assumption that Rafsanjani, as the centrist candidate, could have gotten the votes of Karrubi, Moeen, and Mehralizadeh in round 2 suggests that he should have won with nearly 60 percent of the vote. However,

[7] Qalibaf's father is a Khorasani Kurd. But, that did not seem to make a difference in the votes of Kurdish population in Iran's western provinces, who had very low participation rates and seemed to somewhat favor Karrubi from neighboring Lorestan. Larijani was born in Najaf, Iraq. But, his father was a prominent ayatollah from Mazandaran.

in the event, the issues that dominated the race in the second round changed the balance in important way and allowed Ahmadinejad to get about half of the reformists' votes to beat Rafsanjani.

In round 2 Rafsanjani was able to win only the poorest province, Sistan and Baluchestan, with 55 percent of the vote, losing even his native Kerman to Ahmadinejad (see Figure 1). He received high shares in Kermanshah (49%) and Lorestan (49%) provinces which, like Sistan, have large ethnic and religious minority populations. Sistan's outcome in the election shows the complicated interplay of regional politics and economic issues and the need for multivariate analysis of the results. As the poorest province, some would expect it to have gone to Ahmadinejad, but as a province with a large Baluchi population who are Sunni, it seems to have placed more weight on Rafsanjani's relatively more liberal approach to social issues compared to Ahmadinejad's promise of redistribution. We examine these issues in our multivariate analysis of district level data below.

4. Hypotheses

Based on views expressed by the commentators on Iranian politics and the above description of the candidates and the political and economic contexts, we make an attempt to examine empirically the roles played by a host of factors in Ahmadinejad's electoral success. We motivate and discuss these factors here as a list of claims about the election outcome. The list is not exhaustive.[8] Our focus is on the issues that lend themselves to quantitative examination given the available data.

Claim 1. The 2005 vote was a message from the poor: Poverty had increased and lower income groups cast more votes for Ahmadinejad. To examine this claim, we estimate the relationship between Ahmadinejad's votes and indicators of poverty rate and level and growth rate of per capita expenditure in the regression.

Claim 2. Ahmadinejad received more votes from provinces with greater inequality, where the majority might have a greater demand for redistribution. We inspect this relationship by including the Gini coefficient of province-level inequality in our analysis.

Claim 3. Ahmadinejad received more votes from communities with larger unemployment. To assess this claim we include unemployment rate in our regressions.

Claim 4. Ahmadinejad received more votes from the migrant workers with temporary and insecure jobs. To evaluate the role of this factor, we use the share of population born outside each district in the total residents of that district.

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[8] For a list of hypotheses put forward by various commentators, see chapter 2 of Naji (2008) and "Iran's conservative triumph," in the openDemocracy website, www.opendemocracy.net/democracy-irandemocracy/reaction_2632.jsp, dated June 27, 2005.

Claim 5. Ahmadinejad received more votes from the rural population and those working in agriculture. To assess this claim and similar claims about the sectoral structure of the population, we use urbanization rate and the shares of industry and services in total employment.

Claim 6. Voters living in Tehran and central provinces voted more for Ahmadinejad because, compared to the population elsewhere, more often they identified him as one of their own. Other candidates also received more votes in their home provinces. [Some observers have claimed the opposite: Ahmadinejad received more votes in provinces and far-flung corners of the country because he visited them and promised to pay attention to them (Naji, 2008: 82).

Claim 7. Ahmadinejad's emphasis on Shiism and his association with the Basij and Revolutionary Guards reduced his support among most religious and ethnic minorities that do not indentify with those institutions. The exceptions may be the Arab and Azeri minorities, who live in areas where Ahmadinejad has served as a militiaman (Khuzestan in the southwest) or as an administrator (Ardabil and Azerbaijan in the northwest). We appraise these claims by including the shares of religious and ethno-linguistic minorities in the population.

Claim 8. Ahmadinejad received high votes from people who wanted to protest against the core group of elite in the regime, with which Rafsanjani was identified. Compared to Rafsanjani, Ahmadinejad was viewed as a relative "outsider" who was nevertheless acceptable to the establishment and could serve the public at large. This claim may be examined along with Claim 7 by examining the role of minorities in vote shares. If minorities identify less with the regime than the rest of the population, they should have shown a greater preference for an outsider candidate.

Claim 9. Ahmadinejad's messages appealed to the less educated voters. The test of this claim is the connection between literacy and educational attainments and Ahmadinejad's vote across districts.

Claim 10. Women were less likely to vote for Ahmadinejad than men because of his conservative social views. We use the share of women among eligible voters in each district to investigate this claim.

Claim 11. Ahmadinejad's messages of redistribution and job opportunity appealed to youth. This claim and other possible associations between age structure of the electorate and Ahmadinejad's vote may be studied by including the share of various age groups among voters in each district.

Claim 12. Ahmadinejad was supported by conservative institutions, Basij, Revolutionary Guards, and their veterans. Examining this claim faces some difficulties because data on the local concentration and activities of these groups are not available. However, there is information at the province level on the locations of services and support rendered to the veteran's of Basij and Revolutionary Guards by the Shahid

Foundation. There also similar information on the poor and needy population supported by Imam Khomeini Relief Committee (IKRC), which is considered a conservative organization run under the auspices of the Leader's office. The tests of the claims about these organizations are positive associations between their activity levels, particularly their coverage of the relevant population in each locality, and Ahmadinejad's vote share.

Claim 13. Ahmadinejad received less support in places where reformist organizations were more active. This claim is the counterpart of the previous Claim on the reformist side. We use data on the share of population below poverty line covered by the Social Welfare Organization (SWO) and the NGOs that it funded and supervised. SWO was part of the government bureaucracy and came under full control of reformists during Khatami's administration. Reformists in the Parliament and the government redirected a significant part of the welfare budget from IKRC to SWO and its associate NGOs (Esfahani, 2006).

Claim 14. Ahmadinejad won because of boycott of elections by some reformists and abstention of many other voters who either assumed that Rafsanjani would win or did not see the difference between the candidates as important as showing their protest against the election system by non-participation. This claim is the hardest to examine by means of our statistical analysis. However, the data and the regression results offer some insights regarding this claim that are worth noting, as we discuss below.

5. Estimation Methodology

To describe and estimate voter choice behavior, we employ the well-known multinomial logit model that specifies the value of alternative j (= 1, …, n) for voter i as $u_{ij} = \exp(\beta_j X_{ij})$, where X_{ij} is a k-dimensional vector of characteristics of voter i relevant for alternative j and β_j is a k-dimensional vector of parameters representing the "appeal" of alternative j to the voters (Dow and Endersby, 2004). The model further assumes that the probability that voter i finds alternative j more appealing than all others, P_{ij}, is proportional to $\exp(\beta_j X_{ij})$, which implies

(1) $\ln(P_{ij}) = c_i + \beta_j X_{ij}, \qquad j = 1, \ldots, n,$

where $\exp(c_i)$ is the proportionality factor and must equal $1/\Sigma_j \exp(\beta_j X_{ij})$ because the sum of $\Sigma_j P_{ij} = 1$. The same constraint implies that only $n - 1$ of the equations defined in (1) can be used in the estimation process. It is convenient to subtract the equation for the excluded category, n, from the other equations so that the results for an included alternative j can be interpreted as preferences over j relative to the excluded category:

(2) $\ln(P_{ij}/P_{in}) = (\beta_j - \beta_n)X_{ij}, \qquad j = 1, \ldots, n-1,$

In this form, the equations can be estimated as multinomial logit regressions. Using the log of probability ratios on the left hand side has the advantage over probability (or vote-share) ratios that it allows the dependent variable to have a more symmetric distribution with an unrestricted range. To estimate the model with district level data, equation (2) is averaged over all voters in each district, allowing X_i to be replaced with a vector of average population characteristics, $\underline{X}_{ij}$. In addition, P_{ij} is approximated by the vote share of alternative j in district i, v_{ij}, rendering the equation to be estimate as:

$$(3) \qquad \ln(v_{ij}/v_{in}) = (\beta_j - \beta_n)\underline{X}_{ij} + \varepsilon_{ij}, \qquad j = 1, \ldots, n-1,$$

where ε_{ij} is a random factor. The estimated coefficients will indicate the relative appeal of a candidate compared to the excluded category, $\beta_j - \beta_n$.

The excluded alternative in our analysis is the decision not to participate. We assume that a voter "abstains" in this way when, from her perspective, the difference among the candidates is not sufficiently large to make it worthwhile to cast a ballot. The cost of voting consists of the opportunity cost of the time and effort needed to go to the polling station as well as the legitimacy that the act of voting bestows on the electoral system, which is relevant when a voter has doubts the fairness of the process. Of course, the voter may also choose to show her protest through the ballot box by casting an invalid vote. Since this phenomenon is an issue in Iran, we treat invalid votes as an alternative and analyze it along with the actual candidates on the ballot. Excluding the invalid votes or including them in the abstention category does not change our results in any tangible way. Our approach, however, enables us to analyze the invalid votes along with the other alternatives in a systematic manner, resulting in some interesting insights.

Since the random factors prompting a vote for one alternative preclude a vote for the others, ε_{ij}'s are correlated across the $n-1$ equations in each district. This implies that the estimation of equation (3) may be more efficient if it is carried out as a set of seemingly unrelated regressions (SUR).[9] However, using that technique would yield benefits only if $\underline{X}_{ij}$'s vary across equations. To deal with that issue, we use three variables: a dummy for the home province of Rafsanjani (Kerman), a dummy for the home provinces of the other five candidates, and the distance from Tehran. The latter variable is an alternative to a dummy for the Tehran province, but works better because we drop some of the districts around

[9] Part of the covariance issue among ε_{ij}'s may be addressed by applying Theil's (1970) method that derives a particular covariance matrix based on random variations in multinomial choices. Mikhailov, Niemi, and Weimer (2002) explore that alternative and apply it in generalized least square regressions. However, the covariance coefficients in that method are inversely related to the size of the district and end up being quite small as a source of variance across equations, especially for large districts. We used that procedure and compared its outcome with a simple SUR estimates reported here. The results are qualitatively the same in the two methods.

Tehran due to a problem regarding the pattern of participation, which we discuss in detail below. We assume that the main effect of home base for a candidate is to bring out more voters who would have abstained if the local candidate had not been on the ballot. Under this assumption, the dummy variable for each candidate's home province should be included only in his own regression, with none in the invalid ballots equation. We tested this assumption using OLS estimates of the equations with robust standard errors. We could not reject the hypothesis that the dummy for the other candidates should be included the regressions for Ahmadinejad and Rafsanjani as well as the one for those candidates themselves. Therefore, we keep that dummy in the other two equations. However, there is still sufficient variation in the list of explanatory variables across equations to make the SUR method worthwhile.

For most of the right-hand side variables, the SUR estimates are similar to those obtained via OLS, though they are more reliable and more precise. The SUR method also enables us to combine the equations for the two rounds of elections and use the available information more efficiently. This is because the error terms of the vote equations across the two rounds are likely to be correlated. Although the point estimates do not change much when the two rounds are combined, the standards errors generally decline. Therefore, it is reasonable to focus on the combined SUR estimates.

6. Data

6.1. Election Data

The election results published by the Ministry of Interior (MOI) contain information about both rounds for Iran's 325 districts showing the number of votes of Ahmadinejad and Rafsanjani, total number of votes, the number of eligible voters, and the number of invalid ballots. We have data on the votes cast for the candidates who did not make it to the second round at the province but not district level. So, in our statistical analysis of round 1 we pool together the votes of Karrubi, Larijani, Mehralizaded, Moeen, and Qalibaf as the "Others" alternative, besides Ahmadinejad, Rafsanjani, and invalid votes, with non-participation again serving as the excluded category.

The pattern of voter participation across districts, as depicted in Figure 3, has an unusual characteristic: There are a number of districts with participation rates well above 100 percent. The reason for this outcome is that in Iranian national elections voters are not restricted to voting at specific polling stations or even in the district in which they reside. Moreover, elections take place on Fridays (the weekend) when some people leave town. This is not a notable factor in most districts. However, it does make a difference in districts with tourist or pilgrimage attractions, such as Shemiranat in the north of Tehran where Tehranis flee on hot summer days or Rey in the south of Tehran which has religious significance and is a major burial ground. In Shemiranat, the total ballots cast in both rounds of the 2005

election were about eight times its adult population of about 25,000. In Rey, the inflow of pilgrims more than doubled its adult population of about 127000. To avoid problems that this pattern of voting causes for our estimation process, we exclude districts with participation rates of more than 90 percent. This reduces the sample of districts that we can use in our regression analysis by 12 (about 4 percent of the full sample). The excluded districts tend to be very small and their combined population of eligible voters is less than 1.5 percent of the countrywide total. Setting the exclusion threshold higher or lower has no tangible effect on the results.

Since districts have very different sizes and the larger ones have greater weights in the overall election outcome, we pay particular attention to variations in estimated effects based on district size. We tested the constancy of coefficient estimates across samples of districts with different sizes. Several coefficients vary across district sizes, with the bulk of that variation occurring between districts at the top and the bottom halves of the size distribution. For this reason, we split the sample into two roughly equal parts based on district size (as defined by the number of eligible voters). The sample of large districts consists of those with more than 88000 eligible voters, and the other those with fewer voters. We realize that this division is somewhat arbitrary. We did sensitivity analysis to make sure that the break point we chose does not affect the results. After adjusting the sample for data availability and dropping the districts with above 90 percent participation rates, the large-district sample ends up with 144 observations and the small-district sample with 143. The results of the large-district sample carry more weight because about 82 percent of the country's voters reside in those districts.

6.2 Independent Variables

We obtained district-level data on population characteristics such as age structure, literacy rate, and gender composition from census data of 2006, available from the website of the Statistical Center of Iran (SCI, amar.sci.org.ir). In addition, SCI offers 2006 census data on labor force participation, unemployment rate, and sectoral composition of employment by gender at province level. We used SCI's Household Expenditure and Income Surveys (HEIS) to estimate per capita expenditure and Gini coefficient for 299 districts. We also use HEIS data to estimate poverty rate, which we calculate at the province level to avoid excessive noise.

We derived additional district-level population characteristics, like religion and language which are useful to identify minority presence, from 1996 census data. SCI's Iran Yearbook 1997 provides province-level summary of the data for shares of population speaking different languages. We use this latter source for some minority languages, because the district-level data are very noisy. We will describe the specific measures used in our analysis as we discuss the results. The summary statistics of the variables used in our analysis is presented in Table 4.

7. Empirical Results

Before discussing the regression results, we examine two widely discussed questions regarding the roles of participation and invalid ballots in the outcome of the election.

7.1. Could Rafsanjani Have Won Had the Participation Rate Been Higher?

As indicators of support for the system, turnouts in elections have always been an important issue in the Islamic Republic, in part because candidates are vetted by the Guardian Council. In 2005 presidential election, there were calls for a boycott from prominent individuals in Iran, including the Nobel Laureate Shirin Ebadi. Although the participation rate was lower than most previous presidential elections in the country, it was quite reasonable by international standards. Notably, it was much higher than the two times when Rafsanjani won the election in 1989 and1993 (54.1 and 50.7 percents, respectively). The 1997 and 2001 elections, when Khatami won, drew 80 percent and 66.6 percent of the voters, respectively. In round 1 of 2005 election, 62.7 percent of eligible voters participated. The rate dropped slightly to 59.6 percent in round 2.[10] The fact that the drop was not large is notable because it implies that the Ahmadinejad's surprise ascent into round 2 did not prompt many voters to drop out (or many non-participants in round 1 to vote in round 2). It also suggests that even after the elimination of other candidates, most voters saw a significant difference between the remaining two, which made it worthwhile to go to the polls a second time.

Another way to ask this question is how many more votes Rafsanjani would have needed to win the election in either round. For this to have happened in round 2, in which Rafsanjani received 7.2 million fewer votes than Ahmadinejad, countrywide participation rate must have been at least 74 percent and, furthermore, every additional vote cast in his favor. This would seem even less likely if one takes into account the fact that some votes end up being invalid and that higher participation by potential Rafsanjani supporters might have brought to the polls more people on Ahmadinejad's camp, in which case the required rate of participation would have had to rise well above its historical peak of 80 percent. Moreover, given the fact that those who boycotted the election or cast invalid ballots did not see much difference between the two candidates, it is by no means clear that additional voters would have favored Rafsanjani. As a result, it seems unlikely that Rafsanjani's defeat could be attributed to abstentions in round 2. Winning in round 1 would have been almost impossible because it required the participation of about 16 million more Rafsanjani supporters, which would have required a participation rate of over 97 percent. Of course, the factor that might have made a big difference in round 1 would have been greater

[10] These figures do not include the ballots cast by expatriate Iranians living abroad because the number of eligible voters in that group is not known. This group cast a total of 83818 voters in round 1 and 73962 votes in round 2.

participation and votes in favor of Karrubi, the reformist who finished third in that round. If the votes of others remained the same, an additional 655 thousand voters (1.4 percent of those eligible) could have propelled Karrubi to round 2. This would have significantly changed the landscape in round 2 in terms of social and political platforms, though it may not have been very different in terms of economic policy agendas.

7.2. Did Invalid Ballots Make a Difference?

With hindsight, Karrubi's relatively narrow loss to Ahmadinejad in round 1 set the stage for the latter's ascent to presidency. What change in the proportion of invalid votes could have propelled Karrubi to the second round? Invalid ballots comprised about 4.2 percent of total votes cast in round 1 and 2.4 percent in round 2. These varied considerably between districts, from 0.14 to 21 percent in round 1 and from 0.3 to 23 percent in round 2. So, in principle, if the invalid ballot rate had been much lower, say 1 percent, and a good part of the other 3.2 percent (or 931,000 ballots) had gone to Karrubi, the election outcome could have been very different. But, that would have required at least 70 percent of those 931,000 ballots to have been votes for Karrubi, even if Ahmadinejad had received no additional vote. This seems unlikely, given the presence of other candidates and Karrubi's share of valid votes.

There is also some reason to believe that many of the invalid ballots were in fact protest votes that were not meant to support any particular candidate. This conjecture is supported by the negative correlation between the participation rate and the share of invalid votes in total ballots cast across districts where participation rate was below average, as depicted in Figure 4. (The correlation coefficient is 0.8 for districts with participation rates below 60 percent in round 1.) This implies that invalid votes were less frequent in areas where the population was enthusiastically participating in the election to support one candidate or another. Higher invalid shares appear closely associated with voter disaffection and signal protest rather than disenfranchisement. Most districts with high invalid shares have large minority populations, as highlighted in Figure 4 for the case of the non-Shia, who are more likely to feel alienated under Iran's Shia-based political institutions. Such connections between invalid ballot shares and district characteristics justify the inclusion of invalid vote casting as an alternative in vote-share regressions. As we will see below, the estimates for the invalid ballot share reveal systematic and plausible relationships, confirming that the variations in invalid ballot shares are in part due to protest vote.

7.3. Vote Share Regressions

Tables 5 and 6 report our main SUR estimation results for the two subsamples. We also ran additional regressions that included variables not listed in these tables. We will discuss such experiments as part of our empirical analysis, but do not report the results in detail in the interest of saving space. This

still leaves quite a few variables that proved to be statistically significant in at least some of the regressions. The included variables are also jointly very significant, explaining about 60 to 80 percent of the variation in the dependent variables.

Since the number of explanatory variables is relatively large, we organize the discussion into six subsections about cost of voting, demographics, economic factors, institutional factors, social factors, and home province effects. We begin with the cost of voting and demographic factors before turning to economic factors that relate to our main hypotheses regarding the importance of populist sentiments in the 2005 election.

Cost of Voting

Because the coefficient estimates indicate the appeal of a candidate relative to non-participation, we start our analysis with a set of factors that are likely to influence the cost of voting. If the main effect of a variable is through cost of voting, then it should have similar coefficients across equations because in such a case, $\beta_j = 0$ and the coefficient estimate must represent $-\beta_n$. Although such variables have no impact on the relative vote shares of the candidates on the ballot, controlling for them is important to gain insight into the participation process and to avoid potential omitted-variable bias. The first variable in this category is the log of eligible population per polling station, which is likely to raise the cost of voting because it implies longer waiting time for the voters or longer distances to polling stations. As a result, this variable should be negatively related to the shares of included candidates in the total potential vote. The first rows of Tables 5 and 6 show that the coefficient estimates across equations and samples are indeed all significantly negative and similar in magnitude, even for the invalid vote equation.

A clear indication of the extent of this similarity is the result of a hypothetical calculation of round 2 votes when the number of polling stations changes. The first row of Table 7 shows the results of two such experiments for cases where the population per polling station is assumed to rise by 10 percent or by one standard deviation across all districts. In both cases, the share of Ahmadinejad in total valid votes rise by very small amounts (less than 0.2%), while the participation rate drops by 1.3% and 4.6%, respectively. This finding has a very important implication: While a reduction in the cost of voting, such as an increase in the number of polling stations, could have significantly increased the number of ballots cast by eligible voters, it would not have changed the relative vote shares of Ahmadinejad and Rafsanjani in any tangible way.

Demographic Factors

The second and third variables in Tables 5 and 6 are key indicators of household structure, with potential consequences for voting preferences. The first variable, log of average household size, reflects

high dependency ratios and the presence of extended families. The second variable—the ratio of children 14 years and younger to adults (15 years and older)—captures the role the dependency ratio and, together with other variables that control for the age structure of the population, allows the household size to serve as proxy for other factors. In particular, the presence of extended families is typically associated with "traditional" social and political attitudes, which entail weaker inclinations to participate in elections. Indeed, as the second row of Table 7 show, household size has a significant negative effect on the participation rate. Interestingly, this effect is counterbalanced with the impact of child-adult ratio (see third row of Table 7), suggesting that the coefficient of household size is capturing factors beyond the dependency factor.

Tables 5-7 further show that besides its impact on participation rate, household size negatively affects Ahmadinejad's share of votes (by 3.4 percentage points if household size were one standard deviation higher). While traditional attitudes may explain lower participation rates, their connection with a preference for Rafsanjani is not clear. A possible explanation for the observed pattern is that smaller households tend to be less established with younger adults, typically nuclear families formed in the past two decades. These characteristics may sway them to identify with the younger candidate, Ahmadinejad, who in fact had been advocating policies targeting younger couples. The protective aspects of the Ahmadinejad's platform may have also appealed more to such families. The presence of more children seems to reinforce this effect, but it is not statistically significant. Below, we present further evidence supporting the role of social insurance considerations on voter behavior. The issue is particularly important because it points to a key role that modernization trends may have played in Iranian politics through the rapid decline of household size in the country over the past two decades.

One may suspect that the above effects are at least in part driven by urbanization, population density, or migration rate. Controlling for these factors has little impact on the results (not reported here to save space). In fact, neither variable shows any statistical significance once the voter per station variable is present in the regression.

Social and cultural norms are also likely to influence the participation of women in elections. The inclusion of women's share in the adult population and their literacy rate, the fourth and fifth variables in Tables 5 and 6, reveals interesting patterns. The estimated coefficients for the share of women in adult population are all significantly negative and more or less similar for the small district sample, but they are positive, sometimes significantly, and vary a lot in the large district sample. The opposite of all this is largely true for women's literacy rate. These findings imply that the traditional attitudes may be holding back illiterate women in smaller districts, which are less likely to be modern, but not in large districts and not among the literate women in small districts. Interestingly, the coefficient estimates are the lowest for

Ahmadinejad's vote share, suggesting that less literate women had tended to vote more for Rafsanjani and other candidates, especially in round 1. The difference is not significant for round 2 in large districts. As result, the overall impact of an increase in women's share in population on Ahmadinejad's votes in the final round is relatively small and insignificant. Finally, women's share in population does not have much effect on invalid votes, but their literacy rate is associated with fewer invalid ballots in large districts in round 2.

The overall educational attainment in the population is often expected to raise participation rates, with possible impacts on the preferences over candidates. Our estimates show that the adult literacy rate has indeed a strong positive effect on participation, though it also raises the share of invalid votes. Literacy's effect on Ahmadinejad's vote share in large districts in both rounds is positive but not statistically significant.[11] Beyond literacy, the available measures of schooling attainment indicate strengthening of the role of education in small districts, though not in large ones. See Tables 5 and 6, which report the estimates for the share of population with high school or higher degrees. Since the impact is absent in large districts, the overall electoral consequences of schooling beyond literacy are insignificant (Table 7). The most visible impact of higher education is a sizable increase in the share of invalid ballots, implying that the educated are more likely to display their disenchantment with the system through invalid ballots than through non-participation.

It is interesting to note that, like education, increased labor force participation is associated with increased electoral participation and with higher support for Ahmadinejad in smaller districts, though the overall effect is again relatively small and insignificant because of its absence in large districts (Table 7).

We next turn to the role of age structure of the population. Because the sum of shares of all age groups add up to one, we set aside as the reference group the share of the cohort born in the 1970s (the 25-34 age group), which is the first generation growing up under the Islamic Republic. With this setting, the share of those born in the 1940s (the 55-64 age group) also proved consistently insignificant and was left out of the regression. Examining the overall pattern of cohort effects, the role of the age on participation seems rather small and insignificant, except for those born before 1940, who participated less than others possibly because of higher costs of going to the polling stations (e.g., for health reasons). Concerning preferences over candidates, compared to the reference group, the 1940s, 1960s, and especially the 1980s generations seem to have leaned towards Ahmadinejad. Interestingly, Rafsanjani made an effort to appeal to the youngest cohort (aged 15-24). However, being from an older generation and lacking Ahmadinejad's record of delivering benefits directly to this group seems to have muted his

message. Since this group had significantly increased in relative size in population due to high fertility rates in the 1980s, this demographic factor appears to have helped Ahmadinejad. Distinguishing between the age structures of males and females does not yield any tangible difference.

Economics Factors

Our next set of determinants of voting behavior in Iran focus on economic issues. We start by looking at the sectoral structure of employment. For this purpose we use the shares of industry and services in total employment in each district. We also include the share of employment in the public sector, which could be in either sector. Neither variable seems to affect invalid vote casting with tangible effects, except an increase in such votes in round 1 associated with public employment in small districts. Public employees' electoral behavior does not display any other distinguishing aspect in round 1, but they turned out more and added support to Rafsanjani in larger districts. On the other hand, the share of private sector industry and service employees did not favor Rafsanjani, though their turnout was significantly lower. Still, they must have made a major difference in the outcome because private sector workers comprise about 80 percent of total employment in the country.

This pattern may be the result of a number of different factors. One possible reason is that Ahmadinejad's more protectionist approach and his promise to spend and redistribute more may have appealed to the private sector industry and services that could be the beneficiaries without facing much competition from outside the country. Public employees, on other hand, may have viewed the redistribution as resource being taken away from them. Perhaps more importantly, they must have also been concerned about their jobs, which could change dramatically as Ahmadinejad tried to put his own people in various positions in the bureaucracy, as he actually did after his election. Finally, it should be noted that private employment in Iran includes the labor force that works for *bonyads*, conservative-dominated foundations that run many industrial and service enterprises are and associated with the office of the Leader (Maloney, 2000; Saeidi, 2004). Some of those groups may have indeed supported Ahmadinejad because they must have had greater affinity with him, who was closer to the rank and file of such institutions (see below).

We now turn to economic variables that most observers consider influential the 2005 election, poverty and inequality. In Tables 5-7, we report the results concerning inequality (measured by the Gini coefficient), poverty rate, and the average per capita expenditure level and growth rate during 2000-

[11] Testing the effect for male literacy separately does not yield significant results.

2004.[12] Perhaps the most notable result in this group of variables is the one concerning the inequality measure, which has a positive and almost uniform estimated coefficient for vote shares across all large-district regressions, but not for the invalid ballot equation where it lacks significance. This means that in those districts higher inequality has been associated with higher turnout, but little impact on the shares of candidates in the total votes cast. (See also Table 7 where the overall effects of a one-standard-deviation and 10 percent increases in the Gini coefficient on the participation rate and Ahmadinejad's vote share are reported.) In smaller districts, too, inequality appears to have raised the turnouts, but the balance of these effects has gone against Ahmadinejad. On the whole, inequality has tended to bring out people on all sides in the election, effectively matching each others' votes in large districts where the absolute majority of the electorate reside, thus leaving the overall shares unchanged.

The role of poverty rate is different. In round 1, it appears to have encouraged participation in favor of Ahmadinejad only in large districts. In round 2, the magnitude of its impact on participation was relatively small, but it was clearly associated with a major shift away from Rafsanjani and towards Ahmadinejad in all districts. A one standard deviation increase in poverty rate is associated with more than 5 percent increase in Ahmadinejad's share of votes. The poor seem to have indeed been enchanted by Ahmadinejad's redistributive message and viewed Rafsanjani's policies unfavorably. To check whether this attraction was over rent redistribution or job creation, we included the unemployment rate in the regression as well. However, it did not show much statistical significance, suggesting that the connection between poverty rate and votes for Ahmadinejad must have been driven mainly by redistribution concerns. The unemployed may have been interested in redistribution, but they must have also been concerned about job creation through growth. Invalid voting casting does not seem to have been affected by the extent of poverty or by unemployment.

Expenditure per capita also seems to have had predictable effects: In large districts, it brought voters in favor of Rafsanjani and in small districts, it was associated with lower turnout and going against Ahmadinejad and less invalid ballots. The overall effect of a higher per capita income turns out to be weakly higher participation rate and a possible shift of votes towards Rafsanjani.

The findings regarding per capita expenditure and poverty fit well with the coefficient estimates for the Gini. They all indicate a redistributive battle at the ballot box, with the Gini describing within

[12] The three variables—Gini coefficient, poverty rate, and average per capita expenditure—are of course closely related, but their correlations in our sample are not high enough to cause concern over multicollinearity. This is particularly the case because we measure the poverty rate at the province level, while our Gini and average per capita expenditure are district-level indicators. Measuring poverty at the district level renders the indicator quite noisey.

district differences and per capita expenditure and poverty rates highlighting the differences among districts. Like intra-district inequality, the inter-district differences in income and poverty seems to have drawn more people to polls with opposite preferences. Given the fact that incomes were on rise and poverty was rapidly falling in the years leading the election, it may seem that these economic factors must have worked in favor of Rafsanjani. However, it should be kept in mind that our coefficient estimates represent the role of cross-sectional variations, and not necessarily the effects over time. Indeed, when incomes are rising, the perception that it is associated with increased availability of rents can generate greater demand for redistribution. In fact, such a pattern emerges from the estimated coefficients of the per capita expenditure growth rates during 2000-2004 across provinces. As can be seen in Tables 5-7, higher growth was associated with diminished support for Rafsanjani and lower turnout. (In small districts, turnout was positively related to growth, but that effect was dominated by the one in large districts.) [13] Another way to interpret the result is that, controlling for the level of income, the voters in slower growing districts may have been more concerned about achieving growth than redistribution and have ended up seeing less value in Ahmadinejad's promises. In other words, the poor did want more redistribution, but those experiencing slower growth valued economic growth relatively more. In this setting, the overall economic growth in the country may have diminished the demand for growth and shifted voter preferences towards redistribution.

Institutional Factors

Did the activities of the institutions associated with various factions or offices in the Islamic Republic matter in the election? In particular, we are interested in examining the possible roles played by the Shahid Foundation, IKRC, SWO, and NGOs, for which we have some data. In the second halves of Tables 5-7, we report the results concerning three variables indicating the levels of activity by the first three organizations. The measures available for NGO activity proved largely insignificant and the associated results are not reported here. For the IKRC and SWO, activity is measured at the province level by number of individual receiving benefits under each organization's main support program relative to the number of people below poverty line. For the Shahid Foundation, which is targeting the veterans, activity is measured by the number of pensioners as share of total population in the province.

[13] We explored whether the outcome is sensitive to the specification of other variables or not. In particular, we re-estimated the equations with the log of per capita expenditure in year 2000 and without any per capita expenditure variable. In all cases, the growth rate of per capita expenditure maintained had similar coefficients with reasonable level of statistical significance.

Perhaps the most notable aspect of the estimates concerning the institutions under consideration is that the activity level of IKRC is inversely related to Rafsanjani's vote share and voter turnout rate, both being statistically significant. The reason behind the negative connection with the turnover is not at all clear, but the effect on Rafsanjani's vote is consistent with the view that he was not supported by the conservative institutions.[14] Interestingly, the level of activity of Shahid Foundation is associated with higher turn out and possibly more support for Rafsanjani. This shows that the communities where veterans live tend to be politically more active. It further suggest that either the campaign by such groups had been counterproductive, or their allegiance to Rafsanjani as a leading figure during the Islamic revolution and afterwards may have been no less than their identification with Ahmadinejad. The activity level of SWO is strongly related to higher participation rates, but has no tangible impact on the candidates' vote shares. It is also related to increased share of invalid ballots in small districts. These findings show that while some organizations in the Islamic Republic may have factional affiliations, their broader impacts may be complicated and they may not be particularly effective in swaying the voters in the directions that they desire.

Social Factors

Among the religious and ethno-linguistic variables available to us for use in regressions, the ones with the biggest impacts are the shares of the non-Shia and Kurdish-speakers in the population. Our estimates indicate that if the entire country voted the way the non-Shia did, keeping all other characteristics the same, the participation rate and Ahmadinejad's vote share in round 2 would have gone done down by 18 and 15 percentage points, respectively. The number of invalid ballots in small districts would have also increased by 18 percent. The corresponding numbers would have been 11, 22, and 23 in case all the population voted the same way that the Kurds did, again keeping all other factors constant. The combined effect of these two variables (i.e., everyone acting as Sunni Kurds) would have resulted in 31 and 35 percentage-point declines in turnout and Ahmadinejad's vote share. Indeed, it is these factors that account for the large differences among regions, such as the turnout rate of 42 percent in Sunni Kurdish areas vs. 62 percent in Khorasan Razavi, where the population largely consists of Persian-speaking Shia.

[14] Of course, these associations can be coincidental in the sense that IKRC may have been more active in provinces where the population was less enthusiastic about the election and had a preference for Ahmadinejad. For example, some aspects of poverty not captured in our measures may have prompted IKRC to increase its activity in some provinces, while making it harder for the poor to participate in the election and increasing their preference for Ahmadinejad platform.

The presence of Arab minority also seems to have been associated with reduced participation and higher invalid ballot share, but more votes for Ahmadinejad. This is partly true of the Turkish speaking minority in smaller districts, with much smaller impacts. Ahmadinejad's somewhat higher support in regions with Arab and Turkish speaking population may be connected to his service in those areas. On the other hand, in Baluchistan (which borders Rafsanjani's home province) and Loristan (where the reformist candidate, Karrubi had a strong showing in round 1), the participation rate and Rafsanjani's vote share were higher than predicted by other factors. Also, in round 1, invalid votes tended to be lower in the districts with larger Lori speaking population, who were enthusiastic about Karrubi's candidacy.

Home Province Effects

As Tables 5 ad 6 show, Rafsanjani and especially Ahmadinejad had non-trivial disadvantages in the home provinces of the other candidates in both rounds of election. For example, in round 2, the participation rate in the large districts of the home base of the candidates eliminated in round 1 was about 4 percentage points lower than predicted by other factors. Ahmadinejad's vote share was about 3.3 percentage points lower. Rafsanjani's home province advantage gave him about 7 percentage point boost and added about 5.5 percentage point to the participation rates in large districts of Kerman in round 2. For Ahmadinejad, distance from the City of Tehran works better than a dummy for the Province of Tehran. To gauge the size of this effect, consider what would have happened to the election results in round 2 in cities neighboring Tehran if they had been located 1000 km away (where Kerman is), while keeping all their other characteristics: Participation rate would have declined by about 3-4 percentage points, while Ahmadinejad's share of votes would have dropped by 10 percent.

7.4. Did Economic Trends under Khatami Presidency Lead to Increased Support for Ahmadinejad?

To assess the extent to which economic change under Khatami presidency influenced votes in 2005, we use our estimates of vote share equations to calculate the change in the participation rate and Ahmadinejad's vote share as a result of the changes in the right-hand side variables between 1997 and 2005. The results of this exercise are summarized in Table 8. Since the changes in the demographic variables are closely interconnected, we provide the effect of their joint change in the first row. This overall effect shows an increase in support for Ahmadinejad, which is driven largely by the decline in the household size and to a lesser extent by the increase in the relative share of youth in population. The concomitant reduction in the child-adult ratio tended to lower Ahmadinejad's vote share and was associated with a large drop in participation rates.

The changes in education contributed to an overall increase of about 3.3 percent in participation, but a much smaller increase in Ahmadinejad's vote share. Interestingly, the increase in female literacy

may have contributed to a decline in support of the platform represented by Ahmadinejad, but the concurrent increase in male literacy had the opposite effect and was responsible for the overall positive effect of education on his vote share.

Changes in the labor market seem to have contributed to Ahmadinejad's vote share, while significantly reducing participation rates. The main factor underlying this trend is the expansion of the private sector employment, especially industry and services. An increase in the labor force participation rate also contributed somewhat to the outcome. Income and poverty trends, on the other hand, seem to have gone against the support for Ahmadinejad's platform. In fact, the only factor helping Ahmadinejad may have been faster growth in the years leading to 2005 compared to the situation in 1997.

Combined together, the economic and demographic trends during 1997 and 2005 seem to account for a 22 percent drop in the participation rate and about 4.4 percentage point advantage for Ahmadinejad. However, the drop in the participation rate was lower than predicted by these trends and Ahmadinejad's success in round 2 can only partially be attributed to them. So, what accounts for his two-thirds share of votes?

While our estimates for the role of economic factors seem to go against the popular view that the demand for redistribution was a key force behind voters' preference for Ahmadinejad, the two perspectives can actually be consistent and part of the same process. To see how the differences in the two views may be reconciled, note that income growth and poverty reduction were to a large extent driven by rising oil revenues of the country. As a result, the voters may have been concerned that under another Rafsanjani presidency, they may not benefit much from those rents because of his tolerance for corruption and his focus on "getting the job done" through private incentives. In fact, Rafsanjani's disposition to rely on markets could have turned the resources rents into imports that would increase competition, risks, and woes of many Iranian workers. These considerations seem to have trumped the impact of higher incomes and reduced poverty, inducing voters to hand in a landslide victor to Ahmadinejad.

8. Concluding Remarks

Many observers of Iran's political scene are keen to learn if the Ahmadinejad phenomenon is a passing phase or a more sustained wish on the part of the public to return to the roots of Iran's revolution. Recent speculation about Khatami's return to electoral politics in 2009 has raised the question of his popularity with voters and by implication if the 2005 election was a referendum against his policies. Khatami stood for more democracy at home and for improving relations between Iran and the West under the platform of Dialogue of Civilizations. After 2005, many commentators attributed Ahmadinejad's

success to the failure of Khatami's policies, in particular his reliance on markets and distancing himself from strong redistributive policies. Our results provide support for the role of distributional issues in the 2005 election. We argue that although economic conditions had improved in the course of Khatami's presidency, voters were even keener to ensure that the next president focuses on redistribution and social insurance. The reason is that the process was being driven largely by resource rents that could go to waste or give rise to greater economic risk if it were managed through markets under policies that were commonly associated with Rafsanjani. In this sense, attempts by conservatives (and reformists in an earlier era) to connect Rafsanjani with an image of wealth and corruption in contrasts to Ahmadinejad's humble lifestyle and honesty seem to have been the most effective factors in delivering Ahmadinejad's landslide. His promise of bringing oil money to people's dinner tables may have seemed more credible and more appealing than Rafsanjani's promise of economic growth and prosperity.

In his recent book, Ian Bremmer (2006) considers Ahmadinejad's succession to Khatami as an instance of a developing country choosing closed politics, domestically and internationally, in its intermediate phase of economic growth. His "J curve" predicts that both China and Iran would open up with further economic growth. According to his thesis, all developing societies first close politically before they open up. Although, presumably, the mechanics of the unfolding of this process differs from one country to another, it is interesting to ask if the change of direction as a result of the 2005 election in Iran reveals anything about the role of popular politics in moving Iran along the J curve away from Khatami’s attempt at opening up the Islamic Republic. The question is if the process Bremmer describes is controlled from the above, as in China, or can it be driven by popular politics. The answer would seem to be that in the case of Iran voters chose between candidates who promised further globalization and those who wanted to turn away from it. In the second round this choice was starker: Rafsanjani presented a pro-growth and pro-globalization outlook while Ahmadinejad emphasized redistribution, Islamic values and return to the more insular early years of the revolution. In 2005, the electorate in Iran appears to have opted for redistribution, social conservatism, and greater insularity at the expense of growth and globalization.

There is an obvious reason why Iranians might be swayed by promises of redistribution than growth, more so that in, say, China: oil revenues. Because of the large share of oil in the economy, individual wealth does not necessarily benefit from opening up the economy to the outside world. For example, in China one would expect more educated individuals to be in favor of opening up but not necessarily in Iran. In Iran, education plays a complex role in relation to moving the country up or down the J curve because of the importance of distributive politics. Depending on the type of human capital they possess (local or global skills), a more educated person may favor opening up or closing the country

to competition from the outside. In light of this reasoning it is perhaps not surprising that education plays only a weak role in our regressions of vote shares, and on balance seems to have benefited the redistributive platform.

We believe that our statistical analysis of the election broadly supports the importance of distributional issues. We highlight the roles of poverty and inequality in support of the populist candidate, Ahmadinejad, by controlling for a host of variables that affected the election results. These variables tell interesting stories in their own right, sometimes challenging conventional wisdom on Iran's 2005 election. For example, the notions that Ahmadinejad's appeal to rural and provincial voters had helped him do not find support in our results. Our regression results identify other strong effects, such as ethnicity, but these did not in the end matter for who was elected because of the low participation in minority areas and their small share in the total voting population.

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Table 1. Shares of Candidates in 2005 Presidential Election (Percent)

Candidate	Round 1	Round 2
Rafsanjani	22.0	36.8
Ahmadinejad	20.3	63.3
Karoubi	18.0	-
Moeen	14.5	-
Qalibaf	14.5	-
Larijani	6.1	-
Mehralizadeh	4.6	-
Participation rate	*62.7*	*59.6*

Source: Ministry of Interior of Iran.

Table 2. Economic Growth and Income Distribution in Iran, 1989-2006

Year	Per Capita PPP GDP in 2000 Constant US Dollars	Per Capita GDP Growth (Percent)	Rate of Inflation (Percent)	Poverty Rate		Gini Coefficient	Income Ratio of Richest 10% to Poorest 10%
				Rural	Urban		
1990-1993	5353.5	5.8	16.4	26.8	7.1	39.6	16.0
1994-1997	5840.1	2.2	27.3	22.4	5.7	40.0	15.5
1998-2001	6351.9	1.8	14.7	14.0	2.4	39.9	14.8
2001-2005	7396.0	4.3	13.8	10.3	1.7	40.9	15.6
2001	6557.2	2.0	10.7	16.1	2.9	39.9	14.4
2002	6938.1	5.6	13.4	13.5	2.3	41.9	16.9
2003	7313.8	5.3	15.2	10.3	1.7	41.6	16.2
2004	7563.7	3.4	13.8	7.1	1.2	40.0	14.6
2005	7768.5	2.7	12.6	-	-	40.1	14.5
2006	8088.7	4.0	10.9	-	-	-	-

Source: Central Bank of Iran website; Salehi-Isfahani (2008).

Table 3. Voter Participation Rates and Vote Shares of Candidates in Round 1 by Province (Percent)

	Candidates							*Participation rate*
Provinces	Rafsanjani	Ahmadinejad	Karrubi	Moeen	Qalibaf	Larijani	Mehralizadeh	
Markazi	24.8	28.0	18.1	11.3	12.4	3.0	2.4	*62.1*
Gilan	21.4	14.8	20.3	18.1	17.0	5.0	3.4	*58.4*
Mazandaran	23.6	12.0	7.8	11.2	8.8	35.1	1.4	*65.2*
E. Azerbaijan	20.6	15.2	9.3	14.5	9.3	2.1	28.9	*51.2*
W. Azerbaijan	19.1	9.5	12.6	18.5	17.8	1.9	20.6	*44.0*
Kermanshah	19.1	9.8	35.5	14.9	16.1	3.1	1.7	*78.0*
Khuzestan	21.8	15.9	36.7	10.1	10.1	4.0	1.4	*55.4*
Fars	22.8	13.7	30.9	12.3	15.5	3.5	1.3	*55.3*
Kerman	41.5	11.2	13.2	4.6	9.7	19.1	0.8	*61.4*
R. Khorasan	21.0	15.0	11.8	12.9	34.8	3.1	1.3	*71.0*
Isfahan	14.8	45.6	11.2	11.2	11.3	4.2	1.7	*58.3*
Sistan	18.0	5.6	9.0	55.7	8.0	2.9	0.9	*74.4*
Kurdestan	15.5	6.4	32.0	26.7	14.1	2.2	3.0	*37.4*
Hamedan	22.3	24.7	27.6	10.7	9.2	3.0	2.6	*62.3*
Chaharmahal	16.3	24.8	20.5	13.2	17.5	6.3	1.4	*64.9*
Lorestan	15.3	8.8	55.5	6.8	8.9	3.9	0.9	*67.2*
Illam	14.0	11.2	37.6	19.6	14.2	2.3	1.0	*80.4*
Kohkiloyeh	18.0	11.0	30.9	16.3	16.7	6.5	0.5	*78.5*
Boushehr	24.0	20.3	24.1	16.9	11.6	2.0	1.2	*72.3*
Zanjan	24.7	20.8	14.0	15.3	15.9	5.1	4.1	*65.3*
Semnan	24.8	34.8	9.2	9.4	13.2	7.2	1.4	*73.5*
Yazd	17.2	38.7	12.8	13.4	14.8	2.1	1.1	*76.0*
Hormozgan	12.6	13.4	29.6	25.6	4.2	13.0	1.6	*78.3*
Tehran	25.6	30.1	8.3	13.0	12.3	4.9	5.7	*63.7*
Ardabil	20.1	7.2	11.3	14.1	22.3	1.6	23.4	*54.2*
Qom	22.4	55.2	5.4	6.0	5.6	2.3	3.1	*77.0*
Qazvin	21.9	23.8	16.4	13.7	15.6	3.6	5.0	*69.2*
Golestan	22.2	8.1	27.6	22.4	12.5	6.0	1.2	*65.8*
N. Khorasan	20.4	6.6	25.9	10.8	29.0	4.9	2.4	*63.5*
S. Khorasan	20.0	35.6	9.7	13.8	17.2	2.0	1.7	*78.6*
Total	**22.0**	**20.3**	**18.0**	**14.5**	**14.5**	**6.1**	**4.6**	***62.7***

Source: Ministry of Interior of Iran.

Table 4: Summary Statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max	Availability Level	Source
Number of eligible voters	335	143958	349878	2951	5553619	Province	MOI
Participation Rate in Round 1 (Percent)	325	68.074	43.925	16.970	797.220	District	MOI
Participation Rate in Round 2 (Percent)	325	63.722	46.688	11.870	839.820	District	MOI
Share of Invalid Votes in Round 1 (Percent)	325	4.010	3.010	0.137	21.226	District	MOI
Share of Invalid Votes in Round 2 (Percent)	325	2.783	3.136	0.323	22.947	District	MOI
Log of Ratio of Rafsanjani's Votes to Those of Others in Round 1	325	-1.412	0.568	-3.630	0.757	District	MOI
Log of Ratio of Ahmadinejad's Votes to Those of Others in Round 1	325	-1.959	1.015	-5.664	0.395	District	MOI
Log of Ratio of Ahmadinejad's Votes to Rafsanjani's	325	0.513	0.506	-0.955	1.842	District	MOI
Log of Voting-Age Population per Polling Station	325	6.805	0.335	4.814	7.719	District	MOI
Log of Average Household Size	336	1.453	0.130	1.211	2.027	District	Census
Children 14 Years Old and Younger as Percent of Adult Population	336	36.4828	8.8648	18.8159	71.6127	District	Census
Share of Age Group 15-24 in Adult Population	336	35.185	3.857	25.842	65.468	District	Census
Share of Age Group 35-44 in Adult Population	336	15.970	1.657	11.283	20.061	District	Census
Share of Age Group 45-54 in Adult Population	336	11.253	1.285	3.379	15.212	District	Census
Share of Age Group 55-64 in Adult Population	336	6.268	1.176	1.488	9.618	District	Census
Share of Age Group 65 and Over in Adult Population	336	7.714	2.191	0.620	17.102	District	Census
Literacy Rate of Female Adult Population	336	70.803	9.292	36.558	91.219	District	Census
Literacy Rate of Adult Population	336	77.005	7.562	47.507	97.086	District	Census
Share of Population Aged 10 Years and Over with High School and Higher Education	299	26.524	9.3421	6.91	63.341	District	HEIS
Labor Force Participation Rate	336	47.572	4.154	39.600	54.200	Province	Census
Female Labor Force Participation Rate	336	21.128	5.962	10.000	31.800	Province	Census
Share of Industry in Total Employment	336	27.864	7.173	14.000	45.800	Province	Census
Share of Services in Total Employment	336	41.677	8.033	29.500	63.200	Province	Census

Table 4: Summary Statistics (Continued)

Variables	Obs.	Mean	Std. Dev.	Min	Max	Availability Level	Source
Share of Public Sector in Total Employment	336	18.756	5.153	12.200	30.500	Province	Census
Unemployment Rate	336	11.908	2.891	5.700	16.500	Province	Census
Poverty Rate	299	10.669	6.377	3.631	27.510	District	HEIS
Log of per Capita Expenditure	299	10.099	0.327	9.151	11.454	District	HEIS
Growth Rate of per Capita Expenditure	299	8.222	3.590	(0.417)	15.630	Province	HEIS
Gini Coefficient	299	40.167	3.492	32.058	47.587	Province	HEIS
Beneficiaries of Support Program of IKRC as Percent of Population Below Poverty Line	299	1.103	1.057	0.251	5.702	Province	SCI Yearbook, HEIS
Veterans Receiving Pension from Shahid Foundation as Percent of Population	336	0.232	0.101	0.000	0.575	Province	SCI Yearbook
Pensioners of Social Welfare Organization as Percent of Population Below Poverty Line	299	4.637	5.618	0.000	31.650	Province	SCI Yearbook, HEIS
Non-Shia Population as Percent of Total	336	16.623	27.849	0.000	100.000	District	SCI
Turkish Speaking Population as Percent of Total	296	21.221	33.190	0.000	100.000	District	SCI
Kurdish Speaking Population as Percent of Total	296	10.646	24.977	0.000	99.336	District	SCI
Arabic Speaking Population as Percent of Total	336	3.120	11.637	0.000	49.280	Province	SCI
Lori Speaking Population as Percent of Total	296	7.537	21.545	0.000	100.000	Province	SCI
Distance from Tehran in 1000s of Kilometers	336	0.711	0.389	0.001	2.406	Province	SCI

Table 5. Round 1 Vote Share Regressions, SUR Method, Jointly Estimated with Round 2

(Excluding districts with participation rates greater than 90 percent. Asymptotic *p*-values reported in parentheses.)

Dependent Variables:

Log of Ratio of Votes for Each Included Alternatives to the Number of Non-Participants in Each District

	Ahmadinejad		**Rafsanjani**		**Other Candidates**		**Invalid Ballots**	
Independent Variables	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**
Log of Voting-Age Population per Polling Station	–0.811**	–0.386	–1.048***	–0.855***	–0.562**	–0.889***	–0.547**	–0.439***
	(0.017)	*(0.110)*	*(0.000)*	*(0.000)*	*(0.012)*	*(0.000)*	*(0.030)*	*(0.007)*
Log of Average Household Size	–4.825***	–5.418***	–2.792***	–4.393***	–1.155	–2.334***	–1.990*	–2.397***
	(0.001)	*(0.000)*	*(0.009)*	*(0.000)*	*(0.210)*	*(0.002)*	*(0.057)*	*(0.007)*
Children 14 Years Old and Younger, % of Adult Population	0.019	0.0536***	0.015	0.0621***	0.0312***	0.0386***	–0.019	–0.017
	(0.290)	*(0.003)*	*(0.270)*	*(0.000)*	*(0.007)*	*(0.000)*	*(0.120)*	*(0.170)*
Share of Women in Adult Population	–0.096***	–0.006	–0.075***	0.126**	–0.067***	0.0880**	–0.028	0.045
	(0.003)	*(0.940)*	*(0.002)*	*(0.015)*	*(0.002)*	*(0.026)*	*(0.240)*	*(0.350)*
Literacy Rate of Female Adult Population	0.039	–0.128**	0.061	–0.0900*	0.0553*	–0.033	–0.041	0.017
	(0.440)	*(0.048)*	*(0.110)*	*(0.063)*	*(0.100)*	*(0.370)*	*(0.270)*	*(0.700)*
Literacy Rate of Adult Population	0.020	0.214***	–0.034	0.138**	–0.042	0.068	0.072	0.011
	(0.750)	*(0.008)*	*(0.470)*	*(0.023)*	*(0.310)*	*(0.140)*	*(0.120)*	*(0.840)*
Share of 15+ Population with High School or Higher Educat.	0.0173**	–0.002	0.0178***	–0.003	0.0184***	0.0114**	0.0119*	0.0161**
	(0.047)	*(0.830)*	*(0.006)*	*(0.640)*	*(0.001)*	*(0.039)*	*(0.065)*	*(0.016)*
Share of Age Group 15-24 in Adult Population	–0.030	0.193***	–0.146***	0.030	–0.074***	0.0756**	–0.041	0.0901**
	(0.420)	*(0.002)*	*(0.000)*	*(0.510)*	*(0.002)*	*(0.032)*	*(0.130)*	*(0.035)*
Share of Age Group 35-44 in Adult Population	–0.201***	0.150*	–0.324***	–0.026	–0.193***	–0.005	–0.061	0.066
	(0.010)	*(0.080)*	*(0.000)*	*(0.680)*	*(0.000)*	*(0.920)*	*(0.280)*	*(0.260)*
Share of Age Group 45-54 in Adult Population	–0.177*	0.137	–0.207***	–0.037	–0.016	0.015	–0.097	–0.079
	(0.053)	*(0.120)*	*(0.002)*	*(0.570)*	*(0.790)*	*(0.760)*	*(0.150)*	*(0.200)*
Share of Age Group 65 and Over in Adult Population	–0.015	0.130**	–0.147***	–0.071	–0.091**	–0.056	–0.034	0.021
	(0.790)	*(0.044)*	*(0.000)*	*(0.130)*	*(0.013)*	*(0.130)*	*(0.410)*	*(0.640)*
Labor Force Participation Rate	0.135***	–0.052	0.0696**	–0.047**	0.042	–0.012	0.0560*	–0.027
	(0.002)	*(0.110)*	*(0.037)*	*(0.044)*	*(0.150)*	*(0.500)*	*(0.080)*	*(0.220)*
Share of Industry in Total Employment	0.001	0.0228*	–0.049***	–0.039***	–0.017	–0.016**	–0.012	0.000
	(0.950)	*(0.097)*	*(0.000)*	*(0.000)*	*(0.110)*	*(0.030)*	*(0.290)*	*(0.960)*
Share of Services in Total Employment	0.040	0.012	–0.013	–0.031**	0.0271*	0.006	–0.014	–0.008
	(0.120)	*(0.540)*	*(0.490)*	*(0.046)*	*(0.089)*	*(0.590)*	*(0.420)*	*(0.540)*
Share of Public Sector in Total Employment	0.023	0.010	0.033	0.035	–0.007	0.002	0.0672**	0.021
	(0.590)	*(0.760)*	*(0.300)*	*(0.160)*	*(0.810)*	*(0.920)*	*(0.029)*	*(0.350)*
Gini Coefficient	0.073	1.364	0.322	1.259**	0.844*	1.442***	–0.623	0.328
	(0.920)	*(0.110)*	*(0.570)*	*(0.044)*	*(0.088)*	*(0.003)*	*(0.260)*	*(0.580)*
Poverty Rate	0.032	0.0665***	–0.015	–0.010	0.016	0.005	0.005	0.011
	(0.150)	*(0.000)*	*(0.290)*	*(0.400)*	*(0.190)*	*(0.600)*	*(0.720)*	*(0.310)*
Log of per Capita Expenditure	–0.627**	0.031	–0.452**	0.609**	–0.463**	–0.124	–0.368*	0.004
	(0.026)	*(0.930)*	*(0.030)*	*(0.011)*	*(0.012)*	*(0.500)*	*(0.071)*	*(0.990)*
Growth Rate of per Capita Expenditure	0.0714***	0.013	0.0316*	–0.060***	0.000	–0.017	0.021	–0.002
	(0.003)	*(0.530)*	*(0.080)*	*(0.000)*	*(0.980)*	*(0.150)*	*(0.240)*	*(0.910)*

(Continued on the next page.)

Table 5. Round 1 Vote Share Regressions, SUR Method, Jointly Estimated with Round 2 (Continued)

(Excluding districts with participation rates greater than 90 percent. Asymptotic *p*-values reported in parentheses.)

Dependent Variables:

Log of Ratio of Votes for Each Included Alternatives to the Number of Non-Participants in Each District

	Ahmadinejad		**Rafsanjani**		**Other Candidates**		**Invalid Ballots**	
Independent Variables	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**
Beneficiaries of Support Program of IKRC as Percent of Population Below Poverty Line	–0.002 *(0.370)*	0.0038** *(0.039)*	–0.006*** *(0.001)*	–0.004*** *(0.008)*	–0.002 *(0.320)*	0.000 *(0.920)*	–0.003 *(0.130)*	0.002 *(0.170)*
Veterans on Pension from Shahid Foundation (% of Population)	–0.661 *(0.610)*	0.379 *(0.720)*	–0.505 *(0.540)*	1.057 *(0.160)*	0.240 *(0.740)*	0.742 *(0.190)*	–0.617 *(0.450)*	–0.679 *(0.330)*
Pensioners of Social Welfare Organization as Percent of Population Below Poverty Line	0.105*** *(0.007)*	0.009 *(0.790)*	0.108*** *(0.000)*	0.0435* *(0.065)*	0.0688*** *(0.004)*	0.026 *(0.140)*	0.0696*** *(0.009)*	–0.0374* *(0.075)*
Non−Shia Population as Percent of Total	–0.018*** *(0.000)*	–0.014*** *(0.000)*	–0.009*** *(0.000)*	–0.008*** *(0.002)*	–0.001 *(0.570)*	–0.006*** *(0.004)*	0.00394* *(0.098)*	–0.003 *(0.280)*
Turkish Speaking Population as Percent of Total	–0.006** *(0.013)*	0.003 *(0.180)*	–0.007*** *(0.000)*	0.001 *(0.710)*	–0.002 *(0.220)*	0.002 *(0.160)*	–0.01*** *(0.000)*	–0.001 *(0.620)*
Kurdish Speaking Population as Percent of Total	–0.006 *(0.140)*	–0.011*** *(0.004)*	–0.010*** *(0.002)*	–0.009*** *(0.002)*	–0.008*** *(0.005)*	–0.004** *(0.049)*	0.000 *(0.950)*	0.009*** *(0.001)*
Arabic Speaking Population as Percent of Total	0.008 *(0.450)*	–0.006 *(0.340)*	–0.003 *(0.680)*	–0.017*** *(0.001)*	–0.018*** *(0.008)*	–0.010*** *(0.005)*	0.009 *(0.250)*	0.013*** *(0.003)*
Baluchi Speaking Population as Percent of Total	0.001 *(0.910)*	0.005 *(0.460)*	–0.002 *(0.730)*	–0.007 *(0.170)*	0.001 *(0.790)*	0.0113*** *(0.002)*	0.000 *(0.950)*	0.006 *(0.170)*
Lori Speaking Population as Percent of Total	–0.003 *(0.440)*	–0.002 *(0.410)*	–0.005 *(0.140)*	0.001 *(0.540)*	0.001 *(0.620)*	0.004*** *(0.009)*	–0.01*** *(0.000)*	–0.004* *(0.074)*
Distance from Tehran in 1000s of Kilometers	–0.172 *(0.610)*	–0.474** *(0.031)*						
Rafsanjani's Home Province Dummy			–0.103 *(0.660)*	0.852*** *(0.000)*				
Other Candidates' Home Provinces Dummy	–0.164 *(0.300)*	–0.353*** *(0.008)*	–0.071 *(0.580)*	–0.290*** *(0.003)*	0.310*** *(0.002)*	0.122 *(0.110)*		
Constant	13.83** *(0.028)*	–12.19* *(0.080)*	27.90*** *(0.000)*	–2.963 *(0.560)*	14.76*** *(0.000)*	–0.480 *(0.900)*	7.591 *(0.100)*	–2.835 *(0.550)*
Number of Observations	143	144	143	144	143	144	143	144
R−squared	0.792	0.77	0.71	0.747	0.626	0.762	0.592	0.595

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

Table 6. Round 2 Vote Share Regressions, SUR Method, Jointly Estimated with Round 1

(Excluding districts with participation rates greater than 90 percent. Asymptotic *p*-values reported in parentheses.)

Dependent Variables:

Log of Ratio of Votes for Each Included Alternatives to the Number of Non-Participants in Each District

	Ahmadinejad		**Rafsanjani**		**Invalid Ballots**	
Independent Variables	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**
Log of Voting-Age Population per Polling Station	–0.650*** *(0.004)*	–0.595*** *(0.000)*	–0.714*** *(0.001)*	–0.603*** *(0.000)*	–0.281 *(0.220)*	–0.487*** *(0.000)*
Log of Average Household Size	–2.153** *(0.023)*	–3.176*** *(0.000)*	–0.573 *(0.520)*	–2.170*** *(0.001)*	–0.417 *(0.660)*	–0.089 *(0.890)*
Children 14 Years Old and Younger as Percent of Adult Population	0.0213* *(0.066)*	0.0460*** *(0.000)*	0.0183* *(0.091)*	0.0438*** *(0.000)*	–0.018 *(0.110)*	0.003 *(0.760)*
Share of Women in Adult Population	–0.0748*** *(0.000)*	0.042 *(0.290)*	–0.0443** *(0.026)*	0.043 *(0.230)*	–0.018 *(0.400)*	–0.012 *(0.730)*
Literacy Rate of Female Adult Population	0.0609* *(0.071)*	–0.0596* *(0.099)*	0.0767** *(0.016)*	–0.020 *(0.560)*	–0.014 *(0.670)*	–0.0717** *(0.031)*
Literacy Rate of Adult Population	–0.051 *(0.220)*	0.0835* *(0.064)*	–0.0664* *(0.090)*	0.032 *(0.450)*	0.029 *(0.490)*	0.131*** *(0.002)*
Share of 15+ Population with High School or Higher Educat.	0.0118** *(0.042)*	0.003 *(0.570)*	0.0151*** *(0.005)*	0.001 *(0.860)*	0.009 *(0.110)*	0.0113** *(0.025)*
Share of Age Group 15-24 in Adult Population	–0.033 *(0.180)*	0.049 *(0.160)*	–0.0929*** *(0.000)*	–0.0552* *(0.082)*	–0.020 *(0.410)*	0.022 *(0.500)*
Share of Age Group 35-44 in Adult Population	–0.133*** *(0.010)*	–0.003 *(0.950)*	–0.182*** *(0.000)*	–0.106** *(0.015)*	–0.008 *(0.880)*	0.006 *(0.880)*
Share of Age Group 45-54 in Adult Population	–0.068 *(0.260)*	0.040 *(0.430)*	–0.101* *(0.076)*	0.020 *(0.670)*	–0.054 *(0.380)*	–0.014 *(0.760)*
Share of Age Group 65 and Over in Adult Population	–0.040 *(0.270)*	–0.016 *(0.650)*	–0.0670* *(0.052)*	–0.114*** *(0.001)*	–0.002 *(0.950)*	0.040 *(0.230)*
Labor Force Participation Rate	0.0771*** *(0.008)*	–0.006 *(0.730)*	0.0605** *(0.028)*	–0.024 *(0.140)*	0.0578** *(0.047)*	–0.006 *(0.710)*
Share of Industry in Total Employment	–0.014 *(0.180)*	–0.0160** *(0.036)*	–0.0318*** *(0.001)*	–0.0353*** *(0.000)*	–0.008 *(0.430)*	–0.004 *(0.570)*
Share of Services in Total Employment	0.025 *(0.130)*	–0.010 *(0.390)*	–0.010 *(0.530)*	–0.0358*** *(0.001)*	0.009 *(0.580)*	–0.009 *(0.390)*
Share of Public Sector in Total Employment	–0.003 *(0.920)*	0.0379** *(0.037)*	0.0525** *(0.047)*	0.0677*** *(0.000)*	0.0473* *(0.090)*	0.027 *(0.110)*
Gini Coefficient	0.763 *(0.130)*	1.613*** *(0.001)*	1.104** *(0.019)*	1.466*** *(0.001)*	0.387 *(0.440)*	0.257 *(0.560)*
Poverty Rate	0.013 *(0.340)*	0.0204** *(0.035)*	–0.0244** *(0.035)*	–0.0149* *(0.064)*	–0.008 *(0.520)*	–0.004 *(0.640)*
Log of per Capita Expenditure	–0.343* *(0.064)*	0.124 *(0.500)*	–0.140 *(0.420)*	0.367** *(0.028)*	–0.230 *(0.210)*	0.070 *(0.670)*
Growth Rate of per Capita Expenditure	0.020 *(0.220)*	–0.014 *(0.240)*	–0.016 *(0.300)*	–0.0574*** *(0.000)*	–0.020 *(0.210)*	–0.013 *(0.230)*

(Continued on the next page.)

Table 6. Round 2 Vote Share Regressions, SUR Method , Jointly Estimated with Round 1 (Continued)

(Excluding districts with participation rates greater than 90 percent. Asymptotic *p*-values reported in parentheses.)

Dependent Variables:

Log of Ratio of Votes for Each Included Alternatives to the Number of Non-Participants in Each District

	Ahmadinejad		**Rafsanjani**		**Invalid Ballots**	
Independent Variables	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**	**Small Districts**	**Large Districts**
Beneficiaries of Support Program of IKRC as Percent of Population Below Poverty Line	–0.0032** *(0.046)*	–0.001 *(0.270)*	–0.0052*** *(0.001)*	–0.0030*** *(0.003)*	–0.002 *(0.180)*	0.000 *(0.800)*
Veterans on Pension from Shahid Foundation (% of Population)	–0.222 *(0.790)*	1.086* *(0.066)*	0.604 *(0.380)*	1.615*** *(0.002)*	0.055 *(0.940)*	0.360 *(0.490)*
Pensioners of Social Welfare Organization as Percent of Population Below Poverty Line	0.0799*** *(0.002)*	0.0412** *(0.023)*	0.0701*** *(0.002)*	0.0381** *(0.020)*	0.0405* *(0.094)*	–0.016 *(0.310)*
Non–Shia Population as Percent of Total	–0.0118*** *(0.000)*	–0.0105*** *(0.000)*	0.000 *(1.000)*	–0.00336* *(0.076)*	0.00912*** *(0.000)*	0.000 *(0.830)*
Turkish Speaking Population as Percent of Total	–0.0052*** *(0.002)*	0.000 *(0.830)*	–0.0073*** *(0.000)*	–0.002 *(0.110)*	–0.0070*** *(0.000)*	–0.002 *(0.100)*
Kurdish Speaking Population as Percent of Total	–0.0112*** *(0.000)*	–0.0144*** *(0.000)*	–0.0089*** *(0.001)*	–0.0083*** *(0.000)*	–0.003 *(0.250)*	0.003 *(0.130)*
Arabic Speaking Population as Percent of Total	–0.006 *(0.420)*	–0.0125*** *(0.001)*	–0.0175*** *(0.007)*	–0.0199*** *(0.000)*	–0.002 *(0.800)*	0.003 *(0.420)*
Baluchi Speaking Population as Percent of Total	0.007 *(0.190)*	0.004 *(0.270)*	0.00967* *(0.060)*	0.004 *(0.250)*	–0.005 *(0.360)*	0.00671** *(0.043)*
Lori Speaking Population as Percent of Total	0.000 *(0.890)*	–0.001 *(0.540)*	0.002 *(0.500)*	0.00450*** *(0.001)*	0.002 *(0.430)*	0.001 *(0.520)*
Distance from Tehran in 1000s of Kilometers	–0.374** *(0.048)*	–0.426*** *(0.000)*				
Rafsanjani's Home Province Dummy			–0.024 *(0.870)*	0.585*** *(0.000)*		
Other Candidates' Home Provinces Dummy	–0.075 *(0.430)*	–0.186** *(0.017)*	–0.052 *(0.540)*	–0.162** *(0.010)*		
Constant	13.35*** *(0.001)*	–0.611 *(0.880)*	12.93*** *(0.001)*	4.778 *(0.180)*	–0.664 *(0.880)*	–6.219* *(0.082)*
Number of Observations	143	144	143	144	143	144
R–squared	0.757	0.819	0.697	0.824	0.577	0.603

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

Table 7. Summary of the Main Effects on Vote Shares and Participation Rates in Round 2 (Percentage point change in Ahmadinejad's share of valid votes as a result of changes in characteristics across all districts)

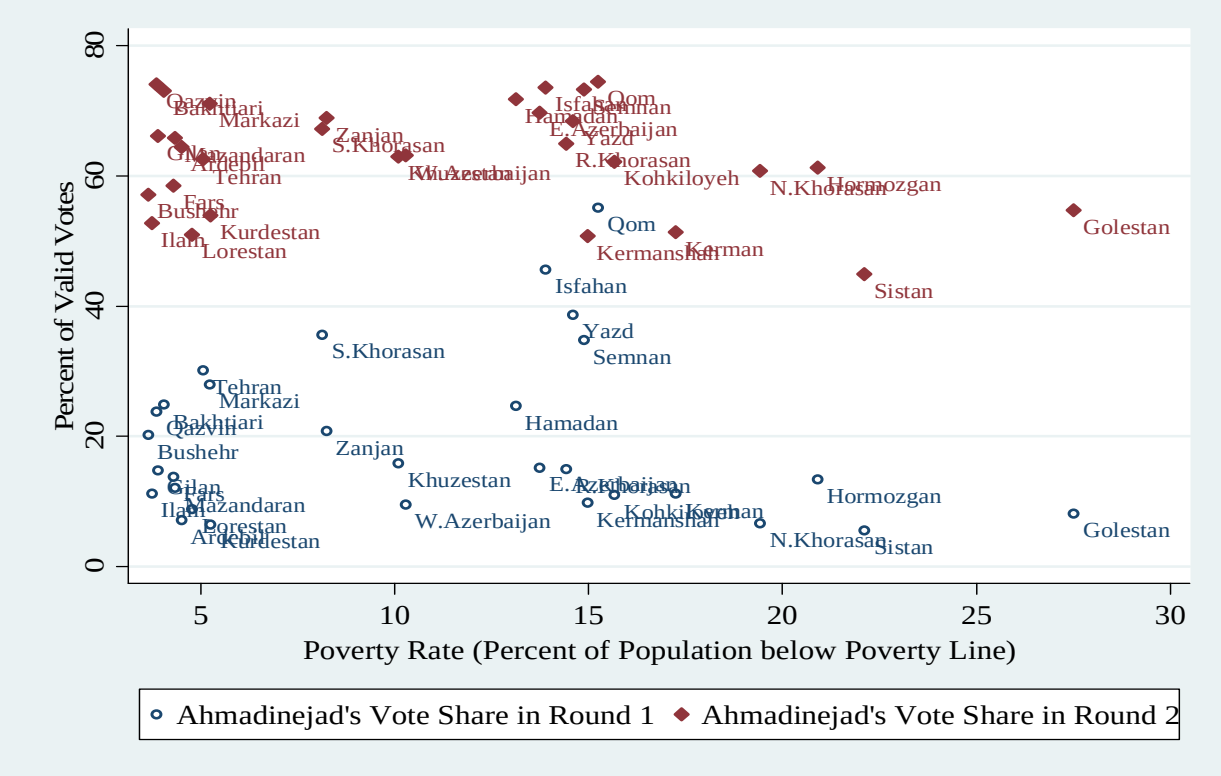
	Ahmadinejad's Share		Participation Rate	
Increase in District Characteristic …	**By 10% †**	**By One Std Deviation**	**By 10% †**	**By One Std Deviation**
Log of Population per Polling Station	0.0	0.1	–1.3***	–4.6***
Log of Average Household Size	–2.5*	–3.4*	–5.5***	–7.6***
Children 14 Years Old and Younger as Percent of Adult Population	0.2	0.5	2.9***	7.7***
Share of Women in Adult Population	–0.6	–0.3	2.5	1.4
Literacy Rate of Female Adult Population	–6.5	–7.7	–5.1	–5.7
Literacy Rate of Adult Population	8.4	7.7	8.5	7.6
Share of Population Aged 10 Years and Over with High School or Higher Education	0.1	0.2	0.3	0.9
Share of Age Group 15-24 in Adult Population	4.6***	5.0***	1.5	1.7
Share of Age Group 35-44 in Adult Population	1.6**	1.6**	–2.1	–2.1
Share of Age Group 45-54 in Adult Population	–1.0	–1.2	0.7	0.8
Share of Age Group 65 and Over in Adult Population	0.5**	1.4**	–0.7**	–2.0**
Labor Force Participation Rate	1.8	1.6	0.2	0.1
Share of Industry in Total Employment	1.2***	3.1***	–1.5***	–3.6***
Share of Services in Total Employment	2.8***	5.0***	–1.4**	–2.4**
Share of Public Sector in Total Employment	–1.6**	–4.1**	2.0***	5.0***
Gini Coefficient	0.1	0.1	1.2***	2.3***
Poverty Rate	0.8***	5.0***	0.1	1.0
Log of per Capita Expenditure	–0.5*	–1.7*	0.3	0.9
Growth Rate of per Capita Expenditures	0.7***	3.3***	–0.4***	–1.8***
Beneficiaries of Support Program of IKRC as Percent of Population Below Poverty Line	0.4**	3.9**	–0.4**	–4.5**
Veterans Receiving Pension from Shahid Foundation as Percent of Population	–0.3	–1.3	0.5***	2.4***
Pensioners of Social Welfare Organization as Percent of Population Below Poverty Line	0.0	0.5	0.4***	5.4***
Non-Shia Population as Percent of Total	–0.2***	–5.2***	–0.2***	–4.7***
Turkish Speaking Population as Percent of Total	0.1	1.3	–0.1	–1.3
Kurdish Speaking Population as Percent of Total	0.1***	–3.1***	–0.2***	–6.5***
Arabic Speaking Population as Percent of Total	0.1**	2.2**	–0.1***	–3.7***
Baluchi Speaking Population as Percent of Total	0.0	–0.1	0.0	1.3
Lori Speaking Population as Percent of Total	–0.1***	–2.3***	0.0	0.5
Distance from Tehran in 1000s of Kilometers	–0.5***	–3.8***	–0.3***	–2.2***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. † By ln(1.1) for log variables.

Table 8. The Impact of Demographic and Economic Change Between 1997 and 2005 on Participation Rate and Ahmadinejad's Vote Share in Round 2 of 2005 Presidential Election

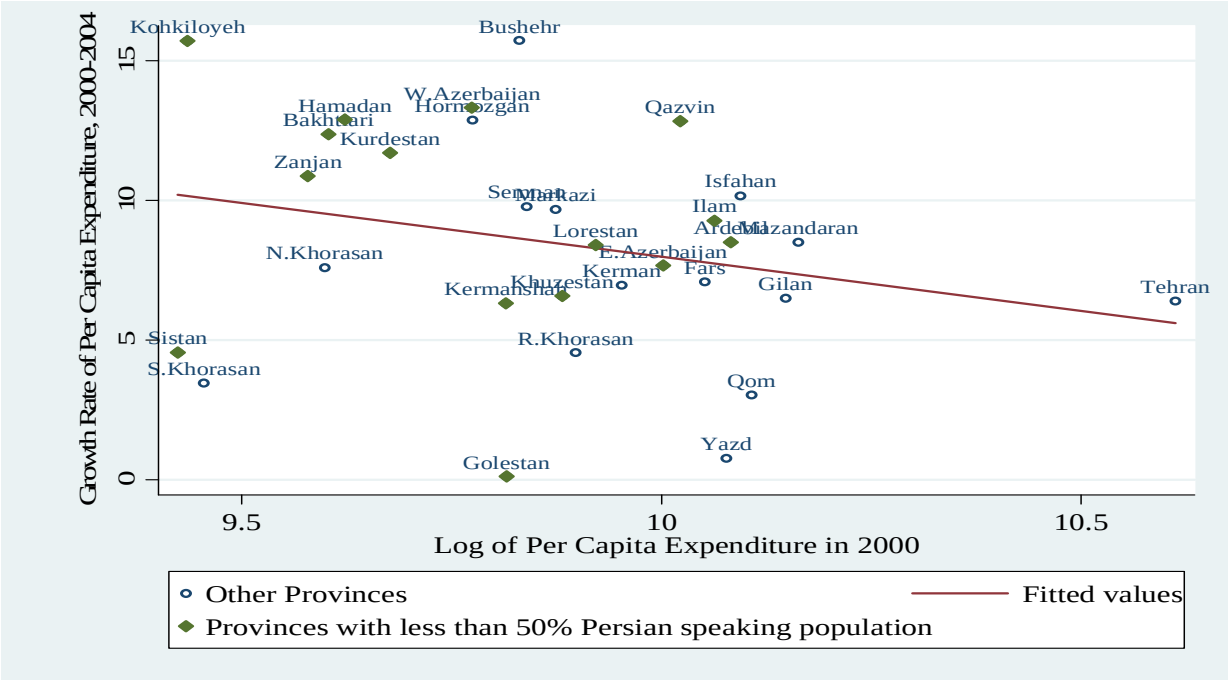
Change from 1997 to 2005 in District Characteristic …	Percentage Point Change in Ahmadinejad's Share	Percentage Point Change in Participation Rate
Combined Effect of Demographic Factors	**2.7**	**–16.5**
Literacy Rate of Female Adult Population	–6.8	–5.2
Literacy Rate of Adult Population	7.9	8.0
Share of 15+ Population with High School or Higher Education	0.3	0.7
Combined Effect of Change in Education	**1.3**	**3.3**
Labor Force Participation Rate	1.7	0.2
Shares of Industry and Services in Total Employment	–3.2	–0.3
Share of Public Sector in Total Employment	6.8	–8.7
Combined Effect of Change in Economic Structural Factors	**4.4**	**–8.6**
Poverty Rate	–8.1	–1.1
Log of per Capita Expenditure	–2.9	1.3
Growth Rate of per Capita Expenditures	7.0	–3.7
Combined Effect of Change in Income, Growth, and Poverty	**–4.1**	**–2.9**
Combined Effect of Demographic and Socio Economic Changes between 1997 and 2005	**4.4**	**–22.0**

Figure 1. Poverty Rates and Ahmadinejad's Vote Shares across Provinces



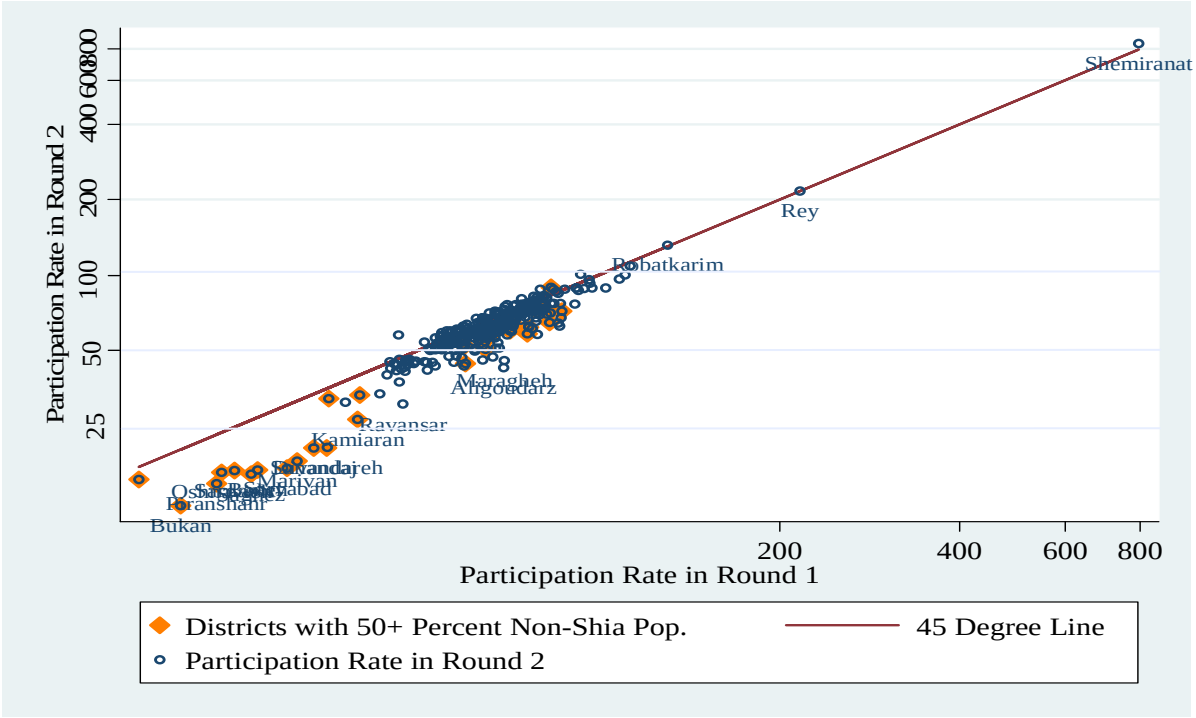
Sources: Ministry of Interior of Iran and Salehi-Isfahani (2007)

Figure 2. Per Capita Expenditure Levels and Growth Rates across Provinces, 2000-2004



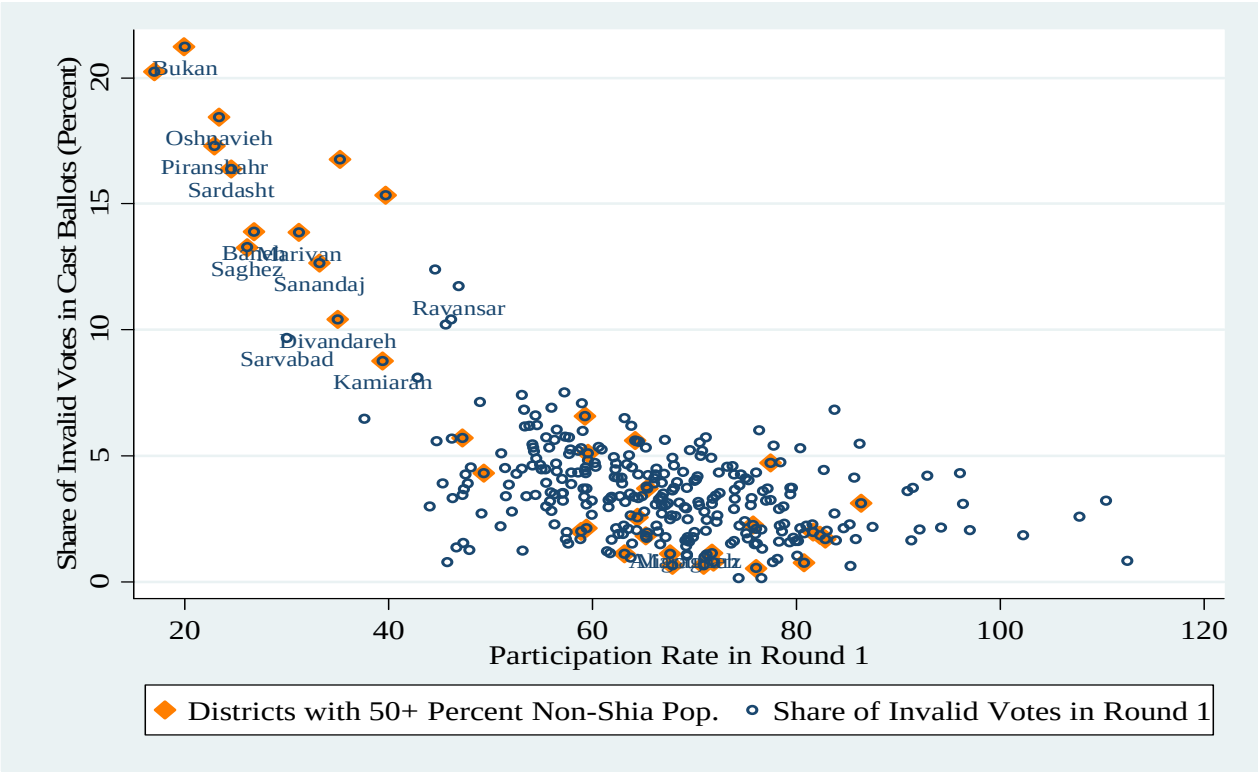
Sources: Calculated based on data from Statistical Center of Iran, HEIS reports, various years.

Figure 3. Participation Rates Across Districts in Rounds 1 and 2 of 2005 Presidential Election



Sources: Ministry of Interior and Statistical Center of Iran.

Figure 4. Voter Participation Rates and the Proportion of Invalid Ballots in Round 1



Sources: Ministry of Interior and Statistical Center of Iran.