Chapter 7
Do Sanctions Cause Economic Growth Collapses?

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Contents

Abstract This chapter explores whether economic sanctions are able to trigger sudden economic growth collapses. The primarily aim of economic sanctions is to cause a political or behavioural change by imposing serious restrictions on important economic activities undertaken by the target country. In particular, the basic idea is that sanctions cause a large adverse and sudden shock to the target's economy. It assumes that when this shock is severe enough, the target country is more willing to cooperate. The findings reported in this chapter clearly demonstrate that economic sanctions have a significant positive effect on the likelihood of a growth deceleration in the first three years after the first threat signals or actual imposition. It turns out that not all sanctions are equally successful in creating a sudden economic shock. In particular, trade sanctions, multilateral sanctions, and sanctions aimed at the business sector are the most harmful for the economy of the target country.

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7.1 Introduction

Since the end of the Cold War era, economic diplomacy started to play an increasing role in international affairs. Many great powers in the world, such as the US or Russia, appear to be less inclined to use armed force to resolve external disputes. Instead, they often adopt more smart alternatives, like the application of economic sanctions, to influence a state's political agenda.[1] In this way, they express their concerns or protect their interests without incurring the large adverse humanitarian costs of a major military intervention. Examples of such coercive policy measures are trade bans, suspension of economic protocols, seizure of assets, or the ending of diplomatic relations. The attractiveness of economic sanctions is extensively documented in the literature.[2] Despite their increased popularity in the last three decades, the debate on their success rate remains rather inconclusive.[3] One explanation for this disappointing result is that states are often reluctant to end or at least suspend an economic relationship as this can be both economically and politically costly. This conclusion induced a shift in the academic sanction literature from the question of "Do they work?" to "What they actually do."[4]

The adjective 'economic' in the term economic sanctions refers to the economic sphere. The basic idea behind economic sanctions is that it is expected that they create a major and sudden adverse economic shock. It assumes that when this shock is large enough, and the target country cannot anticipate or mitigate the costs, the target government is more willing the accept the demands of the sending country. Based on the existing literature, economic sanctions hurt the economic performance of the target economy through various channels including hampering international trade,[5] real exchange rate appreciations,[6] foreign capital flight,[7] or the limited access to certain technologies.[8] However, the complete economic impact of sanctions goes beyond these direct effects related to the future domestic production. For instance, sanctions also increase political uncertainty in a target country which, in turn, will be again reflected in the economic performance by influencing domestic investment and consumption.

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[1] Drezner 2011.

[2] Van Bergeijk 1994; 2009; Van Bergeijk et al. 2011; Kaempfer and Lowenberg 2007; Hufbauer et al.1990; 2007.

[3] Hufbauer et al. 1990; Pape 1997; Morgan and Schwebach 1997; Elliott 1998.

[4] Hufbauer et al. 1990; 2007; Allen 2005, 2008; Allen and Lektzian 2013; Cortright and Lopez 2002; Weiss 1999; Gibbons and Garfield 1999; Alnasrawi 2001; Wood 2008.

[5] Afesorgbor 2019; Kohl and Reesink 2019.

[6] Wang et al. 2019.

[7] Hatipoglu and Peksen 2018; Besedeš et al. 2017; Mirkina 2018.

[8] Hufbauer et al. 1990; 2007.

Although there exists a voluminous literature exploring the impact of economic sanctions on drivers of economic growth, it is quite surprising that there is a lack of empirical evidence on the direct impact of economic sanctions on economic growth. One exception is the paper by Neuenkirch and Neumeier,[9] who empirically estimate the effect of US and UN sanctions directly on economic growth. They find that the imposition of UN sanctions decrease the target state's annual real per capita GDP growth rate by more than two percentage points for the next ten years, while the effect of US sanctions is much smaller and less distinct as they decrease the target state's GDP growth by less than one-percentage-point.

Based on the existing empirical evidence, one can still question whether the economic shock created by economic sanctions is large enough to force a target state to comply with the sender's demands. Nevertheless, growth rates over time have become more unstable due to political events, especially in developing countries, and these breaks in growth rates lead to distinct patterns. Ignoring these structural breaks gives a distorted picture of the factors that play a role in a country's economic performance.[10] Using this insight, existing studies claim that the variability in exports, wars, sudden stops in capital flows, and political transitions are strongly associated with growth decelerations.[11] Economic sanctions, therefore, seem a good candidate in the list of factors that cause the observed patchiness in growth, but the economic growth literature has yet primarily ignored them.

The contribution of this chapter is twofold. First, to explore the effect of economic sanctions on the probability of a sudden economic growth collapse. Second, to reveal the mechanisms underlying the main results of this chapter and relate them to differences among sanctions including policy instrument used, interests threatened, and sender type and commitment. By modifying the methodological approach suggested in the previous literature, we are able to identify periods of major economic contractions.[12] Meanwhile, using the comprehensive Threat and Imposition of Economic Sanctions (TIES) dataset allows us to differentiate between different broad types of sanctions.[13] Based on the findings reported in this chapter, we can draw several conclusions. First, economic sanctions increase the likelihood of an economic growth deceleration by about nine percent in the three years following the first signals of a sanction. Second, it turns out that in particular, trade sanctions, multilateral sanctions, and sanctions aiming at the business sector are successful in creating a major economic shock.

The rest of this chapter is organized as follows. In Sect. 7.2, the theoretical foundation is described explaining the impact of economic sanctions on economic growth. Section 7.3 describes the methodology used. Section 7.4 proceeds with the estimation results. Finally, Sect. 7.5 follows with a conclusion and discussion on the most important findings.

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[9] Neuenkirch and Neumeier 2015.

[10] Pritchett 2000.

[11] Hausmann et al. 2006.

[12] Hausmann et al. 2005; Jong-A-Pin and De Haan 2008; 2011.

[13] Morgan et al. 2014.

7.2 The Economic Impact of Sanctions

7.2.1 Sanction Process

The definition of economic sanctions which will be adopted in this chapter reads, "coercive measures imposed by one country, an international organization or a coalition of countries against another country—the government or any group within the country—with the aim of bringing about a change in a specific policy or behaviour."[14] Thus, an economic sanction involves at least one sender state trying to make one target state comply with some political objective(s) by using economic pressure. Economic sanctions are utilized for different reasons, including cases of war, support of terrorism, nuclear weapons development, or only as an instrument of economic warfare.[15] Economic sanctions are intended to impose a serious restrain on the economic welfare of the target country—especially on the ruling elite and its supporters—and thereby make its leadership change its policy in order to avoid any further damage.[16] The target government will act according to a "straightforward cost-benefit calculus" and will want to comply with the sender's demands to avoid more costs.[17] Besides, it is assumed that the hardship endured due to the sanctions by the citizens in the target state will make them pressure their government to agree with the requirements and conditions of the sending states or organization.[18]

Sanction episodes may start with a threat by the sender(s), which, if not effective, maybe followed by implementation. Perhaps the sender and target come to a settlement without the need for the actual imposition of sanctions. If sanctions are actually imposed, a bargaining process will start. In particular, the outcome of this bargaining process can go in two opposite directions. First, the bargaining is successful, and a target country starts to cooperate. Consequently, 'carrots and sticks' may be provided by the sender state, like the partial lifting of sanctions or providing financial support. Second, the bargaining process is a failure, and the target nation does not cooperate at all. The theory of adaptation acknowledges that targets will not stand on the sideline when facing sanctions.[19] The target may find assistance in allies and seek ways to avoid the effect of the sanctions or even impose sanctions itself.[20] For example, target states can find alternative trading partners or alter consumption patterns.[21] Additionally, the costs incurred on the sender state might reduce its ability to bargain in a

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[14] Escribà-Folch 2010, p. 2.

[15] Van Bergeijk et al. 2011.

[16] Galtung 1967; Porter 1979; Kirshner 1997; Kaempfer and Lowenberg 1988; 1999; 2007; Hoffmann 1967.

[17] Kirshner 1997; Farmer 2000.

[18] Galtung 1967; Renwick 1981; Lindsay 1986; Nossal 1989; Mack and Khan 2000; Marinov 2005.

[19] Galtung 1967.

[20] Drezner 2000; Hufbauer et al. 2007; Early 2009; 2012.

[21] Doxey 1972; Knorr 1975.

tough manner, and third parties may not provide cooperation to the sender, diminishing the effectiveness of the sanctions.[22] Thus, pending the bargaining process, other players may come along that change the political relations or complicate the bargaining. For instance, the previous literature concludes that a regime change was often not achieved because the target received moral and material support from a major superpower (the US or Russia). Therefore, it is possible sanctions may have no effect or even an enhancing effect on the welfare of the target country when other countries come to its assistance, and economic structures adjust.[23] Finally, a sanction episode comes to an end when either the target complies with all or some of the demands of the sender and sender and target come to a settlement, or the (threats of) sanctions are gradually lifted even though the target did not meet the demands.

7.2.2   Economic Impact of Sanctions

To be able to tell precisely how sanctions would influence economic growth, we must understand the channels through which these coercive policy measures affect the economic performance of a country. In the literature, there is a classical distinction between trade, diplomatic, and financial sanctions.[24] Trade sanctions are forms of import or export restrictions imposed on one or more specific goods, often including strategic items, by the sender that reduce the gains of trade of the target.[25] Using a global panel Kohl and Reesink demonstrate that sanction threats, while often much discussed in media and causing uncertainty to economic agents, do not have a significant impact on international trade.[26] Sanctions, once imposed, do have a detrimental effect on international trade. In particular, the imposition of a sanction decreases the international trade of the target country by about fifteen percent.

Trade sanctions influence the economic performance of a target country mainly in three ways. First, according to the export-led growth hypothesis, there exists a positive relationship between the volume of export and the growth of the economy. This implies that export restrictions will harm the economic performance of the target economy.[27] For instance, Elliot and Hufbauer conclude that moderate or limited trade sanctions could reduce bilateral exports by a quarter and a third, while they find extensive sanctions reduce bilateral flows by approximately 90 percent.[28]

Second, an import ban limits access to intermediate products, physical capital, and technology. Though, the economic consequences of an import ban are less straightforward compared to export restrictions. On the one hand, as import restrictions are

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[22] Wagner 1988.

[23] Hufbauer et al. 2007; Dizaji and Van Bergeijk 2013.

[24] Kirshner 1997; Hufbauer et al. 2007; Morgan et al. 2009; 2014.

[25] Van Bergeijk 1989.

[26] Kohl and Reesink 2019.

[27] Evenett 2002; Dizaji and Van Bergeijk 2013.

[28] Elliot and Hufbauer 1999.

likely to hamper domestic production due to a shortage of inputs, it will also reduce the export performance of the target state. On the other hand, domestic import-competing firms may reap the benefits of an import ban due to higher production.[29] However, when imports are being replaced by less competitive domestic production, it will lead to higher domestic prices and, therefore, cause inflation. Consequently, the real exchange rate will appreciate due to a rise in the inflation rate of the target country and make goods more expensive to purchase by foreigners. This will reinforce the negative sanctions' effects on exports some further.

Third, in the past decades many sanctions, such as the ones against Iran and North Korea, have been aimed to decrease technology transfer. These technology sanctions often aim to hurt the target's military capacity or hinder it from developing nuclear weapons. On the grounds of the Nuclear Non-Proliferation Treaty, senders can initiate sanctions to hinder the exchange and development of arms-related technology by the target. In this light, a technology import ban may lower growth because the target country misses the benefits of foreign technology, including learning. A subsequent effect is that the target country will fall behind in technical efficiency compared to rival countries.[30] These rivals now exhibit a comparative advantage in the export product. The target cannot compete internationally and misses out on export returns.

The second broad group of economic sanctions are financial sanctions. Financial sanctions are primarily aimed to interrupt the in and outflow of capital to the target.[31] Financial sanctions compromise a wide set of coercive financial measures, including lending restrictions, restrictions on international money transfers, capital controls, or the withdrawal of foreign aid or foreign direct investments. The economic shocks caused by financial sanctions can be rather diverse. First, financial sanctions could also interrupt trade flows without explicit trade sanctions involved and thus have similar economic effects.[32] Second, the target's assets can be either frozen or vested, the latter meaning that ownership of the assets is transferred from the target to the sender.[33] Already the threat of sanctions may discourage new foreign investors as they create an uncertain business climate. Third, the removal of loans or aid hinders access to hard currency and can even increase the debt burden of the target government. Fourth, the prospect of sanctions may also shake consumer confidence and adversely affect stock market returns.[34]

The third broad category of sanctions is diplomatic sanctions. These policy measures are primarily aimed at decision-makers, the legislator or the political elite and its supporters. Diplomatic sanctions may take the form of seizure of assets, like physical property, securities, and bank accounts of diplomatic personnel or politicians,[35] travel bans on government diplomats, ordering diplomats of the target to

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[29] Selden 1999.

[30] Ben-David and Loewy 1998.

[31] Dizaji and Van Bergeijk 2013; Torbat 2005.

[32] Hufbauer et al. 2007.

[33] Kirshner 1997.

[34] Biglaiser and Lektzian 2020.

[35] Kirshner 1997.

leave the territory of the sender government, recalling the sender's own diplomats to return from the target country, temporary closing of embassies, ending diplomatic contact, and the suspension of an economic agreement or protocol.[36] Since diplomatic sanctions precisely aim to hurt the ruling regime and its elite supporters, it has been frequently argued that they are more effective in reaching the end goal than other sanctions.[37] They have been imposed in preference to trade and financial sanctions, whose effects are regarded as more indiscriminate.[38]

Finally, the complete economic effect of sanctions goes beyond the direct effect on drivers of economic growth. The main end goal of a sanction is to enforce a change in political behaviour that often is preceded by political instability.[39] Political instability is especially apparent when sanctions are used as a tool to destabilize the target government. Political instability, in turn, affects international trade and foreign capital flows. For example, import flows are reduced because of low expected returns to investment[40] or because of increased import costs due to inefficient or suboptimal trade policies.[41] Additionally, an unstable macro-economic environment reduces production by firms and thereby their exports.[42] Moreover, economic deterioration caused by sanctions can also fuel a revolution of the public, adding to political chaos.[43]

Based on the literature review above, it is still not clear whether economic sanctions imposed by the sending state creates an economic shock in the target country that is large enough to force the target country to comply with de senders' demand. When the impact on the target economy is only modest, the target country will not be willing to cooperate. So, the main question dealt with in our empirical section, is whether economic sanctions are able to trigger an economic growth deceleration by creating a structural break. In particular, Pritchett broke new ground in the domain of economic growth empirics when he published his influential paper on 'Hills', 'Plateaus', 'Mountains' and 'Plains' and concluded that there is no single trend growth rate to be seen, especially in developing countries.[44] In fact, countries shift considerably in growth rates, which are mostly discernible in episodes. One thing that is particularly striking about these episodes is the appearance of enormous accelerations and deceleration of growth.

Using this insight, by looking at what happens before or at the start of a growth transition, one can gain insight into the determinants of successful transitions. In particular, they find that growth accelerations are significantly correlated to political regime changes, external shocks, and economic reforms. However, the authors also

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[36] Kaempfer and Lowenberg 2007; Morgan et al. 2014.

[37] Kaempfer and Lowenberg 2007.

[38] Kaempfer and Lowenberg 1999; 2003; Drezner 2011; Wallensteen and Grusell 2012.

[39] Morgan et al. 2009.

[40] Aisen and Veiga 2013.

[41] Edwards and Tabellini 1991; Cukierman et al. 1993.

[42] Musibah et al. 2015.

[43] Rowe 1999.

[44] Pritchett 2000.

conclude that growth accelerations are for the largest part unpredictable and on the whole unrelated to standard determinants suggested in the economic growth literature.[45]

In the same trend, Hausmann and co-authors study episodes of deceleration using a representative sample of developed and developing countries.[46] Their objective is to gain a deeper understanding of growth collapses instead of accelerations. After identifying more than 500 episodes of output contraction, they study factors that determine the onset of crises and the duration of crises. In particular, variables found to be significantly related to the start of a crisis are the incidence of wars, export collapses, sudden stops in capital flows, high inflation, and political transitions, with some strong evidence for the change in exports, especially in developing countries, and somewhat less strong evidence for high levels of inflation predicting the onset of a collapse.[47]

7.3 Data and Methodology

7.3.1 Growth Collapses and Sanction Data

As our dependent variable, we use a binary choice indicator that takes the value one in the country-years when a growth collapse is identified and zero otherwise. In particular, a growth collapse or deceleration is defined as "an interval that starts with a contraction of output per worker and ends when the value immediately preceding the decline is attained again".[48] To operationalize this concept and identify the onset of a sudden growth collapse, a filter is applied. A filter is a set of constraints which together define a growth period. Such a filter should distinguish normal ups and downs in the growth rate from actual growth periods of contraction or acceleration.[49] In particular, a start of growth deceleration in the country i at time t recorded when the growth rate of real GDP per capita (g) fulfils the following criteria. First, the economic growth in year t should be lower than the growth rate in the previous year: ($g_{t+1} < g_t$). Second, the drop in the real GDP per-capita growth is at least 1.5 percent and lasting for at least four years ($g_{t,t-n} \geq -1.5$ ppa, $n = 3$). Third, the difference between the average post-deceleration growth rate and the average pre-episode growth rate (both including year t) must be at least 2.0 percent per year ($g_{t,t+n} \geq -2.0$ ppa, $n = 3$). This threshold value seems low enough to exclude normal fluctuations in the growth rate due to business cycles, but not too low to miss out on the start of a deceleration. Fourth, the level of GDP has to be lower at the end of the deceleration than in all years

[45] Jong-A-Pin and De Haan 2008; 2011; Hausmann et al. 2005.

[46] Hausmann et al. 2006.

[47] Hausmann et al. 2006; Reddy and Minoiu 2009; Berg et al. 2012.

[48] Hausmann et al. 2006, p. 5.

[49] Hausmann et al. 2005; 2006; Reddy and Minoiu 2009; Gupta et al. 2005; Dovern and Nunnenkamp 2007; Jong-A-Pin and De Haan 2008; 2011; Berg et al. 2012.

before the deceleration, including year t ($y_{t+n} < \min\{y_i\}$, $i \leq t$, $n = 3$). This ensures the post-growth rate is lower than the pre-episode peak and hence the economy is not in a recovery period yet. To calculate the growth rate of the economy, we use the growth rate of the GDP per capita in constant 2015 US dollars reported in the World Development Indicators published by the World Bank.

Our dataset consists of 187 countries spanning the years 1960 to 2010, of which 61 countries experienced one or more growth decelerations. Detailed results of the applied filter are displayed in Fig. 7.1, wherein countries are divided according to region. It is immediately apparent that decelerations are most common in Sub-Saharan Africa, Latin-America and the Caribbean and the Middle-East and North Africa (MENA), while nearly absent from the EU and most other developed countries.

The information needed to construct our economic sanction indicator is taken from the Threats and Imposition of Economic Sanctions (TIES) dataset. This dataset contains detailed information on both threats and impositions for a broad spectrum of sanctions for targeting more than 200 countries and send by about 150 countries and institutions between 1950 and 2005. In particular, the dataset includes data about starting and ending date, underlying issue, the type of sanction, aim of the sanction, target interest threatened, commitment by the sender and the estimated economic costs. In this chapter, we focus only on the four main senders of economic sanctions the last decades: the US, UN, EU, and Russia. In particular, we create a dummy variable taking the value one in the full years when a country is subject to an economic sanction by one of the primary senders in a particular year, and zero otherwise. In total, we consider more than 600 sanctions. As explained in the previous section, the entire sanction period consists of different stages. Of the considered sanctions, about three-quarters of the impositions of economic sanctions are preceded by a threat.
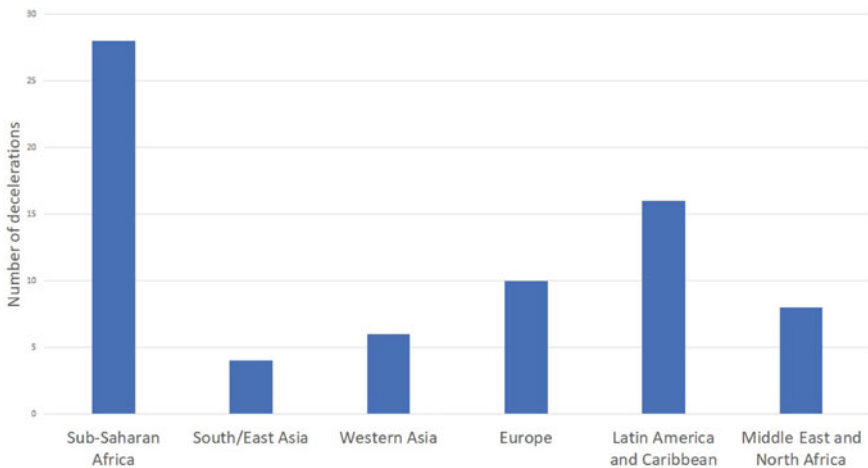
Fig. 7.1 Distribution of Growth Decelerations. *Source* Splinter and Klomp 2021

7.3.2   Empirical Model

In this section, we present the empirical model applied to examine whether sanctions are able to trigger growth decelerations. In particular, we estimate the following Linear Probability Model (LPM). One major advantage of this model is that countries do not drop out when there is no growth deceleration is identified in the period of our analysis. This is of particular importance since less than one-third of the countries in our sample have experienced a growth deceleration. As a result, this approach reduces the sample selection concerns that are related to, for instance, a conditional logit model. However, one drawback of this model is that the estimated coefficients can imply probabilities outside the unit interval.

$$\Pr[decel_{it} = 1] = \alpha_i + \beta_m x_{it-1} + \gamma sanc_{it} + \delta_t + u_{it}$$

Where $decel_{it}$ is our binary dependent variable taking the value one when there is a growth deceleration identified in country i at time t based on the filter explained above, and zero otherwise. The vector **x** includes our set of control variables based on the previous literature.[50] In particular, we include real GDP per capita (in natural logarithm), degree of resource abundance, inflation rate, level of democracy, level of economic freedom. We include the control variables with a one-year lag to overcome the simultaneity bias with our sanction variable $sanc_{it}$ that is explained above. We hypothesize that the likelihood of a growth collapse increases after the threat or imposition of an economic sanction ($\gamma > 0$). The final variable u_{it} is the error term. The parameter α_i is a country-specific intercept controlling for unobserved and time-invariant country characteristics, while δ_t is a time-fixed effect represented by a series of year dummies. In particular, we test for the appropriate panel data model using the Hausmann test. The null-hypothesis of no country-specific effects is rejected at conventional levels of significance for all model specifications.

Before we proceed, we must deal with the potential endogeneity of economic sanctions as sending states do not randomly target other countries. Various factors potentially drive both the likelihood of an economic sanction and the economic growth of the target country. When we fail to control explicitly for these factors, our results might be spurious. To capture this endogeneity issue, we apply the two-stage least squares (2SLS) estimation technique.[51] In particular, we consider two instruments. First, one of the most important decisive reasons why sanctions are imposed against a particular country is the violation of human rights. To proxy the level of human rights protection, we make use of the Freedom House dataset, where countries receive a score based on their political rights and civil liberties. A higher value indicates fewer political rights or civil liberties. Second, the international status ranking, as reported in the Banks International dataset, is used as an instrument. The international status ranking is a composite score based on the diplomatic reputation of a country. For senders, it might be more costly to impose and enforce sanctions

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[50] Hausmann et al. 2006; Jong-A-Pin and De Haan 2008; 2011.

[51] Newey 1987.

Table 7.1 Economic sanctions and economic growth decelerations

	Complete period	First three years only	
	(1)	(2)	(3)
All sanction periods	0.020 (0.016)		0.091* (0.055)
Threat			0.121** (0.033)
Imposition after threat			0.071* (0.040)
Imposition start without threat			0.145* (0.075)
Number of observations	3401	3401	3401
Sargan test (p-value)	0.320	0.414	0.428
Pseudo R-squared	0.048	0.049	0.051

Note **/* Indicating significance levels of respectively 5 and 10 percent; bootstrapped standard errors are shown between brackets
Source Splinter and Klomp 2021

that target countries that are politically and economically important.[52] Clearly, these instrumental variables do not directly affect the likelihood of a growth deceleration as the correlation with our dependent variable is close to zero.

7.4   Results

7.4.1   Imposition and Threats

Table 7.1 reports the results of our Linear Probability Model. The validity of the instrumental variables is formally checked by using the Sargan test under the null hypothesis that the used set of instruments is valid, i.e., they are uncorrelated with the error term in the structural equation. The Sargan test indicates that we cannot reject the null hypothesis, so our instruments are valid ($p > 0.05$). Alternatively, we apply the Wald test of exogeneity under the null hypothesis that the instrumented variables are exogenous ($p < 0.05$). The Wald test indicates that the sanction variable is potentially endogenous and that instruments should be used. To obtain robust standard errors, we use the bootstrap procedure with 1,000 replicators.

The results reported in column (1) of Table 7.1 indicate that economic sanctions have no statistically significant effect on the likelihood of a sudden growth collapse.

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[52] Wezeman 2014.

However, a critical remark one can make about these first results is that they indicate it assumes that the impact of a sanction on the probability of causing a growth collapse is constant over the entire duration of the coercive measure. The average duration of a sanction in our period of analysis is about ten years. The question is whether the impact of sanctions is equal in these years? In particular, sanctions are believed to work as a major and sudden economic shock that cannot be anticipated. This implies that sanctions should in the first place have an effect in the first year of their imposition or when the first signals are observed, for instance, through a credible threat. To capture this issue, we adjust our sanction measure by only recording the first three years of a sanction. The results in column (2) point to a weak, but significant, positive effect of economic sanctions on the likelihood of a growth deceleration. In particular, economic sanctions raise the probability of a sudden growth collapse by about nine percent.

The sanction variable used so far combines both sanction threats and imposition periods. The previous literature suggests that if targets expect to comply, they will do so already at the threat stage, avoiding the additional economic costs of the imposed measures.[53] That is, a threat is effective when the outcome of the threat case is equal to the desired outcome. This debate implies that a sanction threat might be even more effective than the imposition itself. In particular, when there is a threat preceding an imposition, a target country might try to anticipate before the actual imposition. In column (3) of Table 7.1, we split the sanction variable into three stages: (1) threat stage; (2) imposition stage after a threat, and (3) imposition stage with no threats preceding. The findings indicate that although all three stages enter significantly the econometric model, the first and third situation have the most statistical and economic impact. This suggests that there is likely to be some kind of first-signs effect. In particular, expectations about the future imposition of sanctions can lead to a change in the behaviour of economic agents already long before the sanction is really implemented or even agreed on. Thus, foreign investors, in advance of the expected sanctions will try to withdraw their capital, and traders will search for alternative trading partners based on their own assessments of the likelihood of these coercive measures.

7.4.2 Different Types of Sanctions

To explore whether the impact of sanctions differs among the various types of sanctions considered, we have split up our economic sanction variable in three more homogenous groups: trade sanctions, financial sanctions, and diplomatic sanctions. The results in column (1) of Table 7.2 indicate that especially financial and trade sanctions are likely to create a severe economic shock. In contrast, we find no significant effect of diplomatic sanctions at common confidence intervals. One explanation might be that diplomatic sanctions are more tailor-made and usually aimed at the

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[53] Drezner 2003.

Table 7.2 Sanction differences

	Instrument	Aim	Senders	Commitment
	(1)	(2)	(3)	(4)
Trade sanctions	0.142** (0.042)			
Financial sanctions	0.123* (0.071)			
Diplomatic sanctions	0.084 (0.139)			
Political and military interests			0.060 (0.044)	
Economic interests			0.148** (0.053)	
General interests			0.139* (0.074)	
Unilateral sanctions				0.091* (0.048)
Multilateral sanctions				0.161** (0.057)
Strong				0.161** (0.059)
Moderate				0.088* (0.051)
Weak				0.023 (0.037)
Number of observations	3401	3401	3401	3401
Sargan test (p-value)	0.361	0.421	0.452	0.380
Pseudo R-squared	0.048	0.049	0.051	0.052

Note **/* Indicating significance levels of respectively 5 and 10 percent; bootstrapped standard errors are shown between brackets
Source Splinter and Klomp 2021

ruling elite without hurting the general population. One alternative explanation is that diplomatic sanctions are usually accompanied by other economic bans within one package. This makes it difficult to perfectly distinguish between the effect of each specific type of sanction.

Usually, the aim of an economic sanction is to achieve a policy or political change by targeting important economic sectors. Thus, disturbing the economy is only an intermediate goal. To explore whether the target of a sanction (business sector, political system or general) matters for the economic consequences, we split the economic sanctions in accordance with their target audience. The results indicate that general economic sanctions or sanctions aiming specifically at the interests of the business sector raise the likelihood of a sudden growth collapse. In turn, sanctions aiming at the political and military interests have no statistically significant effect at common confidence levels. One possible explanation is that, although these sanctions might create political uncertainty, the coercive measures are mostly targeted at the ruling elite and do not directly have an economic-wide effect. In turn, trade and financial restrictions are more likely to affect the macroeconomic performance of a country.

A key element in this debate on the sanction effectiveness is whether sanctions are imposed multilateral or unilateral. On the one hand, broader participation in economic sanctions is generally hypothesized to lead to better and more effective implementation. However, on the other hand, because of the dominant and bureaucratic process of sanction initiation, a powerful state, may be able to make a formally

unilateral sanction effective. Due to these concerns, we split the total number of sanctions in multilateral (EU and UN) and unilateral (US and Russia) sanctions. One concern is that there is a significant overlap of some sanctions by their senders. For instance, the United States implemented most sanctions imposed by the UN. Simultaneous inclusion of different types of senders allows for isolation of the true effect of individual or multiple senders. The results in column (3) of Table 7.2 indicate that multilateral sanctions have the strongest significant effect on the likelihood of a growth deceleration. This finding supports the view that the multilateralization of sanctions strengthens the signal of dissociation sent to a target.[54]

Finally, we investigate the relationship between the sender states' commitment level and the likelihood of a growth collapse. Three different levels of commitment are employed: weak, moderate, and strong. The degree of commitment is based on the statements made by the sending government. The main objective is to test whether greater determination on behalf of the sender results in greater hardships to the target economy. The estimated results in column (4) of Table 7.2 indicate that in order for sanctions to exert a negative influence on the receiving economy, the sender state(s) need(s) to be at least moderately committed.

7.5   Conclusions

The aim of economic sanctions is to achieve a political change by imposing serious limitations on important economic activities in the target country. In particular, the basic idea behind economic sanctions is that they work like a major adverse and sudden shock to the target's economy. In this respect, one important question is whether economic sanctions cause a sudden growth collapse by creating a structural break in economic growth. Based on the findings reported in this chapter, we can draw several conclusions. First, an economic sanction increases the likelihood of an economic growth deceleration by about nine percent in the three years preceding the first sanction signs. Second, it turns out that, in particular, trade sanctions, multilateral sanctions, and sanctions aiming at the business sector cause sudden negative growth accelerations.

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