ERF 31ST Annual Conference
YOUTH
DEMOGRAPHIC DIVIDEND & MIGRATION IN MENA:
CHALLENGES & OPPORTUNITIES IN UNCERTAIN TIMES
2025

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International Sanctions and Internal Conflict:

The Case of Iran

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ECONOMIC RESEARCH FORUM
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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 with quarterly data on internal conflict and its three subcomponents (civil disorder, terrorism, and civil war) as well as a sanction intensity index, we find that an unexpected 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 indicate that higher intensity sanctions may allow sender country governments to put pressure on target country political regimes without risking an outbreak of major violent conflicts. Therefore, more intensive sanctions, may also not be helpful in inducing violent regime change.

***Keywords*:** Sanctions, sanction intensity, internal conflict, civil disorder, terrorism, civil war, VAR model, Iran.

***JEL-codes*:** D74, F51.

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 protest. 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 2024), 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 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.

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 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, but not in the risk of civil war. 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.

[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 rest of the paper is structured as follows. In Section 2, we present a simple 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.

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

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 more likely in countries with a larger 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 in general 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).

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: Increasing the intensity of international sanctions causes an increase in internal conflict 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

[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.

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.

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.

From these considerations follows our second hypothesis:

Hypothesis 2: Increasing the intensity of international sanctions decreases the risk of civil war in the target country.

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 reaches its highest value in 2012q1 (0.99) and its lowest value in 2015q3 (0.06). This indicator, although still new, 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).

As our dependent variables, we use internal conflict indicators for Iran from the well-established International Country Risk Guide (ICRG) that is produced by PRS (2023). 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 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, the lowest rating is given to countries involved in an ongoing civil war. This overall risk rating is the sum of three subcomponents, each ranging from zero to four points, where higher scores 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.

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, 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.[5] This risk category is of particular importance here, as it serves to test our second hypothesis.

Since the data on sanction intensity is only available at a quarter-year frequency, we convert the ICRG scores, which are recorded on a monthly basis, to quarterly averages. To simplify the interpretation of our results, we follow Farzanegan and Gholipour (2023a) and re-scale the internal conflict index by subtracting the 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 now reflect a higher risk of internal conflict.

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. Methodology

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 comparable empirical approach).[6] Lütkepohl (2011) and Sims (1980; 1986) explain the

[5] 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).

[6] 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 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.

advantages of the VAR approach for policymaking when variables are endogenous. 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 impulse response functions (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 1000 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).

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.

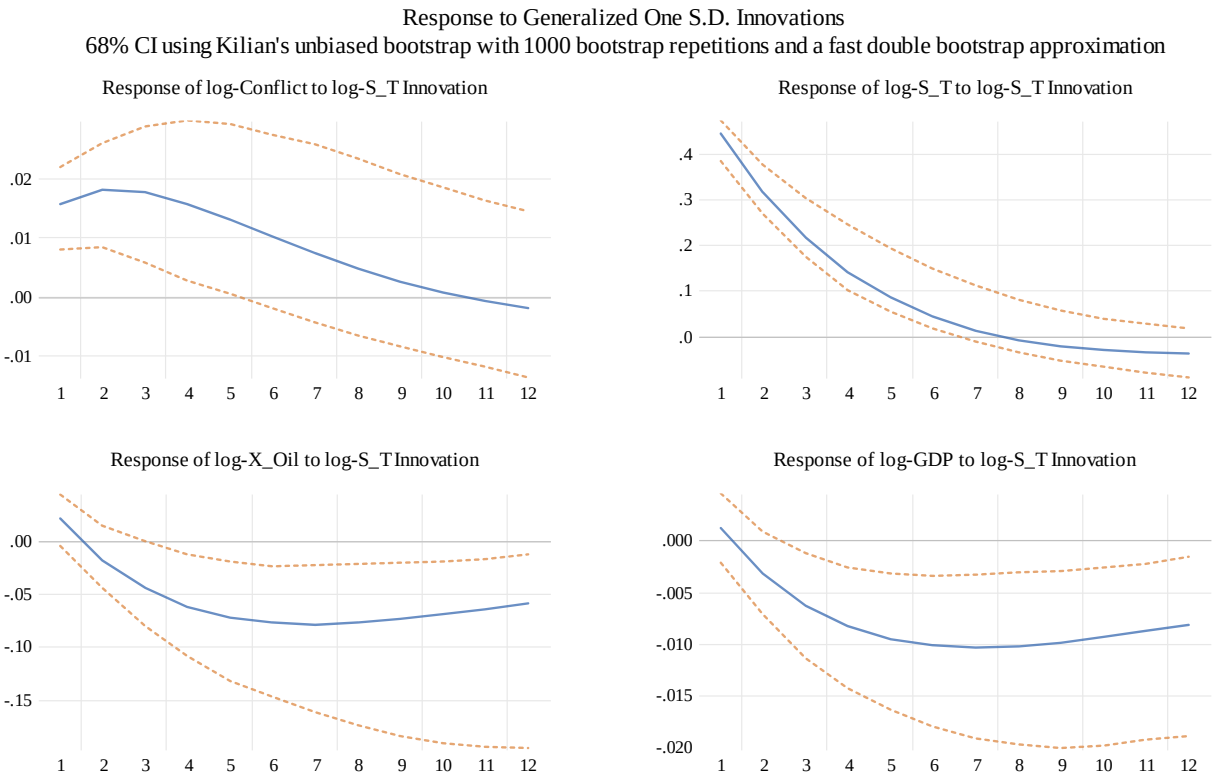
After selecting the optimal lag length, the stationarity of the estimated VAR model is verified. We must also ensure that the estimated VAR model does not exhibit residual autocorrelation at the chosen lag length. Ensuring the stability (stationarity) of the estimated VAR model is essential for validating 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. These confidence bands are based on Kilian's bias-corrected bootstrap method with 1000 replications.

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 three 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.

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 are 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 peak 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

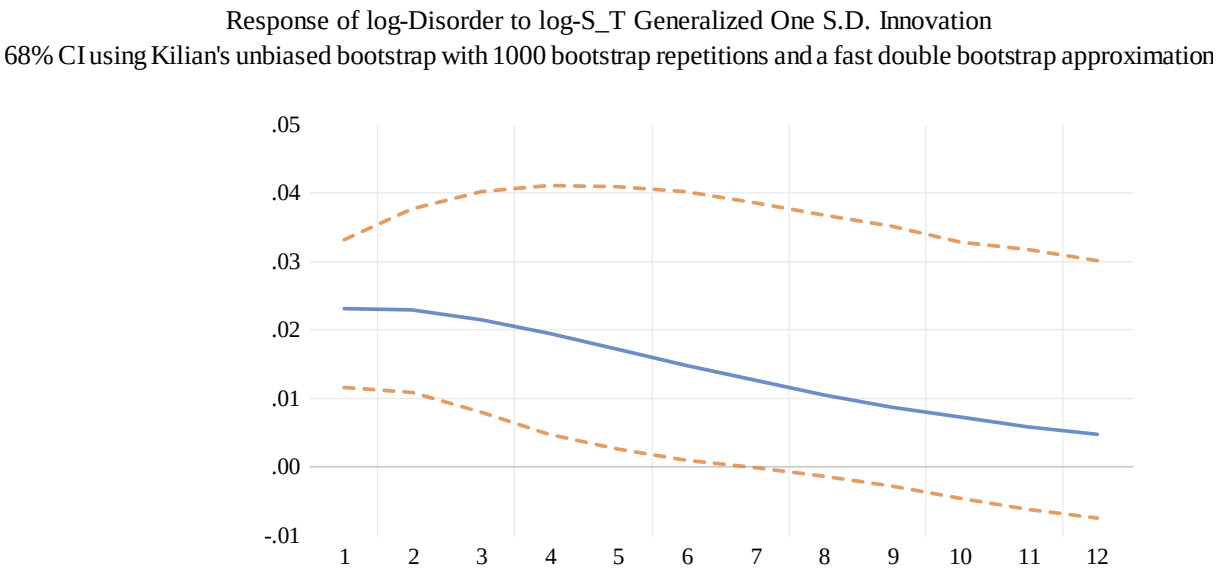
Note: For the VDC, the following Cholesky ordering is used, assuming sanction intensity as the most exogenous variable and internal conflict as the most endogenous one: log-S_T, log-X_Oil, log-GDP, log-Conflict.

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 reported 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 one year 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.

Table 2 shows the VDC for civil disorder. In the first quarter following a shock, more than 5% of the fluctuation in civil disorder are 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.

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

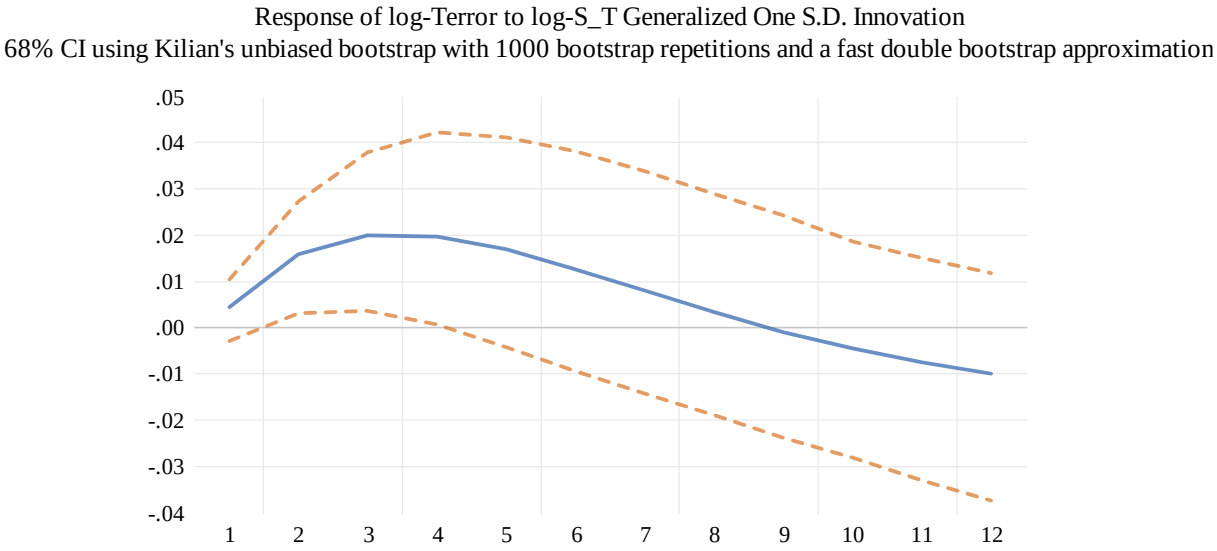
Note: Cholesky ordering: log-S_T, log-X_Oil, log-GDP, log-Disorder.

The response of terrorism risk, the second subcomponent of internal conflict, to positive sanction shocks is shown in Figure 3.[7] 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 and third 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

[7] 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.[8] Thus, the grievances caused by sanctions have to be substantial to create many volunteers for such operations.

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 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.

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

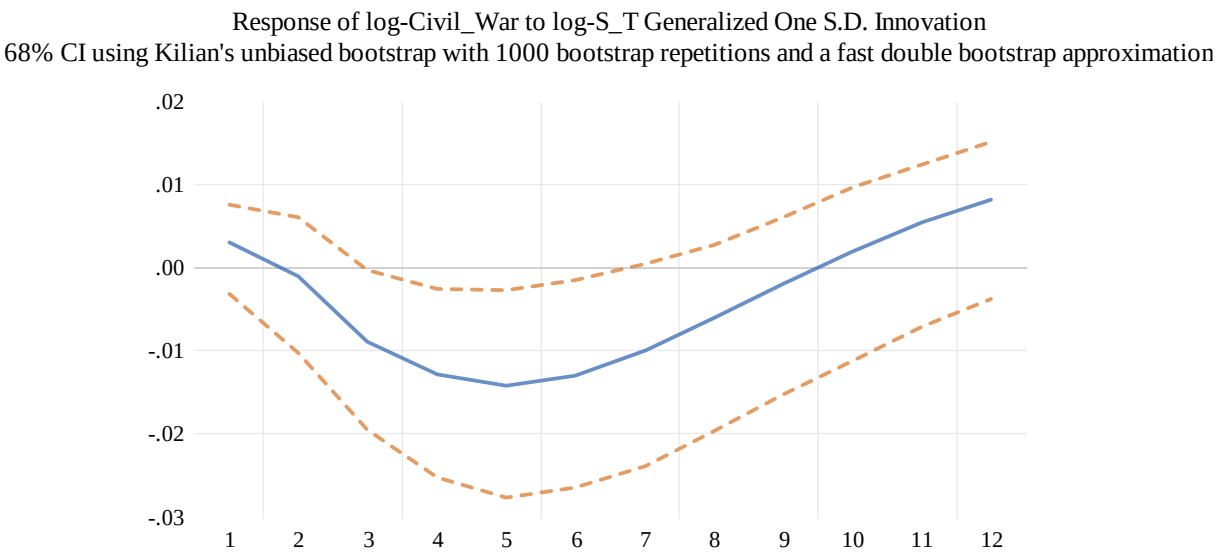
Table 3. VDC of terrorism

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. Typical cross-country studies have focused on the threat and imposition of sanctions, as reliable data on the intensity of imposed sanctions is generally not available. Laudati and Pesaran (2023), however, have recently 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 five quarters following a positive shock to (i.e., an increase in) sanction intensity. Real output and oil export revenues also decline significantly for up to 12 quarters after the sanction shock, illustrating that the sanction intensity index predicts adverse economic effects of sanctions. In our analysis, we consider three categories of domestic conflict risk. The civil disorder subcomponent shows a positive and statistically significant response for up to seven 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. Conversely, the risk of civil war declines after a positive shock in sanction intensity and remains statistically significant from the second to the eighth quarter after the shock. We interpret this evidence as corroborating the frequently formulated idea that 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. Sanctions against Russia after its invasion of Ukraine in 2022 clearly demonstrate this mechanism. 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.

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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