ERF Working Papers Series

Intensity of International Sanctions and Internal Conflict: The Case of Iran

Mohammad Reza Farzanegan and Jerg Gutmann

ECONOMIC RESEARCH FORUM
منتدى البحوث الاقتصادية

Working Paper No. 1786
August 2025

INTENSITY OF INTERNATIONAL SANCTIONS AND INTERNAL CONFLICT: THE CASE OF IRAN

Mohammad Reza Farzanegan[1] and Jerg Gutmann[2]

Working Paper No. 1786

August 2025

Comments and suggestions by Mario Ferrero, Marcel Kossack, and Raed Safadi as well as participants of the 2025 Political Economy of Democracy and Dictatorship conference in Münster, the 2025 European Public Choice Society meetings in Riga, and the 2025 Economic Research Forum annual conference in Cairo are gratefully acknowledged. This work was sponsored by the Economic Research Forum (ERF) and has benefited from both financial and intellectual support. The views expressed in this work are entirely those of the authors and should not be attributed to ERF, its Board of Trustees, or donors. The authors declare no competing interests.

Send correspondence to:
Mohammad Reza Farzanegan
Philipps-Universität Marburg, Marburg, Germany
farzanegan@uni-marburg.de

[1] Economics of the Middle East Research Group, Center for Near & Middle Easter Studies (CNMS), School of Business and Economics, Philipps-Universität Marburg, Marburg, Germany; CESifo (Munich) & ERF (Cairo), farzanegan@uni-marburg.de
[2] University of Hamburg, Hamburg, Germany; CESifo (Munich) - Email: jerg.gutmann@uni-hamburg.de

First published in 2025 by
The Economic Research Forum (ERF)
21 Al-Sad Al-Aaly Street
Dokki, Giza
Egypt
www.erf.org.eg

Abstract

This study investigates the case of Iran to evaluate how changes in the intensity of international sanctions affect internal conflict in the target country. Estimating a vector autoregressive model for the period between 2001q2 and 2020q3, we find that an increase in sanction intensity causes an increase in both civil disorder and terrorism risk. In contrast, the risk of civil war declines after an increase in sanction intensity. These findings for Iran are consistent with our theoretical predictions and indicate that higher intensity sanctions against a stable autocracy with high repression capacity allow sender country governments to put pressure on a political regime without risking an outbreak of major violent conflicts. Therefore, more intensive sanctions may also not be helpful in inducing violent regime change in such countries.

Keywords: Sanctions, sanction intensity, internal conflict, civil disorder, terrorism, civil war, VAR model, Iran.
JEL Classifications: D74, F51

ملخص

تبحث هذه الدراسة في حالة إيران لتقييم كيفية تأثير التغيرات في شدة العقوبات الدولية على الصراع الداخلي في الدولة محل الدراسة. بتقدير نموذج انحدار ذاتي متجه للفترة بين الربع الثاني من عام 2001 والربع الثالث من عام 2020، نجد أن زيادة شدة العقوبات تؤدي إلى زيادة كل من الاضطرابات المدنية ومخاطر الإرهاب. في المقابل، يتراجع خطر الحرب الأهلية بعد زيادة شدة العقوبات. تتوافق هذه النتائج الخاصة بإيران مع توقعاتنا النظرية، وتشير إلى أن العقوبات الأكثر شدة ضد نظام استبدادي مستقر ذي قدرة قمعية عالية تسمح لحكومات الدول المرسلة بالضغط على النظام السياسي دون المخاطرة باندلاع صراعات عنيفة كبيرة. لذلك، قد لا تكون العقوبات الأكثر شدة مفيدة أيضًا في إحداث تغيير عنيف في النظام في مثل هذه البلدان.

1. Introduction

Destabilizing the target country's government or political system is often an implicit, sometimes even an explicit goal when international sanctions are imposed (Felbermayr et al. 2020). However, only few studies have demonstrated a direct link between sanctions and political instability. These researchers argue that the threat or imposition of sanctions can incentivize antigovernment protests (Allen 2008; Grauvogel, Licht, and von Soest 2017; Liou, Murdie, and Peksen 2021; Mei 2025), which, in turn, may increase the likelihood that the target government complies with the sender's political demands (Attia, Grauvogel, and von Soest 2020) or those of nonviolent protest movements (Liou, Murdie, and Peksen 2023).[1]

Grievances caused by sanctions have the potential to lead to protest and, more broadly, political instability. Sanctions harm the economy and cause economic crises (Gutmann, Neuenkirch, and Neumeier 2023; Hatipoglu and Peksen 2018; Neuenkirch and Neumeier 2015; Peksen and Son 2015; Shchepeleva, Stolbov, and Weill 2024; Apeti and Edoh 2024), they increase economic inequality and poverty, weakening the middle class (Afesorgbor and Mahadevan 2016; Farzanegan and Habibi 2024; Moteng et al. 2023; Neuenkirch and Neumeier 2016), they reduce the population's life expectancy (Gutmann, Neuenkirch, and Neumeier 2021), and they hamper international trade (Crozet and Hinz 2020; Dizaji and Farzanegan 2024; Gutmann, Neuenkirch, and Neumeier 2024) as well as capital flows (Besedeš, Goldbach, and Nitsch 2017; Biglaiser and Lektzian 2011; Mirkina 2018).

Although the prediction derived from grievance theory is compelling, some researchers emphasize an alternative response justified by social psychology (Theiler 2018): The imposition of sanctions can cause a rally-around-the-flag effect, strengthening the target regime's popularity and thereby its political control over the country (Eichenberger and Stadelmann 2022; Gold, Hinz, and Valsecchi 2024; Grauvogel and von Soest 2014; Seitz and Zazzaro 2020). Hellmeier (2021), for example, demonstrates that autocratic regimes with control over the media can successfully use sanctions as a tool for mass mobilization. RezaeeDaryakenari, Ghafouri, and Kasap (2025) show that specifically comprehensive sanctions have increased support for the government in Iran.

The few empirical studies on whether sanctions increase political instability rely on cross-country evidence. Grauvogel, Licht, and von Soest (2017) show that sanction threats trigger anti-government protest. Liou, Murdie, and Peksen (2021) link sanctions to increases in both

[1] For a review of literature on economic sanctions and political stability see Peksen (2021).

violent and nonviolent dissent.[2] Our study complements these works with a quantitative case study of Iran, one of the most sanctioned countries in the world. While case studies have limited external validity, they also offer unique advantages; some even argue that "any cross-country regression giving results [that are] not validated by case studies needs to be regarded with suspicion" (Rodrik 2007, 4). State-of-the-art cross-country datasets like the Global Sanctions Data Base (Felbermayr et al. 2020; Kirikakha et al. 2021; Syropoulos et al. 2024) do not measure sanction intensity. Therefore, it is not surprising that also the studies by Grauvogel, Licht, and von Soest (2017) and Liou, Murdie, and Peksen (2021) treat sanctions as a binary variable and disregard any variation in their intensity.

The selection of Iran as a case study is justified by its prolonged exposure to international sanctions of varying intensity, which provides substantial temporal variation in our key variable of interest. Iran generally being heavily sanctioned is also important for our measurement strategy, which relies on news media coverage. As an authoritarian regime characterized by stringent media control and repression of dissent (e.g., responsible for 74% of all recorded death penalty executions in 2023), Iran presents a rigorous test case for the emergence of sanction-induced conflict. Furthermore, its geopolitical significance and documented nationalist responses to external pressures render it an exemplary case for examining the interplay of economic grievances and regime-stabilizing effects. Iran is not only one of the most sanctioned countries, but it is also the single most studied target of sanctions. Numerous studies have examined the effects of sanctions on Iran's formal economy (Laudati and Pesaran 2023), shadow economy (Farzanegan 2013), gender gap in industry and household welfare (Demir and Tabrizy 2022; RezaeeDaryakenari, Asadzade, and Thies 2024), militarization (Dizaji and Farzanegan 2021), foreign trade and finance (Haidar 2017), business strategies of firms (Cheratian, Goltabar, and Farzanegan 2023), CO2 emissions (Balali et al. 2024), and energy efficiency (Jabari et al. 2024). Farzanegan and Batmanghelidj (2023) provide a comprehensive review of the socio-economic effects of sanctions on Iran. The effect of sanction intensity on internal conflict has, thus far, been neglected in empirical research. To fill this gap, we provide an in-depth analysis of how sanctions against Iran have affected internal conflict in Iran.

We estimate vector autoregressive (VAR) models and calculate impulse response functions to investigate how different indicators of internal conflict in Iran respond to a positive shock (i.e., an increase) in sanction intensity. In addition, we employ variance decomposition to understand

[2] Other researchers have asked whether sanctions can be used to shorten the duration or lower the intensity of civil conflict that is already ongoing – rather than whether sanctions trigger new conflicts (Escribà-Folch 2010; Hultman and Peksen 2017; Lektzian and Regan 2016).

the contribution of shocks in sanction intensity to the forecast variance of internal conflict and other variables included in the VAR model. Our results suggest an increased risk of internal conflict following a positive shock in sanction intensity, while controlling for economic performance and oil revenues. This overall effect is driven by increases in civil disorder and terrorism. In contrast, the risk of civil war declines after a sanction intensity shock. Accordingly, increasing sanction intensity may allow a sender country's government to destabilize the target country's political regime without risking an escalation into a major violent conflict. At the same time, more intensive sanctions appear not to be helpful in inducing violent regime change. As with every case study, the external validity of our analysis has to be evaluated carefully. While our results may not generalize to all sanctions cases, we argue that the case of Iran is comparable to other targets with both high and persistent sanction intensity and a high repression capacity of the state, such as Cuba, North Korea, Russia, or Venezuela.

The remainder of the article is structured as follows. In Section 2, we present a theoretical framework for the conflict-sanctions nexus. Section 3 introduces our data and explains the estimation strategy we employ. The results of our empirical analysis are discussed in Section 4, and Section 5 concludes with a discussion of possible policy implications.

2. Theoretical Background

In his seminal work on "exit, voice, and loyalty," Hirschman (1970) contrasts two central accountability mechanisms at the disposal of the members of economic, political, or social organizations to hold their leadership accountable. He argues that economists often disregard the importance of "voice," due to their trust in the virtues of competition. Political scientists, on the other hand, focus on voice, specifically protest and voting, and tend to underestimate the relevance of "exit" as an accountability mechanism.

Gutmann, Langer, and Neuenkirch (2024) show that sanctions cause an increase in emigration (i.e., exit), particularly from countries where freedom of political expression is limited. In other words, their results suggest that exit and voice function as substitutes in citizens' reactions to the hardship caused by sanctions. In line with the argument that mass emigration puts pressure on governments under sanctions, they also demonstrate that sanctioned governments tend to impose additional constraints on international migration, although it is not evident that these restrictions are able to curb emigration.

The international NGO Reporters without Borders ranked Iran in 2024 on place 176 out of 180 countries, only above Myanmar, Eritrea, Afghanistan, and Syria, as one of the world's most repressive countries in terms of press freedom.[3] The Iranian government frequently responds to public displays of dissent with harsh punishment, which received particular international attention during the "Woman, Life, Freedom" protests in the fall of 2022 (Farzanegan and Fischer 2023). Due to these legal and political restrictions, it can be expected that public dissent as a response to the hardship caused by international sanctions occurs less in Iran than it would in freer societies. At the same time, Iranians are more likely than others to respond to sanctions by emigrating. Although we expect that even in Iran sanctions are conducive to protest and political instability, this case study sets a particularly high bar, due to the potential costliness of publicly challenging the Iranian government.

Sanctions plausibly increase the risk of domestic conflict and violence through several channels. First, sanctions raise production and transaction costs, as well as the cost of imports by devaluing the rial, all of which increase inflation. Inflation, in turn, reduces the opportunity cost of engaging in violence by reducing the population's purchasing power and increasing macroeconomic instability. This is even more likely in countries with a large youth bulge, as discontent young people are more likely to challenge the political system (Farzanegan and Witthuhn 2017). Moreover, sanctions decrease investment and job creation (Moghaddasi Kelishomi and Nisticò 2022), resulting in higher levels of unemployment and amplifying citizens' frustration.

Sanctions and the government's response to them also create opportunities for corruption, as evidenced by higher black market premiums in the currency market and increased rent-seeking in Iran (Zamani et al. 2021). This is because intermediaries are needed to facilitate international transactions for sanctioned sectors, leading to more corruption and rent-seeking opportunities, especially when politically connected firms and individuals are involved.[4] Sanctions increase the cost of doing business in the formal sector and, thus, encourage a transfer of resources into the informal economy (Moghaddasi Kelishomi and Nisticò 2024). An expansion of the informal economy, in turn, reduces government revenue, limiting its capacity to finance public goods and services. This can further fuel dissatisfaction with the government and increase the public's appetite for revolution (Farzanegan and Gholipour 2024).

[3] https://rsf.org/en/index/score-saf?year=2024.

[4] The case of Iranian billionaire Babak Zanjani exemplifies the role of intermediaries under sanctions: https://www.theguardian.com/world/2016/mar/06/iranian-billionaire-babak-zanjanis-entenced-to-death-embezzlement.

These theoretical considerations about grievances caused by sanctions can be summarized in the following hypothesis, which we will test for its congruence with the case of Iran:

Hypothesis 1 (grievances): Increasing the intensity of international sanctions causes an increase in internal conflict (particularly civil disorder and terrorism) in the target country.

However, not all forms of conflict are expected to follow this pattern under international sanctions. Thyne (2006) argues that sanctions "allow the government and opposition plenty of time to alter their bargaining positions to avoid conflict because they clearly relate information about who would receive aid and the extent of that aid, if a civil war were to begin" (p. 940). He further provides the example of US sanctions against South Africa, which were announced in advance and supposedly prevented a civil war by giving the South African government the opportunity to appease the opposition. Thyne's argument rests on the assumption that civil war is caused by bargaining failures, which are more likely with increasing uncertainty. Increasing the intensity of sanctions can accordingly reduce uncertainty and, thus, the risk of civil war, by providing all parties with shared and credible information on the likely outcome of a civil war. If both sides of a potential conflict had full information on its expected outcome, a negotiated settlement could replace the actual conflict, which would have caused significant costs.

Another argument why the risk of civil war might decline due to more intense sanctions is based on the idea that government propaganda exploits sanctions to increase nationalist sentiment in society, thus uniting the people behind their government and against external powers. RezaeeDaryakenari, Ghafouri, and Kasap (2025) show that comprehensive sanctions against Iran improved even the sentiment of the moderate opposition towards the government. This rally-around-the-flag effect implies that the political system may remain stable despite increased civil disorder and terrorism by individuals and groups who are motivated by the grievances caused by sanctions. In other words, the fact that these grievances are caused by an external threat may offset their destabilizing effect on the political system, which could otherwise create the threat of civil war or coups. The rally-around-the-flag effect is most relevant in target countries like Iran that have extensive control over the media and might not easily generalize to societies with free and competitive media markets. Iran has both a robust repressive apparatus (e.g., *Basij* or Resistance Mobilization Force) and state-controlled media (e.g., Islamic Republic of Iran Broadcasting). World Values Survey data on two questions offers support for our argument regarding a rally-around-the-flag effect under sanctions on Iran.[5] The share of respondents willing to fight for Iran in the event of an invasion rose from 70% in 2005,

[5] https://www.worldvaluessurvey.org/wvs.jsp.

prior to major sanctions, to 73% in early 2020, during sanctions. Similarly, the share of respondents expressing pride in their nationality increased significantly, from 63% to 83%. While economic instability typically fosters political unrest, the Iranian regime's strategic use of nationalist propaganda capitalizes on sanctions to unify society against external adversaries, thereby mitigating the risk of civil war.

From these considerations follows our second hypothesis:

Hypothesis 2 (bargaining and rally around the flag): Increasing the intensity of international sanctions decreases the risk of civil war in the target country.

Hypotheses 1 and 2 only appear contradictory at first sight. The grievance mechanism posited in Hypothesis 1 is more relevant to lower-intensity and less organized forms of conflict, such as civil disorder and terrorism. Such conflicts are spontaneous and require limited organizational resources. They arise as economic pressure due to inflation and declining income of the middle class (Farzanegan and Habibi 2024) reduce the opportunity cost of many individuals to express their grievances either peacefully or violently (Farzanegan and Witthuhn 2017). These arguments would also apply to the risk of civil war, which is at the core of Hypothesis 2. However, civil war necessitates sustained and organized large-scale opposition, which sanctions may undermine by fostering nationalist cohesion via a rally-around-the-flag effect. Moreover, sanctions reduce information asymmetries between the government and the opposition regarding potential external support for conflict parties, increasing the scope for a peaceful conflict settlement according to bargaining theory. Accordingly, sanctions may exert a dual influence: economic grievances encourage lower-intensity conflicts (protest and terrorism) by discontent individuals and small groups, while nationalist responses and reduced information asymmetries stabilize the regime against large-scale conflict between major factions of society.

3. Data and Empirical Strategy

3.1. Data

To examine how internal conflict, measured by an internal conflict index and its subcomponents (civil disorder, terrorism, and civil war risk), responds to a shock in sanction intensity we study quarterly data on Iran for the period between 2001q2 and 2020q3.

We use the sanction intensity index (S_T) calculated by Laudati and Pesaran (2023) to measure sanction shocks. The authors take a unique approach by introducing a novel newspaper-based

indicator of quarterly recorded sanction intensity for Iran. They examine published news on sanctions, their imposition, their intensity, and their removal. News sources considered are daily US newspapers, such as the New York Times, Washington Post, Los Angeles Times, and the Wall Street Journal, as well as the Guardian and the Financial Times from the UK. The index peaks in 2012q1 (0.99) and takes its lowest value in 2015q3 (0.06). This novel indicator has already become popular in the literature on international sanctions (see, e.g., Bondarenko et al. 2024; Demir and Tabrizy 2022; Jabari et al. 2024). While the sanction intensity index for Iran has the great advantage of measuring the intensity of sanctions over the course of a sanction episode, it does not distinguish between the types of sanction instruments employed (e.g., export sanctions, import sanctions, or financial sanctions). The news-reporting-based measurement strategy employed in the sanction intensity index has also been used in recent prominent work to measure phenomena such as economic policy uncertainty, protest events, and geopolitical risk exposure at the country level (Baker, Bloom, and Davis 2016). Media reporting provides a reasonable proxy for the salience and perceived severity of sanctions in Iran and closely follows significant events, such as the 2012 US/EU oil embargo and the 2018 US withdrawal from the JCPOA, periods widely recognized as sanction pressure shocks. Empirical evidence from our analysis in Section 4 also supports the index: movements in the index mirror reductions in Iran's oil export revenues and real GDP, outcomes consistent with the economic effects of expanded sanctions. The fact that the sanction intensity index measures the salience of sanction severity rather than purely objective intensity can even be seen as an advantage in our empirical application, as the perception of and expectations about future grievances depend on how sanction intensity is perceived by the population. Moreover, short-run economic shocks caused by sanction intensity depend more on its perception than its actual scale (e.g., see Akerlof and Shiller 2010).

As our response variables to sanction intensity shocks, we use internal conflict indicators for Iran from the well-established International Country Risk Guide (ICRG) that is produced by PRS (2023), which is established in the conflict and political economy literature (Lessmann 2016; Farzanegan and Gholipour 2023; Bjorvatn and Farzanegan 2015). ICRG data is based on monthly country expert assessments and has been used frequently in empirical research since the 1990s (e.g., Knack and Keefer 1995; Rodrik 1999). Their internal conflict index ($Conflict$) evaluates the overall risk of violent conflict in a country and its actual or potential impact on governance. This index is also widely used in empirical research (see, e.g., Busse and Hefeker 2007; Farzanegan, Lessmann, and Markwardt 2018; Fredriksson and Svensson 2003; Gupta, de Mello, and Sharan 2001). The ICRG internal conflict index is well-suited for this study, as it

assesses the underlying risk of conflict based on expert evaluations. Expert ratings provide a convenient measure of time-varying conflict intensity compared to, for example, event-based data. Even if it was available for Iran, quarterly event-based conflict data poses a serious aggregation problem. Many small protests could be measured with a higher score than one mass protest. Peaceful and violent conflicts, short-term and persistent protests are difficult to aggregate in one number. Similar arguments can be made about terror attacks. A disadvantage of expert risk ratings is that they might be subject to biases (e.g., Gutmann, Padovano, and Voigt 2020). Nevertheless, expert country ratings are widely trusted in the academic literature.

The ICRG originally assigns the highest rating to countries with no armed or civil opposition to the government, where the government does not engage in arbitrary violence against its citizens, either directly or indirectly. Conversely, countries involved in an ongoing civil war are given the lowest rating. This overall risk rating is the sum of three subcomponents, each ranging from zero to four points, where higher scores again indicate a lower risk. These subcomponents represent the risk of different types of conflict events, and we will use them as separate dependent variables in the following analysis. The three categories are (1) civil disorder risk, (2) terrorism/political violence risk, and (3) civil war/coup risk. Since the data on sanction intensity is only available at a quarter-year frequency, we convert the ICRG conflict scores, which are recorded monthly, to quarterly averages. To facilitate an intuitive interpretation of our results, we follow Farzanegan and Gholipour (2023a) and re-scale the internal conflict index by subtracting their original scores from 13. We also re-scale the three subcomponents by subtracting their original scores from 5. Thus, higher scores on all conflict indicators hereafter reflect a higher risk of internal conflict.

To validate the ICRG conflict indicators, we have examined their correlation with objective event data. The quarterly number of protests in Iran according to ACLED is only positively and significantly correlated with the subdimension civil disorder ($N = 23, r = 0.41$). The quarterly number of terror attacks according to the Global Terrorism Database is only positively and significantly correlated with the subdimension terrorism/political violence ($N = 79,\ r = 0.31$).[6] These correlations clearly support that the expert risk assessments reflect objective conflict risks in the defined dimensions.

Risk of civil disorder ($Disorder$) refers to behaviors typically managed by a nation-state's competent civilian police force. It encompasses "violent protests and strikes, criminal activities,

[6] The correlations between terror attacks and civil war risk and between protests and risk of terrorism are even negative. Data: https://acleddata.com/data-export-tool and https://www.start.umd.edu/gtd-download.

kidnappings for financial gain (not for purchasing arms or pursuing political goals), and widespread civil disobedience." The hardship caused by sanctions is expected to further such unruly and subversive conduct.

Risk of terrorism/political violence ($Terror$) measures the level of violence exerted by individuals or groups to achieve their political goals. McLean et al. (2018) argue that intensive sanctions may weaken target states excessively, thereby potentially strengthening terrorist groups. Moreover, by hurting the economy and lowering the quality of life, sanctions may increase the risk of terrorism by lowering the opportunity costs of engaging in such activities (see, e.g., Choi 2014; Choi and Luo 2013). However, the expected costs of engaging in terrorism in Iran are very high (the death penalty, e.g., is a common punishment for political crimes). Therefore, the impact of sanctions on Iran's society must be severe to observe a meaningful increase in the risk of terrorism.

Civil war/coup risk ($Civil\_War$) reflects the prevalence and severity of open physical conflict between factions in society. Such conflicts can occur between government forces and a segment of the population, or between multiple factions, tribes, or religious groups.[7] This risk category is of particular importance here, as it serves to test our second hypothesis.

We control for Iran's real GDP (GDP) and its oil export revenues (X_Oil), both taken from Laudati and Pesaran (2023) and expressed in million USD. These are the most important variables to capture the economic conditions experienced by Iranians and the government's ability to provide public services. Note that while we focus, in the following, on the direct effects of sanctions on conflict, our estimation approach also accounts for their indirect effects via changes in income and oil export revenues. In other words, the direct effects of sanctions discussed in the following provide only a lower bound for their total influence on internal conflict. All variables are transformed by taking their natural logarithm. Table A1 in the Appendix provides summary statistics of the variables used in our empirical analysis.

3.2. Estimation Method

To examine how the internal conflict index and its subcomponents respond to a shock in sanction intensity, we estimate vector autoregressive (VAR) models (see Carey 2006 for a

[7] There is a strong tendency among Islamic scholars to prioritize the internal stability of Islamic countries over other goals and, thus, to support strong political leaders, even if they are unjust. The early centuries of Muslim history clearly demonstrated the destructive potential of civil discord and strife (*fitna*). The resulting fear of *fitna* heavily influences legal thought, as reflected in the saying that "sixty years of tyranny are better than one hour of civil strife" (Coulson 1957).

comparable empirical approach).[8] Lütkepohl (2011) and Sims (1980; 1986) explain the advantages of the VAR approach for policymaking when variables are endogenous. The VAR approach is suitable for this analysis, as it accounts for the dynamic and interdependent relationships among sanction intensity, economic conditions (real GDP and oil export revenues), and internal conflict. Impulse response functions (IRF) allow us to examine temporal responses to sanction shocks, which is essential given the anticipated lagged effects of economic disruptions. This empirical approach also facilitates a systemic analysis of how sanctions influence conflict directly and indirectly through economic channels.

The following general reduced form model is estimated using OLS:

$$Y_t = g_0 + g_1 Y_{t-1} + g_2 Y_{t-2} + \cdots + g_p Y_{t-p} + \epsilon_1 \quad (1)$$

where Y_t is a vector of endogenous variables. It is a function of its own lags as well as those of the other endogenous variables.

We calculate IRF to understand the direction of the response of internal conflict to a positive sanction intensity shock, as well as its magnitude, duration, and statistical significance. Generalized IRF is used, which is not sensitive to the ordering of variables (Pesaran and Shin 1998). We calculate one-standard-error bias-corrected bootstrap confidence intervals following Kilian (1998) with 1,000 bootstrap repetitions. This approach explicitly adjusts for the bias and skewness of the small-sample distribution of the impulse response estimator (Kilian 1998).

Our primary variables of interest are the internal conflict index (or its components) and the sanction intensity index. Yet, we also account for potential channels through which the impact of a sanction shock can be transmitted to internal conflict in Iran. Our key hypothesis is that the response of internal conflict to a positive shock (i.e., an increase) in sanction intensity is, ceteris paribus, positive (i.e., an increase in conflict).

[8] We prefer the VAR specification over the ARDL model for this analysis. The ARDL is a single equation that explains the dependent variable (conflict, in our case) using its own lags and the lags of independent variables (e.g., sanctions, GDP, oil revenues). However, it requires strict exogeneity of the explanatory variables, which is implausible in our application. In contrast, a VAR system treats all variables as endogenous and consists of multiple equations. Each variable is explained by its own lags and the lags of all other variables. Key analyses such as impulse response functions and variance decomposition are commonly employed in VAR. Moreover, we prefer VAR over VECM because the latter is less accurate in short-term estimates (Naka and Tufte 1997). Studies by Engle and Yoo (1987); Clements and Hendry (1995); and Hoffman and Rasche (1996) also demonstrate that an unrestricted VAR outperforms a restricted VECM in short-term forecast variance.

4. Main Results

4.1. Response of the Internal Conflict Index to Sanction Intensity Shocks

We estimate our VAR model based on the four variables described above (overall internal conflict index, sanction intensity index, oil export revenues, and real GDP), all of which are measured in logs and treated as potentially endogenous. For our data, lag selection criteria suggest that accounting for one quarter-year lag suffices. The estimated VAR with a one period lag is stable and tests do not reject the null hypothesis of no serial correlation (these auxiliary results are available upon request). The majority of the lag selection criteria displayed in Table A2 in the Appendix support this specification choice.

After selecting the optimal lag length, the stationarity of the estimated VAR model is verified. We must also ensure that the estimated VAR model does not exhibit residual autocorrelation at the chosen lag length. Ensuring the stability (stationarity) of the estimated VAR model is essential for validating critical outcomes, including the confidence intervals for impulse responses (IHS Markit 2020). Lütkepohl (2007) further emphasizes that the overall stationarity condition of a VAR model is more important than the stationarity of the individual series. Consistent with prior research, we estimate our VAR model using the levels of the variables, as the stability condition ensures the stationarity and stability of the entire model (see Figure A1 in the Appendix, which shows no roots outside the circle). Previous studies also utilize variables in levels, especially when the focus is on interpreting impulse responses (Sims, Stock, and Watson 1990; Sims 1992). The estimated VAR model shows no residual autocorrelation at the chosen lag length of one quarter. This is verified by a Lagrange Multiplier (LM) test for autocorrelation ($p = 0.15$).

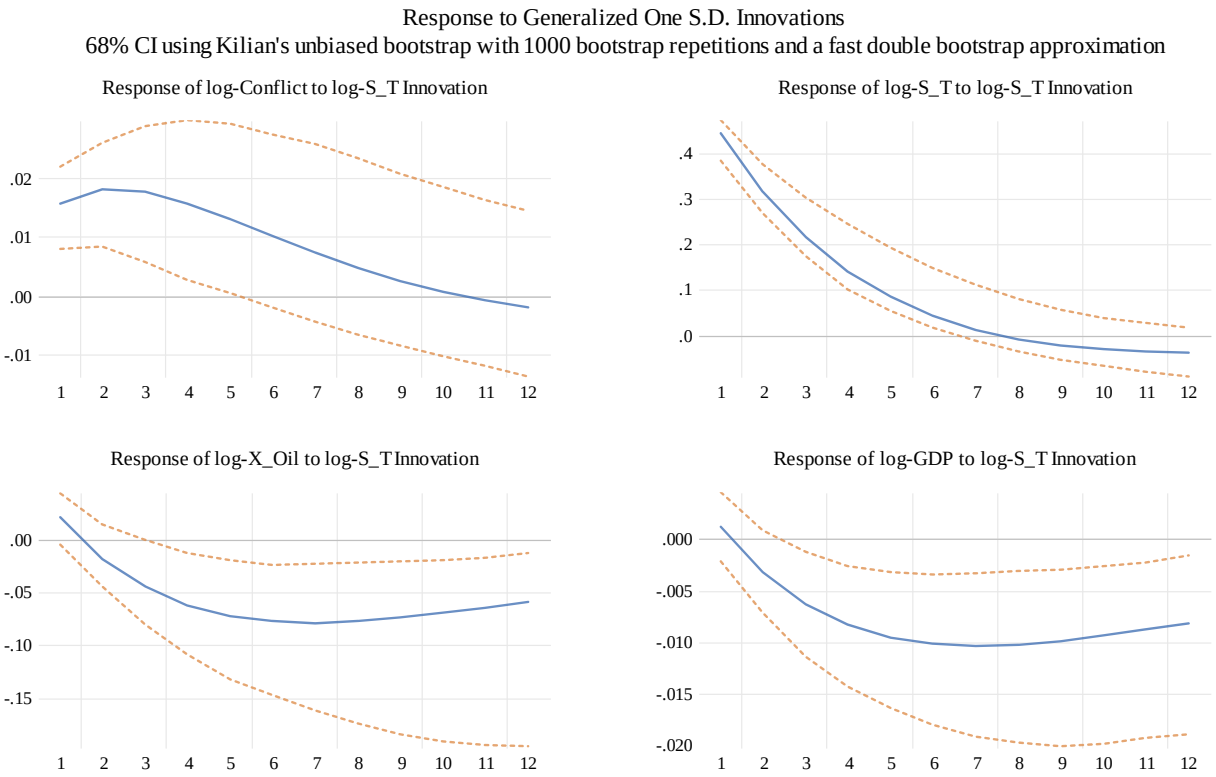
Given the verified stability and proper specification of the estimated VAR model, we proceed to calculate the generalized IRF. In our analysis, the shock variable is the logarithm of sanction intensity, and the primary response variable is the logarithm of the internal conflict index, with other relevant variables controlled for. Following Sims and Zha (1999), Mertens and Ravn (2012), and Stock and Watson (2001), we provide confidence bands corresponding to one standard error, which yields an approximate 68% confidence interval for each impulse response.[9] These confidence bands are based on Kilian's bias-corrected bootstrap method with 1,000 replications.

[9] 68% confidence intervals are standard in VAR analyses, particularly for single-country time-series data with a limited sample size, as they balance statistical precision with interpretability (Sims and Zha, 1999). The use of

Figure 1 shows the response of internal conflict to an unexpected increase in sanction intensity. Following a positive shock in the sanction intensity index, the risk of internal conflict is simulated to increase, reaching its peak in the third quarter after the shock. An unexpected increase in sanction intensity by 1% yields an approximate increase in the risk of internal conflict of 15% of a standard deviation by the third quarter. This positive response of internal conflict is statistically significant for the first four quarters after the shock. Afterwards, the response is no longer statistically significant, and three years after the shock it approaches a point estimate of zero. This is in line with the empirical evidence that sanctions are economically most harmful in the first two years after their imposition (Gutmann, Neuenkirch, and Neumeier 2023). Figure 1 also shows the negative response of Iran's oil export revenues and real output to a positive shock in sanction intensity. Both negative responses are statistically significant between the third and twelfth quarter after the shock. In other words, it takes some months for the negative effect of sanctions on these indicators to manifest. Iran's oil export revenues show a stronger response to an unexpected positive shock in sanction intensity than does real GDP. A 1% increase in sanction intensity reduces oil export revenues by 15% of a standard deviation by the seventh quarter after the shock. Real GDP declines merely by 7% of a standard deviation by the seventh quarter.

one-standard-error bands facilitates the identification of economically meaningful responses while avoiding overly wide intervals that may obscure significant effects.

Figure 1. Responses to a positive shock in sanction intensity



Note: The horizontal axis shows the number of quarters after the initial shock. The solid line indicates the direction and magnitude of the response, while the dashed lines show the confidence intervals. The vertical axis represents the size of the response in percent.

4.2. Variance Decomposition Analysis of the Internal Conflict Index

In addition to evaluating the impulse response analyses, we conduct variance decomposition (VDC) analyses to demonstrate the impact of sanction intensity shocks on the fluctuation in internal conflict, real output, and oil export revenues in Iran. VDC determines the proportion of movements in a time series that can be attributed to shocks within the series itself, as opposed to shocks from other variables. The results are shown in Table 1.

Over 95% of the fluctuation in internal conflict in the first quarter is explained by its own shocks. During this period, sanction intensity shocks account for over 4% of the volatility in internal conflict. This percentage is significantly higher than the shares attributed to real output and oil export revenue shocks, which respectively explain only 0.01% and 0.26%. One year after the shock, the contribution of sanction intensity shocks to the volatility of internal conflict doubles, reaching 8.4%. The highest impact of sanction intensity shocks on internal conflict fluctuation is observed two years post-shock at 9%.

The explanatory power of an oil export revenue shock in internal conflict volatility increases until it reaches 13% three years after the shock. Another insight from Table 1 is the growing share of fluctuation in Iranian oil export revenues that can be explained by sanction intensity shocks. Its contribution increases from 1% in the first quarter after the shock to more than 15% three years after the shock. Finally, sanction intensity also plays an important role in explaining fluctuation in Iran's real GDP. The explained share rises from 0.18% in the first quarter after the shock to about 15% three years after. The second most important factor in explaining fluctuation in Iran's real output – after sanction intensity – are shocks to its oil export revenues.

Our analyses both of the IRF and the VDC have focused on the direct effect of sanctions on domestic conflict, although we acknowledge that some of the hardship caused by sanctions will be directly reflected in changes in GDP or oil export revenues. Thus, we have argued that our results here should be interpreted as a lower bound estimate. Given that over the first two years, sanction intensity shocks explain more of the volatility in domestic conflict than shocks to oil revenues and GDP combined, we are confident that the direct effect does at least not dramatically underestimate the overall importance of sanction intensity for domestic conflict.

Table 1. Variance decompositions

VDC of log-Conflict:				
Quarter after shock	log-Conflict	log-S_T	log-X_Oil	log-GDP
1	95.46	4.26	0.26	0.01
4	88.91	8.39	2.46	0.24
8	82.07	9.04	7.95	0.94
12	77.15	8.44	12.83	1.57
VDC of log-S_T:				
Quarter after shock	log-Conflict	log-S_T	log-X_Oil	log-GDP
1	0.00	100.00	0.00	0.00
4	0.37	96.43	3.19	0.01
8	0.77	88.81	10.39	0.03
12	0.80	84.57	14.56	0.07
VDC of log-X_Oil:				
Quarter after shock	log-Conflict	log-S_T	log-X_Oil	log-GDP
1	0.00	1.03	98.97	0.00
4	0.00	4.35	95.65	0.00
8	0.02	11.69	88.29	0.00
12	0.09	15.44	84.47	0.00
VDC of log-GDP:				
Quarter after shock	log-Conflict	log-S_T	log-X_Oil	log-GDP
1	0.00	0.18	9.53	90.29
4	0.13	4.46	10.88	84.53
8	0.19	11.45	9.95	78.41
12	0.18	14.87	8.75	76.19

Note: For the VDC, the following Cholesky ordering is used, assuming sanction intensity as the most exogenous variable and internal conflict as the most endogenous one: log-S_T, log-X_Oil, log-GDP, log-Conflict.

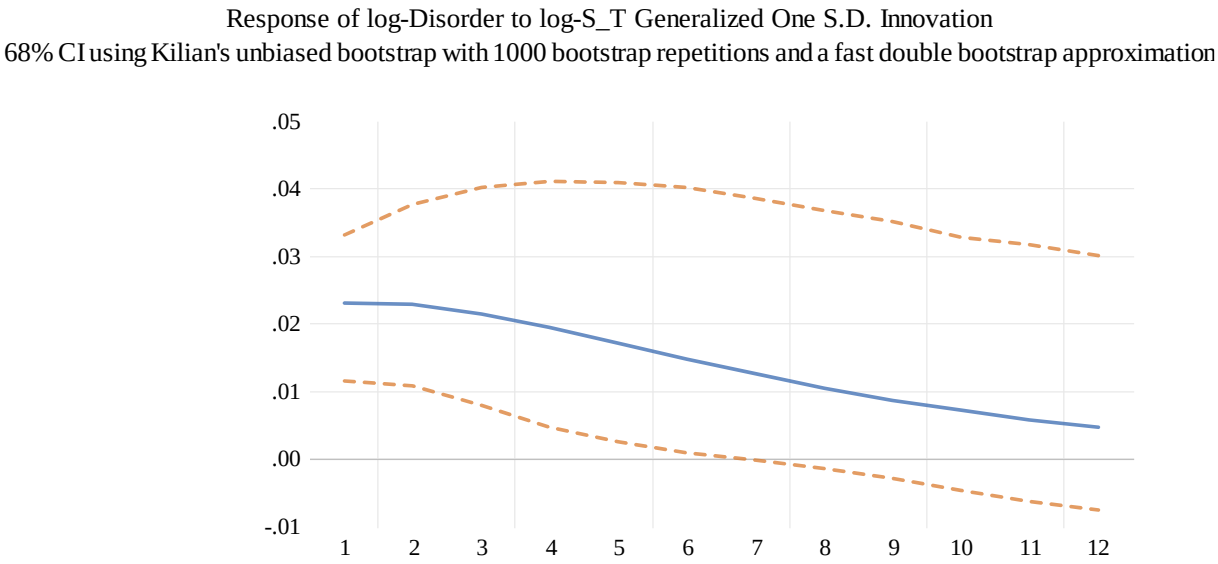
4.3. Response of the Subcomponents of Internal Conflict and VDC

Figure 2 shows the response of civil disorder risk, the first subcomponent of internal conflict, to a positive shock in the sanction intensity index. This impulse response is based on the estimation of a second VAR model, which includes the civil disorder subcomponent, the sanction intensity index, oil export revenues, and real output (all in log form). Again, a one period lag is selected as the optimal lag length. The estimated VAR is stable, and we cannot reject the null hypothesis of no residual serial correlation at the selected lag length. The generalized impulse responses are displayed in Figure 2. The response of civil disorder to an unexpected increase in the sanction intensity index is positive and statistically significant for up to six quarters following the shock. After that, it decreases and becomes statistically insignificant. The peak response is observed within the first two quarters following the shock. A 1% increase in sanction intensity results in an increase in the risk of civil disorder by 14% of a standard deviation. These results are consistent with observed instances of civil disorder in Iran, notably the 2017-18 economic protests and the 2019 Bloody November demonstrations (sparked by a 300% overnight hike in gas prices), which followed periods of heightened sanction intensity, such as the 2011-12 EU oil embargo and the 2018 US withdrawal from the JCPOA. These episodes of economic pressure, including inflation and significant currency depreciation, align with the peak civil disorder response observed two to three quarters following sanction shocks.[10]

Table 2 shows the VDC for civil disorder. In the first quarter following a shock, more than 5% of the fluctuation in civil disorder is explained by shocks to sanction intensity. Oil export revenues and real output shocks have no significant explanatory power during this period. One year after the initial shock, the share of the volatility in civil disorder explained by sanction intensity increases to 8.6%, while the share explained by oil revenues remains unchanged at 0.06%. The share explained by real output shocks increases from 0.03% in the first quarter to 0.06% after one year. In sum, our results do not attribute a significant role to output or oil export revenues in explaining time variation in civil disorder. The share of fluctuation in civil disorder explained by sanction intensity shocks continues to increase, reaching 10.5% two years and 10.9% three years after the shock.

[10] https://nufdiran.org/resource_analysis/interactive-iran-protest-timeline.

Figure 2. Response of civil disorder risk to a positive shock in sanction intensity



Note: The horizontal axis shows the number of quarters after the initial shock. The solid line indicates the direction and magnitude of the response, while the dashed lines show the confidence intervals. The vertical axis represents the size of the response in percent.

Table 2. VDC of civil disorder

Quarter after shock	log-Disorder	log-S_T	log-X_Oil	log-GDP
1	94.45	5.46	0.06	0.03
4	91.23	8.65	0.06	0.06
8	89.10	10.50	0.13	0.28
12	88.33	10.91	0.26	0.50

Note: Cholesky ordering: log-S_T, log-X_Oil, log-GDP, log-Disorder.

The response of terrorism risk, the second subcomponent of internal conflict, to positive sanction shocks is shown in Figure 3.[11] The response of terrorism risk to a positive shock in the sanction intensity index is positive, as expected. However, this positive response is only statistically significant in the second, third and fourth quarters following the shock. In other words, there is high uncertainty regarding the positive response of terrorism to sanction shocks. As mentioned earlier, the cost of engaging in terrorism is significant in Iran, as the Iranian justice system relies heavily on capital punishment. Iran, for example, accounted for 74% of all

[11] As with the earlier estimations, we check the stability and residual serial correlation before conducting the impulse response analysis. All test results are satisfactory.

executions worldwide in 2023.[12] Thus, the grievances caused by sanctions have to be substantial to create many volunteers for such operations. The transient increase in terrorism risk corresponds with incidents such as the 2017 Tehran attacks by ISIS and recurring Baloch separatist activities (in the under-developed province of Sistan and Balochestan). Although often externally influenced, these events were at least in part facilitated by economic grievances stemming from sanctions, including unemployment and poverty (Farzanegan and Batmanghelidj, 2023). These conflict events coincide with periods of intensified sanctions, yet the severe repressive measures taken by the Iranian government have likely limited the persistence of such risks.

Figure 3. Response of terrorism risk to a positive shock in sanction intensity

Note: The horizontal axis shows the number of quarters after the initial shock. The solid line indicates the direction and magnitude of the response, while the dashed lines show the confidence intervals. The vertical axis represents the size of the response in percent.

Table 3 shows the VDC analysis for terrorism. In this case, we observe that shocks in oil export revenues play a more important role in explaining fluctuation in the risk of terrorism over the three years after a shock. One year after a shock, the shares of the volatility in terrorism explained by sanction intensity shocks and oil export revenue shocks are of similar size at 2.3%. This share remains stable for sanction intensity, but it increases for oil revenues to 9.6% and 16.8%, two and three years after the shock. The share of fluctuation in the risk of terrorism

[12] https://www.amnesty.org/en/documents/act50/7952/2024/en.

explained by real output shocks remains negligible throughout. One reason why the risk of terrorism appears to depend more on oil revenue shocks in the medium run than that of civil disorder is that government revenue from oil exports might be critical for the government's resources needed to fight terrorism.

In sum, our results up to this point provide clear evidence in support of Hypothesis 1 that sanction intensity is linked to increased domestic conflict.

Table 3. VDC of terrorism

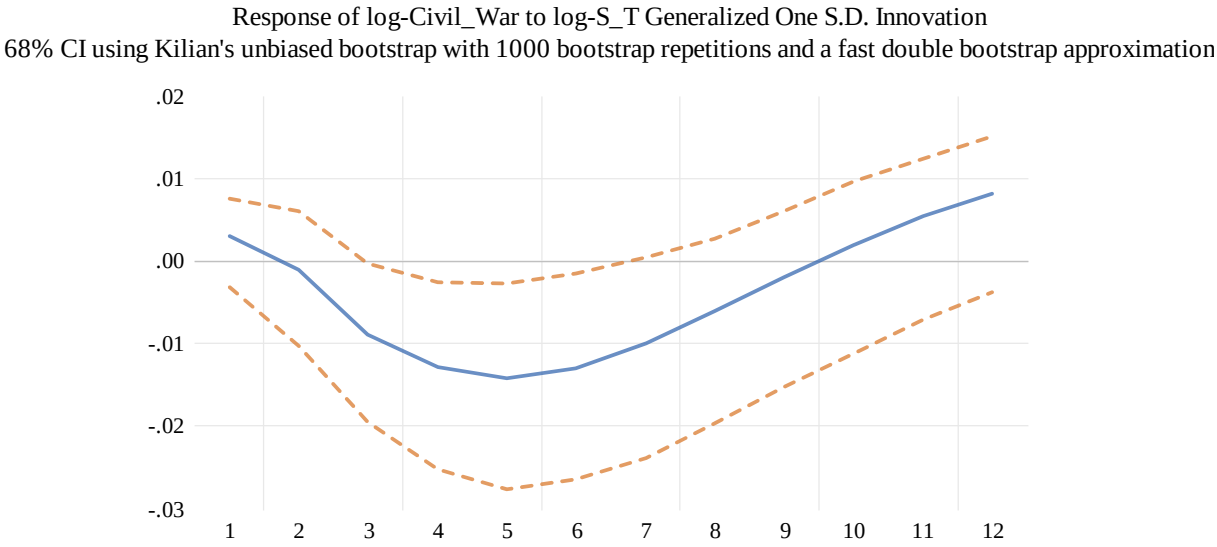
Quarter after shock	log-Terror	log-S_T	log-X_Oil	Log-GDP
1	99.85	0.11	0.04	0.00
4	95.25	2.39	2.34	0.02
8	87.47	2.74	9.69	0.10
12	80.29	2.70	16.84	0.17

Note: Cholesky ordering: log-S_T, log-X_Oil, log-GDP, log-Terror.

Finally, we examine the response of civil war risk, the third subcomponent of internal conflict, to a positive shock in sanction intensity in Figure 4. This time, we estimate a VAR model with two period lags, based on which we cannot reject the null hypothesis of no serial correlation in VAR residuals. The estimated VAR is stable (stationary). As predicted by Hypothesis 2, the response of civil war risk is the opposite of that of the other subcomponents. An unexpected increase in the sanction intensity index results in a declining civil war risk, which is, however, only statistically significant in the fourth to sixth quarter after the shock. One possible explanation is that the Iranian government is successful in promoting nationalist sentiments following increases in international sanctions, portraying sanction senders as the enemy of the Iranian people (see also RezaeeDaryakenari, Ghafouri, and Kasap 2025). Separatist movements and armed opposition groups can be repressed in these situations without the state having to justify its actions. Constraints on the government might also be reduced because any militants could be declared foreign agents who try divide Iranians. This may explain why terrorism risk increases only for a short period of time, after which the government exploits the external threat and domestic political instability to take measures that consolidate the stability of its political regime. While civil disorder persists for a while after a sanction intensity shock, the threat of terrorism disappears rather quickly in a backlash of nationalist political sentiment, which may

explain why the long-lasting sanctions against Iran were never able to induce a violent regime change.

Figure 4. Response of civil war risk to a positive shock in sanction intensity



Note: The horizontal axis shows the number of quarters after the initial shock. The solid line indicates the direction and magnitude of the response, while the dashed lines show the confidence intervals. The vertical axis represents the size of the response in percent.

Table 4 shows the VDC results for the risk of civil war. The role of sanction intensity shocks in predicating the volatility of civil war risk is limited. A larger share of the fluctuation in civil war risk is explained by shocks to real output, followed by oil export revenue shocks. Real output, oil export revenues, and sanction intensity, respectively, explain 12%, 11.13%, and 4% of the variation in civil war risk three years after the initial shock. The fact that sanction intensity shocks are less relevant to volatility in civil war risk than they are for the other subcomponents is in line with our argument that grievances and rally-around-the-flag effects work in opposite directions. Still, we find some evidence in support of Hypothesis 2.

Table 4. VDC of civil war

Quarter after shock	log-Civil_War	log-S_T	Log-X_Oil	log-GDP
1	98.86	0.39	0.58	0.17
4	92.02	1.97	0.75	5.26
8	82.86	4.04	4.02	9.08
12	72.73	3.89	11.31	12.07

Note: Cholesky ordering: log-S_T, log-X_Oil, log-GDP, log-Civil_War.

5. Conclusion

This first study of how sanction intensity affects the risk of domestic conflict focuses on the case of Iran. Cross-country studies have focused instead on how the threat and imposition of sanctions affects domestic conflict, as reliable data on the intensity of imposed sanctions is generally not available. Laudati and Pesaran (2023), however, have developed such a sanction-intensity indicator for Iran, one of the most sanctioned countries in the world. We use their indicator and data on internal conflict risk from the ICRG to estimate a series of VAR models. Our results indicate that the overall risk of internal conflict in Iran increases significantly for the first year following a positive shock to (i.e., an increase in) sanction intensity. In our analysis, we consider three categories of domestic conflict risk and we expect that they may not be affected in the same way by increasing sanction intensity. The civil disorder subcomponent shows a positive and statistically significant response for up to six quarters following a sanction-intensity shock. The response of terrorism risk is also positive but more short-lived and measured with higher levels of uncertainty. All these results demonstrate the destabilizing power of international sanctions as predicted by grievance theory.

Conversely, the risk of civil war, which presupposes organized resistance to a highly repressive political regime on a larger scale, declines after a positive shock in sanction intensity and remains statistically significantly negative from the fourth to the six quarter after the shock. We interpret this evidence as corroborating the frequently formulated idea that significant shares of societies under sanctions may unite behind their political leadership, even if there is widespread discontent and some individuals and groups try to use the opportunity to challenge their government. This rally-around-the-flag effect, however, may not generalize to sanction targets with more limited repressive capacity and state control over the media. Sanctions against Russia after its full-scale invasion of Ukraine in 2022 appear to corroborate the existence of a rally-around-the-flag-effect. In spite of an increased risk of terror attacks in Russia and a

reinvigorated political opposition, President Putin was able to use the rally-around-the-flag-effect in the confrontation with Europe and the US to cement his hold on the Russian presidency, despite continuously declining popular support before the invasion.

Future research may extend the sanction intensity measurement by Laudati and Pesaran (2023) to other heavily sanctioned countries, such as Venezuela or Cuba, which would allow for an evaluation of the external validity of our results beyond the case of Iran.

References

Afesorgbor, Sylvanus Kwaku, and Renuka Mahadevan. 2016. “The Impact of Economic Sanctions on Income Inequality of Target States.” *World Development* 83 (July):1–11. https://doi.org/10.1016/j.worlddev.2016.03.015.

Akerlof, George A., and Robert J. Shiller. 2010. *Animal Spirits*. Princeton University Press. https://press.princeton.edu/books/paperback/9780691145921/animal-spirits.

Allen, Susan Hannah. 2008. “The Domestic Political Costs of Economic Sanctions.” *Journal of Conflict Resolution* 52 (6): 916–44.

Apeti, Ablam Estel, and Eyah Denise Edoh. 2024. “Economic Sanctions and Sovereign Debt Default.” *European Journal of Political Economy* 85 (December):102571. https://doi.org/10.1016/j.ejpoleco.2024.102571.

Attia, Hana, Julia Grauvogel, and Christian von Soest. 2020. “The Termination of International Sanctions: Explaining Target Compliance and Sender Capitulation.” *European Economic Review* 129 (October):103565. https://doi.org/10.1016/j.euroecorev.2020.103565.

Baker, Scott R., Nicholas Bloom, and Steven J. Davis. 2016. “Measuring Economic Policy Uncertainty.” *The Quarterly Journal of Economics* 131 (4): 1593–1636. https://doi.org/10.1093/qje/qjw024.

Balali, Hamid, Mohammad Reza Farzanegan, Omid Zamani, and Mostafa Baniasadi. 2024. “Economic Sanctions, Energy Consumption, and CO2 Emissions in Iran: A System Dynamics Model.” *Policy Studies*, 1–30. https://doi.org/10.1080/01442872.2024.2358842.

Besedeš, Tibor, Stefan Goldbach, and Volker Nitsch. 2017. “You’re Banned! The Effect of Sanctions on German Cross-Border Financial Flows.” *Economic Policy* 32 (90): 263–318. https://doi.org/10.1093/epolic/eix001.

Biglaiser, Glen, and David Lektzian. 2011. “The Effect of Sanctions on U.S. Foreign Direct Investment.” *International Organization* 65 (3): 531–51.

Bjorvatn, Kjetil, and Mohammad Reza Farzanegan. 2015. “Resource Rents, Balance of Power, and Political Stability.” *Journal of Peace Research* 52 (6): 758–73.

Bondarenko, Yevheniia, Vivien Lewis, Matthias Rottner, and Yves Schüler. 2024. “Geopolitical Risk Perceptions.” *Journal of International Economics* 152:104005.

Busse, Matthias, and Carsten Hefeker. 2007. “Political Risk, Institutions and Foreign Direct Investment.” *European Journal of Political Economy* 23 (2): 397–415. https://doi.org/10.1016/j.ejpoleco.2006.02.003.

Carey, Sabine C. 2006. “The Dynamic Relationship Between Protest and Repression.” *Political Research Quarterly* 59 (1): 1–11. https://doi.org/10.1177/106591290605900101.

Cheratian, Iman, Saleh Goltabar, and Mohammad Reza Farzanegan. 2023. “Firms Persistence under Sanctions: Micro-Level Evidence from Iran.” *The World Economy* 46 (8): 2408–31. https://doi.org/10.1111/twec.13378.

Choi, Seung-Whan. 2014. “Causes of Domestic Terrorism: Economic Sanctions as a Violence Trigger Structure.” *The Korean Journal of International Studies* 12 (1): 137–59.

Choi, Seung-Whan, and Shali Luo. 2013. “Economic Sanctions, Poverty, and International Terrorism: An Empirical Analysis.” *International Interactions* 39 (2): 217–45.

Clements, Michael P., and David F. Hendry. 1995. “Forecasting in Cointegrated Systems.” *Journal of Applied Econometrics* 10 (2): 127–46. https://doi.org/10.1002/jae.3950100204.

Coulson, N. J. 1957. “The State and the Individual in Islamic Law.” *The International and Comparative Law Quarterly* 6 (1): 49–60.

Crozet, Matthieu, and Julian Hinz. 2020. “Friendly Fire: The Trade Impact of the Russia Sanctions and Counter-Sanctions.” *Economic Policy* 35 (101): 97–146. https://doi.org/10.1093/epolic/eiaa006.

Demir, Firat, and Saleh S. Tabrizy. 2022. “Gendered Effects of Sanctions on Manufacturing Employment: Evidence from Iran.” *Review of Development Economics* 26 (4): 2040–69.

Dizaji, Sajjad Faraji, and Mohammad R. Farzanegan. 2021. “Do Sanctions Constrain Military Spending of Iran?” *Defence and Peace Economics* 32:125–50. https://doi.org/10.1080/10242694.2019.1622059.

Dizaji, Sajjad Faraji, and Mohammad Reza Farzanegan. 2024. “The Impact of US Trade Sanctions on the Global Trade of Target Countries: Do the Political Institutions of the Targets Matter?” CESifo Working Paper 10910. Munich. https://doi.org/10.2139/ssrn.4711267.

Eichenberger, Reiner, and David Stadelmann. 2022. “Sanctions Are Costly for Citizens but Beneficial for Autocrats: A Political-Economic Perspective.” *The Economists’ Voice* 19 (2): 109–23. https://doi.org/10.1515/ev-2022-0026.

Engle, Robert F., and Byung Sam Yoo. 1987. “Forecasting and Testing in Co-Integrated Systems.” *Journal of Econometrics* 35 (1): 143–59. https://doi.org/10.1016/0304-4076(87)90085-6.

Escribà-Folch, Abel. 2010. “Economic Sanctions and the Duration of Civil Conflicts.” *Journal of Peace Research* 47 (2): 129–41.

Farzanegan, Mohammad Reza. 2013. “Effects of International Financial and Energy Sanctions on Iran’s Informal Economy.” *The SAIS Review of International Affairs* 33 (1): 13–36.

Farzanegan, Mohammad Reza, and Esfandyar Batmanghelidj. 2023. “Understanding Economic Sanctions on Iran: A Survey.” *The Economists’ Voice* 20 (2): 197–226. https://doi.org/10.1515/ev-2023-0014.

Farzanegan, Mohammad Reza, and Sven Fischer. 2023. “The Effect of the ‘Woman Life Freedom’ Protests on Life Satisfaction in Iran: Evidence from Survey Data.” CESifo Working Paper 10643. Munich.

Farzanegan, Mohammad Reza, and Hassan F. Gholipour. 2023. “COVID-19 Fatalities and Internal Conflict: Does Government Economic Support Matter?” *European Journal of Political Economy* 78:102368. https://doi.org/10.1016/j.ejpoleco.2023.102368.

———. 2024. “Does Satisfaction with Amenities and Environment Influence the Taste for Revolt in the Middle East?” *Constitutional Political Economy* 35 (4): 523–65. https://doi.org/10.1007/s10602-023-09422-z.

Farzanegan, Mohammad Reza, and Nader Habibi. 2024. “The Effect of International Sanctions on the Size of the Middle Class in Iran.” CESifo Working Paper Series 11175. Munich.

Farzanegan, Mohammad Reza, Christian Lessmann, and Gunther Markwardt. 2018. “Natural Resource Rents and Internal Conflicts: Can Decentralization Lift the Curse?” *Economic Systems* 42 (2): 186–205. https://doi.org/10.1016/j.ecosys.2017.05.009.

Farzanegan, Mohammad Reza, and Stefan Witthuhn. 2017. “Corruption and Political Stability: Does the Youth Bulge Matter?” *European Journal of Political Economy* 49 (September):47–70. https://doi.org/10.1016/j.ejpoleco.2016.12.007.

Felbermayr, Gabriel, Aleksandra Kirilakha, Constantinos Syropoulos, Erdal Yalcin, and Yoto V. Yotov. 2020. “The Global Sanctions Data Base.” *European Economic Review* 129 (October):103561. https://doi.org/10.1016/j.euroecorev.2020.103561.

Fredriksson, Per G., and Jakob Svensson. 2003. “Political Instability, Corruption and Policy Formation: The Case of Environmental Policy.” *Journal of Public Economics* 87 (7): 1383–1405. https://doi.org/10.1016/S0047-2727(02)00036-1.

Gold, Robert, Julian Hinz, and Michele Valsecchi. 2024. “To Russia with Love? The Impact of Sanctions on Regime Support.” CESifo Working Paper 11033.
Grauvogel, Julia, Amanda A. Licht, and Christian von Soest. 2017. “Sanctions and Signals: How International Sanction Threats Trigger Domestic Protest in Targeted Regimes.” *International Studies Quarterly* 61 (1): 86–97. https://doi.org/10.1093/isq/sqw044.
Grauvogel, Julia, and Christian von Soest. 2014. “Claims to Legitimacy Count: Why Sanctions Fail to Instigate Democratisation in Authoritarian Regimes.” *European Journal of Political Research* 53 (4): 635–53. https://doi.org/10.1111/1475-6765.12065.
Gupta, Sanjeev, Luiz de Mello, and Raju Sharan. 2001. “Corruption and Military Spending.” *European Journal of Political Economy* 17 (4): 749–77. https://doi.org/10.1016/S0176-2680(01)00054-4.
Gutmann, Jerg, Pascal Langer, and Matthias Neuenkirch. 2024. “International Sanctions and Emigration.” *Journal of Economic Behavior & Organization* 226:106709. https://doi.org/10.1016/j.jebo.2024.106709.
Gutmann, Jerg, Matthias Neuenkirch, and Florian Neumeier. 2021. “Sanctioned to Death? The Impact of Economic Sanctions on Life Expectancy and Its Gender Gap.” *The Journal of Development Studies* 57 (1): 139–62.
———. 2023. “The Economic Effects of International Sanctions: An Event Study.” *Journal of Comparative Economics* 51 (December):1214–31. https://doi.org/10.1016/j.jce.2023.05.005.
———. 2024. “Do China and Russia Undermine Western Sanctions? Evidence from DiD and Event Study Estimation.” *Review of International Economics* 32:132–60.
Gutmann, Jerg, Fabio Padovano, and Stefan Voigt. 2020. “Perception vs. Experience: Explaining Differences in Corruption Measures Using Microdata.” *European Journal of Political Economy* 65 (December):101925. https://doi.org/10.1016/j.ejpoleco.2020.101925.
Haidar, Jamal Ibrahim. 2017. “Sanctions and Export Deflection: Evidence from Iran.” *Economic Policy* 32 (90): 319–55.
Hatipoglu, Emre, and Dursun Peksen. 2018. “Economic Sanctions and Banking Crises in Target Economies.” *Defence and Peace Economics* 29 (2): 171–89. https://doi.org/10.1080/10242694.2016.1245811.
Hellmeier, Sebastian. 2021. “How Foreign Pressure Affects Mass Mobilization in Favor of Authoritarian Regimes.” *European Journal of International Relations* 27:450–77.
Hirschman, Albert O. 1970. *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge and London: Harvard University Press. https://www.hup.harvard.edu/books/9780674276604.
Hoffman, Dennis L., and Robert H. Rasche. 1996. “Assessing Forecast Performance in a Cointegrated System.” *Journal of Applied Econometrics* 11 (5): 495–517.
Hultman, Lisa, and Dursun Peksen. 2017. “Successful or Counterproductive Coercion? The Effect of International Sanctions on Conflict Intensity.” *Journal of Conflict Resolution* 61 (6): 1315–39.
IHS Markit. 2020. “EViews 12 User’s Guide II.” www.eviews.com.
Jabari, Leyla, Ali Asghar Salem, Omid Zamani, and Mohammad Reza Farzanegan. 2024. “Economic Sanctions, Energy Efficiency, and Environmental Impacts: Evidence from Iranian Industrial Sub-Sectors.” *Energy Economics* 139:107920.
Kilian, Lutz. 1998. “Small-Sample Confidence Intervals for Impulse Response Functions.” *The Review of Economics and Statistics* 80 (2): 218–30.
Kirikakha, Aleksandra, Gabriel J. Felbermayr, Constantinos Syropoulos, Erdal Yalcin, and Yoto V. Yotov. 2021. “The Global Sanctions Data Base (GSDB): An Update That Includes the Years of the Trump Presidency.” In *Research Handbook on Economic*

Sanctions, 62–106. Edward Elgar Publishing. https://www.elgaronline.com/edcollchap/edcoll/9781839102714/9781839102714.00010.xml.
Knack, Stephen, and Philip Keefer. 1995. "Institutions And Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics* 7 (3): 207–27.
Laudati, Dario, and M. Hashem Pesaran. 2023. "Identifying the Effects of Sanctions on the Iranian Economy Using Newspaper Coverage." *Journal of Applied Econometrics* 38 (3): 271–94. https://doi.org/10.1002/jae.2947.
Lektzian, David, and Patrick M. Regan. 2016. "Economic Sanctions, Military Interventions, and Civil Conflict Outcomes." *Journal of Peace Research* 53 (4): 554–68.
Lessmann, Christian. 2016. "Regional Inequality and Internal Conflict." *German Economic Review* 17 (2): 157–91. https://doi.org/10.1111/geer.12073.
Liou, Ryan Yu-Lin, Amanda Murdie, and Dursun Peksen. 2021. "Revisiting the Causal Links between Economic Sanctions and Human Rights Violations." *Political Research Quarterly* 74:808–21.
———. 2023. "Pressures from Home and Abroad: Economic Sanctions and Target Government Response to Domestic Campaigns." *Journal of Conflict Resolution* 67:297–325.
Lütkepohl, Helmut. 2007. *New Introduction to Multiple Time Series Analysis*. Springer Science & Business Media.
———. 2011. "Vector Autoregressive Models." Economics Working Paper. European University Institute. https://econpapers.repec.org/paper/euieuiwps/eco2011_2f30.htm.
McLean, Elena V, Kaisa H Hinkkainen, Luis De la Calle, and Navin A Bapat. 2018. "Economic Sanctions and the Dynamics of Terrorist Campaigns." *Conflict Management and Peace Science* 35 (4): 378–401. https://doi.org/10.1177/0738894216635023.
Mei, Yu. 2025. "Leader-Contingent Sanctions as a Cause of Violent Political Conflict." *Political Science Research and Methods* 13 (1): 35–55. https://doi.org/10.1017/psrm.2024.13.
Mertens, Karel, and Morten O. Ravn. 2012. "Empirical Evidence on the Aggregate Effects of Anticipated and Unanticipated US Tax Policy Shocks." *American Economic Journal: Economic Policy* 4 (2): 145–81.
Mirkina, Irina. 2018. "FDI and Sanctions: An Empirical Analysis of Short- and Long-Run Effects." *European Journal of Political Economy*, Political Economy of Public Policy, 54 (September):198–225. https://doi.org/10.1016/j.ejpoleco.2018.05.008.
Moghaddasi Kelishomi, Ali, and Roberto Nisticò. 2022. "Employment Effects of Economic Sanctions in Iran." *World Development* 151:105760.
———. 2024. "Economic Sanctions and Informal Employment." *Labour Economics* 89:102581.
Moteng, Ghislain, Chandrashekar Raghutla, Henri Njangang, and Luc Ndeffo Nembot. 2023. "International Sanctions and Energy Poverty in Target Developing Countries." *Energy Policy* 179 (August):113629. https://doi.org/10.1016/j.enpol.2023.113629.
Naka, Atsuyuki, and David Tufte. 1997. "Examining Impulse Response Functions in Cointegrated Systems." *Applied Economics* 29 (12): 1593–1603. https://doi.org/10.1080/00036849700000035.
Neuenkirch, Matthias, and Florian Neumeier. 2015. "The Impact of UN and US Economic Sanctions on GDP Growth." *European Journal of Political Economy* 40 (December):110–25. https://doi.org/10.1016/j.ejpoleco.2015.09.001.
———. 2016. "The Impact of US Sanctions on Poverty." *Journal of Development Economics* 121:110–19.

Peksen, Dursun. 2021. “Economic Sanctions and Political Stability and Violence in Target Countries.” In *Research Handbook on Economic Sanctions,* 187–201. Edward Elgar Publishing.
Peksen, Dursun, and Byunghwan Son. 2015. “Economic Coercion and Currency Crises in Target Countries.” *Journal of Peace Research* 52 (4): 448–62.
Pesaran, Hashem, and Yongcheol Shin. 1998. “Generalized Impulse Response Analysis in Linear Multivariate Models.” *Economics Letters* 58 (1): 17–29.
PRS. 2023. “The International Country Risk Guide (ICRG).” https://www.prsgroup.com/.
RezaeeDaryakenari, Babak, Peyman Asadzade, and Cameron G Thies. 2024. “Economic Sanctions and Food Consumption: Evidence from Iranian Households.” *International Studies Quarterly* 68 (3): sqae103. https://doi.org/10.1093/isq/sqae103.
RezaeeDaryakenari, Babak, Vahid Ghafouri, and Nihat Kasap. 2025. “Who Rallies Round the Flag? The Impact of the US Sanctions on Iranians’ Attitude toward the Government.” *Foreign Policy Analysis* 21 (1): orae033. https://doi.org/10.1093/fpa/orae033.
Rodrik, Dani. 1999. “Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses.” *Journal of Economic Growth* 4 (4): 385–412. https://doi.org/10.1023/A:1009863208706.
———. 2007. *One Economics, Many Recipes*. Princeton University Press. https://press.princeton.edu/books/paperback/9780691141176/one-economics-many-recipes.
Seitz, William, and Alberto Zazzaro. 2020. “Sanctions and Public Opinion: The Case of the Russia-Ukraine Gas Disputes.” *The Review of International Organizations* 15 (4): 817–43. https://doi.org/10.1007/s11558-019-09360-2.
Shchepeleva, Maria, Mikhail Stolbov, and Laurent Weill. 2024. “Do Sanctions Trigger Financial Crises?” *Finance Research Letters* 64 (June):105467. https://doi.org/10.1016/j.frl.2024.105467.
Sims, Christopher A. 1980. “Macroeconomics and Reality.” *Econometrica* 48 (1): 1–48. https://doi.org/10.2307/1912017.
———. 1986. “Are Forecasting Models Usable for Policy Analysis?” *Quarterly Review* 10 (Winter): 2–16.
———. 1992. “Interpreting the Macroeconomic Time Series Facts: The Effects of Monetary Policy.” *European Economic Review* 36 (5): 975–1000. https://doi.org/10.1016/0014-2921(92)90041-T.
Sims, Christopher A., James H. Stock, and Mark W. Watson. 1990. “Inference in Linear Time Series Models with Some Unit Roots.” *Econometrica* 58 (1): 113–44. https://doi.org/10.2307/2938337.
Sims, Christopher A., and Tao Zha. 1999. “Error Bands for Impulse Responses.” *Econometrica* 67 (5): 1113–55.
Stock, James H., and Mark W. Watson. 2001. “Vector Autoregressions.” *Journal of Economic Perspectives* 15 (4): 101–15. https://doi.org/10.1257/jep.15.4.101.
Syropoulos, Constantinos, Gabriel Felbermayr, Aleksandra Kirilakha, Erdal Yalcin, and Yoto V. Yotov. 2024. “The Global Sanctions Data Base–Release 3: COVID-19, Russia, and Multilateral Sanctions.” *Review of International Economics* 32 (1): 12–48. https://doi.org/10.1111/roie.12691.
Theiler, Tobias. 2018. “The Microfoundations of Diversionary Conflict.” *Security Studies* 27 (2): 318–43.
Thyne, Clayton L. 2006. “Cheap Signals with Costly Consequences: The Effect of Interstate Relations on Civil War.” *Journal of Conflict Resolution* 50 (6): 937–61. https://doi.org/10.1177/0022002706293675.

Zamani, Omid, Mohammad Reza Farzanegan, Jens-Peter Loy, and Majid Einian. 2021. “The Impacts of Energy Sanctions on the Black-Market Premium: Evidence from Iran.” *Economics Bulletin* 41 (2): 432–43.

Appendix

Table A1. Summary statistics

	Obs.	Mean	Median	Std. Dev.	Min.	Max.
log-Conflict	76	1.46	1.50	0.13	1.10	1.73
log-Disorder	76	0.91	0.92	0.16	0.69	1.10
log-Terror	76	0.94	1.07	0.27	0.00	1.10
log-Civil_War	76	0.15	0.00	0.24	0.00	0.69
log-S_T	76	-1.36	-1.39	0.68	-2.84	-0.01
log-X_Oil	76	9.46	9.60	0.52	8.26	10.4
log-GDP	76	4.98	5.01	0.14	4.61	5.20

Table A2. VAR lag selection criteria (for the main VAR model)

Lag	AIC	SC	HQ
0	-0.16	-0.03	-0.11
1	-5.66*	-5.01*	-5.40*
2	-5.65	-4.48	-5.18
3	-5.39	-3.71	-4.73
4	-5.14	-2.94	-4.27
5	-4.92	-2.20	-3.84
6	-4.93	-1.69	-3.64
7	-4.81	-1.05	-3.32

Note: AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan-Quinn information criterion, * Indicates lag order selected by the criterion.

Figure A1. Stability of the estimated VAR