# Refinancing the Rentier State: Welfare, Inequality, and Citizen Preferences toward Fiscal Reform in the Gulf Oil Monarchies

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## Abstract

Middle East oil producers are today pursuing profound transformations of their rentier economies, including through new taxes and reductions in state spending and welfare subsidies that have supported citizens for generations. Reforms aimed at deficit reduction are expected to pose serious challenges for authoritarian states whose citizens are accustomed to generous financial patronage in return for political allegiance. However, the dominant rentier state theory does not offer clear expectations about citizen preferences or priorities surrounding welfare retrenchment, beyond the basic assumption that citizens should oppose reductions in state largesse. This paper proposes a general framework for understanding how citizens relate to welfare benefits in the rentier state, and then tests some observable implications using original survey data from the quintessential rentier state of Qatar. We distinguish between nonexcludable benefits that are available to all rentier citizens and personalistic benefits that disproportionately flow to elite citizens and the ruling class, the latter giving rise to inherent inequality. Using two novel choice experiments, we ask Qataris to choose between competing forms of economic subsidies and state spending, producing a clear and reliable ordering of welfare priorities. Finally, expectations derived from the experiments about the individual-level determinants of rentier reform preferences are tested using data from a follow-up survey. Findings demonstrate the importance of nonexcludable public goods, rather than private patronage, for upholding the rentier bargain. Our study has important implications for understanding how citizen preferences may serve to constrain the domestic and foreign policy options available to rentier governments as they seek to reshape their societies away from reliance upon oil. It also invites a larger conceptual reorientation of key aspects of the prevailing rentier state paradigm.

*Keywords:* rentier state, resource dependence, fiscal reform, Middle East, Arab Gulf states, survey research, experimental methods

## Introduction

The oil crash of 2014 hastened long-deferred plans for structural economic and social reform in the petroleum-exporting states of the Middle East and North Africa (MENA). Headlined by Saudi Arabia's sweeping National Transformation Program, governments across the region have sought alternative revenue sources to maintain public spending and fund ambitious development strategies.[1] To this end, they have embraced bold new policy tools, including fees on public services, reductions in fuel and other commodity subsidies, privatization of state assets, and the phased introduction of taxation.[2] MENA leaders have indicated that, unlike temporary cost-saving measures instituted during previous downturns, such changes represent the new normal.[3]

Reforms aimed at deficit reduction are thought to pose serious challenges[4] for authoritarian states whose citizens are accustomed to generous cradle-to-grave welfare as part of the so-called "rentier bargain" of financial patronage in return for political allegiance.[5] However, the dominant rentier state theory does not offer clear expectations about public preferences or priorities surrounding rentier retrenchment, beyond the general assumption that citizens will oppose reductions in state largesse.[6] Similarly, the few extant studies of attitudes toward rentier reform have sought only to describe popular opinion toward specific policies,[7] rather than formulate and test hypotheses about the mechanisms that underlie citizens' preferences. As a result, rentier theorists still lack a clear understanding of which forms of economic welfare citizens consider as essential to upholding the rentier social contract, which are viewed as less essential, and what explains the difference.

This paper proposes a general framework for understanding how citizens relate to welfare benefits in the rentier state, and then investigates some observable implications using original survey data and embedded experiments. We argue that citizens' preferences toward benefits—and so the retrenchment of benefits—are shaped by inequalities inherent in the rentier system.[8]

We first develop a conceptual model of rentier state spending that traces the pathways of unequal allocation, which we support by presenting previously-unavailable comparative data on citizen income distributions in the six archetypical rentier states of the Arab Gulf. We observe that some benefits, such as public services, are nonexcludable[9] and thus universally accessible to all citizens; but many others are personalistic in nature and flow disproportionately to an elite subset of the citizenry.[10] An even more exclusive category of spending, including on foreign policy, remains the prerogative of the ruling class.[11] This theory-building leads to our main proposition: that most citizens will recognize systemic inequalities in the distribution of rents, and therefore prioritize readily accessible public goods over more lucrative, but unevenly allocated and unguaranteed, private benefits. To date, rentier state theory, including recent refinements, has not considered how structural biases condition attachment to different forms of state subsidies and spending.

We test our hypothesis using original survey data from the quintessential rentier state: the Arab Gulf state of Qatar. Our study utilizes two national surveys of Qatari citizens conducted in 2016 and 2017. The surveys assess how individuals prioritize the various financial benefits they receive by virtue of being citizens of a wealthy oil- and gas-exporting country, including public spending, direct subsidies and transfers, and freedom from most taxation. Rather than relying on direct survey questions, we examine preferences via two novel survey experiments included in the 2016 survey that present subjects with a choice between competing types of welfare spending and subsidies, respectively. Finally, expectations derived from the experiments about the individual-level determinants of rentier reform preferences are tested using data from a 2017 follow-up survey.

## The Rentier State: Fragile or Flexible?

The oil- and gas-exporting states of the Middle East and North Africa, especially the resource-rich Arab Gulf monarchies,[12] have long served as the archetypes of rentier state theory,[13] a framework for describing the political economy of countries dependent upon income (rents) from external sources.[14] By this model, the role of the state is to collect revenues from the sale of natural resources[15] and to pass on a portion of this wealth to citizens to buy their political loyalty, while being unaccountable for how it allocates remaining rents.[16] Because the state provides for the public welfare without the need for taxation, citizens are said to forfeit claims to oversight over economic and other public policy, tacitly consenting to a non-democratic political system in what is sometimes called the "rentier bargain."[17] Rentier leaders are theorized to further dampen pressures for political accountability by investing resource wealth in creating supportive patronage networks,[18] buying out merchant elites,[19] co-opting civil society groups,[20] and funding repressive institutions.[21]

Thus, explicit in conventional statements of rentier state theory is that the anomalous state-society relations witnessed in resource-rich countries are viable only so long as autocrats can afford to subsidize their subjects—that is, so long as oil and gas continues to flow and be sold above break-even price.[22] Resource-based governance is, by this view, naturally unsustainable, vulnerable to both long-term structural changes as well as short-term shocks. Innate challenges include, first, the state's very basis in a resource that is both depletable and sold on a volatile international market. Oil economies also face a rapidly changing global energy landscape, including the rise of shale extraction in the United States and an increasing push toward renewable energy in Europe and Asia, that threatens to undercut the long-term price of oil.[23] More recently, Krane identifies what he argues is a more fundamental structural flaw in the rentier model. The use of energy subsidies to maintain political legitimacy, he explains, can create a deleterious "negative feedback loop": subsidies raise local energy demand, which reduces international exports and thereby undermines state capacity for rent distribution and so, ultimately, political stability.[24]

Demographic, social, and political trends also are expected to put increasing pressure on the rentier bargain. MENA oil states feature young and fast-growing populations that anticipate the availability of the same high-wage government jobs that employed previous generations.[25] Meanwhile, the Gulf rentier economies in particular remain highly dependent upon large foreign workforces to fill positions in the service, construction, and petroleum sectors, and these expatriate labor populations represent for many Gulf citizens both economic competition and a cultural threat that fuels discontent.[26] Finally, especially following the Arab uprisings begun in 2011, scholars and policy analysts alike have contended that eventually citizens of the Middle East's autocratic regimes will rise up in the name of democracy, no matter the generosity of the welfare state.[27]

Nevertheless, the Gulf oil monarchies have survived decades of predictions about their imminent demise.[28] And, conceptually, more recent revisions to the behavioral assumptions underlying rentier state theory serve to temper pessimism about the ability of rentier societies to weather economic and political challenges. First, scholars have identified a number of non-economic bases of political legitimacy and authority in the Middle East oil producers. These include the institutions of monarchism,[29] Islam,[30] and the ruling family[31]; pre-oil coalitional bargains[32]; cultural stewardship[33]; international prestige[34]; and the provision of security and stability.[35] If rentier regimes can cultivate political allegiance from such non-material sources, then state stability is less dependent on continued financial patronage of citizens.

Second, scholars have more critically probed the demand side of the rentier bargain; that is, the idea that citizens of resource-based countries are motivated mainly by financial rent-seeking.[36] As early as 1999, Okruhlik argued that the rise of organized political opposition in wealthy oil monarchies such as Saudi Arabia is inconsistent with a theory of rentier citizens as politically agnostic rent-seekers.[37] Using a national survey, Gengler has shown that the political orientations of Bahrainis are determined mainly by confessional-based solidarity with or opposition to the regime, rather than by individual economic circumstances.[38] Similarly, Freer charts citizen involvement in oppositional Islamist groups in Qatar and the United Arab Emirates, contending that such ideological-based activism belies a simple equality between affluence and politically passive citizens.[39] Moritz interviews more than 100 Gulf citizens involved in formal and informal opposition and finds that these "nationals who should theoretically be co-opted" instead defy "rent-based incentives to remain politically inactive."[40] Meanwhile, survey data collected by Krane suggest that Gulf citizens are more willing to surrender customary economic benefits than assumed by classical rentier state theory.[41]

Finally, it is possible that resource-based MENA states can extend the longevity of the existing political-economic model simply by securing new sources of rent. Gulf states today are incubating new rent-generating industries, developing sophisticated financial sectors to attract foreign capital and invest local assets[42]; expanding property markets to create new engines of capital accumulation[43]; and deploying assets internationally through sovereign wealth funds.[44] Another way that Gulf rentier economies are generating new forms of income is through placing greater financial burden on foreign residents and companies.[45]

Thus, in the near half-century since the initial elaboration of the rentier state framework, the prototypical rentier economies of the Gulf have shown a largely unexpected resilience in the face of economic globalization, social and technological change, and shifting political currents. In turn, scholars have extended and adapted rentier state theory to account for a more dynamic state, and state-society relationship, than originally theorized. Gray summarizes this evolution in his account of "late rentierism."[46] The late rentier state, according to Gray, continues to survive because it has become more entrepreneurial and politically sophisticated, supported by state capitalism and neopatrimonialism: more long-term in thinking; more responsive to society even without substantial democratization; more open to globalization but careful to protect indigenous social and cultural values; and more active in pursuing foreign policy goals.[47] The paradigm of late rentierism helps explain how non-material factors have become important elements of rentier state politics, even as resource rents remain the basis of the system.

**The Promise and Pitfalls of Rentier Reform**

These changes in thinking about rentier political economy today underlie the ongoing reform efforts of oil producers. Such plans were spurred by the oil price crash which began in 2014, and as a result of which the IMF projected a $1 trillion USD shortfall in GCC budgets under a scenario of low oil prices and no economic reforms.[48] Gulf governments thus began experimenting with new policy tools. It was in the wake of this oil crash that energy subsidies were cut in most Gulf countries, resulting in higher utility, fuel, and water costs.[49] As benefits were taken away, new costs were added, including a GCC-wide value-added tax (VAT)[50] and new corporate taxes in some countries, new fee structures on government services, and sin taxes on junk food, alcohol, and cigarettes.[51] The IMF estimates that the VAT alone could create revenue of up to 3.5% of non-oil GDP.[52] To raise additional funds, numerous privatization plans have been announced, covering utilities, airports, schools, and hospitals.[53]

Many ongoing economic reforms also have a strong international component. Unlike other sovereign wealth funds, Saudi Arabia's $300 billion-plus Public Investment Fund is more like an aggressive hedge fund, using leveraged loans to invest in high-risk international investments.[54] But Saudi Arabia is not alone in pursuing returns from international markets. The Qatar Investment Authority, for example, is majority shareholder of the largest property owner in London.[55] And in 2018, the UAE's Abu Dhabi Investment Fund was named the world's largest real estate investor, with more than $62 billion in mostly foreign assets.[56]

Meanwhile, at the same time that they are reducing welfare benefits to citizens and diverting more wealth abroad, Gulf governments have sought to emphasize their provision of security and stability amid regional economic and political turbulence. Some scholars view this as a deliberate strategy of political legitimization in which rentier states seek to replace expensive patronage of citizens with the nonmaterial benefit of stability,[57] while others have described it as a mere passive political enabler of fiscal reform.[58] However the case, since the onset of the Arab uprisings in 2011, Gulf states have propped up friendly governments and political factions in Egypt, Lebanon, Libya, Sudan, Yemen, and elsewhere with money and fuel, and sent billions in aid and investment to the Horn of Africa.[59] Since 2015, Gulf states have also been engaged in an extremely costly military intervention in Yemen, ostensibly to check the regional political ambitions of archrival Iran, which they commonly accuse of seeking to topple their regimes.[60] As a result, GCC defense sector spending is projected to balloon to $100 billion by 2019.[61]

Finally, since 2017 the Gulf states themselves have been embroiled in a serious internal diplomatic conflict, with Saudi Arabia and the UAE leading an economic and political blockade of Qatar for its claimed interference in their domestic affairs.[62] This has spurred still greater foreign spending among the disputants, not only on military hardware but also to buy political influence with global powers, especially the United States. Since the onset of the blockade, Qatar has signed a $12 billion deal for American fighter jets, and Qatar Investment Authority has announced $45 billion worth of investments in the U.S.[63] Saudi Arabia, for its part, has spent tens of millions on U.S. lobbying efforts since 2017,[64] and pledged $200 billion worth of investments in U.S. infrastructure during a state visit by U.S. President Donald Trump.[65]

Amid this internal reorganization and external competition, what is clear is that Gulf states' present domestic and international agendas require financial sacrifices of citizens even as ruling elites continue to live opulently and allocate resources without popular oversight. VAT, a generally regressive tax, raises the cost of living for rich and poor alike, as do increases in fuel costs and fees on state services. The policy of privatization has also led citizens to question what benefits they should receive and the costs they should bear for what have traditionally been public services.[66] Meanwhile, upward mobility for Gulf citizens has become less likely as high-wage public employment can no longer be maintained as a right of citizenship. As one 20-year-old Saudi told *The New York Times* during a break from his job at McDonalds, "For the older generation, it was easier. … They'd get out of university and get a government job. Now you need an advanced degree. … The weight is on our necks."[67] These sacrifices are being asked as there is widespread acknowledgement of wasteful government spending and opaque accounting of oil revenues, siphoned away from public coffers through financial transfers to foreign states, arms purchases, investments abroad, and private royal allowances.[68]

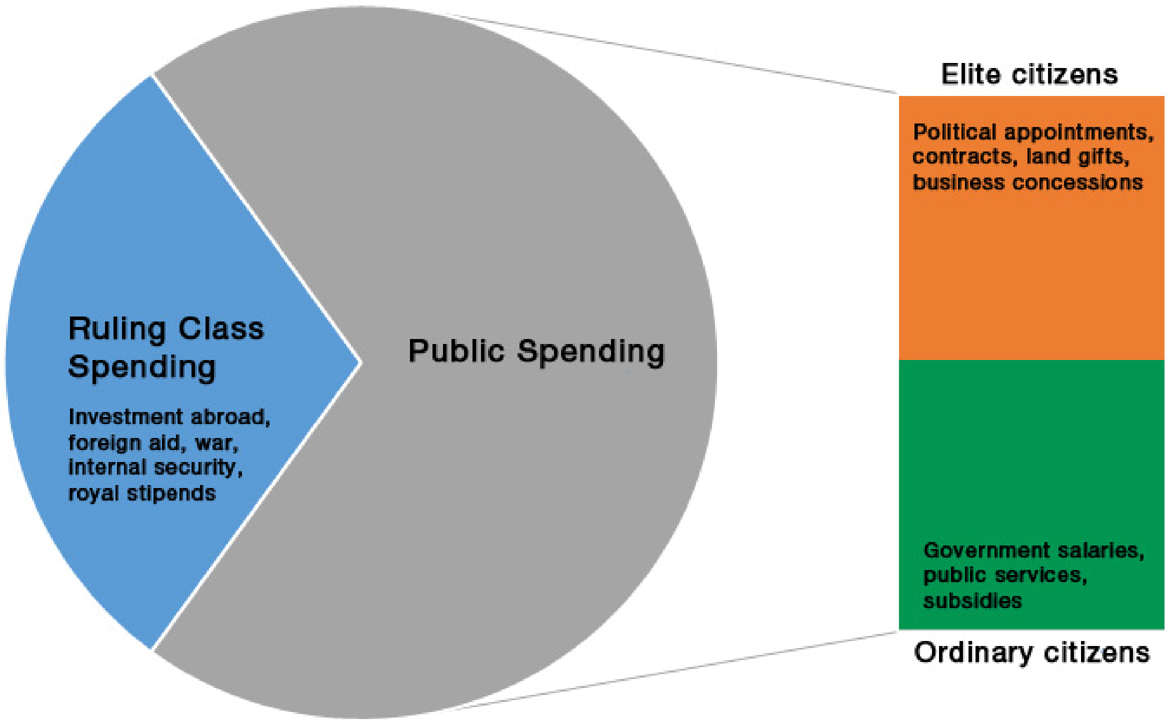
It is evident that rentier leaders are aware of such public misgivings and want to appear responsive to common citizens. In some instances, Gulf states have sought to insulate the poorest citizens from the impact of reforms.[69] Oman, for instance, has instituted new quotas on expatriate labor in order to assure employment for more nationals.[70] To avoid exacerbating existing political discontent, Bahrain continues to defer reductions in food subsidies as it assesses how to compensate low-income citizens.[71] In Saudi Arabia, the Unified Citizen's Account initiative launched in 2017 integrated a variety of non-contributory cash transfer programs with the explicit purpose of redirecting benefits to low-income citizens.[72] Saudi Arabia also combined the roll-out of austerity measures with efforts to show ordinary citizens that elite consumption is being checked, via the now-infamous ‘anti-corruption’ sting that saw wealthy businessmen, including prominent members of the royal family, incarcerated at a luxury hotel until they agreed to sign over supposedly ill-gotten wealth.[73] However, it is too soon to assess whether these modest efforts at redistribution will be able to reduce persistent economic inequalities in the long run. As to their political purposes, it is similarly unclear whether such measures are convincing publics that the financial burden of reform is being spread equitably across society, especially as the ruling class continues to engage in conspicuous discretionary spending at home and abroad.

**Inequality and the Rentier State**

Thus, the very tools employed to guarantee the future stability of resource-dependent regimes in the Gulf and wider MENA region in fact serve to magnify one of the most difficult challenges facing rentier states: distributing rents equitably among citizens, or at least appearing to do so. As will be shown, inequalities arise from the fundamental social and economic structure of rentier states.[74] The absolute wealth enjoyed by Gulf resource exporters often obscures disparities in economic circumstances within and across different strata of society.[75] However, such differences are not anomalies but rather features of the very rentier model itself, which depends on a pyramid of distribution.

Visualized in Figure 1 is the allocation of rents in a typical rentier state such as Qatar. Spending data are not available to quantify the exact proportions of revenues directed to different categories; rather, the object of Figure 1 is to illustrate the structural inequality between three main rentier constituencies. First, the ruling class—in the Gulf context, members of the royal family—oversee a significant portion of the country’s wealth both as direct recipients of resource windfalls and also via their insider status in managing foreign investments, brokering trade deals, and distributing foreign aid.[76] Of course, they also have significant incomes at their disposal for

Figure 1. Resource revenue allocation in the rentier state

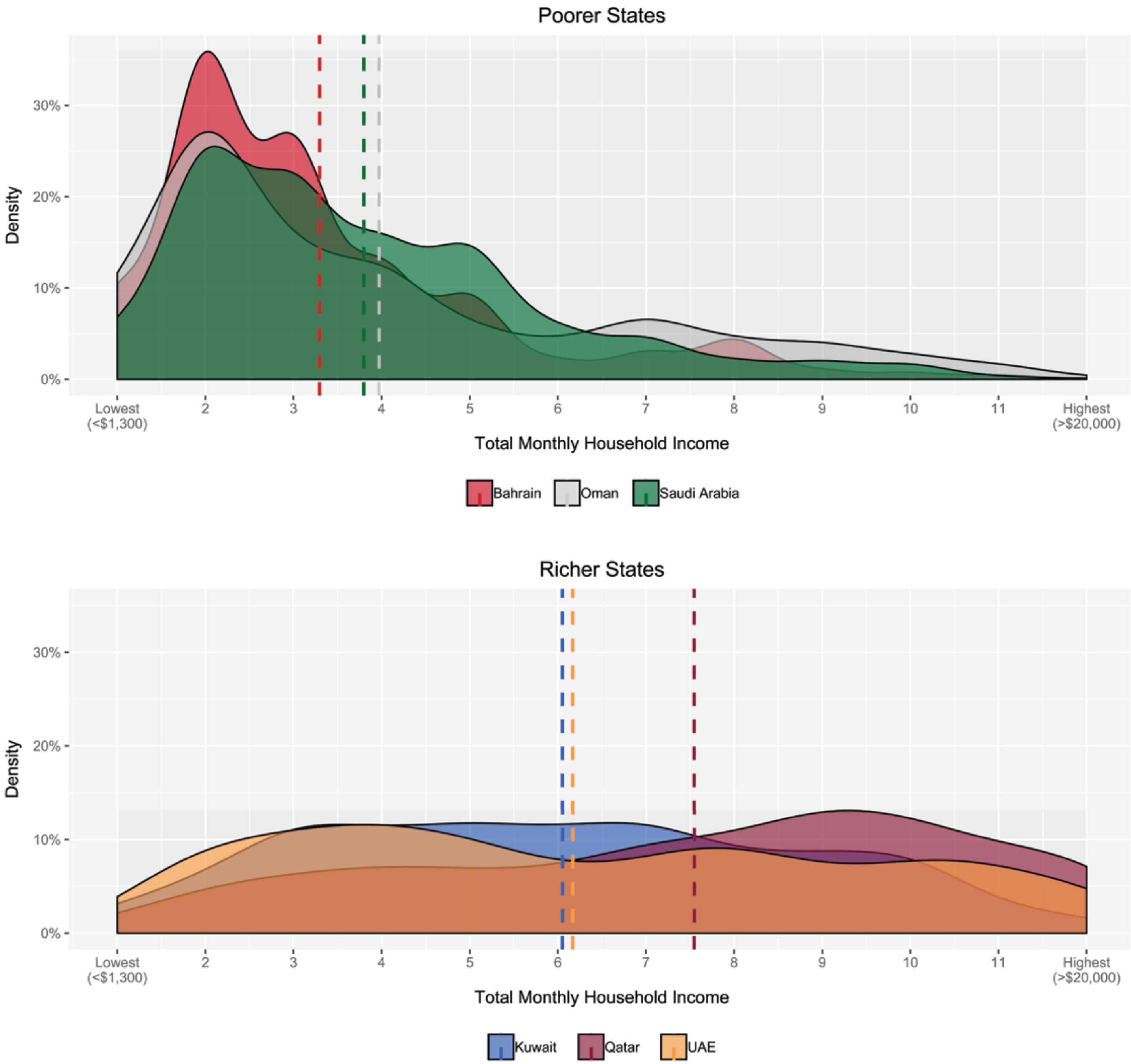



personal consumption: under British colonial administration, one-third of Gulf oil revenues were consigned to the so-called "privy purse" of the royal family, and recent studies of government spending suggest that a similar figure may still apply today.[77]

Rentier rulers are supported by a winning coalition of merchant, tribal, religious, and/or other elites who possess material and political capital, and whose continued allegiance is crucial to regime preservation.[78] Accordingly, another tier of elite, but non-royal, citizens enjoys preferential access to a broad array of state subsidies and benefits, including government jobs, contracts, and land allotments, which in theory are available to all citizens but which in practice depend on personal status and connections.[79] In diverse states such as Bahrain, Kuwait, and Saudi Arabia, ascriptive group affiliation also mediates access to benefits.[80] Even more stringent criteria determine access to more lucrative benefits such as political appointments and business import concessions. Such variation in access, revolving largely around impermeable descent-based distinctions, generates a further layer of distributional inequality between this advantaged group of elites and the final, and largest, class of rentier citizens. These citizens are heavily dependent on the state for access to lower level positions in the public sector, free public services such as education and healthcare, and universal subsidies like those for utilities and food.[81]

The upshot is rentier societies that are wealthy on average, and compared to other MENA states, yet still marked by substantial variation in individual-level economic situations. Figure 2 demonstrates this variation, depicting distributions of reported citizen household income across the six Arab Gulf states. To facilitate comparison, countries are divided according to their relative per-citizen resource wealth, with the richer emirates of Kuwait, Qatar, and the UAE grouped together as well as the relatively poorer Bahrain, Oman, and Saudi Arabia. Country means are signified by dotted vertical lines. To the authors' knowledge, these original data represent the clearest and most complete estimates of Gulf citizen income to date.[82] The data support several important conclusions. First, despite their absolute wealth, all six Gulf states feature significant variation in the household financial situation of their citizens, with some individuals fairing much better than others. Second, the spread of this variation appears related to the magnitude of rentier wealth. Those GCC states with the lowest capacity for distribution—Bahrain, Oman, and Saudi Arabia—have lower average citizen incomes, as expected, but they also tend to show less extreme income differences within their populations. The standard deviation in household income in these three countries is 1.9, 2.6, and 2.0, respectively, compared to 2.7, 3.0, and 3.3 in Kuwait, Qatar, and the UAE. This implies another difference in the nature of inequality in the poorer versus richer Gulf rentier states. In the former, the most significant economic divide lies

Figure 2. Citizen household income distributions in the Arab Gulf states




between the vast majority of relatively poor citizens, and small minority of wealthy ruling elites. But in the wealthier Gulf states, there is a notable secondary inequality among the general populace, some of whom secure access to disproportionate state benefits while others do not.

The early framers of rentier state theory acknowledged inevitable inequalities in distribution but argued that unequal allocation of benefits "is not relevant for political life," because maneuvering for additional resources within the existing system is an optimal strategy to pursing change of the system itself.[83] However, more recent studies have documented the discontent that emerges when some citizens receive a relatively smaller share of benefits than others.[84] So too, ongoing efforts to reform the rentier state betray elite concern over perceptions of inequality and attempts to shore up legitimacy. Yet little is known about citizen preferences related to fiscal reform, and how these might constrain the policy options available to rentier leaders.

In what follows, we examine the essential components of the rentier welfare state in a time of retrenchment. We use rare survey data to test the theory that citizens of rentier states prioritize the material benefits of citizenship—whether public spending or subsidies—based on their expectations of personally benefiting, given known structural inequities in distribution. Some benefits, like utilities, healthcare, and education, are universally accessible to all citizens and thus guaranteed. Others, meanwhile, are more targeted, involving formal and informal eligibility requirements or application processes that may be vulnerable to cronyism and nepotism. We expect that citizens will tend to prefer universal subsidies and spending from which their chances of benefiting are higher, even if these types of benefits may be less lucrative than personalistic, but unguaranteed, patronage. By extension, we also expect relatively poorer citizens to be less willing to bear the financial cost of reform. Since these citizens have reaped a smaller share of the windfall from past oil booms, they might reasonably expect their wealthier compatriots and leaders to curtail their own spending before cutting social services. We expect that this resistance may be magnified among older citizens, who are more accustomed to state largesse and who have a lesser opportunity to capture additional state resources through future employment.

## Data and Methodology

### *The Case of Qatar*

Qatar is an archetypal rentier state in which resource rents are very high and political contestation is very low. Its vast natural gas resources and citizenry of only around 350,000 individuals[85] afford it unparalleled capacity for financial patronage. In 2018, income from oil and gas exports amounted to more than $175,000 per citizen.[86] Qatar's monarchy distributes a generous portion of this income to citizens via an extensive system of welfare benefits.[87] For these reasons, Qatar is commonly labeled an "extreme"[88] (or "über"[89] or "ultra-"[90]) rentier state. This makes it an instructive case through which to assess citizen preferences toward welfare retrenchment, as the most recent updates and refinements to rentier state theory, such as Gray's "late rentierism," were specifically formulated with acute cases like Qatar in mind.[91]

Qatar's extreme rentier status also makes it an appropriate setting to test the theory that distributive inequality shapes public preferences toward rentier reform. On the one hand, it is possible that the tremendous wealth enjoyed by Qataris may temper public resistance to benefit retrenchment, since changes that would greatly affect citizens of poorer Middle East states will have a less negative qualitative impact on livelihoods in Qatar. Alternatively, Qatar's affluence may lead citizens to view austerity programs as unjustifiable in light of the state's massive resource wealth, and thus to expect elites, rather than ordinary people, to make greater financial sacrifices. The former result would imply that citizens are primarily concerned with the absolute magnitude of patronage received from the state, whereas the latter would suggest that citizens' views are also influenced significantly by perceived inequities in the outcomes and processes of distribution.

### *Existing Data on Rentier Reform*

Survey data capturing citizen attitudes toward fiscal reform in the Arab Gulf states are extremely rare, and extant data are limited in at least three important respects. First, studies have either gauged public opinion toward specific policy measures, or else investigated broad notions of economic entitlement. Both Krane[92] and Gengler and Lambert,[93] for instance, assess citizen sensitivity to reducing electricity subsidies. Lambert and Lee consider openness to reuse of treated wastewater as a cost-saving measure in Qatar.[94] Jones surveys Emirati students to evaluate state efforts at "social engineering" via curriculum changes designed to cultivate a more liberal and industrious citizenry.[95] Although these studies offer valuable insights, their results may not be generalizable to other aspects of reform.

A second and related drawback of existing survey-based research is that it relies mainly on responses to traditional, direct survey questions. This can be problematic for several reasons. First, subjects may face incentives to report socially acceptable opinions and behaviors, as observed in other MENA surveys.[96] Such bias may result if survey respondents view qualities like liberal-mindedness and lack of attachment to economic welfare as being more acceptable than resistance to change and financial dependence. Citizens also may be reluctant to express opinions that could be perceived as criticisms of state policy, especially where political dissent is not only socially unacceptable but criminalized.[97] Responses to direct survey questions also pose interpretation challenges because their design usually fails to elicit meaningful responses. Unless presented with a task that forces a choice between competing economic priorities, rentier citizens accustomed to ample resources are likely to report that all benefits and services are essential to maintaining their lifestyle. We demonstrate this tendency in the following section.

A final limitation of available data is their basis in non-representative samples. In some economic surveys, Gulf nationals and expatriates are aggregated in a way that obfuscates the behaviors and preferences of citizens.[98] Krane uses data from a YouGov online panel that he acknowledges is "broadly illustrative of public opinion rather than statistically representative."[99]

The online sample also is heavily dominated by Saudi respondents and thus provides little information about the other, wealthier and more archetypical Gulf rentier states. Our surveys of Qatari attitudes toward state spending and benefits aim to fill gaps in previous research, not only by focusing on a quintessential rentier case, but also by examining the multiple dimensions of economic transformation through an innovative experimental approach.

### *Survey Data and Methods*

Data for our study come from two nationally representative telephone surveys of Qatari citizens carried out in early 2016 ($N = 812$) and early 2017 ($N = 788$) by [blinded for review]. The former survey was implemented at a time when oil prices hit their lowest point in a decade at approximately $27 per barrel; the latter as Qatar had announced measures aimed at reducing its first budget deficit in 15 years.[100] This timing made questions about fiscal austerity highly salient for survey respondents. Survey response rates were 53.6% and 56.4%, respectively. For both studies, a stratified probability sample was constructed from data provided by Qatar's two largest telecommunications companies, covering 98% of citizens. We used list-assisted random digit dialing to select mobile phone numbers and then filtered respondents based on citizenship. The resulting data were weighted based on population estimates.

### *Experimental Design*

Our study makes an important methodological contribution to the rentier state literature by gauging citizen preferences on rentier reform using two novel, choice-based survey experiments included in the 2016 survey. The application of survey experiments to important social and political science questions is becoming more common,[101] and our data provide a rare opportunity to apply this method to a new research topic and geographical region.

Rentier states provide many benefits to citizens and allocate money in a variety of ways. Focusing on a single aspect of rentier retrenchment may be attractive, but it is inconsistent with the complex, multidimensional nature of the topic, in which numerous changes and cuts are being enacted under the broad umbrella of budget reform. Accordingly, we designed and implemented two choice experiments in which elements were randomly combined into short profiles (or "baskets") and respondents selected between these baskets of options. In both experiments, respondents were forced to choose only one basket, and the task was repeated three times. Each basket contained two randomized elements, in order to avoid head-to-head matches between profile attributes. Since respondents may be hesitant to express socially undesirable preferences, having two elements in each profile allows potentially sensitive items to be combined with less sensitive ones. Respondents can then express their views by selecting a combination of attributes, without being forced to state their preferences directly, thus mitigating social desirability pressures.

The first experiment concerned the respondent's priorities for government spending and was framed positively. The following text was read to the respondent:[102]

> Last year, the State of Qatar spent about 225 billion riyals [~60 billion USD] on various public services. Suppose the state was thinking of changing the amount it is spending on different sectors. The following questions will give you a choice between two sets of sectors. Please tell me which of the two sets you would give priority in terms of state spending:
>
> If you had to pick, would you give priority to [Sector 1 and Sector 2] or [Sector 3 and Sector 4]?

Here Sectors 1 through 4 are placeholders for randomized elements from a list of eight sectors that characterize the spending of Qatar and most MENA rentier states. These are: education, health, social insurance, culture, international investment, infrastructure, defense, and involvement in international crises. (The latter is a transparent reference to Qatar's post-2011 political and military involvement in Libya, Egypt, and Syria.) During randomization, basket elements were simultaneously selected with replacement, permitting all combinations except exact matches between baskets. For example, a respondent might be asked:

> If you had to pick, would give priority to [defense and health] or [defense and involvement in international crises]?

The second experiment employed an analogous design to measure citizen subsidy prioritization against the backdrop of Qatar's first budget deficit in over a decade. The treatments in the second experiment are more specific than the first, focusing exclusively on the welfare benefits that Qatar and other rentier states provide to citizens. The prompt read:

> In the first quarter of the 2015, Qatar faced its first budget deficit in more than 10 years. Hypothetically speaking, imagine that the state had to reduce spending in order to recover the deficit. Which of the following benefits would you most want to keep?
>
> If you had to pick, would you give priority to [Subsidy 1 and Subsidy 2] or [Subsidy 3 and Subsidy 4]?"

As before, Subsidies 1 through 4 are placeholders for the different subsidies to which Qatari and most other Gulf citizens have traditionally been entitled, namely: free education, free electricity, free healthcare, land allotment, government job opportunities, marriage allowance, social allowance, and no taxes.[103] For example, a respondent might be asked:

> If you had to pick, would you give priority to [free electricity and government job opportunities] or [free healthcare and no taxes]?

### ***Non-experimental Questions***

The 2016 survey also included a non-experimental battery of questions about preferences for the same rentier subsidies that were included in the experiment, for purposes of comparison. Respondents were asked to rate each subsidy's importance on an ascending scale from 0 to 10, with the ordering of subsidies randomized to avoid ordering effects.[104] To assess the relative importance of each subsidy, we construct a relative difference measure by calculating for each respondent the average of all the subsidies and subtracting it from the answer to a given item.

Thus, for instance, a subsidy with standard deviation of 0 holds average importance relative to the others. We use the resulting indicators to evaluate the efficacy of our experimental approach versus traditional survey questions.

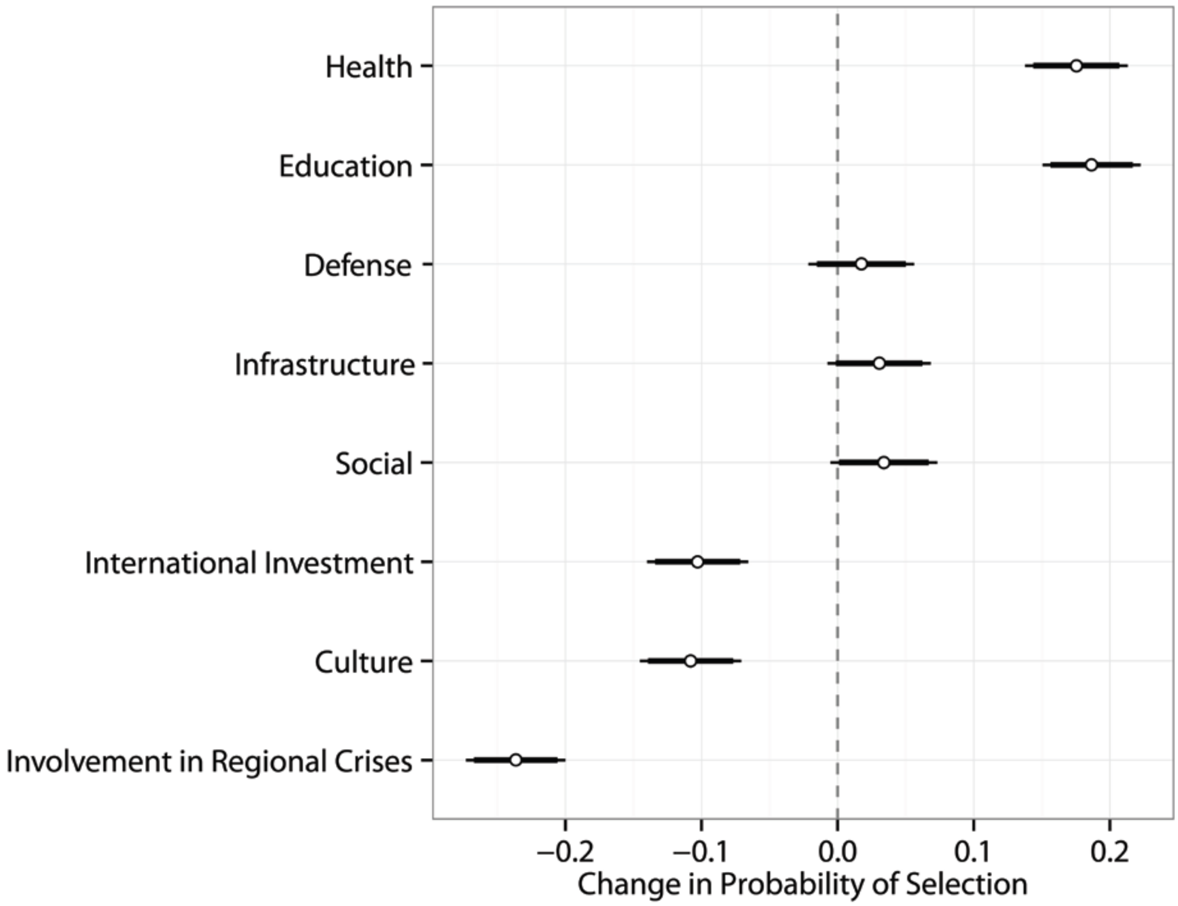
Our experiments forced choices between different fiscal reform options, but they did not allow citizens to reject all options—that is, to reject the notion of reform altogether. We therefore implemented a follow-up survey in 2017 that allows for this possibility. Respondents were asked to choose between state deficit reduction via one of four policies, presented once again in randomized order: (1) a reduction in salaries for Qatari workers in the public sector, (2) a reduction in citizens' allowances, (3) a new tax on goods and services, and (4) requiring citizens to pay for their water and electricity. Although survey enumerators did not read respondents an explicit "None" option, interviewers were instructed to flag all citizens who indicated that all the options were unacceptable and not to press the respondent to select an item from the list. We use these unsolicited responses to construct a dichotomous measure of acceptance versus rejection of fiscal reform.[105]

## Findings

### *Experimental Results*

The sectoral spending experiment gauged citizen priorities given the financial constraints imposed by recent budget shortfalls. Figure 3 shows the change in probability of prioritization (or selection) for a basket of spending options given that it included each of the spending sector treatments.[106] The sectors fall into three groups: those that had a positive impact, those having a very small or null impact, and those with a negative impact. Positive changes in probabilities of selection mean that, on average, citizens prioritize these sectors of spending. Thus, the sectors of education (0.17) and health (0.18) are highly prioritized, relative to the other options. In substantive terms, this can be interpreted as respondents being 17% or 18% more likely to

Figure 3. Spending Priorities of Qatari Citizens: Experimental Results



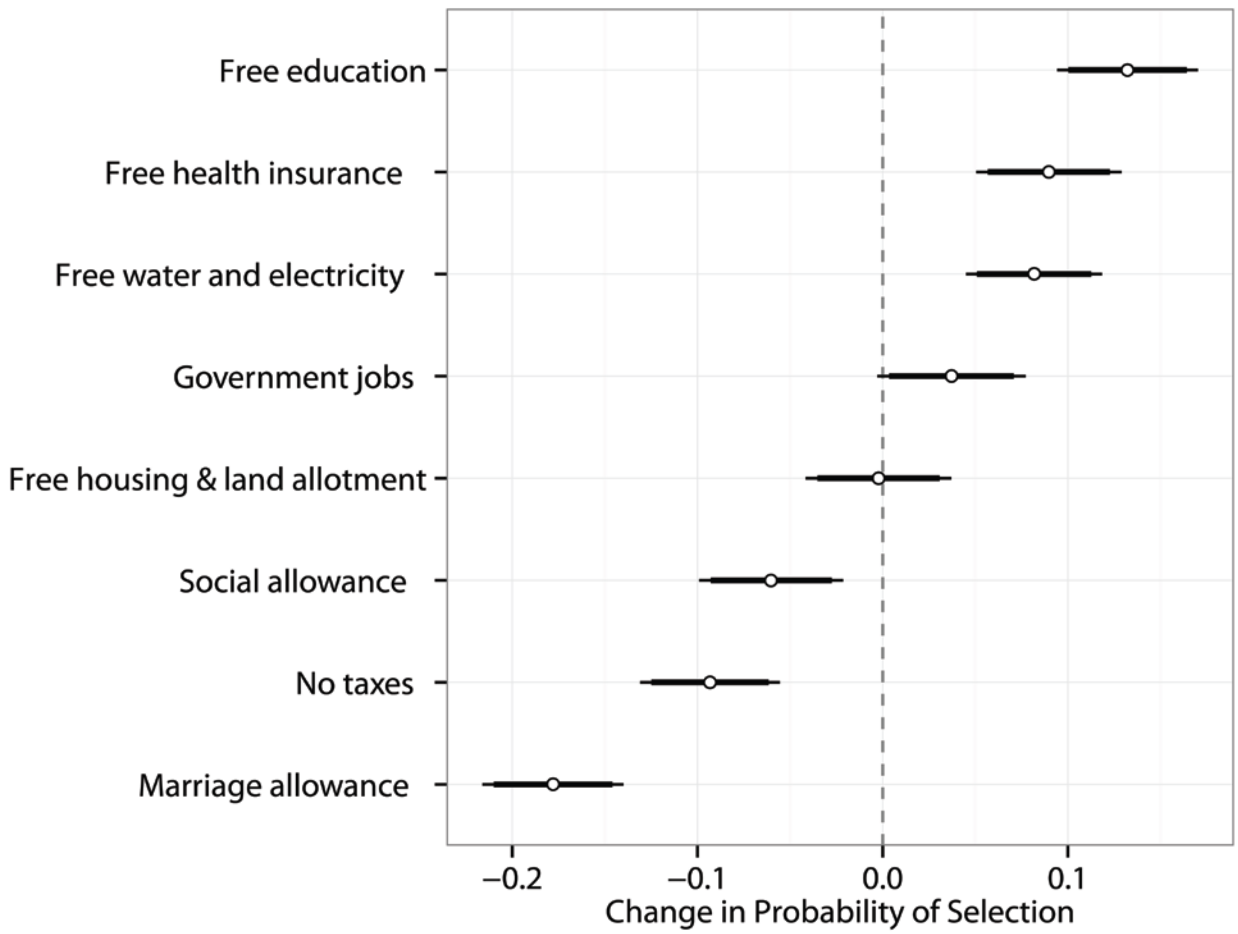

choose a basket when it contains education or health, respectively. In the second category, social (0.03), infrastructure (0.03), and defense spending (0.02) have relatively little impact on the attractiveness of a basket of spending sectors. This does not imply that these spending sectors are unimportant. Rather, because the experiment forced respondents to choose, results reflect the relative, not the absolute, weight of each item in their decisions.

Finally, a third category of spending sectors are those that significantly decrease the probability of selection: international investment (–0.10), culture (–0.11), and particularly, involvement in regional crises (–0.24), which is the largest effect associated with any treatment. The strong aversion to involvement in regional crises indicates a deprioritization of elective foreign policy spending, relative to the provision of domestic social spending in areas such as education and healthcare. Overall, the average Qatari citizen wants spending to be shifted away from international investment and foreign involvement that disproportionately benefit elites, fall entirely under the purview of the ruling class, and only indirectly supports their own standard of living. It is also instructive to note that, while Qataris oppose spending on elite-driven foreign intervention, they have no such objection to spending on national defense, which is a common good, and give it a slight positive priority. In sum, the data indicate a clear preference that scarce resources be allocated to non-excludable public services.

Results from the subsidies experiment, depicted in Figure 4, confirm the relative importance of social services. Access to education (0.13) produces the largest positive change in the probability of selection, followed by free healthcare (0.09) and free water and electricity (0.08). The strong attachment of the average Gulf citizen to free utilities is a well-documented regional phenomenon, for which some scholars have suggested socio-psychological reasons.[107] However, utility subsidies, like other social services, are provided irrespective of ascriptive affiliation or economic status, and we posit that this is a key driving force behind their prioritization.

Although often considered an essential feature to the rentier social contract, access to government employment has a weakly positive (0.04) and marginally significant ($p$ = 0.07) impact on the probability of selection. While somewhat surprising, this finding could arise from the fact that government jobs range from lower-level positions in the bureaucracy, which in Qatar are widely available to most citizens, to higher-level posts requiring some combination of skills and connections to obtain. Thus, while highly lucrative, government employment is also somewhat targeted and certainly not a universal benefit in the same way as free education or healthcare. One can apply similar logic to the finding that housing (0.00) is a relatively neutral

Figure 4. Subsidy Priorities of Qatari Citizens: Experimental Results




benefit in this experiment.  A government-provided land allotment can be extremely valuable, but access is mediated by opaque eligibility requirements and an approval process that in Qatar involves direct appeal to the royal court, leaving many citizens disappointed.[108]

Finally, social allowance (–0.06), lack of taxation (–0.09), and marriage allowance (–0.18) all are negatively associated with the probability of selection.  Both social and marriage allowances are targeted benefits that accrue to citizens who apply after meeting certain criteria. The strong deprioritization of the marriage allowance is sensible in the Qatar context.  The average cost of Qatari weddings has risen dramatically in recent years, leading some to call for increased government assistance; while others contend that the onus is on families to decrease expenditures on notoriously lavish parties.[109] Thus, marriage allowances are not an essential part of the rentier social contract in Qatar but a response to a recent and slightly controversial trend that puts financial stress on citizens across all classes of society.

The experiment intentionally placed the tax-free nature of Qatar's welfare state alongside other benefits. Findings show that the average citizen is not averse to paying taxes, and, on the contrary, places a rather low priority on avoiding taxes relative to losing other subsidies. This may be explained by the well-established loss aversion principle of behavioral economics, in which people may be more willing to incur costs rather than relinquish existing benefits.[110] It could also be that taxes are acceptable because they are viewed as a universal burden that all citizens would be required to bear. But, since the type of tax was not specified in the experiment, we cannot know whether the average respondent interpreted it as being redistributive. Finally, it is possible that taxes are so foreign to Gulf citizens that the average Qatari respondent cannot accurately assess the personal financial implications of taxes. We shed more light on these alternative explanations in the final section.

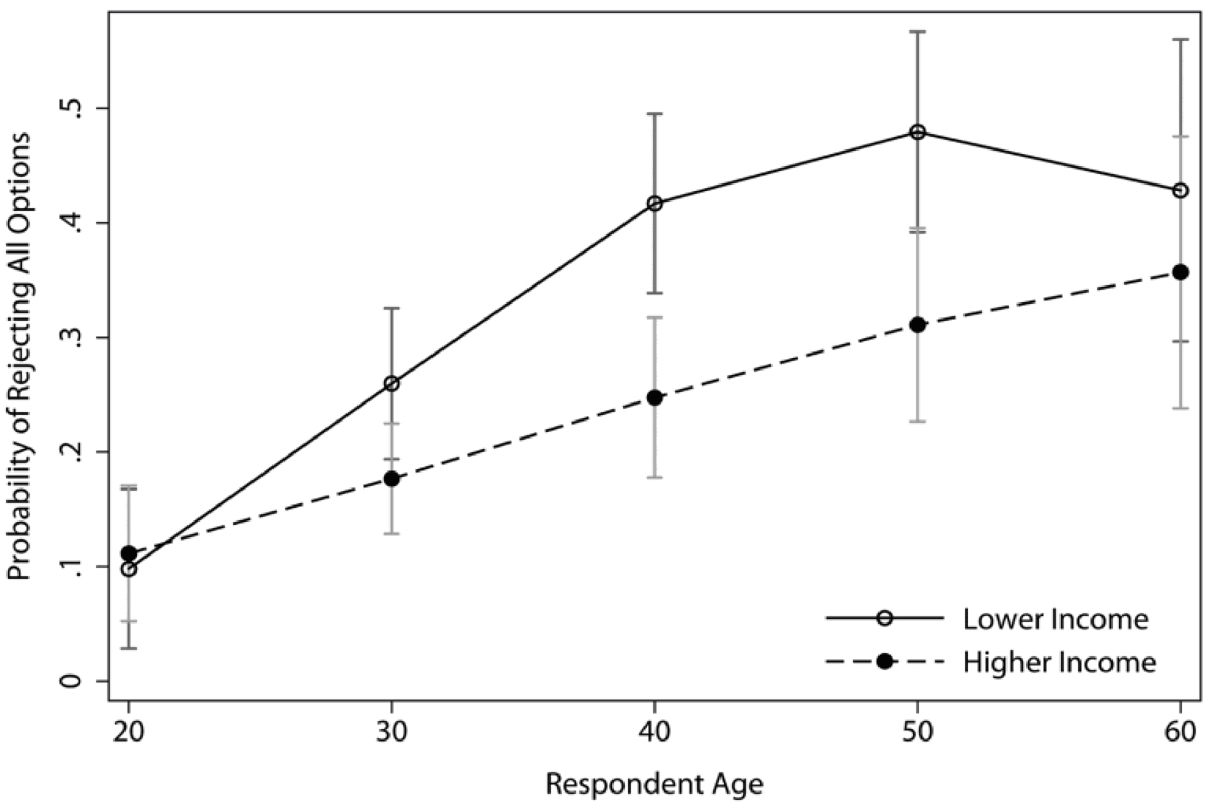
### *Non-Experimental Results*

To illustrate the value of our experimental approach to studying reform preferences, we now consider the results of the non-experimental questions included in the same survey, which directly asked citizens to rate the importance of each subsidy included in the experiment.[111] Results (reported in Appendix C) show that lack of taxation remains substantially less important than the other subsidies. This is consistent with the findings from the experiment and is further evidence that taxes are not antithetical to rentier citizenship. However, few other conclusions can be made on the basis of the results from direct survey questions. Although free education appears to be the most important, there are no other statistical differences between subsidy ratings.  The mean ratings for subsidies other than taxation (mean = 7.5) range only between 9.7 and 8.4, illustrating the tendency of rentier citizens to 'want it all' and insist that all welfare benefits are essential.  Our experiment was therefore advantageous in that it forced respondents into a zero-sum choice between baskets of subsidies in a manner that mirrors economic reality.

Of course, implicit in this forced choice of the experiment is that reforms will take place whether or not citizens agree.  The follow-up questions included in our 2017 survey served the complementary purpose of probing how citizens think about fiscal reform more generally, namely whether they reject the overall notion of bearing some cost of reforms.  Respondents were asked to select between four budget-reducing policies and imagine that each would have the same financial implications for citizens.  In line with previous findings, taxation was the most popular way of raising new revenue, selected by just under one-third of respondents (30.4%).  Cutting existing subsidies was also a popular option among respondents (23.4%).  Salary decreases (6.8%) and paying for utilities (12.2%) were not widely acceptable.  However, the second most popular option for financial reform was to reject it entirely, with more than a quarter (27.2%) of respondents rejecting the idea of cuts to welfare benefits outright.

Clearly, not all Qataris support the idea of balancing budget deficits through reductions in state largesse.  During times of economic difficulty, welfare reductions are particularly problematic for the poor and the aged who have fewer options for recouping their financial losses.  We use logistic regression to predict rejection of all budget-balancing measures (versus selecting any of suggested reform measures) as a function of the interaction between respondent income and age and the associated main effects.  Since age is known to have a nonlinear functional form, the square of age was included in the model, necessitating a three-way

Figure 5. Rejection of Rentier Retrenchment, by Age and Income Category




interaction between income and age-squared. Income was divided into two categories: respondents from households earning above and below, respectively, the estimated mean monthly income of 45,000 Qatari riyals (~$12,300 USD). Age in years was continuous. Since three-way interactions are not readily interpretable, we report predicted probabilities estimated from the model.

Figure 5 shows that the probability of rejecting reform increases with age for both higher and lower income groups.[112] While the relationship between rejection and age is generally monotonic for higher income respondents, this is not the case for lower income respondents. Young, lower income respondents have the same (statistically indistinguishable) probability of rejecting reform as their higher income counterparts. However, this changes after young adulthood, as lower income middle-aged adults are more likely to reject reform. More precisely, the effect of having lower income is statistically significant at the 95% level from ages 27 to 50, which corresponds to 58% of citizens in our representative survey sample.[113] This substantively meaningful connection between age, household income, and acceptance of fiscal reform suggests that those who have benefitted less from the rentier arrangement over previous decades are the least likely to accept reforms that would reduce their welfare. It is also consistent with the main lesson from the experimental findings, which evidence a desire for fairness in the distribution both of rents and of the costs of reforms.

### *Explaining Public Openness to Taxation*

Finally, the non-experimental results also offer additional empirical insight into what underlies Qataris' observed and perhaps unexpected openness to taxation. Absence of taxation is a core principle of classical rentier state theory, and so it is worth considering further which types of citizens are more accepting of taxes, and what this might imply about the underlying drivers of acceptance. In contrast to the experiment, the direct survey questions clearly specified the nature of the hypothetical tax to be weighed by Qataris: "imposition of a new tax on goods and services." This was chosen, first, because it can be assumed to affect all citizens, meaning that variation in response will not depend on differences in how individuals judge the tax's personal applicability. Moreover, at the time of the survey, a tax on goods and services was exactly the plan being discussed and later adopted by GCC governments, making it both more relevant and more easily comprehensible than other measures such as an income tax.

Among which Qatari citizens, then, is taxation the preferred austerity policy? The data reveal several notable findings. First, unlike in the case of outright rejection of fiscal reform, there is no difference in acceptance of taxation based on age: younger citizens are just as likely as older citizens in Qatar to prefer a tax on goods and services over alternative approaches to budget-balancing.  This suggests, significantly, that views on taxation as a broad policy concept are not subject to ideational generational differences such that older citizens oppose taxes on principle, as representing the state's reneging on an established rentier social contract.

A second important finding from this analysis of tax preferences is that the same income-based gap in rejection of fiscal reform witnessed in Figure 5, applies to Qatari views on taxation. (This result is illustrated in Appendix Figure C3.)  The preference for taxation increases with income, with members of the lowest income quartile being only an estimated 23% likely to choose taxes, compared to an estimated probability of 37% among citizens in the highest quartile of household income.  This 62% relative increase in acceptance is associated with a high degree of statistical confidence ($p = 0.011$).  Such a result runs counter to the explanation that public openness to taxation in Qatar results from the expectation that only wealthier citizens will bear the burden of paying, or from general naivety about the implications of taxes.  Instead, it is the wealthiest, and likely most financially informed, segment of society that is disproportionately willing to accept a tax on goods and services over other austerity options.

The finding that income is positively linked to tax acceptance in Qatar admits of different interpretations.  One interpretation is that wealthier individuals prefer the tax option in our survey because it is a regressive tax on goods and services, and thus the societal costs of austerity would be shared equally or borne disproportionately by less well-off citizens.  Alternatively, and more in line with the broader findings of this study, it may be that wealthier individuals prefer taxes because they have higher expectations of  benefiting from the redistributive *output* of those taxes, whether in the form of public services or private patronage.  That is, if the purpose of taxes is to provide the revenue needed to perpetuate the patrimonial rentier system, then the top economic strata of society can expect to recoup more of their tax contribution via privileged access to that system of distribution. Indeed, studies of subsidy reform preferences in other MENA states have shown similarly that prioritization of public service investment tends to rise with income.[114] Given persistent class- and ascriptive-based discrepancies in access to government patronage, it is possible that taxes could become but one more mechanism of inequality in the rentier state.

**Discussion**

This paper has updated the voluminous literature on rentier states with important behavioral insights into how ordinary citizens in resource-dependent countries view their economic entitlements, and the larger principles underlying these individual preferences. It has developed a conceptual framework of inequality in rent distribution both among citizens and between citizens and ruling elites in the rentier state. When the lens of inequality is applied to reform preferences, experimental and non-experimental evidence confirms the driving concern of rentier citizens for equity in benefit distribution.

Our experimental findings revealed a strong preference for nonexcludable goods that benefit all citizens, and a corresponding aversion to both targeted benefits that accrue to individuals and discretionary foreign spending by the ruling class. The average Qatari prioritizes state expenditure on domestic public goods, such as education and health, while soundly rejecting international spending, including on both foreign investment and political intervention. Qataris also favor universal, guaranteed subsidies for education, health, and utilities, over personalistic patronage such as targeted cash transfers and even financially lucrative land entitlements. These patterns lend strong support for the theory that citizens are cognizant of structural inequalities in the distribution of resource rents, and seek to preserve those forms of state spending and welfare from which they can be the most certain of benefiting.

Results of the individual-level analysis provided additional support for this conclusion. In keeping with the idea that the rentier state will be difficult to reform, we found that a substantial proportion of the Qatari population—nearly 30 percent—rejects all types of austerity when asked to identify the most acceptable option for achieving fiscal balance. The likelihood of rejection is higher among older and poorer citizens, demonstrating that those who have gained less from the existing rentier system are especially resistant to the idea that they should bear the financial burden of reforming it.

Beyond its specific theoretical contributions regarding public preferences toward rentier reform, our study also invites a larger conceptual reorientation of some important aspects of the prevailing rentier state paradigm. First, it highlights the value of investigating horizontal relations among rentier citizens, in contrast to rentier state theory's traditional focus on vertical state-society relations. This emphasis is in line with recent work that moves away from the idea of societal co-optation to examine instead the various ways that individuals and societal groups respond to rentier state authority.[115] In demonstrating and explaining citizens' demand for basic social services, even in an extreme rentier case such as Qatar, our results also help untangle the respective roles of public goods and private patronage in underpinning the rentier bargain. Since early statements of rentier state theory, scholars have recognized the importance of both types of distribution in reinforcing the social contract in resource-dependent states. But our unique data give insight into the relative functions of these two forms of allocation, and show how they can exist not only as complements, but also in tension with one another.

Practically, our study has important implications for understanding how citizen preferences may serve to constrain the domestic and foreign policy options available to rentier governments as they seek to reshape their societies away from reliance upon oil. The long-term economic and social reforms currently underway in the Middle East oil producers require a modicum of public support, and our results illuminate some guideposts for governments as they attempt to refinance the rentier state. One implication of our findings is that discretionary spending by the ruling elite is likely to come under increased scrutiny as citizens experience further benefit reductions. Until now, citizens have largely acquiesced when asked to make sacrifices in the name of government spending priorities, whether national transformation strategies, hosting sporting mega-events, or prosecuting wars abroad. But our data suggest that rulers risk public support when they are seen to pursue wasteful discretionary spending while simultaneously demanding sacrifices from ordinary people.

Still, this study suggests that rentier states do have some room to navigate their changing fiscal environment. Most notably, taxation garnered the most public support in Qatar as a means of balancing the budget, compared to the removal of existing subsidies, and this was true among both younger and older citizens. Given the central place of non-taxation in classical conceptions of the rentier state, this public acceptance rather than rejection of new taxes is perhaps surprising. Yet, the lens of economic inequality offers one way to interpret why individuals may be less averse to taxes than generally assumed. Particularly instructive is our finding that taxation is a more highly preferred policy among wealthier, rather than poorer, Qataris. We take this as evidence that rentier citizens are more accepting of taxes when they expect to benefit from their output, in this case via privileged access to avenues of distribution. Under conditions in which fiscal allocation were more equal across society, it is possible that preferences for taxation would follow a different pattern. For instance, less wealthy citizens may be especially supportive of a progressive, income-based tax in which wealthier citizens would pay a greater share. Moreover, greater overall transparency in state spending, or an explicit mechanism for citizen oversight of tax revenue (differentiated from resource rents), would likely bolster public support for taxation generally. Future research could examine the openness of GCC citizens to different forms of taxation, and different uses of tax revenue, to provide more specific direction to policymakers.

Our findings show that some categories of citizens remain entirely resistant to any rentier retrenchment, however. In particular, poorer and older citizens, who perhaps missed out on wealth accumulation that occurred during earlier oil booms, rejected all options when asked to weigh different austerity policies. Even in wealthy Qatar, the proportion of citizens who reject rentier retrenchment outright reaches almost one-third. These citizens, who are approaching the end of their labor force participation, may resent that they must make sacrifices to recover wasteful and unsupervised state spending. Thus, policy should be guided by the knowledge that some citizens are better able than others to absorb the costs of fiscal reform, and that those least able to do so are the most likely to voice opposition. Existing schemes to insulate the most vulnerable are likely too modest in their scope and impact.

Looking forward, such findings call for further research on citizen attitudes toward economic and social reform in the Gulf. From a methodological standpoint, our study shows the utility of experimental methods for examining such attitudes. Whereas responses to direct questions about subsidy preferences did not yield meaningful rankings, our survey experiments elicited clear citizen opinions about how the state should spend—and not spend—national wealth. The experimental approach taken here also enabled us to gauge preferences about a number of different types of spending or subsidies simultaneously, rather than focus only on a particular sector or subsidy. However, there remains a need for more theoretical and empirical analysis of the ways that attitudes toward rentier reform may differ across relevant social groupings in rentier states. Such analysis is especially relevant for poorer and more diverse settings, where ascriptive-based criteria more crucially mediate access to economic benefits. This paper helps set the agenda for studying the many ways that public opinion may help determine the success of efforts to refashion MENA societies away from reliance upon oil and gas.

## Appendix A: Notes to Figure 1

For all countries except the United Arab Emirates, data for Figure 1 come from a 2016-2017 survey commissioned by [blinded for review]. The nationally-representative surveys were conducted face-to-face at citizens' residences. Data for the UAE are aggregated from three nationally-representative telephone surveys, again commissioned by [blinded for review], conducted in 2016, 2017, and 2018. Country samples sizes are as follows: Bahrain ($N$ = 500); Kuwait ($N$ = 1,022); Oman ($N$ = 852); Qatar ($N$ = 793); Saudi Arabia ($N$ = 1,017); the United Arab Emirates ($N$ = 669). Income data were solicited in a two-step procedure to reduce missing data from item non-response, following the design of the widely-used Arab Barometer survey.[i] Valid income data are available for more than 80% of respondents. These data collections were supported by grants from [blinded for review].

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[i] Mark Tessler, Amaney Jamal, Abdallah Bedaida, Mhammed Abderebbi, Khalil Shikaki, Fares Braizat, Justin Gengler, and Michael Robbins, *Arab Barometer: Public Opinion Survey Conducted in Algeria, Morocco, Jordan, Lebanon, Palestine, Yemen, and Bahrain 2006-2009* (Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2016).

## Appendix B: Survey Items

### *Subsidy Prioritization*

"Many things are desirable, but not all of them are essential characteristics of an oil rich Gulf state such as Qatar. Please tell me for each of the following things how essential you think it is as a characteristic of a state like Qatar. Use this scale, where 0 means 'not at all an essential characteristic' and 10 means it definitely is 'an essential characteristic.'"

(Note: Order of response options 1-8 randomized)

1. Free education
2. Free electricity
3. Free healthcare
4. Land allotment
5. Government job opportunities
6. Marriage allowance
7. Social allowance
8. No taxes

### *Reform Rejection*

"This year, due to low oil prices, Qatar expects to spend more than it receives in revenue from oil and gas and other sources. It will be the first time this has happened since 1999. Hypothetically speaking, imagine that the state were considering different options to make up the deficit. Assume that each of these proposals would cost Qataris collectively a similar amount of money. In your opinion, which of the following options would be the most acceptable?"

(Note: Order of response options 1-4 randomized)

1. A reduction in salaries for Qatari workers in the public sector
2. A reduction in allowances currently received by Qataris
3. Imposition of a new tax on goods and services
4. Requiring citizens to pay for their water and electricity

5. [NOT READ: None are acceptable]

## Appendix C: Tables and Figures

Table C1. Spending Priorities of Qatari Citizens: Coefficient Estimates

| | (1)<br>Selected |
|---|---|
| Education | 0.187*** |
| | (0.000) |
| Health | 0.175*** |
| | (0.000) |
| Social insurance | $0.034^{+}$ |
| | (0.090) |
| Infrastructure | 0.030 |
| | (0.115) |
| Defense | 0.017 |
| | (0.380) |
| International investments | –0.103*** |
| | (0.000) |
| Culture | –0.108*** |
| | (0.000) |
| Involvement in regional crises | –0.237*** |
| | (0.000) |
| *Total N* | 4,532 |
| *Respondent N* | 785 |

*Notes*: *p*-values in parentheses; $^{+}$ $p < 0.10$, $^{*}$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$; sampling weights utilized

Table C2. Subsidy Priorities of Qatari Citizens: Coefficient Estimates

| | (1)<br>Selected |
|---|---|
| Free education | 0.132*** |
| | (0.000) |
| Free healthcare | 0.090*** |
| | (0.000) |
| Free utilities | 0.082*** |
| | (0.000) |
| Government jobs | 0.037+ |
| | (0.069) |
| Land allotment | –0.002 |
| | (0.911) |
| Social allowance | –0.060** |
| | (0.002) |
| No taxation | –0.093*** |
| | (0.000) |
| Marriage allowance | –0.178*** |
| | (0.000) |
| *Total N* | 4,404 |
| *Respondent N* | 757 |

*Notes*: *p*-values in parentheses; $^{+}$ $p < 0.10$, $^{*}$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$; sampling weights utilized

Table C3. Variable Names and Descriptive Statistics, Non-Experimental Items

| Variable | *N* | Mean | Std. Dev. | Min. | Max. |
|---|---|---|---|---|---|
| Free education | 772 | 0.72 | 1 | -6.13 | 5.21 |
| Land allotment | 772 | 0.28 | 1 | -5.11 | 5.02 |
| Utilities | 772 | 0.19 | 1 | -5.02 | 3.42 |
| Social allowance | 753 | 0.13 | 1 | -5.40 | 5.10 |
| Government jobs | 764 | 0.02 | 1 | -4.58 | 2.91 |
| Free healthcare | 769 | -0.14 | 1 | -3.84 | 2.91 |
| Marriage allowance | 765 | -0.15 | 1 | -4.14 | 3.02 |
| No taxation | 734 | -0.43 | 1 | -2.91 | 2.49 |

Table C4. Rejection of Fiscal Reform, by Age and Income

| | (1)<br>Reject | (2)<br>Reject | (3)<br>Reject | (4)<br>Reject | (5)<br>Reject |
|---|---|---|---|---|---|
| Age | 0.0381*** | 0.0362*** | 0.158*** | 0.119* | 0.117* |
| | (0.000) | (0.000) | (0.000) | (0.034) | (0.035) |
| Income | | -0.561** | -0.527* | -0.593 | -0.629 |
| | | (0.009) | (0.015) | (0.738) | (0.723) |
| Age x Age | | | -0.00140** | -0.000834 | -0.000814 |
| | | | (0.007) | (0.198) | (0.207) |
| Income x Age | | | | 0.0766 | 0.0784 |
| | | | | (0.385) | (0.375) |
| Income x Age x Age | | | | -0.00107 | -0.00109 |
| | | | | (0.298) | (0.289) |
| Gender | | | | | 0.0940 |
| | | | | | (0.663) |
| Constant | -2.508*** | -2.210*** | -4.617*** | -4.577*** | -4.601*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| *N* | 662 | 629 | 629 | 629 | 629 |
| pseudo $R^2$ | 0.050 | 0.060 | 0.073 | 0.077 | 0.078 |

*Notes*: *p*-values in parentheses; $^{+}$ $p < 0.10$, $^{*}$ $p < 0.05$, $^{**}$ $p < 0.01$, $^{***}$ $p < 0.001$; sampling weights utilized; regressors are introduced into the model sequentially to show how coefficient and standard estimates change with the addition of variables; Figure 5 is based on the full Model 5 results

Figure C1. Rated Importance of Rentier Subsidies: Non-experimental Results

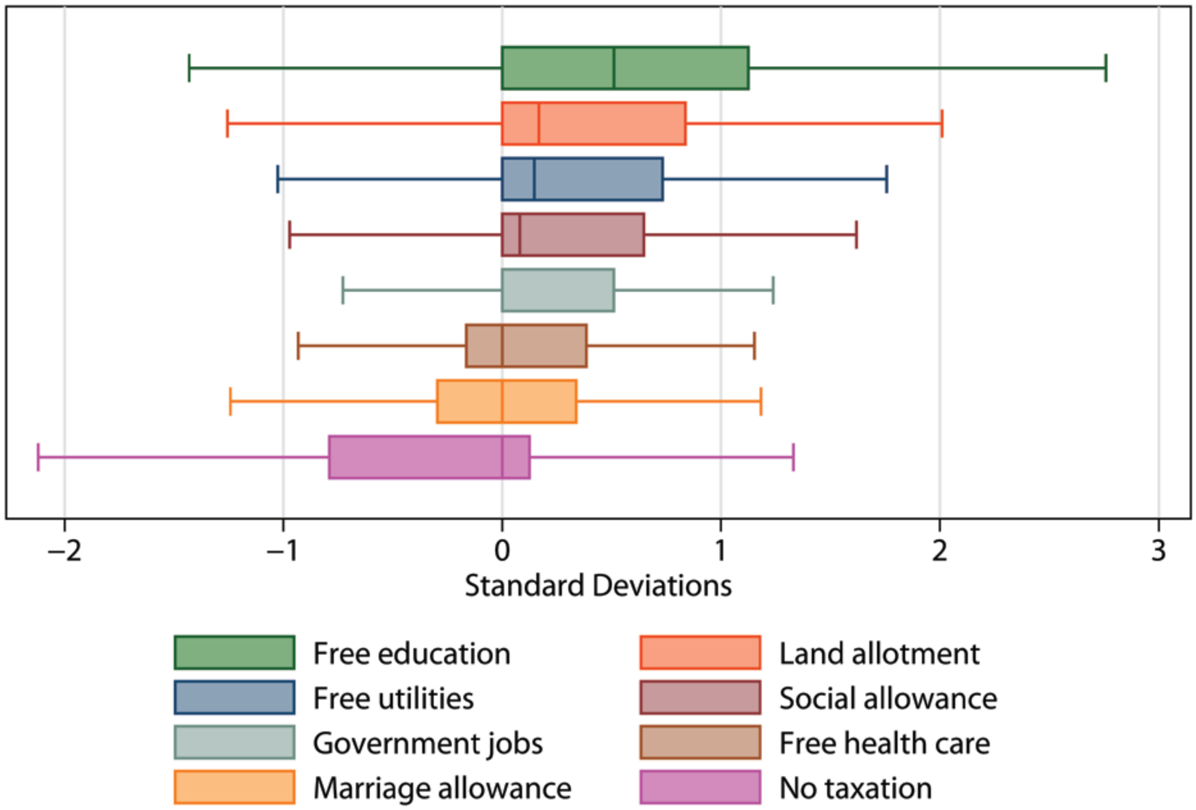


Figure C2. Marginal Effect of Income Category on Rejection, by Age

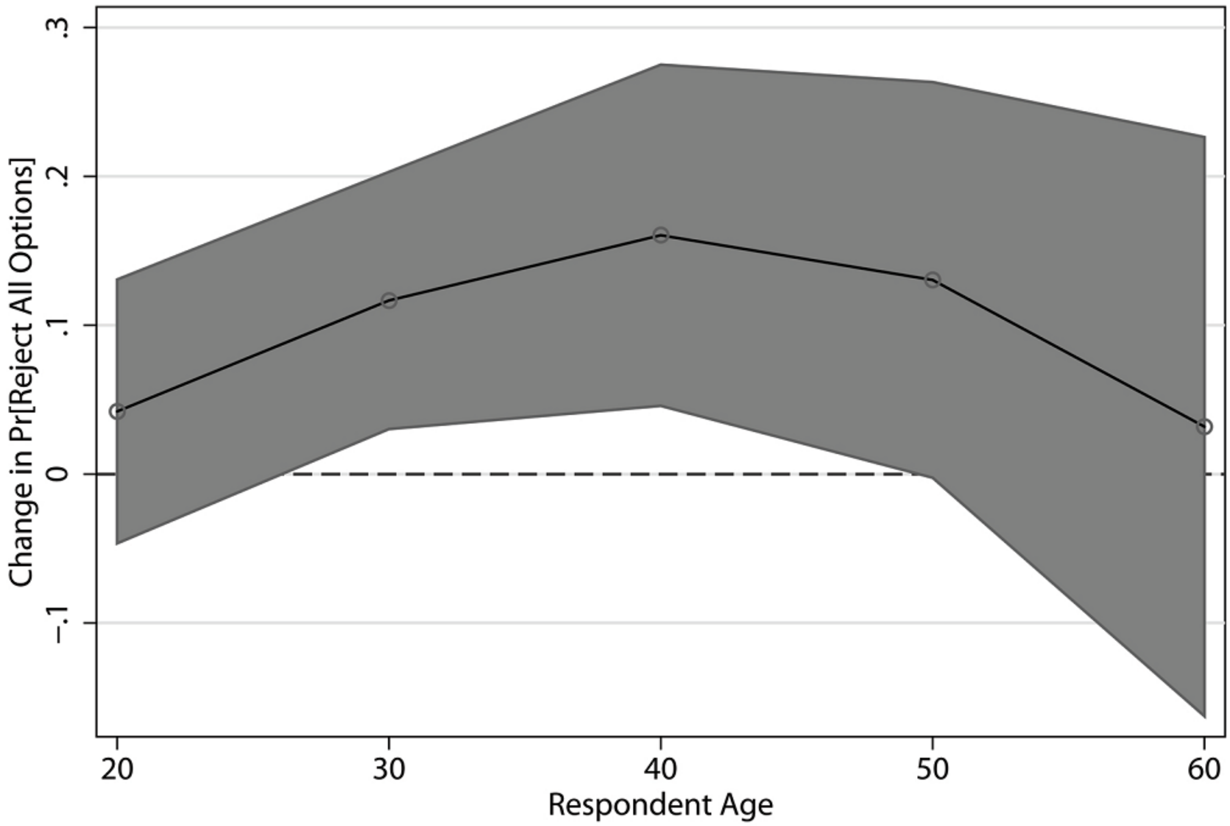
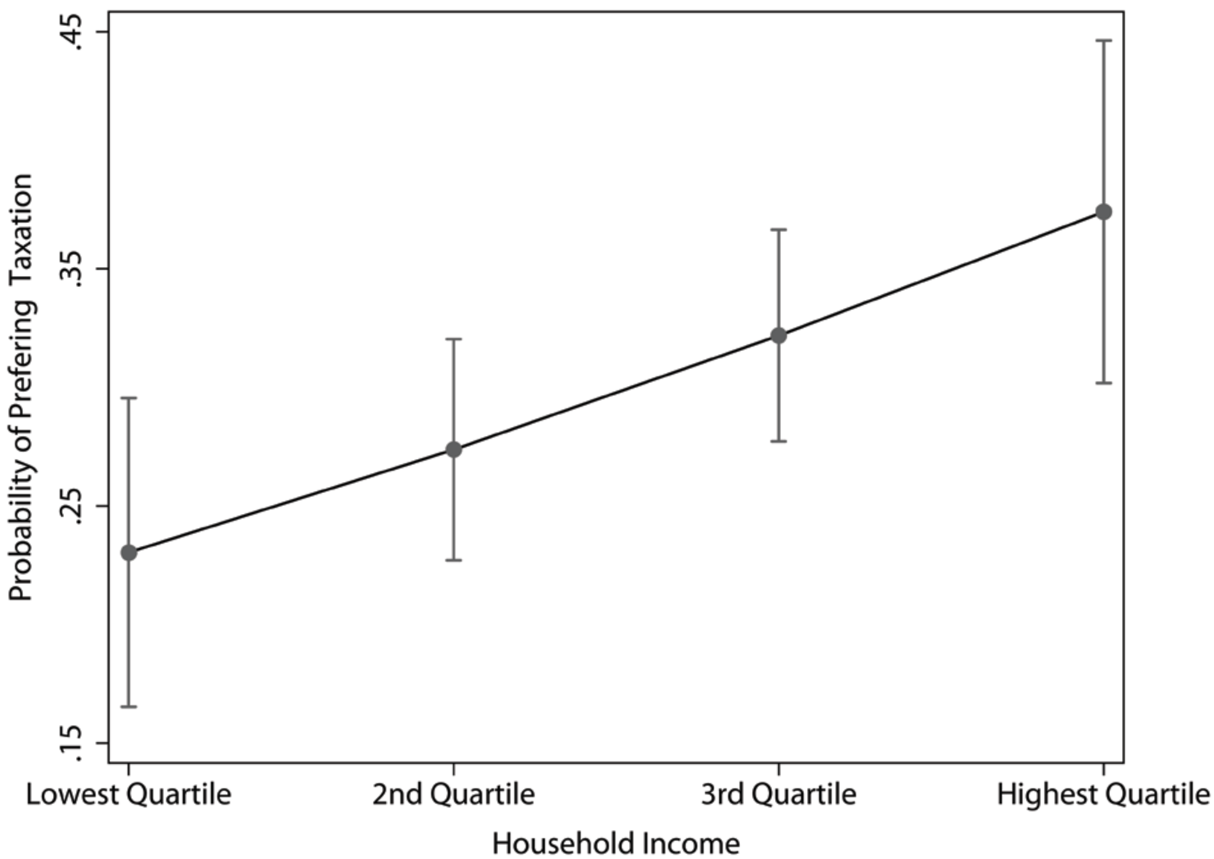


Figure C3. Preference for Taxation as an Austerity Measure, by Income



## Notes

[1] Daniel Moshashai, Andrew M. Leber, and James D. Savage, "Saudi Arabia plans for its economic future: Vision 2030, the National Transformation Plan and Saudi fiscal reform," *British Journal of Middle Eastern Studies* (August 2018), doi: 10.1080/13530194.2018.1500269.

[2] Steffen Hertog, "The GCC Economic Model in the Age of Austerity," in Luigi Narbone and Martin Lestra,eds., *The Gulf Monarchies Beyond the Arab Spring: Changes and Challenges* (Florence: European University Institute, 2015), 5-11.

[3] Jim Krane, "The political economy of subsidy reform in the Persian Gulf Monarchies," in Jon Strand, ed., *The Economics and Political Economy of Energy Subsidies* (Cambridge, MA: MIT Press, 2016), 191-223.

[4] Aasim M. Husain, Ford M. Fraker, Edward Burton, Karen E. Young, and Ausamah Abdulla Al Absi, "Economic reform and political risk in the GCC: implications for US government and business," *Middle East Policy*, 23 (September 2016), 5-29.

[5] Giacomo Luciani, "Allocation vs. Production States: A Theoretical Framework," in Hazem Beblawi and Gaicomo Luciani, eds., *The Rentier State* (London: Croom Helm, 1987); Hossein Mahdavy, "Patterns and Problems of Economic Development in Rentier States: the Case of Iran," in M. A. Cook, ed., *Studies in the Economic History of the Middle East: From the Rise of Islam to the Present Day* (London: Oxford University Press, 1970); and Michael L. Ross, "Does Oil Hinder Democracy?" *World Politics*, 53 (June 2011), 325-361.

[6] Hazem Beblawi, "The Rentier State in the Arab World," *Arab Studies Quarterly* (Fall 1987): 383-398; Hazem Beblawi and Giacomo Luciani, "Introduction," in Hazem Beblawi and Gaicomo Luciani, eds., *The Rentier State* (London: Croom Helm, 1987), 1-21; F. Gregory Gause, III, *Oil Monarchies: Domestic and Security Challenges in the Arab Gulf States* (New York: Council on Foreign Relations, 1994); F. Gregory Gause, III, "The Political Economy of National Security in the GCC States," in Gary G. Sick and Lawrence G. Potter, eds., *The Persian Gulf at the Millennium: Essays in Politics, Economy, Security and Religion* (New York: Palgrave Macmillan, 1997), 61-84; Oliver Schlumberger, "Rents, Reform, and Authoritarianism in the Middle East," *Internationale Politik und Gesellschaft*, 2, (2006), 43-57; Rolf Schwarz, "The Political Economy of State-formation in the Arab Middle East: Rentier States, Economic Reform, and Democratization," *Review of International Political Economy*, 15 (October 2008), 599-621.

[7] Krane, 2016; Laurent A. Lambert and Jordan Lee, "Nudging greywater acceptability in a Muslim country: Comparisons of different greywater reuse framings in Qatar," *Environmental Science & Policy*, 89 (November 2018), 93-99.

[8] Cf. Jocelyn Mitchell and Justin Gengler, "What Money Can't Buy: Wealth, Inequality, and Economic Satisfaction in the Rentier State," *Political Research Quarterly*, 72 (January 2019), 75-89.

[9] Paul A. Samuelson, "The Pure Theory of Public Expenditure," *Review of Economics and Statistics*, 36 (November 1954), 387-389.

[10] Michael Herb, *All in the Family: Absolutism, Revolution, and Democracy in Middle Eastern Monarchies* (New York: SUNY Press, 1999).

[11] This study focuses on inequality among citizens of rentier states as those directly party to the rentier social contract linking subjects and rulers. The related issue of inequality between citizens and non-citizens in rentier states, merits further study as an important topic in its own right but is outside the scope of this project.

[12] These are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates, which collectively form the Gulf Cooperation Council (GCC).

[13] Gause, 1994; Michael L. Ross, *The Oil Curse: How Petroleum Wealth Shapes the Development of Nations* (Princeton, N.J.: Princeton University Press, 2012).

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[104] See Appendix B for precise wording of the non-experimental questions and response options.

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