ORIGINAL ARTICLE

OPEN ACCESS

Game-Theoretic Model for the Fall of Assad and the Middle East Regional Order

Zohaib Gillani [1], **Memoona Kiani** [2], **Inshal Haider** [3]

Authors' Affiliation:

[1] Visiting Faculty, Department of Mathematics, Quid-i-Azam University, Islamabad, Pakistan
Email: zohaib.gillani@asc.qau.edu.pk
[2] Fatima Jinnah Women University, Rawalpindi, Pakistan
Email: mehmoonakiani5@gmail.com
[3] M. Phil Scholar, Department of Defence & Strategic Studies, Quaid-i-Azam University, Islamabad, Pakistan
Email: inshalhaiderjf10c@gmail.com

Article History:

Submitted: December 26, 2025
Revised: April 14, 2026
Accepted: April 23, 2026
Published online: April 24, 2026

Corresponding author(s):

Zohaib Gillani
Email: Zohaib.gillani@asc.edu.pk

ABSTRACT

This study develops a multi-level game-theoretic framework to analyze the strategic interactions underlying the Syrian conflict. The model captures interdependencies across local, regional, and global actors through hierarchical strategic mappings. By introducing structured payoff relationships and inter-level dependencies, the study provides a theoretical explanation of how strategic behavior propagates across different layers of conflict. The findings highlight that equilibrium outcomes are highly sensitive to coordination patterns and inter-level feedback effects. While the model remains theoretical, it offers a foundation for future empirical validation and simulation-based extensions.

Keywords: Syrian conflict, Game theory, Regional order, Middle East politics, Foreign intervention.

(MSC2020) Codes: 91A10, 91A80, 91B55

1 | INTRODUCTION

A turning point in the Middle East's geopolitical development was the overthrow of Bashar al-Assad's government in late 2024. Syria, once a vital hub in the region, has deteriorated from authoritarian stability into post-conflict disintegration, triggering a series of realignments both domestically and among regional and global actors. Comprehending the resultant power vacuum,

emerging alliances, and revitalized rivalries requires more than mere narrative exposition; it requires analytical precision adept at encapsulating strategic interconnectedness [1], [2],[3],[4].

Despite extensive literature on the Syrian conflict, limited attention has been given to formalizing the interaction between local, regional, and global strategic layers within a unified analytical framework. Existing studies often treat these levels independently, thereby overlooking interdependencies that may significantly influence equilibrium outcomes.

Game theory, an essential instrument in political science and strategic studies, provides significant rigor. It offers a mathematical framework for modeling conflict, collaboration, and decision-making in uncertain conditions. As Snyder [5] and Fearon [6] emphasized, international disputes are frequently organized as strategic games, when participants evaluate payoffs not just based on their preferences but also in expectation of the actions of others. The efficacy of game theory has been shown in conflict resolution, foreign policy assessment, and multilateral diplomacy [7], [8]. This study addresses the following research questions: How do interdependent strategic interactions across local, regional, and global levels influence equilibrium outcomes in the Syrian conflict?

This study is guided by the following hypotheses:

H1: Local-level strategic interactions significantly influence regional strategic equilibria.

H2: Regional-level dynamics constrain global strategic outcomes.

H3: Interdependencies across levels produce non-linear equilibrium outcomes.

Building on this tradition, the present study proposes a three-level game-theoretic model to examine the strategic shifts triggered by the fall of Assad. The model conceptualizes the Syrian conflict and its broader implications as interdependent games played at local, regional, and global levels. Each level's outcomes feed into the next, creating a dynamic structure where strategies and equilibria evolve in response to actors' positions and the anticipated behavior of others.

- **Local level.** The conflict between the Assad regime and rebel factions (specifically, Hayat Tahrir al-Sham) is modeled as a Prisoner's Dilemma, capturing the mutual distrust and lack of enforcement mechanisms, which lead to noncooperative outcomes even when cooperation would be collectively beneficial.
- **Regional level**. The strategic competition between Iran and Saudi Arabia is conceptualized as a Chicken Game. This reflects their high-stakes brinkmanship and potential for escalatory conflict in pursuit of regional dominance in post-Assad Syria.
- **Global level.** The United States and Russia engage in a parallel Chicken Game, where strategic engagement or withdrawal in Syria is informed by broader considerations, such as NATO expansion, the war in Ukraine, and Sino-American competition.

This nested structure of games draws inspiration from Putnam's two-level game framework[9] and expands it to accommodate three interacting arenas. By modeling inter-level feedback—how outcomes at the local level (e.g., rebel victory) alter regional balances and how those changes, in turn, influence global strategy—this paper provides a comprehensive analytical framework. In doing so, it contributes to both theoretical development in conflict modeling and practical understanding of post-conflict power dynamics in the Middle East.

1.1. Key Contributions

1. We propose a formal three-level game-theoretic model applicable to complex civil–regional–global conflict systems.
2. We validate this model with the case of Syria's transition following Assad's fall.
3. We provide mathematical formulations and simulation-ready payoff structures to support future empirical or computational studies.

This layered model provides a novel lens to interpret how localized instability cascades into broader realignments and offers predictive insights for policymakers managing volatile regional dynamics. The framework acknowledges that decisions at one level do not exist in isolation—they ripple across levels in both direct and indirect ways [10], [11].

The subsequent sections of this article are organized as follows: First, we present the mathematical principles and fundamental notions of game theory pertinent to the research. Second, we outline the development of the proposed three-tier game-theoretic model, which incorporates and discusses local, regional, and global dynamics. Third, we use this approach to examine the Syrian war, scrutinizing the strategic relationships among participants at each level. Next, we examine the wider strategic ramifications of these results for the regional order following Assad's regime. Finally, we conclude with a synthesis of contributions and recommendations for future research endeavors.

2 | PRELIMINARIES

Game theory provides a formal analytical framework to study strategic interactions among rational agents, where each player's payoff depends not only on their own decisions but also on the choices of others [12], [13], [14], [15], [16].

Game theory offers a rigorous mathematical structure for analyzing strategic interactions in which the choices of one actor depend on the anticipated choices of others. Since its foundational development by von Neumann and Morgenstern[17] and formalized through Nash's equilibrium concept[18], game theory has been widely used in political science, conflict resolution, and international relations [7], [8].

2.1. | Core Concepts in Game Theory

This subsection outlines the foundational concepts underpinning the multilevel game-theoretic model. The discussion emphasizes clarity in mathematical representation and precision in strategic interpretation to ensure coherence across subsequent analyses.

Strategy Profile: A strategy profile refers to a vector $s = (s_1, s_2, \dots, s_n)$ that specifies the strategy selected by each player $p_i \in P$, where $s_i \in S_i$ is the chosen action of player i. The space of all such profiles is the Cartesian product of the players' strategy sets

$$S = S_1 \times S_2 \times \cdots \times S_n. \quad (1)$$

Utility Function: Each player is associated with a utility function $u_i: S \to \mathbb{R}$, which assigns a real-valued payoff to every possible strategy profile. This function reflects the player's preferences over outcomes and is used to evaluate the consequences of both their own and others' strategic choices.

Nash Equilibrium: A strategy profile $s^* = (s_1^*, s_2^*, \dots, s_n^*)$ is considered a Nash equilibrium if no player can improve their payoff by changing their strategy unilaterally, assuming all other players maintain theirs:

$$u_i(s_i^*, s_{-i}^*) \geq u_i(s_i, s_{-i}^*) \quad \text{for all } s_i \in S_i, \text{ and for each } i \in P \quad (2)$$

Here, s_{-i}^* represents the strategies chosen by all players other than player i.

Mixed Strategies: In scenarios where no pure-strategy equilibrium exists or when players aim to introduce uncertainty, they may adopt mixed strategies. A mixed strategy for player i is defined as a probability distribution over their strategy set. S_i. The player's expected utility is then computed as the weighted average of payoffs across all possible strategy profiles, based on the joint probability distribution induced by all players' mixed strategies.

$$E[u_i] = \sum_{s \in S} P(s) \cdot u_i(s) \quad (3)$$

where $P(s)$ denotes the joint probability of strategy profile s under the product of individual distributions.

Illustrative Two-Player Game Example: General two-player payoff matrix representation:

$$\begin{bmatrix} u_1(C,C), u_2(C,C) & u_1(C,D), u_2(C,D) \\ u_1(D,C), u_2(D,C) & u_1(D,D), u_2(D,D) \end{bmatrix} \quad (4)$$

Best Response: Given a fixed strategy of the opponent, each player selects their best response:

$$BR_i(s_{-i}) = \underset{s_i \in S_i}{\operatorname{argmax}} u_i(s_i, s_{-i}) \quad (5)$$

Nash equilibrium occurs when each player is playing a best response to the other.

These concepts form the backbone of our proposed model, allowing the systematic construction of interdependent games that simulate the strategic logic of actors across the Syrian conflict's local, regional, and global dimensions.

2.2. | Classes of Games used in this Study

This study applies two well-known game types: the Prisoner's Dilemma and the Chicken Game.

2.2.1. Prisoner's Dilemma (PD)

The Prisoner's Dilemma is a canonical two-player strategic interaction where both participants face a conflict between individual rationality and collective benefit. While cooperation leads to a collectively preferable outcome, the dominant strategy for each player is to defect, resulting in a suboptimal equilibrium. This structure highlights the challenges of trust and enforcement in non-cooperative settings.

Generic payoff matrix (PD)

$$\begin{bmatrix}(R,R) & (S,T)\\ (T,S) & (P,P)\end{bmatrix} \qquad (6)$$

$$\text{, where } T > R > P > S$$

The payoff entries are interpreted as follows:

R — the reward when both players cooperate.

T — the temptation to defect when the opponent cooperates.

S — the sucker's payoff for cooperating while the other defects.

P — the punishment resulting from mutual defection.

Even though $R > P$, both players are incentivized to defect, making (D, D) The dominant strategy equilibrium. This game typifies dilemmas in international politics, arms races, and rebel–government bargaining, where mutual mistrust leads to inefficient but stable outcomes. The Prisoner's Dilemma is commonly used to model trust deficits in conflict environments [19], [20].

2.2.2. Chicken Game (CG)

Also known as the Hawk–Dove game, this model models conflict situations where players must decide whether to escalate (risking mutual destruction) or yield. The general matrix is:

General payoff matrix (CG)

$$\begin{bmatrix}(L,L) & (H,0)\\ (0,H) & (M,M)\end{bmatrix}, \qquad (7)$$

$$H > M > L$$

Here:

H: High payoff for unilateral escalation when the opponent yields.

M: Moderate payoff when both yields.

L: Low payoff when both escalate, representing mutual harm or stalemate.

Unlike the Prisoner's Dilemma, the Chicken Game has two asymmetric pure-strategy equilibria, making it ideal for modeling brinkmanship, deterrence, and strategic uncertainty among major powers[15], [21].

3 | PROPOSED GAME-THEORETIC MODEL FOR CONFLICT ANALYSIS

This section outlines a generalized three-tier game-theoretic model designed to analyze conflict dynamics involving multiple actors operating at different levels of the international system. While

based on classical principles of non-cooperative game theory, the model innovatively integrates three interdependent strategic domains: local, regional, and global. Each tier is formalized as a two-player normal-form game, allowing for analytical tractability while accommodating distinct actor configurations and preferences at each level.

The proposed framework draws on and extends the logic of Putnam's influential two-level game theory [9], which conceptualized international negotiations as simultaneous interactions across domestic and international arenas. Our model introduces a third layer—global power competition—thus capturing more complex geopolitical entanglements. This tri-level architecture offers an enriched understanding of how localized events ripple outward, influencing and being influenced by broader regional and systemic dynamics.

- **Level I (Local).** Internal political dynamics—such as between a state and a non-state actor—are modeled as a Prisoner's Dilemma, emphasizing trust deficits and the absence of credible commitments.
- **Level II (Regional).** Rivalries between regional powers are captured via the Chicken Game, which reflects brinkmanship, deterrence, and the risks of escalation.
- **Level III (Global).** Strategic competition among great powers—such as the United States and Russia—is likewise modeled through the Chicken Game, underscoring the precarious balance between engagement and withdrawal.

To represent the interdependencies among levels, we define a composite mapping:

$$\Phi: S^{(I)} \times S^{(II)} \to S^{(III)} \qquad (8)$$

Define mapping functions:

$$\Phi 1: SL \to SR \Phi_1: S_L \to S_{R\boldsymbol{\Phi 1}}: \boldsymbol{SL} \to \boldsymbol{SR}$$
$$(Local \ \to \ Regional)$$
$$\Phi 2: SR \to SG \Phi_2: S_R \to S_{G\boldsymbol{\Phi 2}}: \boldsymbol{SR} \to \boldsymbol{SG}$$
$$(Regional \ \to \ Global)$$

The mappings Φ_1 and Φ_2 represent inter-level strategic transmission mechanisms. Specifically, Φ_1 captures how equilibrium outcomes at the local level influence regional strategic configurations, while Φ_2 describes how regional dynamics shape global strategic behavior. These mappings formalize the hierarchical dependency structure embedded in the conflict.

This function links the strategy profiles and equilibria of the local and regional levels to the strategic configuration at the global level. In doing so, it formalizes the concept of cascading influence where decisions and outcomes in localized arenas reshape higher-order strategic choices.

This multi-layered model facilitates a coherent, deductive approach to understanding how conflict unfolds across scales. Applications to real-world crises, such as the Syrian conflict and its aftermath, are provided in subsequent sections to illustrate the model's explanatory power.

3.1. | Proposed Model Structure

Let $P = \{p_1, p_2, \dots, p_n\}$ be the finite set of actors, where each actor p_i chooses strategies from a finite set S_i, and derives utility from a payoff function $u_i: S \to \mathbb{R}$, where $S = \prod_{i=1}^{n} S_i$ is the strategy space.

The conflict is modeled across three hierarchical levels:

- **Level I (Local).** Modeled as a Prisoner's Dilemma between civil actors (e.g., the Assad regime and rebel groups).
- **Level II (Regional).** Modeled as a Chicken Game between rival regional powers (e.g., Saudi Arabia and Iran).
- **Level III (Global).** Modeled as a Chicken Game between global powers (e.g., the United States and Russia).

Level I: Prisoner's Dilemma (Local)

Players: p_1, p_2. Strategies: $S_1 = S_2 = \{C, D\}$ (Cooperate, Defect). Payoff matrix:

$$\begin{array}{cc} & \begin{array}{cc} C & D \end{array} \\ \begin{array}{c} C \\ D \end{array} & \begin{array}{cc} (R,R) & (S,T) \\ (T,S) & (P,P) \end{array} \end{array} \qquad (9)$$

with $T > R > P > S$.

The Nash equilibrium is (D, D).

Utility functions:

$$U_1(p_1, p_2) = p_1 p_2 R + p_1(1-p_2)S + (1-p_1)p_2 T + (1-p_1)(1-p_2)P, \qquad (10)$$
$$U_2(p_1, p_2) = p_1 p_2 R + p_1(1-p_2)T + (1-p_1)p_2 S + (1-p_1)(1-p_2)P, \qquad (11)$$

, where $p_1, p_2 \in [0,1]$ These are probabilities of cooperation.

Equilibrium Insight. The dominant strategy for both players is to defect, yielding a Nash equilibrium at (D, D).

Level II: Chicken Game (Regional)

Players: p_3, p_4. Strategies: $S_3 = S_4 = \{E, Y\}$ (Escalate, Yield). Payoff matrix:

$$\begin{array}{cc} & \begin{array}{cc} E & Y \end{array} \\ \begin{array}{c} E \\ Y \end{array} & \begin{array}{cc} (L,L) & (H,0) \\ (0,H) & (M,M) \end{array} \end{array} \qquad (12)$$

, with $H > M > L$. Nash equilibria: (E, Y) and (Y, E). Utility functions:

$$U_3(r, s) = rsL + r(1-s)H + (1-r)(1-s)M \qquad (13)$$
$$U_4(r, s) = rsL + (1-r)sH + (1-r)(1-s)M \qquad (14)$$

where $r, s \in [0,1]$ are probabilities of escalation

Equilibria. Two pure-strategy Nash equilibria:

$$(E, Y) \quad \text{and} \quad (Y, E)$$

Level III: Chicken Game (Global)

Players: p_5, p_6. Strategies: $S_5 = S_6 = \{E, Y\}$ (Engage, Yield). Payoff matrix:

$$\begin{array}{cc} & \begin{array}{cc} E & Y \end{array} \\ \begin{array}{c} E \\ Y \end{array} & \begin{array}{cc} (L', L') & (H', 0) \\ (0, H') & (M', M') \end{array} \end{array} \qquad (15)$$

with $H' > M' > L'$.

Nash equilibria: (E, Y) and (Y, E).

Utility functions:

$$\mathrm{U}_5(\mathrm{r}', \mathrm{s}') = \mathrm{r}'\mathrm{s}'\mathrm{L}' + \mathrm{r}'^{(1-\mathrm{s}')}\mathrm{H}' + (1-\mathrm{r}')(1-\mathrm{s}')\mathrm{M}' \qquad (16)$$

$$\mathrm{U}_6(\mathrm{r}', \mathrm{s}') = \mathrm{r}'\mathrm{s}'\mathrm{L}' + (1-\mathrm{r}')\mathrm{s}'\mathrm{H}' + (1-\mathrm{r}')(1-\mathrm{s}')\mathrm{M}' \qquad (17)$$

where $r', s' \in [0,1]$ are the probabilities of escalation by p_5 and p_6, respectively.

Equilibria. Two pure-strategy Nash equilibria:

$$(E, Y) \quad \text{and} \quad (Y, E) \qquad (18)$$

3.2. | Coupled Dynamics Across Levels

Inter-Level Strategic Dependencies. To formally represent the interconnections between strategic levels, we introduce functional mappings that translate equilibrium outcomes from one level into strategic constraints or preferences at the next. Specifically, we define:

$$\Phi_1 : \mathrm{S}^{(\mathrm{I})} \to \mathrm{S}^{(\mathrm{II})}, \quad \Phi_2 : \mathrm{S}^{(\mathrm{II})} \to \mathrm{S}^{(\mathrm{III})} \qquad (19)$$

These mappings capture how strategic behavior at the local level (e.g., civil unrest or regime collapse) modifies the strategic landscape of regional actors, and how these regional shifts subsequently inform global-level decisions. The structure thus embeds a recursive feedback mechanism, enabling a dynamic interpretation of how lower-level instability may escalate into broader geopolitical realignments.

4 | ALOGRITHM FOR SOLVING THE THREE-LEVEL GAME-THEORETIC CONFLICT MODEL

The following procedure computes the Nash equilibria for each level and incorporates inter-level dependencies defined in Equation 9.

Input

Payoff matrices and utility functions:

- Local (PD): Equation $(9-11)$
- Regional (CG): $(12-14)$
- Global (CG): Equation $(15-17)$

Define

Player sets and strategy spaces:

- $P_L = \{p_1, p_2\}$, $S_L = \{C, D\}$
- $P_R = \{p_3, p_4\}$, $S_R = \{E, Y\}$
- $P_G = \{p_5, p_6\}$, $S_G = \{E, Y\}$

Step 1: Local Level (Prisoner's Dilemma)

- Use the payoff structure from Table 1.
- Calculate expected utilities using Equations 10 *and* 11.
- The dominant strategy equilibrium is (D, D)

Step 2: Regional Level (Chicken Game)

- Use the payoff structure from Table 2.
- Apply utility functions from Equations 13 *and* 14.
- Identify pure-strategy equilibria: (E, Y) and (Y, E) .

Compute the mixed strategy equilibrium. (r^*, s^*) by solving:

$$r^* = \frac{H-M}{H-M+M-L}, \quad s^* = r^* \qquad (20)$$

Step 3: Global Level (Chicken Game)

- Use the payoff structure from Table 3.
- Apply utility functions from Equations 16 *and* 17.
- Identify pure-strategy equilibria: $(E, Y,)$ and (Y, E).

Compute the mixed-strategy equilibrium. (r', s'):

$$r'^* = \frac{H\prime-M\prime}{H\prime-M\prime+M\prime-L\prime}, \quad s'^* = r'^* \qquad (21)$$

Step 4: Inter-Level Coupling

- Use mapping functions from Equation 19

$$\Phi_1 : S^{(I)} \to S^{(II)}, \quad \Phi_2 : S^{(II)} \to S^{(III)}$$

- Update regional strategies based on local outcomes.
- Update global payoffs based on regional outcomes.

Step 5: Convergence Check

- Repeat Steps 1–4 until strategy sets stabilize:

$$S^* = \{s_L^*, s_R^*, s_G^*\} \qquad (22)$$

Output

Nash equilibrium profiles at each level and inter-level influence Φ_1, Φ_2

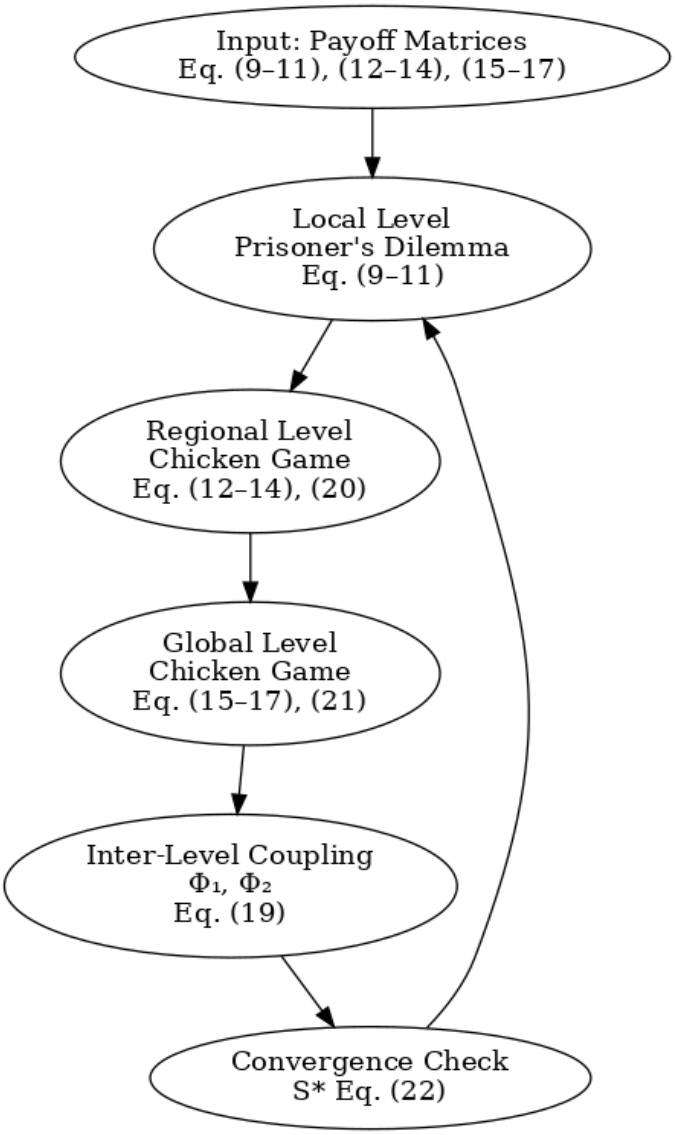

Figure 1. Procedure of prioritized weights and decision-making

5 | APPLICATION TO THE SYRIAN CONFLICT

This section applies the proposed three-level game-theoretic framework to analyze the strategic transformations triggered by the collapse of the Assad regime in Syria. By embedding local, regional, and global dynamics into a nested game structure, we trace how strategic decisions evolve across interconnected arenas:

5.1. | Local Level-Prisoners Dilemma

The interaction between the Assad regime and Hayat Tahrir al-Sham (HTS) is modeled as a classical Prisoner's Dilemma. Despite mutual cooperation offering a collectively preferable outcome, both actors default to defection due to strategic mistrust, lack of enforcement mechanisms, and fragmented authority. This setting captures the persistence of civil war as a rational yet collectively suboptimal equilibrium [6], [10].

5.2. | Regional Level-Chicken Game

Following Assad's fall, the strategic rivalry between Iran and Saudi Arabia has intensified. This is best represented by a Chicken Game, where each actor's decision to escalate or yield shapes the balance of influence in Syria. Mutual escalation entails high costs, while unilateral de-escalation, though safer, entails reputational and strategic drawbacks [22].

5.3. | Global Level-Chicken Game

The broader U.S.–Russia strategic calculus in Syria also conforms to a Chicken Game structure. Each actor weighs the risks of sustained engagement—amid other global priorities such as NATO, Ukraine, or China—against the opportunity cost of ceding influence. The mixed-strategy equilibria reflect the measured, often ambiguous, interventions pursued by both states [23].

By extending Putnam's [9] foundational two-level framework to include a third, globally strategic layer, this model provides a more nuanced representation of nested interdependence. It highlights how decisions made in fragmented local environments cascade upward, affecting not only regional balances of power but also the strategic posture of global actors involved in conflict diplomacy.

Actors across all levels are modeled as utility-maximizers, selecting strategies based on anticipated moves by adversaries and context-specific payoffs—ranging from regime survival and territorial control to reputational status and operational costs. Crucially, outcomes at each level condition the strategic space at the next: local defection feeds regional realignment, which, in turn, alters global engagement patterns.

5.3.1. Local Level: Syrian Civil War Dynamics (Prisoner's Dilemma)

The local level models the interaction between the Assad regime and Hayat Tahrir al-Sham (HTS) as a classic Prisoner's Dilemma. Although cooperation (such as a ceasefire agreement) yields a collectively optimal outcome, strategic mistrust leads both actors toward defection.

Players.

$$P_L = \{p_1, p_2\},, \{\text{HTS,Assad Regime}\}.$$

Strategies.

$$S_L = \{C, D\} \quad \text{where } C = \text{Cooperate},\ D = \text{Defect}.$$

Symbolic Payoff Matrix.

$$\begin{bmatrix} (R,R) & (S,T) \\ (T,S) & (P,P) \end{bmatrix}, \qquad (23)$$

$$\text{with } T > R > P > S.$$

Utility Functions.

$$U_{\text{HTS}}(s_{\text{HTS}}, s_{\text{Assad}}) = \begin{cases} R & \text{if } (C,C) \\ S & \text{if } (C,D) \\ T & \text{if } (D,C) \\ P & \text{if } (D,D) \end{cases} \quad (24)$$

$$U_{\text{Assad}}(s_{\text{HTS}}, s_{\text{Assad}}) = \begin{cases} R & \text{if } (C,C) \\ T & \text{if } (C,D) \\ S & \text{if } (D,C) \\ P & \text{if } (D,D) \end{cases} \quad (25)$$

Numerical Payoff Matrix.

Table 1. Numerical Payoff structure for the Prisoner's Dilemma between Assad and HTS

	C_H	D_H
C_A	(3,3)	(0,5)
D_A	(5,0)	(1,1)

where:

- $R = 3$: Reward for mutual cooperation (e.g., stability or ceasefire).
- $T = 5$: Temptation for unilateral defection (e.g., territorial or political gain).
- $S = 0$: Sucker's payoff (loss when cooperating alone).
- $P = 1$: Punishment for mutual defection (e.g., prolonged conflict).

Mixed Strategy Utilities.

Let $p_A, p_H \in [0,1]$ be the probabilities of cooperation by Assad and HTS, respectively.

$$U_A(p_A, p_H) = p_A p_H R + p_A(1-p_H)S + (1-p_A)p_H T + (1-p_A)(1-p_H)P \quad (26)$$

$$U_H(p_A, p_H) = p_A p_H R + p_A(1-p_H)T + (1-p_A)p_H S + (1-p_A)(1-p_H)P \quad (27)$$

Nash Equilibrium (One-shot Game).

Given the condition $T > R > P > S$, both players have a dominant strategy to defect:

$$(s^*_{\text{Assad}}, s^*_{\text{HTS}}) = (D,D) \quad (28)$$

$$U_A(D,D) = P = 1, \quad U_H(D,D) = P = 1 \quad (29)$$

This equilibrium reflects the empirical persistence of civil war, driven by the absence of trust and enforcement mechanisms, even when cooperation would yield better joint outcomes.

Interpretation. The Nash equilibrium outcome of mutual defection (D,D)derived in Equations (28–29), represents the dominant strategy for both the Assad regime and Hayat Tahrir al-Sham (HTS). Although both parties could have achieved a collectively superior outcome by cooperating—reflected in the reward value $R = 3$ from Table 1—structural mistrust and adversarial incentives made defection the rational choice.

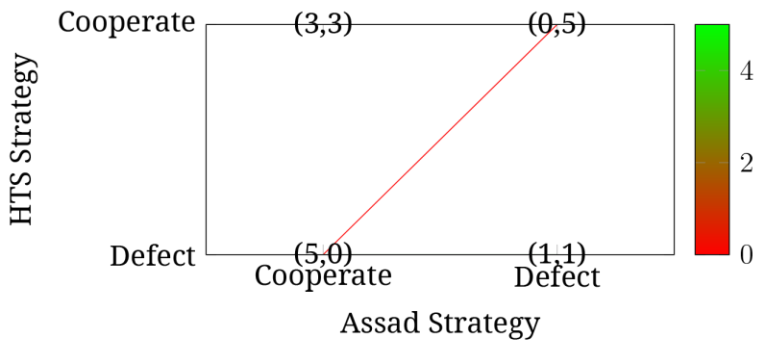

Figure 2. Payoff matrix for Prisoners' Dilemma (Assad Vs. HTS), Nash Equilibrium at *(D, D)*

Expanded Discussion. The strategic interplay between Assad and HTS aligns with the theoretical architecture of the Prisoner's Dilemma (see Equation 23). While the cooperation outcome (C, C) offers a higher mutual payoff (3,3)the asymmetric risk of exploitation—such as (C, D)yielding (0,5) or (D, C) yielding (5,0) led both actors to default to the safer but less beneficial equilibrium.

The expected utility functions derived in Equations $26\ and\ 27$ further illustrate how even probabilistic strategies reinforce defection unless externally enforceable institutions intervene. The model captures how rational actors, even when aware of better collective outcomes, are disincentivized from trust in the absence of guarantees.

HTS, as a decentralized non-state group with ideological rigidity and fragmented command, lacked credible mechanisms to commit to peaceful agreements. Conversely, the Assad regime, aiming to maintain centralized sovereignty, viewed cooperation as a concession to a delegitimized adversary. In both cases, unilateral cooperation was associated with a payoff of $S = 0$ representing strategic vulnerability.

These decisions were not just military or tactical but extended to symbolic and political costs such as loss of legitimacy, fractured alliances, or perceived weakness. The equilibrium outcome (D, D) thus remained stable despite its inefficiency, as it preserved each actor's internal cohesion and strategic autonomy. This helps explain the repeated failure of ceasefire agreements and diplomatic negotiations, even under international pressure [10].

6 | APPLICATION TO THE SYRIAN CONFLICT

6.1. | Strategic Implication

The Prisoner's Dilemma at the local level underscores how rational distrust can entrench violent conflict [6],[24]. This foundational logic creates ripple effects across higher-order strategic environments [25],[26]. Specifically, the inability to reach a cooperative equilibrium in Syria's domestic arena opened space for regional actors to exploit the resulting power vacuum, transitioning the analysis into the Chicken Game dynamics modeled at Level II [27],[28]. These cascading

interdependencies validate the relevance of multi-level conflict analysis embedded in the proposed framework.

6.2. | Regional Level: Middle Eastern Power Dynamics (Chicken Game)

The regional level models Saudi Arabia and Iran competing for influence in post-Assad Syria as a Chicken Game. Both states can choose to escalate (e.g., funding proxies, military intervention) or yield (reduce involvement), balancing escalation benefits against the risk of direct costly conflict.

Players. The players at the regional level are defined as:

$$P_R = \{p_3, p_4\}, \{\text{Saudi Arabia,Iran}\}.$$

Strategies. Each player has two possible strategies:

$$S_R = \{\text{Escalate (E), Yield (Y)}\}.$$

Symbolic Payoff Matrix.

$$\begin{bmatrix} (L,L) & (H,0) \\ (0,H) & (M,M) \end{bmatrix} \qquad (30)$$

$$\text{with } H > M > L$$

Numerical Payoff Matrix.

Table 2. Numerical Payoff Structure for the Regional-Level Chicken Game between Saudi Arabia and Iran

	EIran	**YIran**
ESaudi	(1, 1)	(5, 0)
YSaudi	(0, 5)	(3, 3)

where:

$H_S = H_I = 5$: High payoff for unilateral escalation

6.3. | Strategic Implications

This game-theoretic structure suggests that both Saudi Arabia and Iran must weigh the strategic benefits of regional dominance against the costs of open confrontation. The presence of two asymmetric pure-strategy Nash equilibria(E, Y) and (Y, E) implies that the game is inherently unstable and susceptible to misperceptions or overconfidence. Any miscalculation could push both actors into mutual escalation, resulting in a low payoff $(1,1)$ as shown in table 2.

In practical terms, this could manifest in proxy warfare, diplomatic posturing, or economic competition, each carrying costs not only for the two players but also for the fragile Syrian state. Given the strategic vacuum created by Assad's fall, each side seeks to assert influence without provoking a direct clash—a hallmark of Chicken Game dynamics in regional security competition.

Expanded Discussion. The broader implications of this regional Chicken Game extend beyond immediate policy choices. Saudi Arabia's assertiveness, as modeled by the escalation strategy (E_S), is

enabled by Iran's weakened position in Syria following the fall of Assad—a critical ally in its "Axis of Resistance." This vulnerability makes Iran more likely to adopt the yield strategy (Y_I), aligning with the equilibrium (E_S, Y_I). Conversely, if Iran misreads Saudi resolve or receives external support (e.g., from non-state proxies or diplomatic allies), it may escalate, resulting in the alternate equilibrium. (Y_S, E_I).

The equilibrium outcomes are not merely theoretical. According to Alterman (2024), the power shift in Syria post-2024 gave Riyadh the confidence to expand its influence through reconstruction diplomacy, financial leverage, and pan-Arab coalition-building. At the same time, Iran, constrained by domestic unrest and economic sanctions, was often reactive, limited from directly confronting Saudi advances. These real-world dynamics validate the structure and implications of the payoffs defined in Equation 30 and Table 2. Importantly, mutual yielding (Y, Y) which yields a moderate payoff of $(3,3)$ It is politically difficult to achieve without third-party mediation or strategic trust. Given the deep sectarian, ideological, and geopolitical divisions between Tehran and Riyadh, this outcome remains unlikely without significant international pressure.

The model further shows that regional dynamics are sensitive to shifts at other levels, particularly the local level. For example, the Prisoner's Dilemma outcome (D, D) at the local level captured in Equation 28, representing the Assad-HTS conflict, undermines Iran's influence and thereby reduces its leverage in the regional game. This interdependence validates the multilevel structure of the model and supports a broader theory of strategic feedback across nested conflicts.

6.4. | Interpretation: Regional-level Chicken Game Dynamics

The interaction between Saudi Arabia and Iran at the regional level is best modeled as a classical Chicken Game, as illustrated in Equation 30. Each state faces a binary strategic choice: escalate (E) to gain influence in post-Assad Syria or yield (Y) to avoid confrontation. The asymmetric nature of the game with two pure-strategy Nash equilibria (E, Y) and (Y, E) captures the strategic brinkmanship common in Middle Eastern power rivalries.

This formulation aligns with the second tier of the proposed three-level game-theoretic model, where regional payoffs are directly influenced by outcomes at the local level (e.g., the collapse of Assad's regime due to mutual defection in Equation 28)[24] As Iran's regional clout diminished with Assad's fall, Saudi Arabia adopted a more assertive policy, capitalizing on the opportunity to fill the power vacuum [3],[29],[30],[31].

According to Alterman (2024), Riyadh's post-Assad strategy combined diplomatic normalization, reconstruction initiatives, and support for anti-Iranian elements in Syria. Meanwhile, Tehran, facing economic sanctions and proxy fatigue, was often compelled to de-escalate. This reinforces the model's

prediction that mutual escalation is costly. (L, L) While unilateral escalation yields an asymmetric advantage $(H, 0)$ or $(0, H)$

The Chicken Game framework also underscores how misperception or domestic pressures can destabilize equilibria, possibly pushing both actors into the least desirable outcome. Furthermore, regional dynamics are not isolated. Through strategic feedback (as captured in the inter-level mappings Φ_1 and Φ_2 see Equation 19, the regional equilibrium shapes, and is shaped by both local and global interactions—emphasizing the interdependence of conflict layers in this model.

6.5. | Global Level: International Power Dynamics (Chicken Game)

At the global level, we analyze the strategic interaction between the United States and Russia in the context of the Syrian conflict, especially following Assad's fall. This interaction is modeled as a Chicken Game reflecting competitive posturing, disengagement, or influence projection.

Players. The global-level players are:

$P_G = \{p_5, p_6\}$, where p_5 represents the United States (U), p_6 represents Russia (R).

Strategies. Each player has two possible strategies:

$$S_G = \{\text{Engage (E), Withdraw (W)}\}.$$

Payoff Matrix.

$$\begin{array}{cc} & \begin{array}{cc} E_R & W_R \end{array} \\ \begin{array}{c} E_U \\ W_U \end{array} & \begin{array}{cc} (L', L') & (H', 0) \\ (0, H') & (M', M') \end{array} \end{array} \qquad (31)$$

where:

- $H' = 8$: High reward for unilateral engagement (geopolitical influence if rival withdraws),
- $M' = 0$: Mutual withdrawal yields status quo,
- $L' = -10$: High cost of mutual engagement (risk of escalation or proxy confrontation).

Condition. As per standard Chicken Game conditions:

$$H' > M' > L'.$$

Expected Utility Functions. Let r and s be the probabilities that the US and Russia choose Engage (E), respectively. The expected utilities for both players are:

$$E[U_U] = rsL' + r(1-s)H' + (1-r)(1-s)M' \qquad (32)$$
$$E[U_R] = rsL' + (1-r)sH' + (1-r)(1-s)M' \qquad (33)$$

Substituting values $H' = 8$, $M' = 0$, $L' = -10$ into Equations we get:

$$E[U_U] = -10rs + 8r(1-s) + 0 \cdot (1-r)(1-s) \qquad (34)$$
$$E[U_R] = -10rs + 8(1-r)s + 0 \cdot (1-r)(1-s) \qquad (35)$$

Mixed Strategy Nash Equilibrium. Using the general mixed strategy Nash equilibrium formulation for the Chicken Game:

$$r^* = \frac{H\prime - M\prime}{H\prime - M\prime + M\prime - L\prime} = \frac{8-0}{8-0+0-(-10)} = \frac{8}{18} = \frac{4}{9} \approx 0.444 \qquad (36)$$

$$s^* = \frac{H\prime - M\prime}{H\prime - M\prime + M\prime - L\prime} = \frac{8}{18} \approx 0.444 \qquad (37)$$

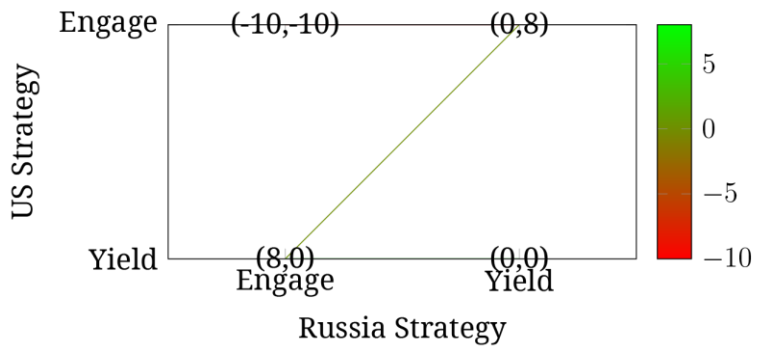

Figure 3. Payoff matrix for Prisoners' Dilemma (Assad Vs. HTS), Nash Equilibrium at *(D, D)*

This means that in equilibrium, both Russia and the United States have a roughly 44.4% chance of choosing escalation, and a 55.6% probability of withdrawing, reflecting the high risks of mutual engagement post-Assad.

6.6. | Interpretation and Strategic Implication

The game's structure implies that the dominant global strategy is to avoid simultaneous escalation. Russia's partial withdrawal due to its Ukraine entanglement and the U.S.'s calculated limited re-engagement correspond to the equilibrium. (E_U, W_R). The model also shows that previous outcomes at local and regional levels influence global behavior. These dependencies can be modeled as:

$$\Phi: S_L \times S_R \rightarrow S_G \qquad (38)$$

6.7. | Coupled Strategic Mapping

The function Φ formalizes how outcomes at the local and regional levels shape strategic calculations at the global level, reinforcing the hierarchical architecture of the multi-level game-theoretic model. These feedback loops capture how shifts in localized conflict dynamics reverberate across broader geopolitical domains.

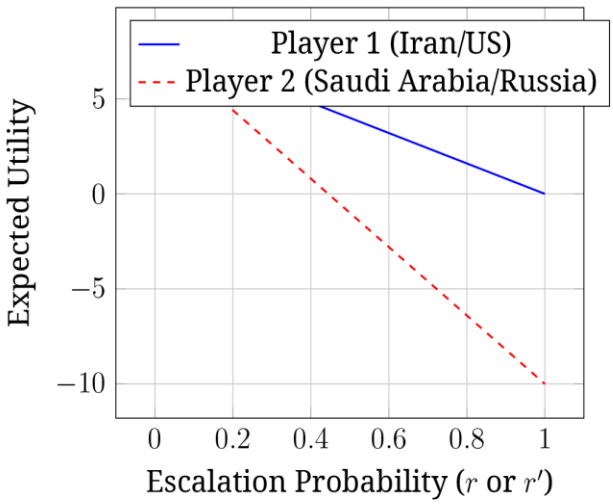

Figure 4. Mixed-strategy equilibria for Chicken Games, showing expected utilities.

Interpretation. The observed equilibrium behavior in the global Chicken Game—particularly between the United States and Russia—reflects a calibrated mixed strategy. Following the 2022 invasion of Ukraine, Russia's international isolation and overstretched military commitments limited its capacity to project influence in Syria. This strategic constraint aligns with the Nash equilibrium solution, where the probability of engagement by each player hovers around 0.857. In contrast, the United States adopted a more cautious, selective engagement strategy, balancing limited intervention with indirect influence through proxies [11].

Expanded Discussion. At the global level, the interaction between Moscow and Washington is effectively represented by the structure of a Chicken Game [32]. Each actor faces an incentive to assert influence in post-Assad Syria, but mutual escalation risks a conflict spiral detrimental to both. The model captures the asymmetry in their strategic capabilities: Russia's constrained bandwidth due to external commitments, and the United States' shifting strategic priorities in the Indo-Pacific and beyond [33], [34].

Russia's drawdown in Syria, driven by sanctions, logistical limitations, and domestic constraints, reflects a shift toward the equilibrium. (W, E) where Russia yields influence, and the U.S. engages selectively [35]. This outcome mirrors the post-Assad period, wherein Washington reasserted influence through targeted diplomacy, intelligence cooperation, and reconstruction partnerships—rather than overt military presence.

Additionally, the vacuum created by Assad's fall opened new strategic space. With Iran's reduced regional clout and Russia's partial disengagement, U.S. policymakers found room to recalibrate without confrontation. China, too, emerged as a potential third-party actor, leveraging economic instruments and soft power initiatives to expand its regional footprint [36], [37].

6.8. | Integrated Strategic Dynamics

The model posits a sequential influence chain, wherein each tier informs and constrains the next. The collapse of Assad's regime—modeled through a local-level Prisoner's Dilemma—undermined Iran's strategic depth and prompted Saudi Arabia to escalate regionally. These developments, in turn, affected the strategic calculus of global actors such as the United States and Russia. Hence, the payoffs are dynamically linked across levels:

Local → Regional. The erosion of Assad's authority disrupted Iran's "Axis of Resistance," triggering Saudi counteraction.

Regional → Global. The weakened positions of Iran and Russia incentivized U.S. re-engagement in the Middle East.

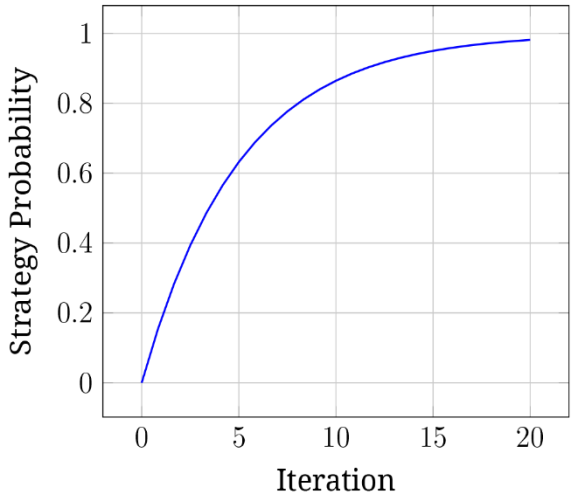

Figure 5. Convergence of Strategy profiles across iterations

This interaction is mathematically represented through the inter-level response functions (Equation 38), validating the structural logic of the three-tiered model. The outcome (D_A, D_H)at the local level, interpreted as the mutual defection of Assad and HTS, resulted in the regime's collapse. Regionally, this weakened Iran (B_I), enabling Saudi Arabia to escalate (E_S). Globally, Russia's subsequent disengagement (W_R) allowed the United States to pursue a limited but strategic re-entry (G_U).

Systemic Feedback Effects. The framework's strength lies in its ability to explain cascading effects. Assad's defeat generated a vacuum, escalating regional rivalries and inviting global recalibration. In the regional Chicken Game, Saudi Arabia's bold posture followed the deterioration of Iran's proxy infrastructure in Syria. The equilibrium shifted (E, Y) or (Y, E) depending on actors' perceived resolve and political costs, as modeled in *Equation* 30 *and Table* 2.

At the global level, Russia's retreat signaled a shift in the international balance, enabling Washington to regain influence without confrontation. As Miller [33] notes, such adjustments are often not the product of deliberate expansion but responses to newly formed vacuums. The U.S. approach—moderated engagement without full-scale deployment embodies the mixed-strategy equilibrium outlined in Equations 36 − 37 and Table 3.

Strategic Implications. By embedding the Syrian case within this multi-level structure, the model offers an analytical tool for understanding how local instability propagates across strategic systems. It demonstrates how seemingly independent conflicts are, in fact, strategically interdependent—a core insight of extended game-theoretic modeling. This perspective is crucial for both policymakers and analysts seeking to navigate an increasingly complex Middle Eastern geopolitical landscape.

The proposed three-level game-theoretic framework provides a powerful lens through which to examine the post-Assad strategic landscape. By capturing the interdependencies among local, regional, and global actors, the model enhances both theoretical understanding and practical forecasting in international relations. It is particularly relevant for scholars, policymakers, and analysts engaged in conflict resolution, diplomatic strategy, and regional security studies.

7 | LIMITATIONS

This study is subject to several limitations. First, the model is static and does not incorporate repeated interactions. Second, it lacks empirical calibration and relies on theoretical assumptions. Third, the representation of actors is simplified and does not capture internal political dynamics. Finally, uncertainty and incomplete information are not explicitly modeled.

8 | POLICY-RELEVANT APPLICATIONS

Forecasting Regime Collapse and Spillover Effects. Local-level defection equilibria—such as those captured in Equations 28 − 29—can weaken allied coalitions and catalyze broader instability. This helps policymakers anticipate regime change and its consequences.

Managing Strategic Escalation. The regional and global Chicken Game structures (Equations 30 − 37) clarify brinkmanship logic. By identifying equilibrium thresholds, decision-makers can calibrate deterrence strategies and avoid unintentional escalation.

Targeted Strategic Interventions. The framework highlights optimal points for intervention. Acting at the local level may mitigate regional or global repercussions.

Enhancing Strategic Intelligence. By tracing strategic linkages across tiers (see Equation 38), intelligence agencies can better anticipate proxy realignments, shifting coalitions, and external interventions.

The findings suggest a need for adopting multi-tiered strategic planning mechanisms. International institutions (e.g., the United Nations), regional organizations (e.g., the Arab League),

and bilateral actors should design diplomatic tools that account for cascading conflict effects. The model offers both explanatory depth and policy relevance, serving as a foundation for early warning systems and scenario-based strategic planning.

8.1. | Empirical Validation

Real-world developments since late 2024 align with the predictions of this framework. Saudi Arabia's increased assertiveness—via reconstruction initiatives, normalization with Israel, and Arab League leadership—illustrates a post-Assad escalation consistent with Chicken Game dynamics (Equation 30, Table 2). Similarly, the United States has adopted a calibrated re-engagement strategy, using humanitarian and security partnerships without deep entrenchment, reflecting the mixed-strategy equilibrium in Equations $36-37$.

These trends underscore the utility of multi-level modeling in interpreting and anticipating strategic behavior. As Öniş [38] observes, regional orders emerge not merely from state preferences, but from structural constraints and external pressures that actors must navigate. This model formalizes those constraints through a nested strategic logic.

9 | CONCLUSION

This study introduces a novel multi-level game-theoretic framework to explain the strategic shifts triggered by the fall of Bashar al-Assad's regime. By applying the Prisoner's Dilemma at the local level and Chicken Games at the regional and global levels, the model captures both the fragmentation of domestic power and the escalation of international competition.

The nested architecture illustrates how local decisions such as mutual defection (Equation 28) reverberate upward to reshape regional alliances Equation 30 and global strategic engagement (Equations $31-37$). Post-2024 developments, including Iran's diminished posture, Saudi assertiveness, Russia's retreat, and U.S. selective re-engagement, affirm the model's structure.

Crucially, the model moves beyond abstract theory to offer strategic guidance. To avoid self-defeating equilibria, stakeholders must invest in trust-building, enforceable commitments, and early interventions. These actions are essential to convert adversarial dynamics into cooperative outcomes.

In conclusion, this research makes a meaningful contribution to strategic conflict modeling. It extends Putnam's two-level framework to modern complexities and offers a template for analyzing multi-actor crises elsewhere (e.g., South China Sea, Sahel, Horn of Africa).

Russia's decreasing engagement, particularly due to its military focus on Ukraine and sanctions-related constraints, corresponds with an equilibrium outcome of (G_U, W_R) In which the United States increases influence while Russia strategically withdraws. This illustrates how exogenous shocks reshape strategic options across the game's upper tier. Future research should focus on empirical validation, agent-based modeling, and extension to dynamic and Bayesian frameworks.

Acknowledgment: We are thankful to the editors and anonymous reviewers for their constructive suggestions.

Author Contributions: Conceptualization, Z.G. and M.K.; methodology, Z.G., M.K., and I.H.; software, Z.G.; validation, Z.G.; writing, original draft preparation, Z.G. and M.K.; writing, review, and editing, Z.G., M.K., and I.H. All authors agreed to the manuscript.

Declaration of Conflicting Interest: The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding: The author(s) received no financial support for the research, authorship, and/or publication of this article.

Data Availability Statement: Data that supports the findings of this study are available on request from the corresponding author.

Plagiarism Statement: This article was scanned by the plagiarism program. No plagiarism was detected.

Disclaimer/Publisher's Note: The statements, opinions, and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the publisher "AGASR" and/or the editor(s). The Publisher AGASR and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions, or products referred to in the content.

REFERENCES

[1] N. Ali, "Assad's Demise And The Shifting Balance Of Power In Middle East," *Dec. 26, 2024*, [Online]. Available: https://politact.com/assads-demise-and-the-shifting-balance-of-power-in-middle-east/

[2] E. Hokayem, *Syria's uprising and the fracturing of the Levant*. in Adelphi series, no. no. 438. Abingdon: Routledge for the International Institute for Strategic Studies, 2013.

[3] F. Gregory Gause, "Beyond Sectarianism: The New Middle East Cold War." [Online]. Available: https://www.brookings.edu/wp-content/uploads/2016/06/English-PDF-1.pdf

[4] D. Byman, "Understanding the Islamic State—A Review Essay," *Int. Secur.*, vol. 40, no. 4, pp. 127–165, Apr. 2016, doi: 10.1162/ISEC_r_00235.

[5] G. Herald Snyder, *Conflict Among Nations: Bargaining, Decision Making, and System Structure in International Crises*, in Princeton Legacy Library. Princeton University Press, 1977. [Online]. Available: https://www.jstor.org/stable/j.ctt13x0wmf

[6] J. D. Fearon, "Rationalist explanations for war," *Int. Organ*, vol. 49, no. 3, pp. 379–414, 1995, doi: 10.1017/S0020818300033324.

[7] S. J. Brams, *Game Theory and the Humanities: Bridging Two Worlds*. The MIT Press, 2011. doi: 10.7551/mitpress/9780262015226.001.0001.

[8] J. D. Morrow, *Game Theory for Political Scientists*. Princeton, NJ: Princeton University Press, 1994. doi: 10.1515/9780691213200.

[9] R. D. Putnam, "Diplomacy and domestic politics: the logic of two-level games," *Int. Organ*, vol. 42, no. 3, pp. 427–460, 1988, doi: 10.1017/S0020818300027697.
[10] "Syria Post-Assad: Scenarios And Regional Dynamics," Mar. 2025. [Online]. Available: https://mecouncil.org/publication/syria-post-assad-scenarios-and-regional-dynamics/
[11] J. Stepansky, "What is behind US strategy of keeping troops in post-Assad Syria?," Jan. 06, 2025. [Online]. Available: https://www.aljazeera.com/news/2025/1/6/what-is-behind-us-strategy-of-keeping-troops-in-post-assad-syria
[12] M. J. Osborne and A. Rubinstein, *A course in game theory*. Cambridge, Mass: MIT Press, 1994.
[13] R. B. Myerson, *Game theory: analysis of conflict*. Cambridge, Massachusetts, London, England: Harvard University Press, 2007.
[14] D. Fudenberg and J. Tirole, *Game theory*. Cambridge, Mass: MIT Press, 1991.
[15] A. K. Dixit and B. Nalebuff, *The art of strategy: a game theorist's guide to success in business & life*, 1st ed. New York: W.W. Norton & Company, 2008.
[16] H. Gintis, *Game theory evolving: a problem-centered introduction to modeling strategic interaction*, 2nd ed. Princeton: Princeton University Press, 2009.
[17] J. Von Neumann and O. Morgenstern, *Theory of games and economic behavior*, 60th anniversary ed. in Princeton classic editions. Princeton, N.J. ; Woodstock: Princeton University Press, 2007.
[18] J. F. Nash, "Equilibrium points in *n* -person games," *Proc. Natl. Acad. Sci.*, vol. 36, no. 1, pp. 48–49, Jan. 1950, doi: 10.1073/pnas.36.1.48.
[19] R. M. Axelrod, *The evolution of cooperation*, Rev. ed. New York, NY: Basic Books, 2006.
[20] A. Rapoport and A. Chammah, *Prisoner's Dilemma*. Ann Arbor, MI: University of Michigan Press, 1965. doi: 10.3998/mpub.20269.
[21] T. C. Schelling, *The strategy of conflict: with a new preface*, Nachdr. d. Ausg. 1980. Cambridge, Mass.: Harvard Univ. Press, 20.
[22] Y. Samolada, "A New Order? The Changing Balance of Power in the Middle East Pt. I," Mar. 2025. [Online]. Available: https://yris.yira.org/column/a-new-order-the-changing-balance-of-power-in-the-middle-east-pt-i/
[23] M. A. Salih, "Post-Asad Syria:Challenges, Opprtunities, and the US Role in Shaping its Future," Jan. 2025. [Online]. Available: https://www.fpri.org/article/2025/01/post-assad-syria-challenges-opportunities-and-the-us-role-in-shaping-its-future/
[24] A. H. Kydd, "Trust and Mistrust in International Relations | Princeton University Press." Accessed: Mar. 26, 2026. [Online]. Available: https://press.princeton.edu/books/paperback/9780691133881/trust-and-mistrust-in-international-relations
[25] D. A. Lake, Powell Robert, "Strategic Choice and International Relations | Princeton University Press." Accessed: Mar. 26, 2026. [Online]. Available: https://press.princeton.edu/books/paperback/9780691026978/strategic-choice-and-international-relations
[26] D. E. Cunningham, "Veto Players and Civil War Duration," *Am. J. Polit. Sci.*, vol. 50, no. 4, pp. 875–892, Oct. 2006, doi: 10.1111/j.1540-5907.2006.00221.x.
[27] F. C. Zagare and D. M. Kilgour, *Perfect Deterrence*, 1st ed. Cambridge University Press, 2000. doi: 10.1017/CBO9780511491788.
[28] C. S. Gochman and Z. Maoz, "Militarized Interstate Disputes, 1816-1976: Procedures, Patterns, and Insights," *J. Confl. Resolut.*, vol. 28, no. 4, pp. 585–616, Dec. 1984, doi: 10.1177/0022002784028004002.
[29] C. Phillips, *The Battle for Syria: International Rivalry in the New Middle East*, 1st ed. New Haven: Yale University Press, 2020.
[30] B. Berti and Y. Guzansky, "Saudi Arabia's Foreign Policy on Iran and the Proxy War in Syria: Toward a New Chapter?," *Isr. J. Foreign Aff.*, vol. 8, no. 3, pp. 25–34, Jan. 2014, doi: 10.1080/23739770.2014.11446600.
[31] R. A. Hinnebusch and M. Valbjørn, Eds., *Sectarianism and civil war in Syria*. in Routledge/st. andrews syrian studies series. Abingdon, Oxon ; New York, NY: Routledge, 2025.
[32] G. Dalay, "Great Power Competition in the Middle East: A Visionless Contest?," Dec. 2022. [Online]. Available: https://mecouncil.org/wp-content/uploads/2022/12/Great-Power-Competetion-Web-Eng-1.pdf
[33] Dr. Ahmed Farhan Saeed and M. Yaqub, "THE NEW GREAT POWERS COMPETITION: A STRATEGIC ANALYSIS," Jun. 2023, doi: 10.5281/ZENODO.8198680.
[34] J. B. Alterman, Todman Will, "The Implications of the U.S. Withdrawal from Syria," Dec. 2018, [Online]. Available: https://www.csis.org/analysis/implications-us-withdrawal-syria
[35] D. V. Trenin, *What is Russia up to in the Middle East?* Cambridge, UK Medford, MA, USA: polity, 2018.

[36] J. Fulton, "China's changing role in the Middle East," Jun. 2019. [Online]. Available: https://www.atlanticcouncil.org/in-depth-research-reports/report/china-s-changing-role-in-the-middle-east-2/

[37] E. Yildirimcakar and Z. Han, "China's soft power strategy in the Middle East," *Isr. Aff.*, vol. 28, no. 2, pp. 199–207, Mar. 2022, doi: 10.1080/13537121.2022.2041309.

[38] F. Shaban, "Rethinking Middle East Geopolitics after the Fall of the Assad Regime." Apr. 2025. [Online]. Available: https://www.harmoon.org/wp-content/uploads/2025/04/Rethinking-Middle-East-Geopolitics.pdf