Dear CPW Reader,

First off, thanks in advance for giving this very rough draft a read. I appreciate any and all comments you may have. A quick note and apology. You’ll see that the paper ends rather abruptly without really getting into the core model. In an effort to simplify the game, I recently made significant changes to my model of sabotage. Unfortunately, I didn’t get the new math typed up so I decided to hold off on that part of the paper. Despite the omission, I hope you can get a sense of where I’m going, and I can certainly answer any questions on Friday.

Additionally, I’m at a bit of quandary and haven’t yet decided how to conclude the paper. I’d like to add one more section (mostly written already) after the model, which describes a few cases (i.e., Qatar, Dubai and Bahrain) that help tease out the model’s equilibrium dynamics. There are some interesting data I can use descriptively, but saying anything more concrete would be tough. Comments here would be much appreciated as I decide how to move forward empirically. Thanks again!
Rentier Systems Under Threat of Sabotage: Distributive Politics and Regime Stability in the Gulf

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Abstract

Even before the Arab Spring, the resource-rich, rentier states of the Arabian Gulf had been described as some of the most stable regimes in the world. Their apparent robustness over the last few years has only reinforced this view, and led many to conclude that these regimes have eliminated any real threat to their rule. In the following paper, I challenge this conventional wisdom and explore the threat of economic sabotage. From work stoppages and industrial strikes, to targeted protests and violent riots, sabotage can take any number of forms in the Gulf. By interrupting production, sabotage threatens the traditional rentier system and these regimes’ longterm political stability. The conditions under which sabotage occurs, and its effects on regime policy, is crucial to understanding the Gulf’s apparent stability today. To this end, I develop a formal model of rentier distribution under the threat of sabotage. The model generates a series of predictions on when we should see sabotage, what form it takes, and how rulers may respond to these threats through distributive policies.

1 Introduction

During the Arab Spring, protest spread rapidly across the Middle East and North Africa. With seemingly stable regimes suddenly on the brink of revolution, many observers believed that democratization had finally come to the region. Yet despite this wave, the Arabian Gulf remained largely insulated from such pressures, appearing robust to the conflict that engulfed their neighbors. Such stability has been often attributed to the rentier system (Luciani 1994), though scholars disagree over how or why resource wealth prevents the emergence of an organized opposition (Crystal 1989; Okruhlik 1999; Yom 2011). Whatever the source of their stability, the Gulf states initially appeared immune to the same pressures challenging the region.

And yet however popular this view, even before the Arab Spring, the Gulf had not been the island of calm that many scholars and regional observers suggested. The region’s history of conflict has been far more varied and complicated, marked by protests, strikes and even violent clashes (Gengler 2013; Kareem 2013; Omran
These events have revealed an underlying instability and fragility within these regimes, whose longtime rentier strategies have failed to prevent new challenges and distributive conflict from arising (Ayub 2013). This conflict derives from the region’s structural dependence on foreign workers and other non-citizens who provide a vital and indispensable role in these economies. Such a dependence has made these regimes vulnerable to a new and urgent threat: economic sabotage. By threatening production, sabotage can compromise these states’ economic development, and thus their longterm political stability. The growing threat of sabotage has forced these regimes to reevaluate their traditional rentier strategies and consider how to best respond to these new pressures. To understand the Gulf today, and the distributive politics that sustain it, we must begin with this problem of sabotage. The following paper takes up this question, asking: under what conditions does sabotage occur, and how do regimes respond to this threat?

In answering this question, I develop a formal model of rentier distribution under the threat of sabotage. The model includes and an autocrat and a set of groups within society. These groups differ in their respective endowments, which results in varying political and economic value to the regime. The game begins with the autocrat’s distributive choice, allocating resources between groups. This distributive choice resembles Luciani’s description of the “allocative state” (1990), where the autocrat does not tax society, but instead decides how to allocate resources across groups. The groups then decide how to deploy their effort between production or sabotage, and whether to support the autocrat. Depending on how much support he receives, the autocrat survives or falls, and the game ends.

In the game, the autocrat uses distributive policy to buy the support of important social and political groups within society. But to purchase this support, the autocrat must continuously raise revenues. Support-buying does not exist within a vacuum; it is financed by economic growth, and thus depends on the actors critical to production. The autocrat’s optimal distributive choice must consider both political supporters and vital economic actors. To the extent these groups overlap, there is little conflict. But as they become more disjoint, the autocrat must trade-off between maximizing his personal rents, buying political support, and inducing economic production.

When politically weak and marginalized groups (e.g., migrants and religious minorities) are critical to the economy, they may threaten costly economic sabotage. In equilibrium, sabotage can take one of two forms: obstruction or destruction. Obstructive acts of sabotage (e.g., peaceful labor strikes or factory slowdowns) obtain over a large parameter space. Unless provided sufficient incentives (i.e., a large enough share of the pie), marginalized groups may withhold their labor and obstruct production. The cost of obstruction varies widely, depending on its scale and the economic sectors
affected. Other acts of sabotage may outright destructive (e.g., violent protests or riots), which are often more costly but far less common in equilibrium. Such sabotage not only destroys capital, but also scares off firms and investors. No matter the type of sabotage, the autocrat must worry about the downstream implications for his survival. As production declines, the opportunity cost of mass revolt decreases and the autocrat’s support base may erode. Although rare, if sabotage is sufficiently costly, it may even lead to regime collapse.

These equilibrium dynamics suggest a few significant empirical implications for the Gulf. The threat of sabotage (and the particular form it takes) influences regime policies and distributive outcomes. While the threat of sabotage is endogenous to the game, some regimes are more likely to be vulnerable at the outset. Vulnerability is increasing in the relative size of the marginalized and their position across vital sectors of the economy. For the most resource rich regimes (e.g., Qatar), sabotage can be avoided by preemptively targeting these marginalized groups with distributive goods. When resources become scarce or volatile (e.g., Dubai), regimes are less likely to use these preemptive measures, and may instead accept some risk of sabotage. Typically though, this sabotage will be mostly obstructive. The actual threat of destructive sabotage depends less on the size of the marginalized population, and more instead on the expectation of post-transition redistribution. Destruction is especially pronounced in regimes (e.g., Bahrain) where marginalized groups expect to receive majors redistribution or other concessions if the autocrat falls.

The rest of the paper proceeds as follows. Section 2 describes the rentier system and the structural changes that have begun to compromise it. These changes have made the current system unsustainable and produced an environment ripe for sabotage. Section 3 presents the model. I begin with a simple allocation game, which formalizes the classic assumptions of the rentier system. I then incorporate group production and evaluate the effects of sabotage on distributive policies. Section 4 concludes with a discussion of possible extensions and speculates on future trajectories in the Gulf.

2 Sabotage and the Rentier System

For decades, the Gulf’s exceptional stability has been predicated on a simple exchange between rulers and citizens, trading goods for loyalty. This basic exchange underlies the rentier system and is at the core of these regimes’ survival. Rentier theory comes from a rich intellectual tradition, starting with to Beblawi (1987) and Luciani (1990),

1 An important note: by “resource rich” I am specifically referring to resources per capita. Qatar’s regime not only enjoys access to tremendous resources, but also a very small population. While Saudi Arabia may have greater reserves, the regime must contend with a much larger, geographically dispersed, and diverse population, which makes cooptation much more expensive.
who defined many of the early concepts that remain integral to theoretical work today (Ross 2001, 2004; Smith 2004; Herb 2005; Ulfelder 2007). In its simplest form, rentier theory argues that autocratic rulers are able avoid democratization and suppress popular demands for representation by providing their citizens with goods and services. These benefits substitute for meaningful reform, pacifying any potential opposition and buying the political quiescence of the population. In the rentier Gulf, the scope of these welfare services has grown dramatically over the years. Today’s benefits include subsidized energy and water, housing allotments, massive spending on healthcare and education, and even access to well-paid public sector jobs. In exchange for these various services, the citizens of the Gulf are expected to remain loyal to their rulers, recognizing their authority and providing these regimes with legitimacy.

However challenged or criticized, the basic rentier system has remained remarkably robust over time (Gray 2011; Ehteshami 2003; Nonneman 2006; Yom 2011). The Gulf states have developed rapidly in only a few short decades, achieving impressive growth rates without facing many of the social and political pressures often concomitant with such profound economic change (Fargues 2011). This stability has not come cheap. The rentier system depends on a constant and, in some cases, increasing provision of goods and services to citizens. As demands for representation grow, these regimes find themselves under greater pressure to increase benefits in lieu of institutional reform.

To meet these growing costs, the rentier states must continuously raise revenues and maintain high levels of production. Without such production, the Gulf states could not afford the distributive payments that sustain their regimes. Although often overlooked, the question of production is thus integral to the rentier system and its stability. Studies on the rentier system typically take for granted this production, assuming that a steady flow of oil and gas should ensure relatively constant revenues. The economic reality is, of course, much more complicated. Revenue is highly dependent on economic shocks, both to commodity prices and, crucially, the cost and supply of labor.

For decades, the Gulf economies have relied on the labor of non-citizens (for historical review, see Baldwin-Edwards 2011; Shah 2012). Over time, the size and composition of this labor force has changed dramatically. Before the 1970s oil boom, many of the Gulf’s workers were other Arabs, either from resource-poor states (e.g., Egypt, Yemen, and Palestine), or native residents who never received citizenship. Until the 1991 Gulf War, Kuwait relied heavily on the bidoon to fill many public sector jobs (Kapiszewski 2001). These Arabs are descendants of various disenfranchised groups who did not receive citizenship at the founding of the state, and thus have little to no access to the rentier benefits offered to full Kuwaiti citizens.

Today’s system, however, primarily depends on the millions of foreign workers coming from Asia each year (Shah 2013). Although many Western, African and Arab expats
remain vital throughout the Gulf, they have become greatly outnumbered by workers from countries like India, Bangladesh, Pakistan, the Philippines and Indonesia. Table 2.1 reports recent estimates of the total foreign population in the Gulf. Although varying significantly across the region, non-citizens constitute a demographic majority in all the Gulf states but Oman and Saudi Arabia. Yet even in these countries, migrants are critical to the economy. Non-citizens represent a majority of the workforce in every Gulf state, reaching highs of over 90 percent in Qatar and the UAE.

[INSERT TABLE 2.1 ABOUT HERE]

The quality of life that Gulf citizens have come to enjoy is as much a product of their states’ incredible resource wealth as it is the labor of these workers. Non-citizens hold positions both banal and critical throughout the Gulf. Take, for example, the state of Qatar, where over 85 percent of the estimated 1.7 million population are non-citizens. These workers are employed in large numbers across all major economic sectors in Qatar. Table 2.2 offers a glimpse into this vast scope, reporting the number of foreign workers by sector. Without these workers, oil and gas would be left in the ground, floors would remain unswept, and construction sites found vacant. Ultimately, migrant workers are not only critical to production, but indispensable to the Gulf way of life.

[INSERT TABLE 2.2 ABOUT HERE]

Yet despite this profound economic importance, these workers have traditionally had little leverage to negotiate with or extract concessions. And in the past, the dependence on foreign labor has not represented a major challenge to these regimes’ long-term stability. An economic and social problem, perhaps, but hardly a source of political threat. Until recently, foreign workers rarely, if ever, challenged these regimes outright. Asian migrants, who have come to predominate throughout the Gulf, have been particularly dismissed, even “believed to be more efficient, obedient, and manageable” (Kapiszewski 2006, 7). This control has not been an accident: the Gulf regimes have carefully designed their immigration law, known as the kafala, to maximize their control over migrants. Having limited exit options or access to institutions of redress (Gardner et. al. 2013), workers’ vulnerability is structural, making this population an easy target for exploitation and abuse. Given their vulnerability within this system, non-citizens have traditionally accepted the status quo and their treatment under it.

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2 Unfortunately, the Gulf states do not typically release data on the exact breakdown of foreign workers in their countries. For a broader discussion on the limits of these data, see Shah (2013).

3 While wages certainly drove the shift towards Asian workers, Arab expats were also seen as a greater political threat. Many Arab workers came from countries with radical and Islamist ideologies inimical to the Gulf regimes. Given their shared language and religion, Arab migrants were also more likely to interact with Gulf citizens and potentially spread these radical ideas (Louer 2008). Thus, replacing Arabs with Asian workers was both an economic and political-security choice for the Gulf regimes (Kapiszewski 2001).
Growing structural changes, however, have begun to alter this dynamic, compromising the rentier system and opening up new avenues for resistance. The biggest change is demographic. Despite efforts to reduce their dependence on foreign labor, the number of migrants in the Gulf has continued to increase, as seen in Figure 2.1 below. Although Qatar and the UAE remain the most dependent on foreign workers, Bahrain has seen the greater increase and has more than doubled since 1970. Across the Gulf, native citizens have become (or soon will be) a minority, leaving many feeling under siege. Although critical to these economies, the presence of these workers has introduced major social tensions and conflict within these societies, raising serious debate over the role and place of non-citizens in the Gulf.

[INSERT FIGURE 2.1 ABOUT HERE]

Compounding this demographic problem, resource-poor states, like Bahrain and Oman, face ever tightening budget constraints. And although rich in oil, Saudi Arabia is in some ways closer to these resource-poor states than it is to Qatar and the UAE. Saudi Arabia has a much larger population than the other Gulf states, making it harder to fully buy off the potential opposition. Recognizing their unsustainable trajectories, these countries have had to make greater investments in non-resource industries, diversifying for the future. But ironically, these workers may be even more important today, just as the Gulf states attempt to transition into knowledge economies built around tourism, trade and finance. At least in the short-term, these investments and development strategies rely on cheap foreign labor, undercutting any efforts to limit the number of migrant workers.\footnote{April 15, 2014. “Oman extends curbs on foreign workers in construction, housekeeping.” Reuters.} Construction and other major projects would be prohibitively costly without this labor supply. This transformation will be neither quick nor cheap, and crucially depends on a steady supply of migrant workers.

With their dependence on non-citizens greater than ever before, the Gulf states have begun to face increasing criticism from abroad, and growing pressure from within. As this dependence grows, so too does the bargaining power these marginalized groups wield. Yet the sheer size of this foreign population is too large to fully incorporate or buy-off. Under such strains, the rentier states have begun to face a new threat to their survival: economic sabotage. From work slowdowns, to labor strikes and even violent protests, the Gulf has recently seen a series of acts of sabotage. Sabotage can be defined as any act that destroys capital or obstructs its creation. Generally, we can think of two modes of sabotage: obstruction and destruction. Obstruction is more passive but still costly for the regime. This kind of sabotage slows down production by withholding some vital input (e.g., labor), or increases transaction costs. In practice, obstructive sabotage includes more than just labor strikes, also capturing efforts to
impede manufacturing, transportation, or other aspects of production. In other cases, sabotage may be far more destructive. Rather than simply impede production, this kind of sabotage actively destroys capital or infrastructure.

Over the past decade, we have seen many examples of such sabotage throughout the Gulf. Strikes erupted throughout Oman in 2011.5 Outside of the capital of Muscat, workers began by blocking exits, seizing vehicles and stopping work throughout a manufacturing estate.6 A year later, large strikes among oil and gas workers decreased production, forcing the regime to act quickly.7 Beyond striking, Omanis also interrupted production by slowing traffic and blocking key roundabouts.8 These kinds of strikes and slow downs have been especially common in the UAE, where construction workers refused to report to their job sites in the summer of 2013.9 Workers for the same firm, Arabtec, have also gone on strike in the past, disrupting projects in 2007 and 2011.10 While less common, the Gulf has also seen destructive sabotage in recent years. Since the early 2000s, Dubai has faced increasing pressure from migrant workers, whose living and working conditions had become intolerable (Kapiszewski 2006). Demanding better treatment and wages, protests escalated into full-blown riots in March 2006. Oman has similarly seen such violence. In 2011, riots led to looting in the industrial port city of Sohar, with various markets and banks targeted.11 Across the Gulf, these acts of sabotage disrupt manufacturing, construction, and even tourism and investment. They not only cost firms and investors, but also the regimes that depend on this production to finance their rentier systems.

Whether obstructive or destructive, sabotage is a major threat to the Gulf and the rentier system itself. Incorporating non-citizens into this system, however, is simply infeasible, and would bankrupt even the richest Gulf states. Instead, these regimes have responded more deliberately. Rather than provide universal benefits, they have begun to target benefits, hoping to prevent sabotage altogether or, at the very least, make it less likely to spread. How these regimes make this distributive choice—deciding when and to whom to provide these benefits—remains unclear.

The potential threat of sabotage not only varies between groups, but also across regimes. Given sabotage’s many forms and its varying intensity, there is not a single best policy. Each regime must consider its own costs and constraints when determining the optimal response. This response depends on a series of related questions. What

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political and economic conditions make some regimes more or less vulnerable to sabot-
ogage? How do group characteristics and endowments inform the threat of sabotage? 
And, finally, under what conditions does this threat translate into targeted benefits? 
Answering these questions is critical to understanding the political economy of the Gulf 
today and the threat of sabotage to the rentier system. In the next section, I offer a 
formal model that can help resolve each of these questions.

3 Modeling Rentierism: Allocation, Production 
and Sabotage

Rentier systems depend on the exchange of goods for political support. I formalize 
this exchange as one of simple support-buying: the autocrat provides selective benefits 
to purchase support from various groups in society. Most support-buying models are 
redistributive, and tend to focus on the autocrat’s choice over taxation (Acemoglu and 
Robinson 2001). In rentier systems, however, taxation is often negligible, at least for 
citizens. For these regimes, the basic question is distributive, or as Luciani (1988) 
famously described it, allocative.

To fully tease out the effects of sabotage on distributive policies, I begin with a 
simple allocation game. This baseline model roughly captures the conventional wisdom 
on the rentier system. Focusing on the political logic underlying rentierism, I first show 
how resource rich states allocate wealth among citizens. I then move on to the main 
focus of the paper: sabotage. By incorporating production and labor choices, I show 
how the threat of sabotage provides marginalized groups a bargaining power to extract 
distributive concessions from the autocrat.

3.1 Allocation Game

In resource rich states, the autocrat does not rely on taxation. The quintessential 
rentier economy depends entirely on resource rents, which may be volatile but state- 
controlled. Under these conditions, the autocrat’s distributive choice resembles that 
facing the ruler of an allocative state (Luciani 1988). To survive, the autocrat must 
solicit (i.e., buy) support from society by allocating resources across groups. Depending 
on this allocation, groups then choose whether to support the autocrat. For this 
simple allocation game, the marginalized are assumed to be politically powerless. This 
assumption effectively renders these groups as non-actors, lacking any real agency or 
means of influencing distributive outcomes.
Players and Actions  The game consists of N+1 players. There are N groups in society and one Autocrat. I denote the population of N groups by the set \( \mathcal{N} \). The game consists of three stages. In the first stage, the Autocrat decides on a distributive allocation of \( \Omega \), which is the total wealth produced in the economy. This allocation is an N+1 vector, specifying a non-negative share for each group in the population (i.e., \( x_i \geq 0 \text{ } \forall i \in \mathcal{N} \)) and the Autocrat (i.e., \( x_A \geq 0 \)). Formally, the Autocrat makes a distributive allocation, \( x = \{x_i \ldots x_N; x_A\} \), where the ith element represents group i’s private share and the N+1 element is the Autocrat’s personal share. Since the benefits accrue only to the specific group targeted and are privately consumed, we can think of these shares as private goods.

The Autocrat makes this allocation conditional on his expectation of the economy. The total economic production is a function of some fixed capital stock \( \Gamma \), and a scalar for total factor productivity \( \omega \). The \( \Gamma \) term can be thought of as a natural resource (e.g., oil fields) that provide state revenues. These revenues are often volatile over time because of price fluctuations or supply problems, forcing the Autocrat to account for these shocks in his distributive calculus. The \( \omega \) scalar captures this uncertainty. For simplicity, suppose \( \omega \in \{\omega^l, \omega^h\} \) and without loss of generality let \( \omega^h = 1 \) and \( 0 < \omega^l < 1 \). Further assume that the probability \( \omega = \omega^l \) is \( q \), with the complementary probability \( 1 - q \) for \( \omega^h \). Incorporating all of these terms, we have the following production function

\[
\Omega = q\omega^l \Gamma + (1 - q)\Gamma
\]

After \( \omega \) is revealed, each group decides simultaneously whether (and how much) to support the Autocrat. Each group \( i \) chooses a level of support, \( s_i \), to give the ruler, where \( 0 \leq s_i \leq 1 \). The Autocrat’s probability of survival \( \pi \) is increasing in this support as follows

\[
\pi = \sum \frac{s_i^\psi}{n} \quad \forall i \in \mathcal{S}
\]

The parameter \( \psi_i \) captures the relative political importance of each group to the Autocrat’s survival. Note that in Expression (2), I have introduced the new set \( \mathcal{S} \), and

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12 A brief comment on notation: Greek letters are used for fixed parameters (i.e., terms for which I will later do comparative statics) and are all bounded, some naturally (e.g., probabilities) and others by assumption; Roman letters are reserved for choice variables and countable elements of a set; bold face indicates a vector; and calligraphic font represents a set.

13 If this allocation is not enforced or the Autocrat could revoke or amend it, the allocation would lead to a potential commitment problem. For many redistribution papers, this commitment problem is a central dynamic driving the model and results. Although a potential extension, commitment problems are not the focus here and are beyond the scope of this model. I avoid this problem by assuming all proposals are enforced if the Autocrat survives.

14 To ensure the probability of survival is not greater than one, and that the support choice is mononotonic, I assume that \( \psi_i \) is bounded but relatively large (i.e., \( 1/2 < \psi_i < 1 \) \( \forall i \in \mathcal{S} \)).
that the summation is over \( n \) (not the full population of \( N \) groups). The set \( \mathcal{S} \) helps distinguish politically valuable groups (e.g., elites and citizens) from the marginalized (e.g., migrants, religious minorities), who do not matter to the Autocrat’s survival. Conceptually, we can think of \( \mathcal{S} \) as the potential support base for the Autocrat. Depending on the relative value of \( \psi_i \), some groups will be more valuable than others within \( \mathcal{S} \). Among the population of \( N \) groups, let \( n \) have some political support to offer (i.e., belong to set \( \mathcal{S} \)). The remaining \( N-n \) groups comprise the marginalized, and are denoted by the set \( \mathcal{M} \).\(^{15}\) Having no political value, these groups are not included in the survival function from Expression (2).\(^{16}\)

After each group in \( \mathcal{S} \) makes its support choice, the game ends with the Autocrat either surviving (with probability \( \pi \)) or falling (with probability \( 1 - \pi \)). In either case, final payoffs are realized given the decisions above. First consider the Autocrat’s utility

\[
u_A = \begin{cases} x_A \Omega & \text{if the Autocrat survives} \\ 0 & \text{if the Autocrat falls} \end{cases}
\]

Note that the Autocrat’s payoff, conditional on falling, has been normalized to 0. To help solve the game, we can also re-express \( u_A \) in terms of expected utility\(^{17}\)

\[
u_A = \pi x_A \Omega \quad (3)
\]

The Autocrat’s expected utility is simply the probability he survives, times his share of the total wealth produced. Implicit in this equation is the central problematic underlying authoritarian rule: the trade-off between rent-maximization and survival. If \( \pi \) is at least weakly increasing in the distributive goods provided to other groups, then the Autocrat must trade-off between private rents and the odds of survival.\(^{18}\)

Next consider the groups’ utility, which is captured below. Note that this expression includes two new terms: \( \delta \), which is a scalar representing the transition costs incurred should the Autocrat fall (i.e., \( 0 < \delta < 1 \)); and \( r_i \), which is group \( i \)’s share of redistribution if the Autocrat falls. Incorporating these terms, group utility is as follows

\[
u_i = \begin{cases} x_i \Omega - s_i & \text{if the Autocrat survives} \\ (1 - \delta)(r_i \Omega) - s_i & \text{if the Autocrat falls} \end{cases}
\]

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\(^{15}\)The union of sets \( \mathcal{S} \) and \( \mathcal{M} \) recovers the total population \( N \).

\(^{16}\)And since these groups do not matter for survival, I assume that they do not make a support choice. We could allow the marginalized to make a support choice but since they offer no value to the Autocrat, this choice is dominated.

\(^{17}\)This expression is a slight abuse of notation. Properly speaking, the right-hand side should include an expectation operator (i.e., \( E[\pi x_A \Omega] \)). For notational simplicity and readability, I leave out this operator in the discussion below.

\(^{18}\)And by design, this exact tension plays out in the model, as seen in the equilibrium analysis below.
Authoritarian transitions, whether through a coup, revolution, or even natural leader death, involve significant costs for the system. In practice, these costs can take a myriad of forms from actual destruction of capital to financial divestment. To capture such costs, $\delta$ scales the payment from distribution should the Autocrat fall. If the Autocrat falls, each group in $N$ receives some share $r_i$ of whatever wealth is left after regime collapse.\footnote{Formally, these assumptions imply $\sum_{i \in N} r_i = 1$ and $0 \leq r_i \leq 1$.} In the sabotage game later, this parameter will be crucial in helping explain why different forms of sabotage obtain across regimes. For now, however, this term simply helps capture the expected benefits groups may enjoy from regime transition.\footnote{For this simple version game, I assume that these redistributed shares are fixed and known to all players. An interesting extension of this model could make these shares endogenous to the groups' support choices (e.g., shares are decreasing in the support given to the Autocrat). Such a complication would further introduce an incentive for groups to defect from the Autocrat.} As before, we can use these payoffs and the Autocrat’s probability of survival to set up the following expected utility expression

$$u_i = \pi(x_i \Omega) + (1 - \pi)(1 - \delta)(r_i \Omega) - s_i$$

All told, the groups’ expected utility is an additive function of the following: the probability the autocrat survives, times the group’s share from the economy; the probability the autocrat falls, times the transition-scaled redistributive payment; minus the support costs incurred during the course of the game (for the groups in set $S$).

**Equilibrium Strategies and Analysis** To summarize, the game’s overall sequence of play is as follows:

(i) **Allocation:** The Autocrat proposes some allocation of shares $x = \{x_1, \ldots, x_N; x_A\}$ that exhaustively divides $\Omega$.

(ii) **Production:** The random productivity factor $\omega$ is revealed; $\Omega$ is realized.

(iii) **Support Choice:** Each group in $S$ decides how much support $s_i$ to provide.

(iv) **Survival and Payoffs:** The Autocrat survives (with probability $\pi$) or falls (with probability $1 - \pi$); payoffs are realized and the game ends.

Given this sequence of play, equilibrium strategies take the form of best-response correspondences, mapping optimal responses for all players’ possible strategies, conditional on the previous gameplay (if any) and the model’s parameters. Although the game involves a stochastic shock in the production period, this random variable $\omega$ is drawn from a known distribution. The Autocrat’s allocation choice incorporates the expectation of $\omega$ in his calculus. His optimal strategy is simply an $N+1$-tuple, allocating shares to maximize his expected benefit, which trades off between increasing...
his odds of survival and the private benefit conditional on surviving. For groups in $S$, strategies will follow a cutpoint or switching logic: a group will only provide support to the Autocrat conditional on receiving some minimal share of $\Omega$, at which point they will choose a level of support that optimally balances the cost of providing this support and their expected return. I solve by backwards induction, characterizing the Subgame Perfect Nash Equilibrium. All proofs are left to the Appendix.

We can characterize optimal play by beginning at the terminal period of the game and working backwards. In the support period, groups face a simple utility maximization problem. Using the expected utility from Expression (4), we have the following unconstrained optimization problem:

$$\max_{s_i} \left\{ \pi(x_i \Omega) + (1 - \pi)(1 - \delta)(r_i \Omega) - s_i \right\} \quad (5)$$

At this point in the game, each group in $S$ decides simultaneously whether and how much support to give to the Autocrat. Support increases the probability that the Autocrat survives but it is costly to each group. Solving for the optimal choice resembles a cutpoint strategy. A given group will provide a positive level of support if and only if the benefits from Autocrat survival outweigh the potential redistribution if the Autocrat falls. Formally, this condition leads to the following cutpoint

$$\bar{x} \equiv x_i > r_i(1 - \delta) \quad (6)$$

At the cutpoint $\bar{x}$, a group will expect to receive more if the Autocrat survives than falls, and thus strictly prefers survival.

Having met this threshold, the exact amount of support provided in equilibrium will vary across groups depending on their specific endowments and expected shares. The optimal level of support will solve the maximization problem from Expression (5). I begin by substituting in the contest function that defines $\pi$ from above, and then take the first-order conditions. After rearranging terms and simplifying, we reach the following expression

$$s^* = \left[ \frac{1}{n} \psi_i \Omega \left( x_i - r_i(1 - \delta) \right) \right]^{\frac{1}{1 - \psi_i}} \quad (7)$$

The optimal level of support $s^*$ depends on several parameters and group characteristics. Before considering each of these parameters in turn, note the similarity between Expression (7) and the cutpoint from above. Specifically, we see that the parenthetical $\left( x_i - r_i(1 - \delta) \right)$ effectively recovers the support threshold: if this term is negative (and thus the cutpoint not reached), then $s^*$ would have to be negative, which is impossible. If Expression (6) is satisfied, $\Omega$ and $n$ are simple scalars on the optimal level of support.
These scale effects are straightforward: groups provide more support when the pie is large (i.e., a greater \( \Omega \)) but are less supportive when their political contribution is less valuable in the presence of many groups and can free-ride on others (i.e., a larger \( n \)). The costs of regime transition also affect support as expected. As \( \delta \) increases, less of \( \Omega \) remains after transition, making Autocrat survival relatively more attractive and increasing support. As for \( \psi_i \), we not only see positive scale effects (like those for \( \Omega \)), but also an exponential term, which influences the rate at which support grows. The relative benefit from support is increasing as a group’s political value grows, since its support has a greater effect on the Autocrat’s survival.

Beyond these parameters, the support choice crucially depends on group-specific payments (i.e., \( x_i \) and \( r_i \)), which not only figure into the cutpoint, but also drive the optimal \( s^* \). Support is increasing with a group’s share (i.e., a higher \( x_i \)) but decreasing with redistribution (i.e., a higher \( r_i \)). Higher shares of \( \Omega \) imply a larger benefit from Autocrat survival, thus inducing greater support. Conversely, groups will have less of an incentive to support the Autocrat if their expected share from redistribution is high. Combining Expressions (6) and (7), the following Lemma summarizes the groups’ cutpoint strategy.\(^{21}\)

**Lemma 1:** In equilibrium, each group \( i (\forall i \in S) \) selects an optimal level of support according to the following cutpoint strategy:

\[
s^*_i = \begin{cases} 
0 & \text{if } x_i < \bar{x} \\
 s^* & \text{if } x_i > \bar{x} 
\end{cases}
\]

where \( \bar{x} \) and \( s^* \) are defined in Expressions (6) and (7), respectively.

Having solved the groups’ equilibrium strategy, I now consider the Autocrat’s choice problem. The Autocrat makes a distributive allocation \( x = \{x_i \ldots x_N; x_A\} \) to maximize his expected utility from Expression (3). Unlike the groups, who choose their level of support after observing \( \Omega \), the Autocrat has to decide on this allocation conditional on his expectation of \( \omega \). Formally, he faces the following optimization problem

\[
\max_x \left\{ \pi x_A \Omega \right\}
\]

In equilibrium, the optimal allocation balances the trade-off between increasing the probability of survival and decreasing the Autocrat’s rents. To solve this problem, I set up the Autocrat’s constrained optimization problem. The Autocrat’s allocation \( x \) is an \( N+1 \) vector, subject to a series of mixed constraints. In addition to the simple

\(^{21}\)The proof for Lemma 1 and corresponding comparative statics can be found in the Appendix.
non-negativity constraints (i.e., $x_A \geq 0$ and $x_i \geq 0 \ \forall i \in N$), the Autocrat has the \textit{binding budget constraint} \[ \sum_{i \in N} x_i + x_A = 1. \]

While these conditions are straightforward given the Autocrat’s choice problem, an additional constraint emerges from equilibrium play. Specifically, the Autocrat should not allocate a positive share to any group from whom he does not expect to receive support. This condition immediately applies to the marginalized (i.e., groups in $M$) who have no support to offer. In this simple allocation game, distributive shares are solely used to purchase political support and increase the Autocrat’s odds of survival. Since these groups have no support to offer, any allocation would be a waste. This logic further extends to any groups for whom a positive share would not meet the support cutpoint $\bar{x}$. If the Autocrat provides a non-zero share to some group $j$, and that share does not satisfy Expression (6) from above (i.e., $x_j < \bar{x}$), then group $j$ will not provide any support. Thus, the groups’ cutpoint strategy implies an additional constraint for the Autocrat: for any group receiving a positive share, this share must be at least as great as the threshold $\bar{x}$. To formalize this constraint and help solve, let $C$ be the set of groups who receive some positive share in equilibrium. We can think of this set as the winning coalition from among the support base, and is thus a subset of $S$. Formally then, we have the following constraint: $x_j \geq \bar{x} \ \forall j \in C$.

Taking these constraints, I solve by first setting up the traditional Lagrangian function

\[
L = \pi x_A \Omega - \lambda \left( \sum_{i \in N} x_i + x_A - 1 \right) + \lambda_j (x_j - \bar{x}) + \lambda_i x_i + \lambda_A x_A
\]

(9)

Differentiating this expression with respect to $x_A$, $x_j$ and $x_i$ (where $x_j$ is the representative group in $C$ and $x_i$ is the representative for all groups not in $C$), we have a series of first-order conditions (FOC), which are fully specified in the Appendix. The optimal $x$ solves these Kuhn-Tucker conditions.

A solution to this problem is relatively straightforward. First note that in equilibrium, the Autocrat will not provide any positive shares to groups outside of $C$, so we can immediately set $x_i^* = 0$. We are now left with $x_A$ and $x_j$. Given the structure of this problem and the Autocrat’s need to balance survival prospects and potential rents, we can further note that the solution must be an interior one with respect to $x_A$ (a full proof of this point can be found in the Appendix). With $x_i = 0$ and $0 < x_A < 1$, we can reduce the number of FOC to a more manageable set. Solving for $x_A^*$, we find

\[
x_A^* = \frac{\pi}{\pi_j}
\]

(10)
The term $\pi'_j$ represents the marginal effect of $x_j$ on the Autocrat’s probability of survival. Expression (10) reveals the basic tension in the Autocrat’s choice problem. On the one hand, the Autocrat’s share is increasing in $\pi$: as the probability of survival grows, the relative benefit increases and the Autocrat wants to maximize these rents by increasing $x_A$. At the same time though, the Autocrat’s share is decreasing in $\pi'_j$: as the marginal effect of a group increases, the Autocrat is forced to divert more resources to this group, which reduces his personal share by some degree.

Expression (10) is crucial. Not only does it characterize the Autocrat’s share, but it also reveals a key to solving for $x_j^*$. Since this expression holds for all groups in $C$, the Autocrat must provide each group the exact amount necessary to make all groups’ marginal effect on survival equal. We can use this implication to finally solve for the optimal $x_j$. Taking any two groups $j$ and $k$ ($\forall j, k \in C$), the optimal $x_j^*$ and $x_k^*$ make the following true

$$\pi'_j = \pi'_k$$

(11)

While the math is not clean, we can solve this expression for an analytic solution of $x_j^*$. For now, however, let Expression (11) and the corresponding Kuhn-Tucker conditions in the Appendix implicitly characterize this solution.

Altogether then, an optimal allocation is defined in the following Lemma.

**Lemma 2:** In equilibrium, the Autocrat’s optimal allocation $x^*$ is an $N+1$ vector where:

$$x^* = \begin{cases} 
0 & \forall i \notin C \\
x_j^* & \forall j \in C \\
x_A^* & 
\end{cases}$$

where $x_A^*$ and $x_j^*$ are defined implicitly by Expressions (10) and (11), respectively, and this solution satisfies the Kuhn-Tucker conditions.

Finally, putting these results together, Proposition (1) defines an equilibrium to the allocation game.

**Proposition 1:** An equilibrium is a set of strategies $x^*$ and $s_i^*$ that satisfy Lemmas 1 and 2.

### 3.2 Sabotage Game

[SORRY, MATH NOT TYPED YET]
4 Conclusion

Ultimately, the model suggests that under some conditions, the threat of sabotage can significantly inform the autocrat’s distributive strategy. The autocrat buys support from groups by offering them a sufficient share of the pie, such that they become invested in the regime and have an interest in the autocrat’s survival. As the pie shrinks, either through sabotage or some exogenous shock, the opportunity cost of not supporting the ruler decreases. Consequently, the autocrat is forced to extend benefits more broadly, even including otherwise marginalized groups. Whether buying support or deterring sabotage, the underlying logic is the same: by providing benefits, the autocrat can tie groups to the regime’s survival, thus raising the opportunity cost of their political defection or act of sabotage.

Depending on the parameter space, either form of sabotage may obtain in equilibrium but the logic driving each of them is distinct. Obstruction (i.e. the withholding of productive activity) may be rational for a large range of groups whose distributive benefits are limited. Benefitting little from the system, these groups are not sufficiently invested to find it profitable to deploy their assets productively. Destruction, however, is much more costly and obtains over a smaller parameter space. For destructive sabotage to be sequentially rational, there must be some subset of society who is not only marginalized, but also expect to receive a net welfare increase from regime collapse. By committing sabotage, they hope to reduce the productivity of the system, which in turn decreases the total wealth available to buy support, and thus makes autocratic survival less likely. As the economic costs of regime collapse increase, this condition is harder to sustain, making it less likely for destructive sabotage to obtain in equilibrium, no matter how aggrieved the population.
Appendix

Table 2.1: Migrants as a Share of Population and Workforce Across the Gulf

<table>
<thead>
<tr>
<th>Country</th>
<th>Population Size</th>
<th>% Migrant (Population)</th>
<th>% Migrant (Workforce)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bahrain</td>
<td>1,234,571</td>
<td>54.0</td>
<td>74.8</td>
</tr>
<tr>
<td>Kuwait</td>
<td>3,965,144</td>
<td>68.7</td>
<td>82.9</td>
</tr>
<tr>
<td>Oman</td>
<td>3,855,206</td>
<td>43.7</td>
<td>79.9</td>
</tr>
<tr>
<td>Qatar</td>
<td>1,699,435</td>
<td>85.7</td>
<td>93.9</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>29,994,272</td>
<td>32.4</td>
<td>56.0</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>8,264,070</td>
<td>88.5</td>
<td>92.9</td>
</tr>
</tbody>
</table>

*Note: Table reproduced with permission from the Gulf Labor Markets and Migration website. These estimates have been taken from individual country data from 2010 to 2014. See GLMM Website for updated data and country years.*

Table 2.2: Foreign Workers Across Economic Sectors in Qatar

<table>
<thead>
<tr>
<th>Sector</th>
<th>Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and fishing</td>
<td>17,070</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>80,654</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>99,871</td>
</tr>
<tr>
<td>Electricity, gas, water and waste management</td>
<td>3,310</td>
</tr>
<tr>
<td>Construction</td>
<td>505,721</td>
</tr>
<tr>
<td>Motor vehicle sales and repairs</td>
<td>140,940</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>33,249</td>
</tr>
<tr>
<td>Accommodation and food service activities</td>
<td>28,961</td>
</tr>
<tr>
<td>Information and communication</td>
<td>6,877</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>7,911</td>
</tr>
<tr>
<td>Real estate activities</td>
<td>8,132</td>
</tr>
<tr>
<td>Professional, scientific and technical activities</td>
<td>20,067</td>
</tr>
<tr>
<td>Administrative and support service activities</td>
<td>38,795</td>
</tr>
<tr>
<td>Public administration and defence</td>
<td>30,124</td>
</tr>
<tr>
<td>Education</td>
<td>18,171</td>
</tr>
<tr>
<td>Human health and social work activities</td>
<td>15,570</td>
</tr>
<tr>
<td>Arts, entertainment and recreation</td>
<td>4,350</td>
</tr>
<tr>
<td>Other service activities</td>
<td>5,307</td>
</tr>
<tr>
<td>Activities of households as employers</td>
<td>132,401</td>
</tr>
</tbody>
</table>

*Note: Qatar Statistics Authority, Census 2010.*
Figure 2.1: Percent Foreign Population in the Gulf (1970-2010)
Proof of Lemma 1

Optimal Support  Suppose Expression (6) is satisfied such that \( x_i \geq \bar{x} \). We can solve the maximization problem from Expression (5) by taking the first-order conditions.

\[
\pi'(x_i\Omega) - \pi'(1 - \delta)r_i\Omega - 1 = 0
\]

\[
\pi' = \frac{1}{\Omega(x_i + \delta r_i - r_i)}
\]

Using the survival function from Expression (2), and taking the derivative with respect to \( s_i \), we can rearrange this expression to characterize the analytic solution for \( s^* \).

\[
\psi_i s_i^{\psi_i - 1} \frac{1}{n} = \frac{1}{\Omega(x_i - r_i(1 - \delta))}
\]

\[
s_i = \left[ \frac{n}{\psi_i \Omega(x_i - r_i(1 - \delta))} \right]^{\frac{1}{\psi_i - 1}}
\]

\[
s^* = \left[ \frac{1}{n} \psi_i \Omega \left( x_i - r_i(1 - \delta) \right) \right]^{\frac{1}{1 - \psi_i}}
\]

This solution characterizes the optimal support level conditional on Expression (6) being satisfied. Now suppose that this condition were not met, and \( x_i < \bar{x} \). The term within the brackets would now become negative, making the optimal support less than zero. By assumption, this impossible since \( s_i \) is bounded by zero. Thus, if \( x_i < \bar{x} \), then \( s^* = 0 \).

Comparative Statics  For an interior solution to the maximization problem in Expression (5), the optimal support level is defined by \( s^* \) above. Note that the exponent, is always positive since \( \psi_i > 1/2 \) by assumption. The term outside the parenthesis is also always positive since each of these parameters are strictly greater than zero. Thus, \( s^* \) is strictly positive if the condition in Expression (6) is satisfied. Taking the comparative statics is relatively straightforward since these terms are mostly just positive or negative scalars. The following comparative statics hold:

\[
\frac{\partial s^*}{\partial x_i} > 0 \quad \frac{\partial s^*}{\partial r_i} < 0
\]

\[
\frac{\partial s^*}{\partial n} < 0 \quad \frac{\partial s^*}{\partial \psi_i} > 0
\]

\[
\frac{\partial s^*}{\partial \Omega} > 0 \quad \frac{\partial s^*}{\partial \delta} < 0
\]
Proof of Lemma 2

Optimal Allocation  The Autocrat’s constrained optimization problem is as follows

$$\max_x \left\{ \pi x_A \Omega \right\}$$

s.t.

$$x_i \geq 0 \quad \forall i \in N$$
$$x_j \geq \bar{x} \quad \forall i \in C$$
$$x_A \geq 0$$
$$\sum_N x_i + x_A = 1$$

Using the $\lambda$ multipliers to incorporate these constraints, we can generate the Lagrangian function from Expression (9)

$$L = \pi x_A \Omega - \lambda \left( \sum x_i + x_A - 1 \right) + \lambda_j (x_j - \bar{x}) + \lambda_i x_i + \lambda_A x_A$$

Taking the FOC, the following Kuhn-Tucker conditions hold

$$\frac{\partial L}{\partial x_j} = \pi' x_A \Omega + \lambda_j = \lambda$$
$$\frac{\partial L}{\partial x_i} = \pi' x_A \Omega + \lambda_i = \lambda$$
$$\frac{\partial L}{\partial x_A} = \pi \Omega + \lambda_A = \lambda$$
$$\sum x_i + x_A - 1 = 0$$
$$\lambda_j x_j = 0 \quad \lambda_i x_i = 0 \quad \lambda_A x_A = 0$$
$$\lambda_j \geq 0 \quad \lambda_i \geq 0 \quad \lambda_A \geq 0$$
$$x_j \geq \bar{x} \quad x_i \geq 0 \quad x_A \geq 0$$
Works Cited


Kapiszewski, Andrzej. 2001. Nationals and Expatriates. ISBS.
Kapiszewski, Andrzej. 2006. Arab Versus Asian Migrant Workers in the GCC Countries. \(1\) 17.


Nonneman, G. 2006. Political Reform in the Gulf Monarchies: From Liberalisation to Democratisation?: a Comparative Perspective..


Shah, Nasra M. 2013. Labour Migration From Asian to GCC Countries: Trends, Patterns and Policies. Middle East Law and Governance: 3670.

Silvey, Rachel. 2004. Transnational Domestication: State Power and Indonesian Mi-
grant Women in Saudi Arabia. Political Geography 23(3): 24564.


