



Political Economy Dynamics of Society-State Interaction in Iran during the Qajar and Pahlavi Eras: Institutional Congruity, Game Theory and Policy Implications

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ABSTRACT

The dialectic between the state and society in modern Iran has undergone significant transformations, reflecting the transition from tradition to modernity. Despite these changes, the interaction between society and the state remains in a state of flux, shaped by historical, political, and social factors. This research aims to provide a comprehensive analysis of the state-society interaction in modern Iran by employing an expanded institutional analysis framework, incorporating the concept of "institutional congruity." Additionally, we utilize game theory logic to investigate the strategic dynamics between societal forces and state structures. This dual approach enables a deeper exploration of the motivations, incentives, and power dynamics that have shaped Iran's socio-political landscape throughout its history. The findings of this research have significant implications for understanding Iran's political trajectory, informing policy decisions, and fostering a nuanced understanding of the country's future development.

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1. Introduction

According to Hegel (2004, p. 191), the Iranians were the first historical people and established the first state, marking the beginning of continuous history with their empire. However, contemporary Iran has been characterized by continuous transformations, movements, and revolutions. It has fluctuated between anarchism and a despotic Leviathan. The primary challenge facing contemporary Iran is how to maintain a balance in state-society relations, emphasizing both democracy and responsiveness to social demands. Despite significant efforts in state-building, Iran has continually struggled with maintaining a balance between state authority and societal demands, resulting in a history marked by fluctuations between tyranny and attempts at democratization. This imbalance has impeded the establishment of a stable and effective institutional framework in Iran. The primary objective of this research is to analyze the balance of power between the state and society in Iran through the lens of institutionalism, focusing on the concept of 'institutional congruity.' By examining the historical dynamics of the Qajar and Pahlavi eras, this study aims to uncover the institutional causes behind the persistent instability in Iran's state-society relations. Despite the growing scope of institutional analysis in interdisciplinary research, conventional economic studies, especially in Iran, often reduce institution-based research to the use of institutional quality in an econometric equation. This study seeks to bridge this gap by offering a comprehensive institutional analysis rooted in both historical context and theoretical innovation. This research introduces and expands the concept of 'institutional congruity', as conceptualized by Raanaei et al (2024), to explain the equilibrium (or lack thereof) in Iranian institutions during the Qajar and Pahlavi periods. Furthermore, by applying a game theory model inspired by Acemoglu and Robinson (2023), this study offers a novel analytical approach to understanding the dynamics of state-society interactions in modern Iran. This interdisciplinary approach bridges gaps in the current institutional framework, providing deeper insights into the institutional factors that have shaped Iran's historical trajectory.

The article is structured as follows: Section two reviews the theoretical underpinnings and existing literature, providing a detailed explication of the concept of institutional congruity. Section three introduces a baseline model informed by the work of Acemoglu and Robinson (2023). Subsequently, section four delves into the multifaceted history of Iran, constructing a relevant model and extracting associated dynamics. Finally, the fifth section presents the research conclusion and discusses policy implications

2. Theoretical foundations and literature review

Halliday (2024) highlights the internal conflicts and issues within the Pahlavi government and Iranian society as a whole. Iran, a land of revolutions, has consistently shaped its politics and society through the pursuit of a constitution that aims to mediate the relationship between tradition and society within an Iranian framework. This driving force is renewed with each new generation (Ansari, 2024). Numerous historical narratives have been constructed around contemporary Iran, often portraying the nation as being caught in a dialectic between traditional and modern values. For instance, Sadeghi-Boroujerdi (2024) explores several narratives, including the “return of the repressed” and the backlash against modernization, the challenge of “Islamic revival,” and critiques of the “secularization thesis.” He also addresses the persistent impact of coloniality and Orientalism in these analyses. The Iranian political system is characterized by a complex interplay of competing legitimacy claims, a dynamic influenced by diverse political behaviors that often lead to internal tensions and contradictions. Ultimately, these texts suggest that politics is fundamentally about understanding how power is justified and maintained within society (Blinder, 2023).

Institutional congruity and Balance of Powers Between Government and Society

The nature, mechanism, and function of institutions are defined within a

specific structure and system. In reality, institutions do not exist in isolation from another but are always interconnected with other institutions and actors. The outcome of the interactions between institutions determines the fate of the institutional structure. If we wish to conduct a macro-level analysis, the state and society are two key institutions whose interplay of motivations and functions shapes the destiny of institutional structure. While it is true that various possibilities for interaction can be envisioned between the state and society, the crucial question is: what is the determining factor in the realization of each of these possibilities? In other words, what are the dependencies and determinants of the different forms of state-society interaction? "Institutional fact" cannot exist independently or in isolation, but only within a systematic set of relationships with other facts. As Kasper and Streit (1999, p. 134) argued, indeed institutions do not operate in isolation to achieve goals; but rather do so by shaping a system of mutually supporting rules. No single institution can shape the entire society or economy. It follows, therefore, that the economy and society are shaped by co-existing and interacting institutions that operate in interrelated ways, as emphasized by Dai (2015, p. 3). This fact that the functioning of any institution is determined concerning a specific institutional system clarifies that any particular institution that is important for economic performance will not have identical functions and outcomes in different societies and periods. Institutions are not only difficult to isolate from their context and cannot be identified under a conventional atomistic approach, but must be analyzed as part of an overall institutional system.

The concept of institutional congruity, as formulated by Raanaei et al. (2024) and demonstrated in contemporary Iranian history by Hosseini et al. (2022), is not merely a theoretical construct but also has significant policy implications. For instance, Shahnazi et al. (2024) have employed this approach to evaluate the consequences of targeted energy subsidies in Iran. Lee (1999) and Gates et al. (2006) also employed this term. However, they focused on the mismatch between two institutions within an institutional

system. In contrast, the concept of institutional congruity as articulated by Raanaei et al (2024) refers to two types of institutional congruity: horizontal congruity (among all institutional spheres, including political, economic, and social) and vertical congruity (between the system's value foundations and the totality of existing institutions, as well as between cognitive and mental faculties and the objective, external formation of institutions). The novelty of this research, relative to Raanaei et al. (2024), resides in its application of their analytical framework of institutional congruity to the Qajar and Pahlavi eras, thereby revealing that the demise of these regimes was attributable to institutional incongruity. In the "institutional congruity" approach, the persistence of an institution depends on its congruity with other institutions within the system. The overall system's endurance is similarly contingent upon the overall congruity among these institutions. A system declines when its institutions fail to achieve congruity and adaptability. Consequently, even low-quality institutions can persist due to their congruity with other system elements. This can lead to the formation of dysfunctional institutional systems that, despite their inefficiencies, endure due to congruity. In such situations, inefficient economic institutions may be supported and reinforced by a system of regulations and rules linked to other institutional spheres. For instance, exploitative political institutions can solidify exploitative economic institutions, while the latter, in turn, perpetuate the former, creating a vicious cycle within the society. A society may exhibit institutional congruity without achieving institutional balance. Conversely, a society can achieve institutional balance without attaining institutional congruity, but such a balance will not be sustainable in the long run. It can be argued that institutional congruity is a necessary, though not sufficient, condition for enduring institutional balance. Institutional balance pertains to the interplay between political and social institutions, an interplay facilitated by institutional congruity. Table 1 depicts the static and dynamic relationship between balance and congruity:

Table 1. Matrix of Institutional congruity and balance

	Institutional congruity	Institutional congruity
Institutional balance	fragile	Institutional system persistence
Institutional imbalance	collapse	Dictatorship (despotic Leviathan) or anarchism (absent Leviathan)

Source: Authors' analysis

Institutional congruity both defines the potential for state-society interactions and enables the emergence of new institutions. It plays a dual role. On one hand, it determines the interaction between the government and society, and on the other hand, it provides the foundation upon which the state-society interaction of other institutions is built. The effect of institutional congruity is direct in the first case, as it determines the type of state-society interaction. In the second case, its effect is indirect, acting as the guiding principle for society's institutions. Resource access is a crucial component in the competition between political and social institutions. A despotic Leviathan can only arise when the political institution has maximum control over resources, while an absent Leviathan characterizes a situation of diffuse societal control. The points mentioned above can be observed in Fig 1.

Figure 1 depicts the direct and indirect effects of institutional congruity, as well as the contest between political and social institutions at time t over resource distribution. This contest influences the distribution of both de jure and de facto political power, the latter held by non-political actors (such as social or extra-state coalitions that operate outside the legal political system). The resultant economic institution at t determines economic performance and subsequent resource distribution. The balance of power between political and social forces shapes the institutional landscape of period $t+1$.

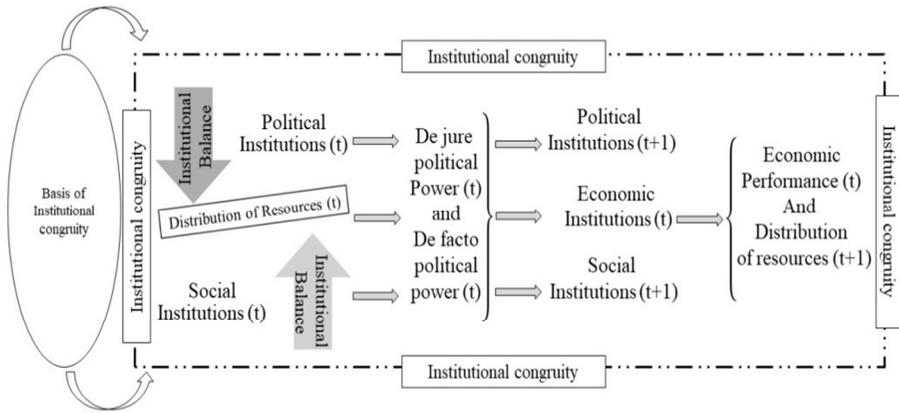


Fig 1. Relationship between Institutional congruity and balance.

Source: Raanaei et al (2024: 179), Inspired by Acemoglu (2008: 853)

2.2 The Three Potential Leviathans

Through a reformulation of classic concepts, Acemoglu and Robinson (2017, 2019, 2022, 2023) demonstrate that historical and structural forces shape state-society relations, resulting in three potential long-term equilibria. They employ the ‘Leviathan’ metaphor to characterize these interactions (Acemoglu & Robinson, 2017, 2019, 2022, 2023). The first state is the absent Leviathan, characterized by a weak political institution but a strong presence of social collective actions and diverse norms that constrain political hierarchies. The second state is a despotic Leviathan, where the powerful political institution can dismantle a pre-existing weak society. The third state is the shackled Leviathan, representing a balance between societal and state capacities, leading to a more powerful yet accountable political institution. We utilize a baseline diagram (in Fig 2) to illustrate the interaction between government and society and depict the three leviathans. The vertical axis measures state capacity¹, encompassing institutional

1. This concept refers to the state’s ability to effectively design and implement public policies, influenced by factors such as institutional framework, administrative capacity, and fiscal resources.

capacity and the ability to exert control. The horizontal axis measures societal capacity¹, including organizational capabilities and protest potential.

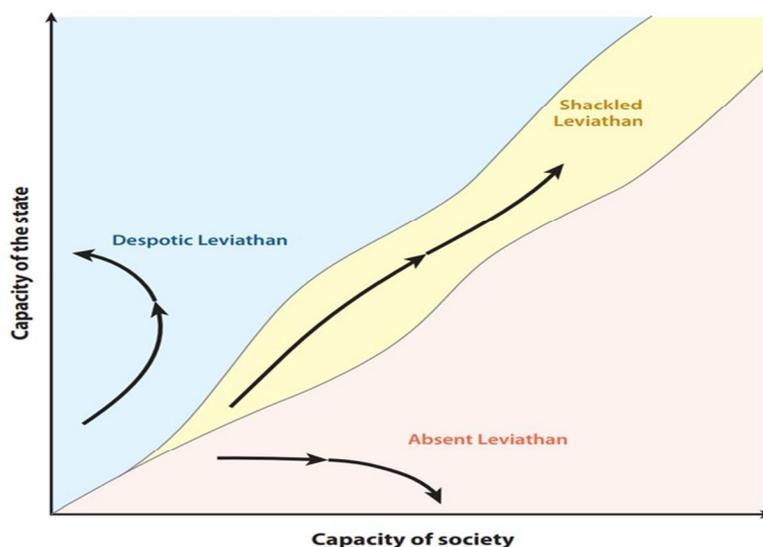


Fig 2. the three potential leviathans

Source: Acemoglu and Robinson (2019, 2022, 2023)

In the domain associated with the despotic leviathan (depicted in blue), as the state's control over society increases, the society becomes weakened and unable to organize and compete with the political institution. Conversely, in the domain corresponding to the absent Leviathan (depicted in red), society is relatively strength and prevents the emergence of political hierarchies and powerful state institutions. In this scenario, the situation tends towards chaos and anarchy. However, in the middle range (depicted in yellow), the situation differs. In this zone, both state and societal capacities increase simultaneously. Acemoglu and Robinson (2019) interpret this situation as

1. The collective ability of a society to address complex challenges, encompassing social capital, human capital, and civil society. This concept is closely intertwined with state capacity and is influenced by the balance of power between elites and society.

the outcome of competition and cooperation between the state and society. The competition between the state and society arises from the fact that as the state's capacity grows, it becomes more challenging to monitor, requiring society to enhance its power to maintain a balance. Cooperation is equally important. When society is capable of restraining the state, it becomes more willing to share information and allows the government to intervene and regulate productive and social relations. This type of balance between the state and society is essential for the establishment of democratic institutions and the broader concept of liberty, encompassing the provision of protection and social opportunities for individuals to act, as well as fostering economic dynamism.

There is a self-reinforcing dynamic within each defined boundary between the state and society. For instance, in a despotic Leviathan, the stronger the state and its elites, the weaker the society. Given that societies' potential trajectories are determined by their institutional congruity, an analysis of self-reinforcing dynamics is incomplete without considering the concept of institutional congruity. For example, if a specific institutional congruity dictates that top-down governance is legitimate (due to the rulers' grace or divine power) and subjects have no right to intervene, such a congruity creates the capacity for the path to converge towards the despotic Leviathan. Naturally, in such a situation, it is difficult to speak about democracy. Furthermore, persistence in such a situation will institutionalize the state-society relationship, thereby facilitating the legitimization of elite rule.

It is noteworthy that in a shackled Leviathan, state's capacity is greater than that of a despotic Leviathan. This is because, in a despotic Leviathan, the state dominates society and has less incentive to improve its capacities. The competition between the state and society encourages political elites to invest more. In all three states of the Leviathan, society also has different capacities. The transition from one state to another is contingent upon the latent possibilities within institutional congruity. For example, a particular type of institutional reform within a specific institutional congruity may

increase the state's power, shifting the equilibrium from Region 3 (absent Leviathan) to Region 2 (shackled Leviathan), and creating a robust and coherent process of state capacity building. However, the same reforms within a different institutional congruity could propel a state already in Region 2 into Region 1 (despotic Leviathan), reducing its long-term potential for achieving high state capacity.

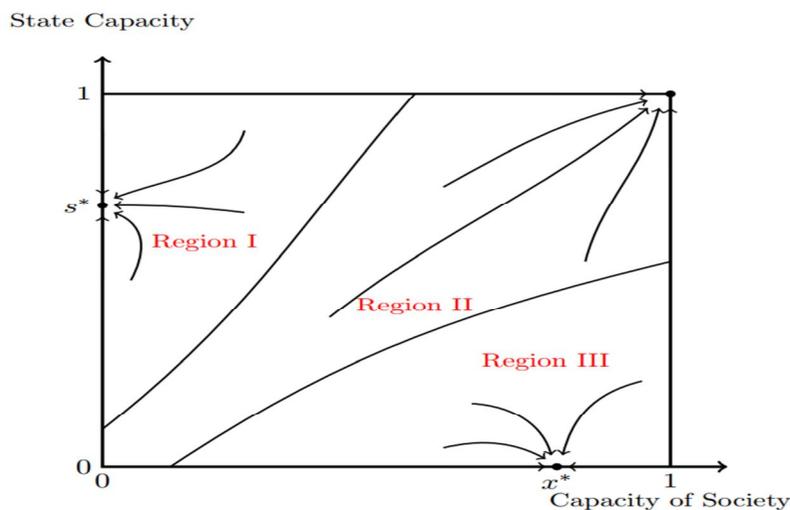


Fig 3. three (locally) asymptotically stable (Nash) equilibria

Source: Acemoglu and Robinson (2023)

While Acemoglu and Robinson's model (2019, 2022, 2023) presents multitude of long-term possibilities, it also offers several falsifiable predictions. First, it posits that a state's greatest capacity does not arise when it exercises complete dominance over society, but rather when a balance exists between the two. Second, the model suggests that the longer a society remains within the confines of a despotic Leviathan (or an absent Leviathan), the more challenging it becomes to transition to a shackled Leviathan. Third, the model implies a form of weak path dependence in initial conditions in response to shocks. For instance, two policies exposed to identical shocks and possessing

the same social capacity are more likely to evolve into a despotic Leviathan if one has a larger state capacity than the other.

3. Baseline model

Game theory can be a powerful tool for modeling and analyzing interactions among strategic actors (Guerin, 2007). In this study, we employ a game (designed by Acemoglu and Robinson (2023)) to model the dynamic interactions between the state and society. Following Long (1958), we consider the state-society relationship as a game unfolding within an institutional context, he argues that structured group activities that coexisting within a specific territorial system can be considered a game. Humans a playful animals and a creator of games. The human capacity to create and engage in games is innate. A game also unfolds within the institutional balance between the state and society. A game exists between the political elites and civil society. In this section, different possible states of interaction between the state and society are modeled based on Acemoglu and Robinson's (2023) model. This model will be used in the next section to analyze Iran. The designed model is based on Hirshleifer's theory of dynamic competition (Hirshleifer, 1989), in his theory the game may result in a clear winning for one side, leading to either a despotic or absent leviathan, or it may end in a peaceful equilibrium, resulting in a shackled leviathan. The struggle for power is a common theme in the research literature on interest group politics, civil wars, and international relations (Powell, 1999; Skaperdas, 1992; Tullock, 2001). following this literature, the outcome of the competition and conflict between elites and society in uncertain and contingent. Depending on the capacities of each side, the ultimate winner depends on various factors embedded in institutional congruity that cannot be easily predicted beforhand. Whichever side wins can determine policies and allocate resources in its own favor. The specific characteristics embedded within the institutional congruity, which in a way constitute the initial conditions, can steer the state-society interaction towards one of three equilibria.

3.1 Preferences and Competition

In the model, time is discretely considered with a period length of $\Delta > 0$. At time t , we have the variables from the previous period, which means that

$$(x_{t-\Delta}, s_{t-\Delta}) \in [0,1]$$

In the model, x represents the society's capacity and s represents the state's capacity. At each point, the society and the state are represented by players. At any given time, the players simultaneously choose their investments¹, denoted as $i_t^x \geq 0$, and $i_t^s \geq 0$, respectively. These investments determine their current capacities according to the following equations:

$$x_t = x_{t-\Delta} + i_t^x \Delta - \delta \Delta \quad (1)$$

$$s_t = s_{t-\Delta} + i_t^s \Delta - \delta \Delta \quad (2)$$

where $\delta > 0$ represents the capacity depreciation of both players over time. The investment cost² of the society during time Δ is denoted as $\Delta \cdot \tilde{c}_x(i_t^x, x_{t-\Delta})$, where:

$$\tilde{c}_x(i_t^x, x_{t-\Delta}) = \begin{cases} c_x(i_t^x) & \text{if } x_{t-\Delta} > \gamma_x \\ c_x(i_t^x) + (\gamma_x - x_{t-\Delta})i_t^x & \text{if } x_{t-\Delta} \leq \gamma_x \end{cases}$$

A main assumption of the model is that the increase in state and social capacity exhibit dynamic economies of scale. In other words, the cost of capacity building will decrease below a certain threshold. Alternatively, once both the state and society have attained sufficient capacity, achieving further capacity becomes easier. The expression $\gamma_x > 0$ demonstrates the nature of increasing return to scale in capacity accumulation, indicating that initiating capacity building from a low level is more costly. In our modeling, this is captured by assuming that the investment cost increases linearly as the capacity of the previous period falls below the threshold γ_x . It is important to note that increasing return plays a crucial role in the analysis of the model

1. "Investment" in this context refers to the effort and resources expended by both the state and society to achieve their desired outcomes within the game-theoretic framework.

2. The term "investment cost" refers to the expenses associated with undertaking an investment over time.

results. The investment cost for elites (or government officials) during the period Δ is represented as $\Delta \cdot \tilde{C}_s(i_t^s, s_{t-\Delta})$, where:

$$\tilde{C}_s(i_t^s, s_{t-\Delta}) = \begin{cases} c_s(i_t^s) & \text{if } s_{t-\Delta} > \gamma_s \\ c_s(i_t^s) + (\gamma_s - s_{t-\Delta})i_t^s & \text{if } s_{t-\Delta} \leq \gamma_s \end{cases}$$

During each generation's lifetime, there is an interaction with state capacity s_t and social capacity x_t , which generates production or income.

$$f(x_t, s_t) \tag{3}$$

The production function f is assumed to be non-decreasing and differentiable. It is further assumed that both the state and society play a role in generating total income, which in turn affects the conflict and competition between them. Essentially, the society's ability to coordinate and the state's underlying power enhance the productivity of producers, thus influencing the distribution of income between the two sides. Next, we will discuss how to allocate the total income between elites and society. At time t , if elites and society compete with each other and one side emerges as the winner, that side obtains the entire income of the economy, while the other side receives nothing. The probabilities of winning depend on the relative capacities, with elites winning when:

$$s_t \geq x_t + \sigma_t \tag{4}$$

where σ_t is drawn from the independent distribution H that encompasses all past events. We represent the density of the distribution function H as h . The inclusion of the random term σ_t acknowledges the influence of various random factors on the outcome of conflicts and competitions between society and the state. This specification of the stochastic competition function, along with the assumption of symmetry mentioned below, indicates that the probability of elites winning is equal to $H(s - x)$, while the probability of society winning is equal to $1 - H(s - x) = H(x - s)$.¹

1. To maintain the focus of this paper, we have adopted a simplified framework based on the work of Acemoglu and Robinson (2023). This framework involves certain simplifying assumptions that, while necessary for tractability, may limit the model's generalizability. Further details regarding these assumptions can be provided upon request.

3.2 Equilibrium

Let us assume that the interaction involves non overlapping generations of actors, with one side representing the elites and the other side representing society. At any given time, t , the community maximizes the following relationship by selecting x_t (or equivalently i_t^x), considering the value of $x_{t-\Delta}$:

$$H(x_t - s_t) - \Delta \cdot C_x(x_t, x_{t-\Delta})$$

At the same time, elites also maximize the following relationship by selecting s_t taking into account the value of $s_{t-\Delta}$.

$$H(s_t - x_t) - \Delta \cdot C_s(s_t, s_{t-\Delta})$$

A dynamic (Nash) equilibrium with short-lived players is characterized by a sequence of $\{x_{k\Delta}^*, s_{k\Delta}^*\}_{k=0}^{\infty}$, where given $x_{(k-1)\Delta}^*$, $x_{k\Delta}^*$ is the best response to $s_{k\Delta}^*$, and given $s_{(k-1)\Delta}^*$, $s_{k\Delta}^*$ is the best response to $x_{k\Delta}^*$. Political elites and society investment decisions are determined based on first-order conditions. Specifically, at time t , we have:

$$h(x_t - s_t) \leq c'_x \left(\frac{x_t - x_{t-\Delta}}{\Delta} + \delta \right) + \max\{0; \gamma_x - x_{t-\Delta}\} \text{ if } \frac{x_t - x_{t-\Delta}}{\Delta} = -\delta \text{ or } x_t = 0,$$

$$h(x_t - s_t) \geq c'_x \left(\frac{x_t - x_{t-\Delta}}{\Delta} + \delta \right) + \max\{0; \gamma_x - x_{t-\Delta}\} \text{ if } x_t = 1,$$

$$h(x_t - s_t) = c'_x \left(\frac{x_t - x_{t-\Delta}}{\Delta} + \delta \right) + \max\{0; \gamma_x - x_{t-\Delta}\} \text{ otherwise,}$$

And

$$h(s_t - x_t) \leq c'_s \left(\frac{s_t - s_{t-\Delta}}{\Delta} + \delta \right) + \max\{0; \gamma_s - s_{t-\Delta}\} \text{ if } \frac{s_t - s_{t-\Delta}}{\Delta} = -\delta \text{ or } s_t = 0,$$

$$h(s_t - x_t) \geq c'_s \left(\frac{s_t - s_{t-\Delta}}{\Delta} + \delta \right) + \max\{0; \gamma_s - s_{t-\Delta}\} \text{ if } s_t = 1,$$

$$h(s_t - x_t) = c'_s \left(\frac{s_t - s_{t-\Delta}}{\Delta} + \delta \right) + \max\{0; \gamma_s - s_{t-\Delta}\} \quad \textit{otherwise}.$$

The first line of each expression is applied when the corresponding player has chosen zero investment, resulting in the accumulation variable either shrinking at the rate δ or remaining at its previous low value (i.e., $x_t = 0, s_t = 0$). In this case, the additional cost of investment is on the right-hand side, and the optimal condition is represented by inequality since the marginal benefit is strictly less than the marginal cost of investment. The second line indicates the situation where the player considers the capacity accumulation variable to be 1, resulting in the marginal benefit being significantly greater than the marginal investment cost. The third line is applicable when the marginal benefit equals the marginal cost. Now, let us consider the assumption $\Delta \rightarrow 0$ to derive the first-order optimal conditions in the continuous-time state (and consequently, the equilibrium):

$$\begin{aligned} h(x_t - s_t) &\leq c'_x(\dot{x}_t + \delta) + \max\{0; \gamma_x - x_t\} \quad \textit{if } \dot{x}_t = -\delta \textit{ or } x_t = 0, \\ h(x_t - s_t) &\geq c'_x(\dot{x}_t + \delta) + \max\{0; \gamma_x - x_t\} \quad \textit{if } x_t = 1, \\ h(x_t - s_t) &= c'_x(\dot{x}_t + \delta) + \max\{0; \gamma_x - x_t\} \quad \textit{otherwise.} \end{aligned} \tag{5}$$

$$\begin{aligned} h(s_t - x_t) &\leq c'_s(\dot{s}_t + \delta) + \max\{0; \gamma_s - s_t\} \quad \textit{if } \dot{s}_t = -\delta \textit{ or } s_t = 0, \\ h(s_t - x_t) &\geq c'_s(\dot{s}_t + \delta) + \max\{0; \gamma_s - s_t\} \quad \textit{if } s_t = 1, \\ h(s_t - x_t) &\leq c'_s(\dot{s}_t + \delta) + \max\{0; \gamma_s - s_t\} \quad \textit{otherwise.} \end{aligned} \tag{6}$$

The dynamics of government and society's capacity can be described by the following two differential equations:

$$\begin{aligned} \dot{x} &= \max\{ (c'_x)^{-1}(h(x - s) - \max\{\gamma_x - x, 0\}); 0\} - \delta \\ \dot{s} &= \max\{ (c'_s)^{-1}(h(s - x) - \max\{\gamma_s - s, 0\}); 0\} - \delta. \end{aligned} \tag{7}$$

The two aforementioned assumptions, namely the single peak of h and the economic aspect associated with the scale of the cost function, are clearly defined in equation 7. Firstly, when x and s are near each other, $h(x - s)$

takes on a large value, leading to an increase in both variables. Conversely, when x and s are far apart, $h(x - s)$ becomes small, resulting in a reluctance from both parties to invest. This observation reveals the primary factors driving the distinct dynamics of state-society relations and the various types of government in our model. Secondly, the use of the expression "max" implies that when the capacity of either side falls below the threshold value (γ_x or γ_s), an additional force is exerted, pushing for further reduction of the capacity.

3.3 Dynamics of Society and State Capacity

The key findings of this section are condensed in the following propositions: Proposition 1: Given the establishment of assumptions 1, 2, and 3, three stable asymptotic (local) Nash equilibria emerge. The Nash equilibria indicate approximate equilibrium points between the government and society, representing the three states of Leviathans: a despotic, shackled, or absent Leviathan:

1. $x^* = s^* = 1$
2. $x^* = 0$ and $s^* \in (\gamma_s, 1)$.
3. $x^* \in (\gamma_x, 1)$ and $s^* = 0$.

This proposition presents three asymptotically stable equilibria: despotic Leviathan, absent Leviathan, and shackled Leviathan. When we are in the vicinity of the uniform state $x^* = s^* = 1$, where $h(x - s)$ is large, both sides are encouraged to converge towards $x^* = s^* = 1$. Conversely, in the vicinity of $x^* = 0$ or $s^* = 0$, where $h(x - s)$ is small, neither party has a strong incentive to invest, and one of them may ultimately end up in a zero-capacity state. The equilibria outlined in Proposition 1 and their local dynamics correspond precisely to those depicted in Figure 3.

3.4 Different cases of modern Iranian history: direct transitions between despotic and absent leviathan

The modern history of Iran has unfolded in a way that indicates a direct transition between despotic Leviathans and an absent one. At the same time,

Acemoglu and Robinson's baseline model does not illustrate this direct transition (although they have proven this state in the online appendix). To illustrate a direct transition, the cost function needs to be modified. Suppose the cost functions are as follows:

$$C_x(x_t, x_{t-\Delta}) = c \left(\frac{x_t - x_{t-\Delta}}{\Delta} + \delta \right) [\max\{\gamma - x_{t-\Delta}, 0\} - \max\{\gamma - s_{t-\Delta}, 0\}] \left(\frac{x_t - x_{t-\Delta}}{\Delta} + \delta \right)$$

and

$$C_s(s_t, s_{t-\Delta}) = c \left(\frac{s_t - s_{t-\Delta}}{\Delta} + \delta \right) + [\max\{\gamma - s_{t-\Delta}, 0\} - \max\{\gamma - x_{t-\Delta}, 0\}] \left(\frac{s_t - s_{t-\Delta}}{\Delta} + \delta \right)$$

The differential equations for the strength of society and state can now be written as

$$\begin{aligned} \dot{x} &= (c')^{-1}(h(x - s) + x - s) - \delta \\ \dot{s} &= (c')^{-1}(h(s - x) + s - x) - \delta \end{aligned}$$

4. Contemporary Iran: Between Anarchism and Leviathan

4.1 A Precarious Equilibrium: The Fragile State-Society Relations and the Failure of the Iranian Constitutional Revolution

The constitutional revolution in Iran marked a unique movement in the Islamic world (Gheissari & Nasr, 2009) and stood out as a socially grounded event in the modern history of the Middle East (Amant, 2017). The revolution aimed not to alter the law, but to establish it and eradicate organized lawlessness. Furthermore, it sought to transform Iranians from subjects to citizens, signifying a significant legal revolution. Katouzian (1981) argues that socioeconomic equality was not the primary goal of the constitutional revolution for Iranian society. Instead, they aimed to share in

and influence the absolute power of the state, believing that overcoming tyranny would automatically lead to other social ideals, political-economic progress, social welfare, and national prestige (Katouzian, 1981). Thus, the constitutional revolution primarily involved a struggle between the state and society over the distribution of power. Although Iranians swiftly acquired a constitution, they struggled to consolidate it due to the absence of essential institutional foundations such as a middle class, stability, and political order. The constitutional revolution aimed to establish a new government that represented the social base, but such an objective lacked deep roots in Iran's institutional congruity. On the contrary, the strong roots of anarchism were still actively present within Iranian institutions. As a result, as Katouzian (2004) suggests, the initial years following the constitutional revolution witnessed escalating destructive conflicts within the central government and the provinces, raising concerns that the country might disintegrate (Katouzian, 2004). The conflict between the state and society during the years 1300-1304 (1921-1925) manifested in three forms: a) forces of chaos, b) their antithesis—those favoring dictatorship and later arbitrary rule, and c) constitutionalists, both conservative and democratic, who sought order free from arbitrariness but lacked a clear strategy to achieve it and were embroiled in internal conflicts. However, given that they, and the classes they represented, generally desired an end to anarchy, achieving this objective was relatively straightforward, requiring only the will and military resources possessed by Reza Khan. By 1304, a dictatorial regime was established within the framework of a general constitution, which evolved into an arbitrary government by 1310 (Katouzian, 2004). Cronin (2004) also argues that the constitutional revolution dismantled the traditional center of authoritarian power but failed to establish an effective alternative. It was within this context that Reza Khan emerged, ignoring the criticisms of the constitutionalists regarding the evils of tyranny and the benefits of the rule of law. However, due to his ability to fulfill the second goal of the constitutional revolution—creating a strong state and promoting modern

national values—he garnered widespread support (Cronin, 2004). Although the constitutional revolution ultimately suffered from instability and failure, it remains a significant milestone in history as a revolutionary movement that aimed to disrupt the balance of power and transform Iranian society. The revolution's failure can be attributed to the constant shifts and fragility within the coalition that formed during the revolution. John Foran argues that the failure of the constitutional revolution and the subsequent rise of Reza Khan exemplify the concept of stalemate social forces (Foran, 2019). The failure of the constitutional revolution demonstrated the inability of domestic political actors to sustain a free and democratic system in Iran, although some argue that the failure was due to imported rather than original reasons (Amant, 2017).

The Qajar state represented an unstable balance that eventually became imbalanced and collapsed following the implementation of the constitution. Despite the Qajar kings, as demonstrated by Abrahamian (2018, 2021), exploiting the weakness of social institutions and attempting to perpetuate their rule through tribal conflicts, this balance remained precarious. At any moment, the grievances of the social institutions could have overwhelmed the government itself. The paradox of the constitutional revolution lies in the fact that the opening it initially brought was subsequently destroyed, both stemming from the same phenomenon: the absence of an efficient and stable central government. Initially, the revolution saw success to a significant extent because the government lacked the means to suppress opposition. However, it ultimately failed in large part due to the absence of mechanisms to consolidate the power of the revolutionaries. The constitutional revolution marked the establishment of laws that regulated the interaction between the government and society for the first time. Yet, instead of recognizing the importance of this issue, both the government and society attempted to sideline and seize power from one another. Based on the concept of economies of scale and the analysis of the Qajar period, it can be concluded that both state and societal capacities were extremely low. The initial phase of capacity building, as explained, is more costly and challenging, a reality clearly evident in the Qajar era. The absence of effective institutions,

political instability, and a lack of a middle class indicate that both the state and society in Qajar Iran were at a nascent stage, prior to reaching the level of capacity where economies of scale could be realized. Therefore, it can be asserted that state and societal capacities during the Qajar period were positioned between zero and the point of economies of scale:

$$x^* \in (0, \gamma_x), s^* \in (0, \gamma_s)$$

As evident from the preceding explanations, as well as the emphasis by Gheissari and Nasr (2009), the objective of the constitutional movement was not the establishment of democracy, but rather the initiation of a process to rationalize the government and establish a connection between political authority and specific norms, particularly emphasizing accountability. Consequently, we have examined the accumulation of capacity within both society and the state, ranging from zero to economies of scale. Initially, we will illustrate the instability of this equilibrium. The optimal conditions required for the maintenance of such an equilibrium are:

$$h(s^* - x^*) = c'_s(\delta) + \gamma_s - s^*$$

$$h(x^* - s^*) = c'_x(\delta) + \gamma_x - x^*$$

The dynamic system of relationship 7 in this case can be described as follows:

$$\dot{x} = (c'_x)^{-1}(h(x^* - s^*) + \gamma_x - x^*) - \delta$$

$$\dot{s} = (c'_s)^{-1}(h(s^* - x^*) + \gamma_s - s^*) - \delta$$

Given that the equilibrium levels of state and community capacity are determined by similar conditions in this scenario, the local dynamics can be derived from the linearized system, which is characterized by the following matrix:

$$\begin{bmatrix} \frac{1}{c''_s(\delta)} [h'(s^* - x^*) + 1] & -\frac{1}{c''_s(\delta)} h'(s^* - x^*) \\ -\frac{1}{c''_x(\delta)} [h'(x^* - s^*)] & \frac{1}{c''_x(\delta)} h'(x^* - s^*) + 1 \end{bmatrix}$$

By employing assumption 3 ($h'(s^* - x^*) = -h'(x^* - s^*)$), we can derive the characteristic of the aforementioned matrix as follows:

$$\frac{1}{c_s''(\delta)c_x''(\delta)} > 0.$$

Furthermore, we can evaluate the impact of the matrix using part number 2 of assumption 2.

$$\frac{1}{c_s''(\delta)} [h'(s^* - x^*) + 1] + \frac{1}{c_x''(\delta)} [h'(x^* - s^*) + 1]$$

By utilizing assumption 3, it can be inferred that the aforementioned statement can be positive under the following conditions:

$$h'(s^* - x^*)(c_s''(\delta) - c_x''(\delta)) \leq c_x''(\delta) + c_s''(\delta) \quad (A7)$$

It is deduced from assumption 2 that:

$$|c_s''(\delta) - c_x''(\delta)| \leq \frac{c_x''(\delta)}{|h'(s^* - x^*)|}$$

This condition is sufficient for expression 7, leading to both eigenvalues of the matrix being positive and resulting in an asymptotically unstable equilibrium. The conclusion of the constitutional period marked the onset of an anarchic situation where the government experienced significant weakening. As previously mentioned, the Qajar government was weak throughout its reign, and one of the reasons for the success of the constitutional movement was the government's vulnerability. The acceptance of the constitution did not occur within a legal framework established by a strong government; instead, it was associated with the triumph of the constitution during a period of governmental frailty. Following the constitutional victory, the government's weakness intensified, leading to the following observations:

$$s^* = 0, x^* \in (0, \gamma_s)$$

Essentially, while society continued to strive towards reaching the point of economies of scale, the government's capacity diminished. This situation

created an imbalance. When the state is in the state $s^* = 0$, the condition for equilibrium existence requires that society is in the state $x^* \in (\gamma_x, 1)$. Based on equation 6, an internal investment equilibrium necessitates the following:

$$h(x) = c'_x(\delta) + \max\{0; \gamma_x - x\}.$$

Assumption 3 implies that at $x = 1$ $h(1) < c'_x(\delta)$, and at $x = \gamma_x$ $h(\gamma_x) > c'_x(\delta)$. Therefore, by applying the intermediate value theorem, there exists a value of x^* that satisfies the following relationship: $\gamma_x < x^* < 1$, where

$$h(s^*) = c'_s(\delta). \quad (A2)$$

Additionally, since h is single-peaked and the solution at 0 is symmetric, $h(s)$ is decreasing for $s \geq \gamma_s$. As a result, there is only one value of s^* that satisfies this relationship. Next, we verify that $s^* = 0$ is consistent with community optimization:

$$h(-x^*) = h(x^*) = c'_x(\delta) < c'_s(0) + \gamma_x$$

where the first equality follows from the symmetry of h , and the second equality is an iteration of A2. The inequality is also derived from Assumption 2, confirming that $s^* = 0$ is an optimal response for the community. To establish local stability, we employ Lyapunov's argument. In the neighborhood of equilibrium ($s = 0, x = x^*$), the dynamic system in 7 can be rewritten as follows:

$$c'_s(\dot{s} + \delta) = h(s - x) + \gamma_s - s \quad \text{if } s > 0 \text{ and } \dot{s} = 0 \text{ if } s = 0, \text{ and}$$

$$c'_x(\dot{x} + \delta) = h(x - s)$$

We have utilized the fact that we are in the neighborhood of $(0, x^*)$, satisfying the conditions $s < \gamma_s$ and $x > \gamma_x$. The dynamic system of relation 7 can be reformulated as:

$$\dot{s} = (c'_s)^{-1}(h(s - x) + \gamma_s - s) - \delta$$

$$\dot{x} = (c'_x)^{-1}(h(x - s)) - \delta \quad (8)$$

We select the Lyapunov function as:

$$L(x, s) = \frac{1}{2}s^2 + \frac{1}{2}(x - x^*)^2$$

This function is continuous, differentiable, and possesses a unique minimum at $(0, x^*)$. We verify that within the neighborhood of $(0, x^*)$, $L(x, s)$ decreases along the solution paths of the dynamical system described by dynamical relation 8. Specifically, since L is differentiable, we can write for $s \in (0, \gamma_s)$ and $x \in (\gamma_x, 1)$:

$$\frac{dL(x, s)}{dt} = x\dot{x} + (x - x^*)\dot{x}.$$

Please note that since $h(-x^*) < c'_s(\delta) + \gamma_s$, for x and s in the neighborhood of $(0, x^*)$, we have:

$$\dot{x} = (c'_s)^{-1}(h(s - x) + \gamma_s - s) - \delta < 0 \quad (9)$$

Therefore, by utilizing Taylor's first-order expansion of the dynamic relation 8 in the aforementioned neighborhood, we obtain:

$$(x - x^*)\dot{x} = \frac{1}{c''_x(\delta)}h'(x^*)(x - x^*)(x - s - x^*) + o(.) \quad (10)$$

Here, $o(.)$ represents the second-order term in s and $x - x^*$.

The desired result follows from the following arguments:

(1) For $s \in (0, \gamma_s)$ and $x \in (\gamma_x, 1)$, regardless of the sign of $(x - x^*)\dot{x}$, we have $|s\dot{s}| > |(x - x^*)\dot{x}|$. As $s \rightarrow 0$ and $x \rightarrow 0$, $\frac{(x-x^*)(x-s-x^*)}{s} \rightarrow 0$. This is because in the neighborhood of equilibrium $(0, x^*)$, \dot{x} is of the order $x - x^*$, while the condition $h(-x^*) < c'_s(\delta) + \gamma_s$ guarantees that $\dot{s} < 0$. Therefore, in the region where $x \in (0, \gamma_x)$ and $s \in (0, \gamma_s)$, we have $\frac{dL(x,s)}{dt} < 0$.

When $s = 0$, relation 8 implies that $(x - x^*)\dot{x} < 0$ due to the fact that $h'(x^*) < 0$. Thus, we have $\frac{dL(x,s)}{dt} < 0$.

When $x = x^*$, relation 9 guarantees that $\dot{s} < 0$. Hence, we have $\frac{dL(x,s)}{dt} < 0$.

Therefore, in all three cases, the asymptotic stability of $(0, x^*)$ follows from Lasalle's theorem. The equilibrium depicted above illustrates that when one party has zero capacity, "h" will be small for both players. This encourages one party to build small capacity while discouraging the other party from building more capacity. Based on the explanations provided, it can be concluded that during the constitutional period, the government's initial attempt to establish a constitutional government was desirable. However, the government was unable to resist the social demand due to its weakness. Over time, societal efforts increased, resulting in the triumph of the constitution. The economies of scale within society were low (e.g., 0.3) because society was able to exert significant effort to achieve its goals. Conversely, the government's economies of scale were very high (e.g., in the range of 0.8 or 0.9) due to its weakness. Achieving a strong government required extensive effort. These developments ultimately led to the collapse of the Qajar dynasty and the emergence of a state of anarchy and chaos. Figure 4 depicts the dynamics between the government and society during the constitutional period. In summary, this Fig 4 illustrates the dynamic interplay between the government and society. The inability of a weak state to effectively control an active society has resulted in a situation characterized by an absent Leviathan.

4.2 The First Pahlavi's State-Building: Navigating Constitutional Legacy and Modern Tyranny in Post-Qajar Iran

During Mohammad Ali Shah Qajar's reign, he demonstrated the government's power by closing the parliament with a cannon, an act known as the "minor tyranny." However, after the fall of the Qajar dynasty and the ascension of Reza Khan, he did not repeat the mistakes of minor tyranny and did not reject the constitution. Instead, he sought to shift the balance of power within the constitutional framework, favoring the executive branch at

the expense of the legislative branch. This strategic maneuver allowed Reza Shah to mitigate the risk of collapse (Gheissari and Nasr, 2009). While Reza Khan's actions disregarded the democratic ideals and individual and political freedoms enshrined in the constitution, Amanat (2017) argues that the Pahlavi era itself was a continuation of the constitutional legacy. If the constitutional period can be seen as an endeavor to establish the rule of law and promote citizenship, the first side should be regarded as an attempt to build a strong state. Although the first Pahlavi government eventually devolved into pure tyranny, Matin-Asgari (2012) suggests that Reza Khan's tyranny represented a modern form. This form of tyranny deviated from the historical patterns of Iranian tyranny and was influenced by the constitutional experience (Matin-Asgari, 2012). Abrahamian (2021) states that Reza Khan established and strengthened three pillars to support his state-building efforts: the new army, the state bureaucracy, and the judiciary.

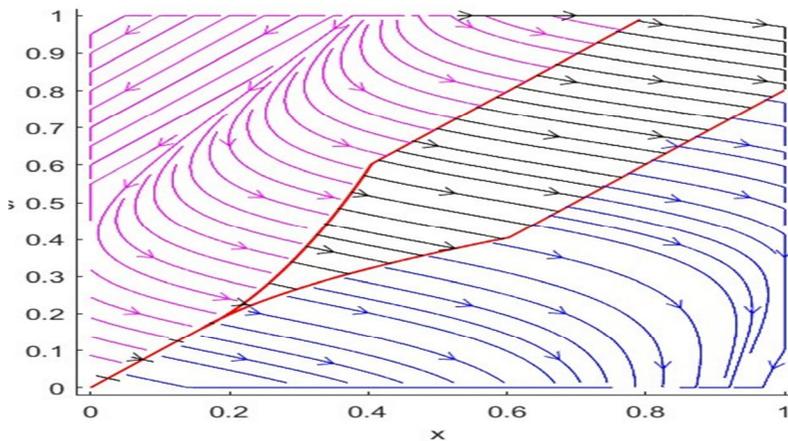


Fig 4. State-Society Dynamics during the Constitutional Period

Source: Authors' analysis and calculation

After consolidating his monarchy's foundations, Reza Khan suppressed independent newspapers and dissolved political parties. Subsequently, he initiated social reforms aimed at gradually creating a semi-Western society.

One of his significant social reforms was the mandatory veiling of women, which faced opposition from society. Such actions by Reza Khan contributed to societal imbalances. Alongside these reforms, he appointed Ali Akbar Daver, a Swiss-educated individual, as the Minister of Justice. Reza Khan aimed to replace traditional judges and reduce the presence of clerics in parliament. He even declared religious ceremonies illegal. Abrahamian (2021) argues that Reza Khan's government possessed coercive power but lacked the ability to establish the means and institutions of coercion based on class structure and social foundations. This weakness played a pivotal role in its eventual collapse and imbalance. Reza Khan's post-constitutional government failed to reconcile the state and society, leading Iran into a precarious situation. The Pahlavi regime's pursuit of power became its Achilles' heel in state formation, effectively alienating the very social classes upon which state power was expected to rely. The Pahlavi era witnessed a period of rapid state-building and social transformation. This process was initially characterized by significant challenges and resource constraints, reflecting the concept of diminishing returns at low levels of capacity. However, as the state and society gradually developed, the capacity to absorb and utilize resources more efficiently increased, leading to economies of scale. The specific thresholds γ_x and γ_s represent the critical points beyond which these economies of scale become apparent. While acknowledging the limitations of precise quantification in historical analysis, these thresholds are conceptualized as proxies for the minimum level of state and social capacity required to unlock the benefits of increasing returns. For instance, γ_x for society might correspond to the establishment of a basic education system and infrastructure, while γ_s for the state could represent the formation of a professional bureaucracy and a centralized administrative apparatus. It is important to emphasize that the model captures the general trend of increasing returns rather than providing precise empirical estimates. Future research could explore more refined methodologies for quantifying

these thresholds based on specific historical data. So these finding reflects the historical observation that Reza Khan's state-building efforts were more effective once a certain level of state capacity was established, but the initial phase of capacity-building was costly and fraught with challenges. Based on the aforementioned explanations, the situation of the first side can be represented as follows:

$$x^* \in (0, \gamma_x), s^* \in (\gamma_s, 1)$$

Drawing from the constitutional experience, society was able to progress along the economic scale. The primary weakness leading to the collapse, namely the lack of state building, became a focal point for the initial Pahlavi government. During this period, the government enhanced its capacity, but due to Reza Khan's methods, society could not keep pace. This can be attributed to the nature of governance in Iran, which necessitated the suppression of society. In such circumstances:

$$h(x^* - s^*) = c'_x(\delta) + \gamma_x - x^*$$

$$h(s^* - x^*) = c'_s(\delta)$$

The local dynamics can be determined by examining the linearized system with the characteristic matrix:

$$\begin{bmatrix} \frac{1}{c''_x(\delta)} [h'(x^* - s^*) + 1] & -\frac{1}{c''_x(\delta)} h'(x^* - s^*) \\ -\frac{1}{c''_s(\delta)} [h'(s^* - x^*)] & \frac{1}{c''_s(\delta)} h'(s^* - x^*) \end{bmatrix}$$

The trace of the matrix can be calculated as follows:

$$\frac{1}{c''_x(\delta)} [h'(x^* - s^*) + 1] + \frac{1}{c''_s(\delta)} h'(s^* - x^*)$$

The above expression can yield a positive value when:

$$h'(x^* - s^*)(c''_x(\delta) - c''_s(\delta)) \leq c''_s(\delta) \tag{11}$$

By utilizing assumption 2, we can verify the validity of relation 11. This expression indicates that both eigenvalues of the matrix become positive, resulting in the formation of an asymptotic unstable equilibrium. This situation persisted until it eventually led to an imbalance during the first Pahlavi period:

$$x = 0, s^* \in (0, \gamma_s)$$

During this time, due to Reza Khan's authoritarian approach, the capacity of society diminished to zero. During the first Pahlavi period, the capacity of society reached zero due to Reza Khan's authoritarian approach. A democratic state-society requires a balance of competition and cooperation, but the efforts to build a strong state ultimately fell short. This situation mirrors the imbalance observed during the constitutional period, with the difference being that here both the society's capacity and the government's capacity building are diminished. The society failed to improve its capacity alongside the government's state-building endeavors.

During the initial phase of Pahlavi I's rule, the government prioritized state building, and this focus continued to grow in the subsequent years. The society, which was in a state of turmoil after the constitution, sought stability, leading to a partial neglect of preserving the constitutional heritage. This provided an opportunity for Reza Khan's totalitarianism to emerge. Although Reza Khan's state-building efforts compensated to some extent for the lack of a central government during the Qajar period and achieved some economic scale, it came at the expense of destroying the constitutional heritage and sacrificing the society's capacity. The dynamics of this period can be visualized in the fig 5. In other words, Reza Shah's despotism (the despotic Leviathan) was a direct consequence of the post-Constitutional Revolution anarchy (the absent Leviathan). Reza Shah's dictatorship was a reaction to the chaos-seeking tendencies of social activists. Thus, the emergence of a despotic Leviathan was a response to the absent Leviathan of the post-Constitutional era.

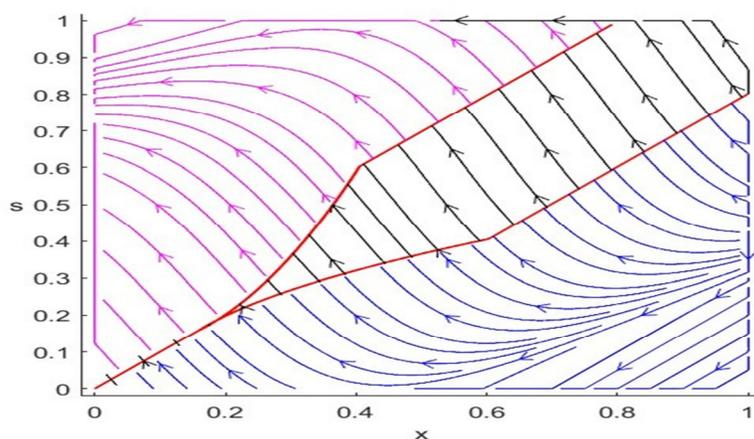


Fig 5. State-society dynamics in the first Pahlavi period

Source: Authors' analysis and calculation

4.3 To have your cake and eat it too¹

In the first stage, Pahlavi II learned from his father's fate and made efforts to enhance social capacity. The second Pahlavi period can be divided into two periods: before and after the coup d'état on August 28, 1332. Prior to the coup, the Shah aimed to improve both societal capacity and address the governance deterioration caused by his father's tyranny. However, following the coup, Pahlavi's tyranny resurfaced and intensified.

Pahlavi II encouraged party competition to enhance societal capacity and improve the government's effectiveness. Meanwhile, Mossadegh's successful oil nationalization movement brought new hope for the establishment of a civil society, according to Amanat (2017). However, Matin-Asgari (2012) considers the rise and fall of Mossadegh to be a pivotal turning point that shattered the prospects of modern Iran and cast a shadow on the legitimacy of the Pahlavi monarchy (Matin-Asgari, 2012). Rahnema (2021) further suggests that the 1332 coup provided the political foundation for Pahlavi II's

1. This expression is often used to describe a situation where someone desires conflicting or mutually exclusive outcomes. It suggests the impossibility of keeping and consuming the cake simultaneously, symbolizing the challenge of pursuing conflicting goals. This proverb refers to the aspirations of Pahlavi II, who aimed to establish a civil society while simultaneously consolidating his tyranny.

transition into a modern dictatorship, with his coronation in November 1346 marking the rise of authoritarianism in Iran (Rahnema, 2021). Approximately seven months after his coronation, the Shah expressed his loss of faith in democracy to Alam. The king, who once viewed his father as a dictator, now believed that he had surpassed him in strength. In a letter to the Shah, Alam acknowledged that everything was within the Shah's control, and the Shah had imposed his power and influence on both domestic and foreign entities. The Shah proclaimed that the king and God must be one. Previously, the king saw himself as a divine instrument carrying out a holy mission, but now he considered himself as God.

The White Revolution was intended to restore social order and partially compensate for the memory of the coup. Although the Shah initiated modernization efforts in the socio-economic structure, limited efforts were made in developing the political system. While pressure groups were allowed to form and a more open political space was created for various social forces, the relationships between the regime and the old classes, as well as the expansion of the regime's social base, were not given much attention. Government centralism reached its peak during Pahlavi II's reign, with the government intervening in various aspects of daily life. The government controlled land lease contracts, fruit collection and packaging, chemical fertilizers, animal feed, beekeeping, and disease control measures. Pahlavi II's social reforms resulted in mixed outcomes. Intellectuals, workers, and farmers protested the disappearance of professional associations, labor unions, political parties, and land ownership, respectively. The trickle-down growth model further widened the wealth gap between the rich and poor. In dealing with political parties, Pahlavi II, inspired by Huntington's¹ idea of a single-party government, established the Rostakhir party, which reinforced the government's dominance and control over the

1. According to Huntington, modernization in the social sphere gives rise to increased demands and escalates political instability. Therefore, governments should aim to prevent revolutions by establishing a one-party system to effectively manage public affairs.

salaried middle class, urban working class, cooperatives, agricultural and rural areas, markets, and the clergy institution.

Similar to other modern authoritarian regimes, which inherently tend to be unstable, Pahlavi II's rule became a winner takes all political game. However, unlike the 1332 coup, this time the king was overthrown (Rahnema, 2021). After the collapse of the Pahlavi regime, the Shah expressed to American statesmen that: "the changes were genuine on my part. But Iran is not ready for Western-style democracy" (Guerrero, 2016, p. xvii). The Iranian society, having overcome the tyranny of Reza Khan, now faced a ruler who, unlike his father, had partners in power from the beginning. Abrahamian (2021) identifies five departments as partners of the Pahlavi II government: the court, parliament, cabinet, foreign embassies, and the people. Pahlavi II's political rigidity led society to disregard his economic, social, and cultural developments. According to Rahnema (2021), the society even directed its social participation towards overthrowing the tyranny.

The second Pahlavi period differs from the constitutional period and the first Pahlavi period in that there was no transition from one era to another. Instead, the same despotic Leviathan state inherited from Reza Khan deepened. Pahlavi II aimed to lead Iran into a narrow corridor, simultaneously improving social and political capacities. However, the increase in capacities required reducing the tyranny within the political system, which Pahlavi II resisted. This led to an unstable balance where society was ready to enhance its capacities, but the political system refused to yield to the demands of institutional reforms. In conclusion, the chosen parameters accurately reflect the historical dynamics of the pre-coup period under Pahlavi II, where societal capacity was maximized due to active social engagement, while state capacity remained suboptimal, leading to an unstable balance between the two. This state can be represented as follows:

$$x^* = 1, s^* < 1$$

Equilibrium will be established under the following conditions:

$$h(1 - s^*) \geq c'_x(\delta)$$

$$h(s^* - 1) = c'_s(\delta) + \max\{\gamma_s - s^*, 0\}$$

By using these conditions, it can be demonstrated that such an equilibrium cannot be asymptotically stable. There are two cases to consider when $s^* < 1$: $\gamma_s < s^* < 1$ and $s^* < \gamma_z < 1$. First, let's examine the scenario where $s^* > \gamma_s$. Assuming a perturbation that maintains x^* constant but reduces s^* to $s^* - \varepsilon_s$ (where $\varepsilon_s > 0$ for small values of ε_s , as demonstrating instability for small perturbations implies instability for larger ones as well), we have:

$$\dot{s} = -\frac{1}{c''_s(\delta)} h'(s^* - 1) - \delta < 0$$

The negative sign above, derived from the condition $h'(x^* - 1) > 0$, indicates that s^* deviates from equilibrium and leads to asymptotic instability.

Now let's consider the case where $s^* < \gamma_s$:

$$\dot{s} = -\frac{1}{c''_s(\delta)} [h'(s^* - 1) + 1] - \delta < 0$$

This case will exhibit local asymptotic instability. In Fig 6, you can observe the unstable dynamics of Pahlavi II before the coup. During this period, both the government and society were relatively balanced, although it is important to note that the root of tyranny still persisted, leading to the revival of the despotic leviathan. The government and society competed and cooperated alongside each other, as depicted in the diagram, showing the potential for operating within a narrow corridor. However, the possibility of anarchy and tyranny remained close at hand.

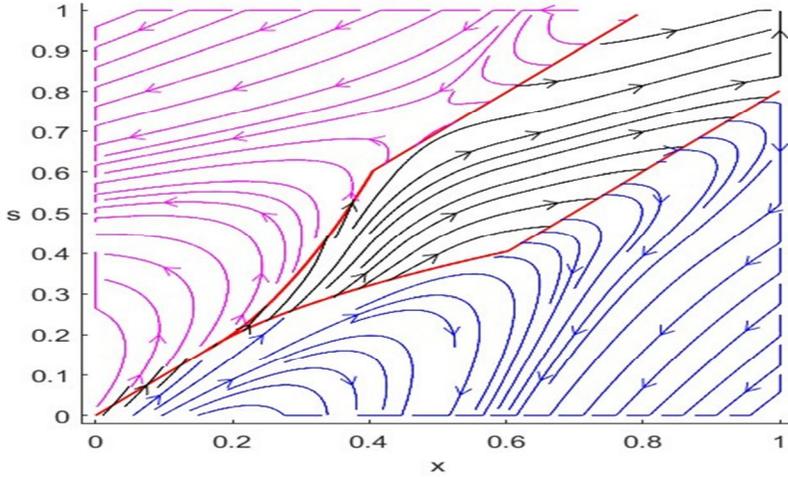


Fig 6. Pahlavi II before the coup
 Source: Authors' analysis and calculation

The unstable equilibrium preceding the coup eventually led to an imbalance. Pahlavi II's refusal to embrace political reforms and resorting to a coup d'état diminished societal capacity, prompting the society to shift its efforts towards overthrowing the government rather than attaining a democratic state. In summary, the chosen parameters accurately represent the post-coup scenario where the state capacity increased significantly due to authoritarian consolidation, but societal capacity, though diminished, still existed within a range that allowed for resistance and opposition. Consequently, the following conditions prevailed:

$$x^* \in (\gamma_x, 1), s^* \in (\gamma_s, 1)$$

For the aforementioned situation to reach a state of equilibrium, the following conditions must be satisfied:

$$h(s^* - x^*) = c'_s(\delta)$$

$$h(x^* - s^*) = c'_x(\delta)$$

By virtue of the symmetry of the function h around zero, we have:

$$h(s^* - x^*) = h(x^* - s^*)$$

Thus,

$$c'_s(\delta) = h(s^* - x^*) = c'_x(\delta)$$

This contradicts the assumption made in the second part of the second assumption, resulting in an imbalance. The dynamics of Pahlavi II after the coup are illustrated in Fig 7. During this period, the government's efforts were primarily focused on centralization, which rendered the realization of economies of scale unattainable for the government.

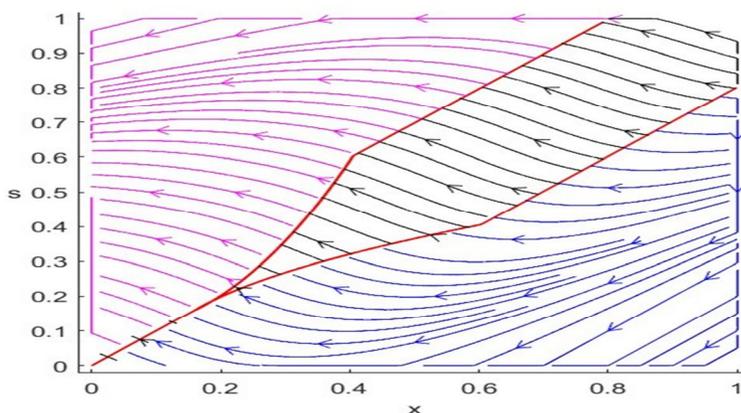


Fig 7. State-society interaction in the Pahlavi II period after the coup.

Source: Authors' analysis and calculation

5. Conclusion and Policy Implications

The concept of persistent insurgency, as used by Goodwin (1993), provides a lens through which the episodic and fragmented nature of Iranian movements and revolutions can be understood. These movements, while initially successful, have often collapsed due to the inherent diversity and complexity of the social, political, and cultural forces involved (Foran, 1991,

1994). This study argues that this diversity, essential for constructing an inclusive society, becomes an obstacle once a modest level of success is achieved, leading to internal conflicts and eventual imbalance. Drawing on the game theory proposed by Acemoglu and Robinson (2023), this research identifies a pattern of unstable equilibria in Iran's history, where the absence of a Leviathan alternates with the emergence of a despotic Leviathan. This cyclical pattern reflects the difficulty of achieving modernization without despotism and the challenge of maintaining democracy under an authoritarian regime. Katouzian refers to the oscillation between despotic leviathan and anarchism as the "arbitrary rule-chaos-arbitrary rule" cycle, as depicted in Fig 8.

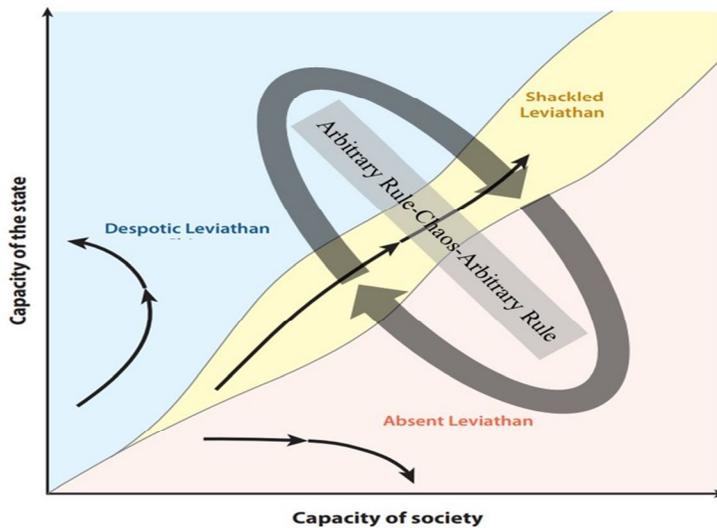


Fig 8. The Cycle of "Arbitrary Rule-Chaos-Arbitrary Rule"

Source: Authors' analysis and calculation

The findings suggest that the relationship between the state and society in Iran does not follow a linear path towards democracy, as suggested by Huntington (1968) and Fukuyama (2011), but rather exhibits a complex

interplay of forces that can lead to various outcomes depending on the balance of institutional capacities. Moreover, the research highlights the importance of institutional congruity in achieving socio-economic stability and preventing the resurgence of tyranny under different ideological guises. The interdependence of political and social institutions based on institutional balance suggests that "there is no single endpoint towards which all societies necessarily move" (Acemoglu & Robinson, 2022, p. 324). Rather, the interaction of institutions can take various forms. Through an examination of modern Iranian history, it becomes evident that socio-economic stability and peaceful progress can only be achieved if the persistent adversary of Iranian tyranny is permanently eradicated. It must not be given an opportunity to conceal itself under the guise of modernism, reformism, traditionalism, Marxism, or any other ideology, as doing so would only provide it with a chance to resurface and exert dominance over society as a whole.

The analysis of the constitutional period and the Pahlavi eras reveals that neither extreme of a despotic Leviathan nor an absent Leviathan is sustainable in the long term. Instead, a balanced and rational approach, informed by historical self-awareness, is crucial for fostering progress and harmony between society and the government. This research focuses solely on the events of the 1979 revolution in Iran. The period that followed, known as the Islamic Republic, could be the subject of an independent study. Nonetheless, the findings of this research can serve as a valuable example of the dynamics between the government and society in Iran and provide insights into future developments. For instance, scenarios such as $x^* = s^* = 0$ or $x^* = 0, s^* \in (0, \gamma_s)$ or $s^* = 0, x^* \in (0, \gamma_x)$ are all unlikely to occur as they represent disequilibrium states. Historical interactions between the government and society indicate that neither party would choose zero capacity. It could be argued that the economy of scale for both the society and the government is not lower than γ , making the occurrence of an unstable balance during the constitutional period or under Reza Khan unlikely. Both the government and society have improved their capacities over time. However, a state of

imbalance or unstable balance, similar to the situation during the second period, could still be possible. The stable equilibrium states of $x^* = 0, s^* \in (\gamma_s, 1)$, $x^* \in (\gamma_x, 1)$ and $s^* = 0$ (representing the extreme states of despotic leviathan and absent leviathan) are also improbable because, as mentioned, both the government and society have enhanced their capacities. Although the past should serve as a guide for the future, John Harris (2017) demonstrates that the Islamic Republic is replicating the same unsuccessful projects as previous governments in certain areas (Harris, 2017). To ensure progress and harmony between society and the government, both parties must adopt a long-term rational approach based on historical self-awareness, specifically since the constitutional era. By doing so, they can advance together. However, a significant danger lies in the possibility of repeating the same mistakes as in the second period if historical, social, and political consciousness is neglected. In some cases, the situation observed during the constitutional era and Reza Khan's time could resurface. In conclusion, figure 9 provides an overview of the three leviathans in modern Iran, summarizing the fate of the constitutional and Pahlavi periods, as well as the potential scenarios for the Islamic Republic.

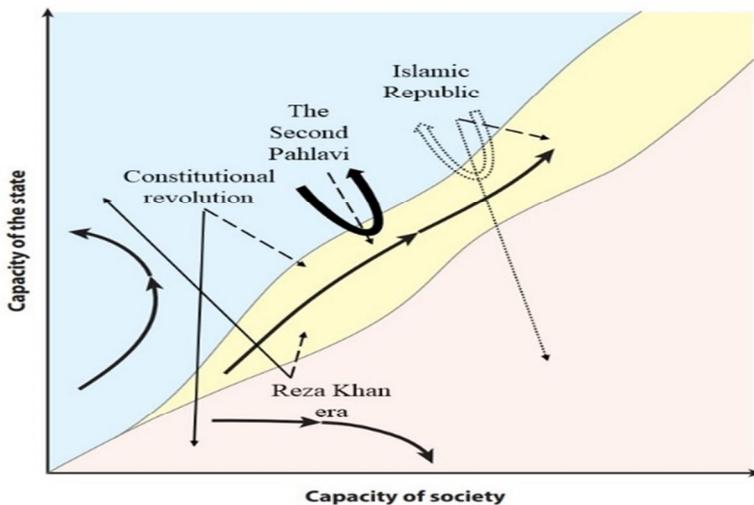


Fig 9. The Status of the Three Leviathans in Modern Iran

The findings of this research have several policy implications:

Understanding Historical Context and importance of path dependent: The article emphasizes the importance of considering the historical context of Iran in analyzing its political and economic trajectory. It highlights the unique characteristics of Iran's history, such as transitions between different forms of Leviathan and periods of imbalance. Policymakers and scholars should take into account the historical factors and dynamics when formulating policies and strategies for Iran. There is a need for policies that promote historical awareness among both the governing elite and the general populace. Understanding the lessons of past governance failures is crucial for preventing the repetition of mistakes and for guiding future reforms. This could involve educational programs, public discourse, and policy research that emphasize the importance of learning from history. Policymakers should prioritize historical, social, and political consciousness when formulating policies, ensuring that past mistakes are not repeated.

Analyzing Society-State Interactions: The study employs institutional congruity and game theory logic to examine the interaction between society and the state in Iran. This analytical framework provides a deeper understanding of the complex dynamics and interdependencies between political and social institutions. Policymakers can utilize this framework to assess the potential impacts of policy decisions on society-state relations and strive for a harmonious and stable balance.

Challenging Modernization Theory: The research findings challenge the central tenet of modernization theory, which posits a linear progression towards a robust democratic government. The coexistence of diverse political trajectories and equilibrium states in state-society relations in Iran contradicts this theory. Policymakers and scholars should reconsider the assumptions of modernization theory when analyzing political and economic development with respect to institutional congruity in Iran and other contexts.

Institutional Reform and Capacity Building: To avoid the cyclical pattern of tyranny and instability, it is essential to focus on long-term institutional reform that strengthens both the state and society. This includes developing robust institutions that can mediate between different social forces, prevent the concentration of power, and ensure accountability.

Promoting Inclusivity in Governance: The findings suggest that diversity, while initially a source of strength, can become a liability if not managed effectively. Policies should aim to create an inclusive governance framework that allows for the representation of diverse social, political, and cultural groups, thereby reducing the likelihood of internal conflicts that lead to instability.

Policy Lessons for the Islamic Republic: While the article focuses on Qajar and Pahlavi eras and doesn't consider Islamic Republic, it provides insights into the dynamics between the government and society in Iran. Policymakers can draw lessons from the historical interactions and scenarios presented in the article to anticipate future developments and design policies that promote socio-economic stability and progress.

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Conflicts of interest

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