

The Unintended Consequences of Economic Sanctions

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Question

Provide an overview on:

- *Do sanctions have counterproductive effects (e.g. achieving the opposite of the intended effect), and in what circumstances?*
- *What other unintended consequences may result from the imposition of sanctions?*

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1. Summary

Economic sanctions are associated with a range of adverse effects, with variable levels of supporting evidence for different kinds of negative consequences. This includes negative effects for the population of the targeted state, for third party states, and for the sanctioning state itself. These effects appear worse for comprehensive sanctions than targeted sanctions, but even for so-called ‘smart sanctions’ unintended side-effects are common (Biersteker et al., 2013). The severity of unintended side-effects is likely to vary depending on the specific political and economic context within the targeted state.

It is frequently challenging to demarcate the boundary between the intended and unintended consequences of sanctions. Often sanctions regimes are designed to achieve their objectives through the pressure created by hurting the economy of the sanctioned state. This means that – whilst they are unlikely to be designed to hurt the population of the sanctioned state – the decision to implement a sanctions regime will be made in the expectation that success will involve (at least short-term) negative consequences. This is a particular problem for the economic consequences of sanctions (e.g. rising unemployment or increased inflation), but may also apply to broader negative consequences, such as internal conflict; which may increase pressure on a ruling regime to fall into line with international demands or represent the prelude to regime change.

Sanctions apply pressure on targeted states by inflicting economic damage, but the economic disruption is frequently broader than intended. Sanctions often lead to hyperinflation (Ghorbani, 2018; Aita, 2020; Kabalira, 2021; UNICEF, 2022), currency volatility and devaluation (Wang, et al.) and banking crises (Hatipoglu & Peksen, 2018), which negatively affect ordinary people in the targeted state. Sanctions negatively affect small businesses (Aita, 2020) and increase income inequality (Afesorgbor & Mahadevan, 2016), spatial inequality (Lee, 2014), economic informality (Petrescu, 2016; Early & Peksen, 2019; Havasbeigi et al., 2021; Sarvananthan, 2006; Enos, 2017) and protectionism (Pond, 2017) in targeted states.

Economic damage is not restricted to targeted states. For states that are closely economically linked to the targeted state, sanctions may reduce their trade (Slavov, 2007; Biersteker et al., 2013) and gross domestic product (GDP) (Bayramov et al., 2020; Nephew, 2017). However, sanctions may provide new opportunities for some third-party states by diverting investment and trading opportunities towards them (Haidar, 2017). Similarly, sanctions can harm sanctioning states economically through reduced exports (Crozet et al., 2020) and firms from the sanctioning state attempting to evade sanctions (e.g. through legal restructuring) in ways which make them otherwise less efficient and may reduce the tax they pay in the sanctioning state (Harrell, et al., 2017).

Sanctions may have a negative humanitarian impact on targeted states. Whilst this is likely particularly severe for comprehensive sanctions, there were negative humanitarian consequences in 39% of UN targeted sanctions episodes from 1990-2013 (Biersteker et al., 2013). There is a negative association between sanctions and the Human Development Index (HDI) of sanctioned states. Sanctions are associated with declining expenditure on disaster preparedness and increased damage from natural disasters (McLean & Whang, 2021). Econometric evidence on the impact of sanctions on food security is ambiguous (Allen & Lektzian, 2013), but case studies reveal many specific instances where sanctions have reduced

crop yields and created “immense food shortages” (Aita 2020; Kabalira, 2021; Smith, 2020). Likewise, on some occasions, sanctions have contributed to highly damaging declines in the quality and quantity of water supplies (Aita, 2020; Buck et al, 1998; Kabalira, 2021).

Sanctions may lead to declining health outcomes in targeted states. Despite inconsistencies, overall the econometric evidence indicates a negative impact of sanctions on life expectancy (Allen & Lekzian, 2013; Gutmann, 2021). The high-profile reported spike in infant mortality in Iraq during the sanctions of the 1990s was likely fabricated (Dyson & Cetorelli, 2017), but econometric studies concur that sanctions are associated with increased under-five mortality (Peksen, 2011; Gutmann, et al., 2021; Parker et al., 2016). Negative outcomes may be conditioned by declining public health expenditure (Gutmann et al., 2021), reduced private expenditure on medical services and products like anti-mosquito bed nets (Parker et al., 2016), and disruption to medicine supplies (Moret, 2015; Setayesh & Mackey, 2016; Karimi & Haghpanah, 2015; Shahabi, et al., 2015).

Sanctions may increase conflict, terrorism, and undermine the rule of law in targeted states. Sanctions increase the probability of targeted states being attacked by other states (Peterson & Drury, 2011). Sanctions may increase the intensity of internal armed conflicts (Hultman & Peksen, 2017; Aita, 2020), and worsen inter-ethnic violence (Lv & Xu, 2017), though conflicts may be shorter (Escriba-Folch, 2010). Econometric studies agree that sanctions increase terrorism within targeted states and spilling over their borders (Choi & Luo, 2013; Altmann & Giersch, 2021; McLean, et al., 2018; Rosenberg, 2016). Sanctions are associated with increased corruption and criminality (Biersteker et al., 2013; Rosenberg, 2016; Balanov, 2017). This appears to be partly linked to rents from sanction evasion (Biersteker, et al., 2013; Aita, 2020; Andreas, 2005), which breeds organised criminal gangs linked to ruling elites.

The impact of sanctions on respect for human and economic rights remains disputed. Several econometric studies have found that sanctions are associated with declining respect for human rights (Peksen, 2009; Carneiro & Apolinario, 2016) and economic rights (Lektzian & Mkrтчian, 2021; Peksen, 2017). However, more recently Gutmann et al. (2020) have argued powerfully that these findings may be biased by endogeneity between the decision to impose sanctions and the factors driving declining respect for human rights; their study found that once endogeneity controls are applied there is no evidence for a relationship between sanctions and respect for either human or economic rights. Moreover, there is econometric evidence indicating that sanctions designed to improve human rights in targeted states have a positive effect on respect for human rights in similar states (Peterson, 2014; Carneiro, 2014).

Likewise, there is no consensus on the impact of sanctions on democratisation. Some econometric studies indicate that sanctions strengthen authoritarian rule in targeted states (Biersteker, et al., 2013; Hellmeier, 2021; Kabalira, 2010), potentially reflecting a “rallying-around-the-flag” effect. However, other econometric studies find that sanctions are associated with declining support for the ruling regime (Rosenburg, 2016), democratisation (Von Soest & Wahman, 2015) and regime change in personality-based authoritarian states (Escriba-Folch & Wright, 2010).

Sanctions may have specific effects on women and girls. Sanctions may have a greater negative impact on female life expectancy (Gutmann, et al., 2021). However, there is diverging econometric evidence on the impact of sanctions on women’s rights; one major study found a negative impact (Drury and Peksen, 2014) but a more recent study – employing a potentially

more robust methodology – found a positive impact (Gutmann et al., 2020). Case study evidence from Iran indicates that the sanctions “fuelled regressive social policies”, pushed women out of the labour market and led to the prioritisation of boys’ over girls’ education (Fathollah-Nejad, 2014).

Sanctions have a range of geopolitical effects. Sanctioned states may increase economic and political links with the sanctioning state’s rivals (Harrrell, et al., 2017; Amuzegar, 1997). Following through on a sanctions threat increases the likelihood that the sanctioning state will be able to make other states acquiesce in future using the threat of sanctions alone (Peterson, 2013). Anti-proliferation sanctions may increase the intensity of a sanctioned state’s efforts to develop nuclear weapons (Miyagiwa & Ohno, 2015). However, the US anti-proliferation sanctions regime may have discouraged states that are economically interlinked with the USA from pursuing nuclear weapons (Miller, 2014). Sanctions may negatively impact on international refugee and migrant flows (Lopez, 2019), but this remains under-explored (Ozdamar & Shahin, 2021).

This report is based on an assessment of 75 separate articles or reports. Of these 43 were econometric studies, which were overwhelming international panel studies. 26 were case studies, which generally combined qualitative and quantitative data without the support of a rigorous counterfactual. The final six were literature reviews, synthesis reports, or more discursive reports or position papers. In the vast majority of cases these articles and reports come from peer reviewed journals, though a few are academic papers that have gone through alternative forms of quality assurance (e.g. postgraduate theses). The report builds on a previous K4D report focused on the impact of sanctions on growth and inequality (O’Driscoll, 2017) and a United States Government Accountability Office (2019) report on sanctions effectiveness, which provides a very light touch review of unintended consequences of sanctions. The report also complements another as yet unpublished K4D report focused on issues related to sanctions against non-state actors.

Despite the volume of studies published on this topic, there are weaknesses in the evidence base. Many – though not all – econometric studies do not distinguish sufficiently between different kinds of sanctions. As a result, sanctions regimes that may have quite different effects (e.g. comprehensive versus targeted; targeted sanctions focused on different sectors) are often lumped together, making it challenging to assess whether sanctions can be designed in a way that is likely to avoid specific kinds of adverse effects. In addition, on some important issues (e.g. the impact of sanctions on human rights or health) there are major inconsistencies between the findings of different econometric studies. In some cases these inconsistencies are paired with technical debates around whether the methodologies employed on different studies adequately address issues related to the potential endogeneity between the decision to impose sanctions and trends in variables of interest (e.g. life expectancy).

Whilst the qualitative case studies conducted provide a potential antidote to this issue, these have their own problems – notably the fact that they rarely present credible counterfactuals to the imposition of sanctions. This is particular problematic given the complex array of changes and challenges typically faced by states in the period preceding and following the imposition of sanctions. As a result, often the adverse effects attributed by the authors to sanctions could (to a greater or lesser extent) relate to other factors (e.g. poor economic management by the targeted country’s government, worsening social tensions and civil conflict, etc.).

2. What do we mean by unintended consequences?

The term “unintended consequences” is challenging to define meaningfully in the context of economic sanctions. Sanctions regimes are a form of coercive diplomacy; to the extent that they are in fact effective, their effectiveness depends on the way in which they put pressure on the state targeted. Frequently, this pressure is created by hurting the economy of the sanctioned state. This means that those who design sanctions will frequently anticipate that success will come at the cost of (at least short-term) negative consequences. This is a particular problem for assessing whether the negative economic consequences of sanctions (e.g. rising unemployment or increased inflation) are intended. However, it is also potentially problematic for a broader range of negative consequences, such as internal conflict, since such negative consequence may increase the pressure on a ruling regime to fall into line with international demands or represent the prelude to regime change.

The term “unintended consequences” is used frequently in the literature on sanctions, but is rarely defined explicitly. Instead, the term is frequently used broadly to refer to any adverse consequences of economic sanctions, other than those that exclusively effect the ruling regime or the elites that support them. Biersteker’s (2013) review all 22 UN targeted sanctions regimes from 1990-2013 (based on case studies conducted by the Targeted Sanctions Consortium according to a consistent methodology) is typical: he does not define unintended consequences explicitly but instead reports 17 types of adverse consequences identified through case studies treats any sanctions regime where such adverse effects occur as having “unintended consequences.”

This report adopts follows the literature on focusing on identifying adverse consequences, without problematising whether they were unintended. This reflects both established practices and the inherent challenges of assessing intentions and expectations of those designing sanctions regimes. We exclude from consideration adverse effects that exclusively impact on ruling elites. We also do not explore directly claims related to the impact of sanctions on the GDP of the targeted country, reflecting both the fact that this is frequently the very mechanism by which the sanctions are expected to achieve their intended effects, and because this issue has been explored by a previous K4D report (O’Driscoll, 2017). However, it is important to acknowledge that many of the adverse consequences discussed are likely in part mediated by the impact of sanctions on GDP.

This report does not set out to explore the positive intended or unintended consequences of sanctions, but these are discussed when relevant to claims on adverse consequences. In line with the question we were given, we have focused our review on unintended, negative or adverse consequences of sanctions. However, once we identified issues where there were claims in the literature that sanctions had adverse effects (e.g. a negative impact on respect for human rights), it was important for balance to explore and report upon studies that found the opposite (e.g. a positive effect on human rights). Despite the inclusion of these references to positive effects, this study should not be taken as a fair reflection of the literature on the successes achieved through sanctions.

3. Sanctions: comprehensive versus targeted

Sanctions are “political or economic coercive measures imposed by countries, and multilateral or regional organizations” (UNICEF, 2022). As such they encompass a wide range of measures. They may target state or non-state actors, though this report is focused on sanctions targeting states.

A distinction is frequently drawn between comprehensive and targeted or “smart” sanctions. Whilst the former impose broad restrictions on economic engagement with the targeted country, targeted sanctions tend to be more narrowly focused with the intention of creating pressure on the targeted governments and the elites who support them. Six main types of targeted sanctions have been identified (Biersteker, 2013):

- Individual/entity sanctions target named individuals or corporate entities (e.g. political parties or companies) using devices such as asset freezes or travel bans
- Diplomatic sanctions restrict the diplomatic activity of a government using devices such as the limitation of accredited personnel, travel and general suspensions from inter-governmental organisations
- Arms embargoes involve the general or limited suspension of the import of arms or dual-used goods
- Commodity sanctions limit trade in specific products from the target country, notably valuable natural resources like diamonds or timber
- Transport sanctions prohibit the international transit of aircraft or ships from the target state
- Sectoral sanctions provide specific restrictions for particular sectors (e.g. oil embargoes, investment bans, limitations on bank transactions to target the financial sector)

Targeted sanctions have increasingly become the norm. Trade-related sanctions are becoming relatively less frequent and financial and travel sanctions becoming more common (Felbermayr, et al., 2020). However, the line between targeted and comprehensive sanctions “remains contested and unclear” (Kabalira, 2021). Some so-called targeted sanctions regimes appear much more focused than others and quite different results might be expected for the six different kinds of targeted sanctions described above.

Targeted sanctions likely have less severe unintended consequences, but they are not problem free. The emergence of targeted sanctions in part reflected concern for the negative unintended consequences of comprehensive sanctions for the population of sanctioned countries. The “scale of human suffering” linked to sanctions against Iraq was particularly influential in the decision of the UN Security Council to adopt targeted sanctions as their preferred approach (Kabalira, 2021).

Some commentators suggest that targeted sanctions have successfully avoided the pitfalls of comprehensive sanctions, and report that there has not been a repeat of the “dire humanitarian

consequences” commonly attributed to the 1990s sanctions against Iraq (Kabalira, 2021).¹ However, Biersteker et al. (2013) notes that whilst targeted sanctions have less serious unintended impacts than comprehensive sanctions, unintended consequences still occurred for 91% of UN targeted sanction episodes.

4. Economic consequences

Macroeconomic

Economic sanctions can contribute to spiralling inflation. This is significant given evidence that high inflation often has a disproportionately negative impact on the poor. Ghorbani, et al. (2018; 2022) found quantitative support for a relationship between the severity of sanctions against Iran and its inflation rate and scores on the ‘Misery Index’ (a measure of stagflation). Aita (2020) maps out a spiral of hyper-inflation, devaluation and dollarization in his case study on post-2011 sanctions targeting Syria.

Kabalira (2021) describes a similar spiral in his case study on the impact of US sanctions against Zimbabwe in the 2000s, with the key mechanism being identified as the cutting off of Zimbabwe’s access to finance from International Financial Institutions (IFIs), which forced a reliance on money creation to meet the government’s financing requirements. This in turn was blamed for the reintroduction of barter trading, the growth of the black market and deterioration in the supply of key services like education. However, a key debate concerns whether the sanctions were responsible for cutting off access to finance or whether it reflected the country’s longstanding default on its obligations to IFIs.

Sanctions may increase the risk of financial sector crises. Hatipoglu and Peksen’s (2018) panel study, covering the period 1970-2005, identified an association between economic sanctions and banking crises, conditioned by the degree of economic cost inflicted on targeted economies. Wang et al.’s (2019) panel study, covering the period 1996-2015, found that economic sanctions are associated with greater exchange rate volatility for the currencies of targeted countries.

Poverty, income inequality and human development

Sanctions have a negative impact on inequality and poverty. The impact of economic sanctions on economic growth, poverty and income has been explored in a previous K4D Rapid Evidence Review (O’Driscoll, 2017), and will therefore not be covered in depth here. The key evidence includes Neuenkirch and Neumeier’s (2016) international panel study, which revealed a significant association between sanctions and poverty² and Afesorgbor and Mahadevan’s (2016) panel study which found that sanctions were associated with a 1.5-1.7 percentage point increase

¹ Though see the discussion in Section 4 regarding potential overestimation of the adverse impact of sanctions in Iraq on infant mortality.

² With sanctioned regimes having a 3.8 percentage point larger poverty gap compared to a control group matched for pre-treatment characteristics

in inequality as measured by the GINI coefficient for income.³ Rosenberg (2016) – looking at the period 2001-2016 – finds a significant negative impact of US sanctions on the Human Development Index (HDI) of targeted states after just one year of sanctions. The potentially negative impact of sanctions on poverty and income inequality may reflect an effect described by Kaempfer and Lowenberg (2007) in the case of Serbia in the 1990s, namely the opportunity provided by sanctions for elites to capture rents through smuggling and other forms of sanction busting, as well as by creating state-run monopolies and centralising the distribution of goods.

Regional inequality

The limited relevant studies conducted to date suggest that sanctions may increase regional inequality within targeted states. Lee (2014) conducts a quantitative study employing satellite data focused on the relationship between economic sanctions against North Korea and the country's night time urban-rural "luminosity gap", which proxies electricity availability and potentially economic outcomes more generally. The study indicates that sanctions led to the regime prioritising major urban conurbations and neglecting "marginalised hinterlands." The author also found that sanctions led to an increase in luminosity on the Chinese border, potentially indicating that sanctions benefited areas involved in sanctions busting trade.

Medium, small and micro-enterprises (MSMEs)

The limited number of relevant studies indicate that – perhaps unsurprisingly – MSMEs are negatively affected by sanctions. Oxenstierna and Olsson (2015) argue that sanctions imposed on Russia after its invasion of Ukraine mean that there was "extremely limited room for productive investment for small and medium-sized enterprises." Aita (2020) describes the negative effect of post-2011 sanctions against Syria on the country's MSMEs. They were particularly negatively affected by the energy prices rises and shortages partly created by the sanctions (by affecting trade in oil, gas and electricity with neighbouring countries, as well as through "restrictions on importing capital and spare parts for power plants").

Economic informality

Sanctions appear to encourage a shift towards the informal sector. International panel studies by Petrescu (2016), covering the period 1960-2012, and Early and Peksen (2019), covering the period 1971-2005, find that sanctions are associated with an increase in the percentage of GDP coming from the informal economy. This finding is corroborated by case studies focused on Iran (Havasbeigi et al., 2021), Sri Lanka (Sarvananthan, 2006) and North Korea (Enos, 2017). This shift likely reflects efforts to evade sanctions and declining access to formal banking services.

³ This reflected a decline in the income share of the two lowest income quintiles. Each additional year of sanctions was associated with a further 0.26 percentage point increase in the coefficient. The study found contrasting effects on income inequality for different kinds of sanctions. The negative effect was especially severe for financial sanctions, which often lead to the interruption of official development assistance and remittance flows, which may hit the poorest in society hardest. However, trade sanctions applied alone – and particularly import bans – were associated with reduced inequality, potentially reflecting that it is wealthy owners of capital who are hit most by disruption to export-orientated industries.

Protectionism

Sanctions appear to be associated with long-term increases in trade protectionism. Pond (2017) uses panel data for the period 1945-2010 to show that economic sanctions are associated with increased tariff rates in the targeted country, with the effect increasing with each year that sanctions are imposed for. Pond argues that this reflects the way that sanctions “create rents for import-competing producers, who are protected from international competition” and who then use these rents to “pressure the government to implement protectionist policies.”

Third country effects

Sanctions generally negatively impact on the trade of interlinked economies, though some third-party states may benefit from trade and investment diversion. Both Slavov (2007) and Biersteker et al. (2013) find that UN targeted sanctions have a significantly negative impact on the international trade flows of neighbouring states. In contrast, Haidar (2017) provides evidence indicating that Western sanctions on Iran led to diversion of Iranian exports to markets in Asia, but often at reduced prices (with a potential positive impact on consumers in those countries, but potential negative impact on import-competing producers).

Reduced trade with sanctioned states likely has a negative impact on the GDP of neighbours. Bayramov et al. (2020) use a vector autoregression (VAR) model to estimate that a 9% drop in Russian GDP (which was the IMF’s 2015 estimate for the long-term negative impact of post-2014 sanctions on Russia) would likely lead to a 6.5% reduction in the GDP of Commonwealth of Independent States (CIS) countries⁴ and a 2% reduction in the GDP of Central and Eastern European countries. They take this as evidence that post-2014 sanctions against Russia will also have had a significant negative impact on Russia’s neighbours. The mechanisms explaining this negative impact varied: for Central Asian CIS states reduced migrant remittances was a major factor, whilst for Eastern European states such as Lithuania (where 20% of exports went to Russia prior to 2014) reduced exports to Russia was the predominant channel.

Sometimes negative effects on neighbouring states are an inevitable effect of the sanctions regimes, but they may sometimes partly reflect a deliberate policy by the targeted state. Nephew’s (2017) suggests that US sanctions against Iran from 1996 had a fairly direct negative impact on Pakistan’s GDP by making it impossible to complete a planned gas pipeline that would have helped relieve Pakistan’s acute energy shortage. In contrast, Bayramov et al. (2020) notes that Russia’s Government has deliberately spread the economic cost of sanctions onto its neighbours through measures like a 2015 migration law which forced migrant workers from many neighbouring states to return to their home countries, reducing unemployment in Russia whilst increasing pressure on the labour markets of neighbouring countries.

5. Humanitarian consequences

Sanctions can lead to a wide range of negative humanitarian consequences. Humanitarian consequences are likely particularly severe for comprehensive sanctions regimes, but also

⁴ The CIS is an organisations of nine former Soviet Republics: Armenia, Azerbaijan, Belarus, Khazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Uzbekistan

remain a problem for supposedly targeted sanctions. This is exemplified in Biersteker et al.'s (2013) meticulous analysis of all UN targeted sanctions episodes from 1990-2013, which concludes that there were negative humanitarian consequences 39% of the time.

Part of the problem relates to the restrictions on humanitarian access caused by sanctions regimes (UNICEF, 2022). Whilst sanctions regimes frequently include humanitarian exceptions, they may still require complex authorisations which prove burdensome and can lead to “overcompliance” or a “chilling effect” (International Peace Institute, 2019), where key implementation partners are unwilling to conduct work in sanction countries at all. The result are delays in providing aid or humanitarian support not being provided (p.16). For example, UNICEF (2022) describe how concern about violating sanctions meant that “donors have not allowed humanitarian organizations in Syria to repair damaged sewer systems, and have been reluctant to authorize the repair of critical health and education infrastructure.”

Medical outcomes and system

Overall the econometric literature indicates that sanctions have a negative impact on life expectancy, though the evidence does not appear definitive. Allen and Lektzian's (2013) panel study (which covered the period 1990-2007) found no significant association between sanctions and either immunization rates, the share of government expenditure devoted to the health sector or life expectancy (though they did find that major sanctions led to a significant reduction in health adjusted life expectancy).⁵ Similarly, Omati and Kim's (2015) panel study covering the period 1978-2012 finds no significant relationship between sanctions and life expectancy.

However, Gutmann, et al.'s (2021) study using panel data for the period 1977-2012 found that sanctions significantly reduce life expectancy, with sanctions imposed by the US being associated with a loss of 0.4-0.5 years of life expectancy, whilst UN sanctions were associated with 1.2-1.4 years of loss. This likely reflects the greater economic impact caused by sanctions imposed simultaneously by a large number of countries. Moreover, longer lasting sanctions had a more deleterious effect, with every additional year of sanctions being associated with another 0.3 years of life expectancy lost. Similarly, Ha and Nam (2022) find that sanctions are associated with a 0.3 year reduction in life expectancy, though their findings indicate that this effect may only exist for less developed countries and is mitigated by higher institutional quality.

Sanctions appear to have a negative impact on child mortality specifically. A cornerstone of the prevailing narrative on the unintended consequences of sanctions comes from a 1999 UNICEF retrospective survey that found a sudden large increase in the under-5 death rate in Iraq between 1990 and the imposition of sanctions in 1991, with mortality remaining at that high level through the 1990s. However, the veracity of these results has been recently subject to challenge. Dyson and Cetorelli (2017) cite 1997 Iraqi census data and three subsequent surveys (conducted in 2004, 2006 and 2011), none of which corroborate the very high post-1990 child mortality rates reported by the 1999 UNICEF study. Indeed, they suggest that there was no

⁵ They also found that for states where a military conflict was ongoing sanctions were associated with a reduction in immunization rates (13% reduction for major sanctions and 10% for minor sanctions) and the proportion of government expenditure devoted to the health sector (16% reduction for major sanctions and 25% for minor sanctions).

significant increase in child mortality after the imposition of sanctions nor any substantial reduction after 2003, when the sanctions regime ended. The authors use this evidence to argue that “Saddam Hussein’s government successfully manipulated the 1999 survey in order to convey a very false impression” about the impact of sanctions on child mortality.

However, panel studies by Peksen (2011), covering the period 1970-2000, and Gutmann et al. (2021), covering the period 1977-2021, found that economic sanctions do increase under-five mortality. Similarly, Parker et al. (2016) found that Section 1502 of the USA’s Dodd-Franks Act – which officially set up a voluntary ‘conflict free’ minerals certification scheme for major electronics manufacturers, but which created a “de facto boycott” of tin, tantalum, and tungsten from the broadly demarcated conflict mineral zone of the eastern Democratic Republic of the Congo – led to a 143% increase in child mortality in villages near affected mining operations relative to control villages (both conflict zone villages not near mines and mining village not in the conflict zone). They identify a potential channel mediating this impact: namely decreased consumption of health care goods, in particular anti-mosquito bed nets.

Sanctions likely impact on health outcomes through reduced public and private expenditure on healthcare and health products, and by disrupting medical supplies.

Various studies have attempted to understand the mechanisms by which sanctions negatively impact on health outcomes. There is evidence that negative health outcomes are modulated by the costliness of sanctions for the economy of a targeted state (Peksen, 2011; Gutmann, et al., 2021) and their duration. In addition, Gutmann, et al. (2021), contradicting Allen and Lektzian (2013), find that sanctions are associated with a significant decrease in public expenditure on health care.

Case study evidence indicates that direct disruption to the pharmaceutical industry is another key reason why sanctions have a negative impact on health. Moret (2015) argues that worsening health outcomes in Iran and Syria were driven by disruption to the availability of medicines. Similarly, Setayesh and Mackey (2016) suggest that sanctions “crippled Iran’s domestic pharmaceutical industry”, disrupting generic medicines production and forcing the country to rely on imports of “lower or questionable quality.” They estimate that, despite exemptions for most medicines, sanctions left 6 million Iranian patients with “limited treatment access for a host of diseases” due to price rises of 30-40% and medicine shortages (ibid, Karimi & Haghpanah, 2015). The impact of sanctions on transportation and financial transfers appear to have driven this disruption (Setayest & Mackey, 2016; Shahabi, et al., 2015).

Food and water security

Sanctions have a negative and severe impact on water security in at least some cases.

Sanctions against Syria (Aita, 2020), Iraq (Buck et al., 1998) and Zimbabwe (Kabalira, 2021) led to negative consequences for the availability and quantity of water supplies. In the case of Zimbabwe this in turn led to a cholera outbreak with over 190,000 cases and 4,000 deaths (p.23). Gutmann et al.’s (2021) finding that sanctions are associated with a significant increase in cholera deaths indicates that water-related issues likely mediates the relationship between sanctions and reduced life expectancy.

There are prominent examples of sanctions impacting negatively on food security, though it is less clear whether these represent exceptions or the rule. Allen and Lektzian (2013) conduct a panel study covering the period 1990-2007 and find no significant association between

sanctions and food supply. In contrast, Afesorgbor (2021) found that sanctions were associated with increases in the Global Hunger Index of sanctioned states. Turning to case study evidence, Krivko et al. (2019) found no evidence that sanctions on Russia after 2014 had a negative impact on food security in the country. However, other cases indicate that individual sanctions regimes may have a highly deleterious impact on food security in some cases. Deteriorating food security in Syria after 2011 may have reflected the impact of sanctions as well as the conflict (Andronik, 2018; Aita, 2020), with energy sector sanctions having been identified as having a negative impact on food production (Aita, 2020, p.8). This reflected the fact that fuel scarcity and rising fuel prices made the pumping required for irrigation more challenging, resulting in “a major reduction of irrigated planted land and crop production” and an increase in dependency on volatile rainfall. The decline in yields was further exacerbated by “an almost complete halt of fertiliser imports”, which led yields for irrigated land to approximately halve. These issues had knock-on effects throughout the agricultural value chain.

Sanctions from 2001-2008 are also reported to have negatively impacted on food security in Zimbabwe, reducing production and creating “immense food shortages” (Kabalira, 2021). Similarly, Smith (2020) blames the introduction in 2017 of “stringent” energy sanctions targeting North Korea for a “precipitous” fall in agricultural production in the country, which left it unable to feed a third of its population.

Disaster preparedness

A panel study by McLean and Whang (2021), covering the period 1945-2005, find that sanctions are associated with a 16% reduction in expenditure on disaster preparedness, as well as very large increases in the economic damage associated with disaster and increases in the number of people negatively affected per disaster.

6. Impact on security, rule of law and respect for rights

Criminality and corruption

Sanctions appear to increase corruption and criminality. This reflects concern that even relatively effective regimes are subject to evasion, which tends to involve use of “front companies...black market contractors...and re-flagging or disguising of vessels” (Biersteker, et al., 2014). Such activities undermine the rule of law and increase the power of criminal groups and corrupt officials. This is exemplified by the case of Syria, where Aita (2020) describes how the post-2011 sanctions regime led to “the development of illegal trade networks” that were controlled by the Syrian security services” (p.8). Similarly, Andreas (2005) used the case study of the sanctions on Yugoslavia to argue that sanctions contribute to criminalisation of the state and economy in both targeted countries and its neighbours by “fostering a symbiosis between political leaders, organized crime, and transnational smuggling networks.”

Biersteker, et al. (2013) find that targeted UN sanctions are associated with increased corruption and criminality. Indeed, this was the most frequent unintended consequence identified in his analysis of all 22 UN targeted sanctions regimes implemented from 1990 to 2013 – with an increase in criminality and corruption occurring for 69% of sanctions episodes. Rosenberg (2016) – focusing on the period 2001-2016 - also reports an association between US sanctions and corruption, but not with a rule of law indicator.

Balanov (2017) finds – based on a multiple regression analysis using panel data - that the threat of sanctions is associated with a 1.25% increasing in corruption for relatively clean states and a 5% increase in corruption for already corrupt states. The Balanov finding could be interpreted in two ways: (1) as bolstering the findings above by indicating that even sanctions threats increase corruption; or (2) as demonstrating the risk that the apparent association found previously between sanctions and corruption is contaminated by endogeneity between corruption trends and the likelihood of sanctions being imposed.

Human rights and economic freedom

There is not yet a clear consensus on how sanctions impact on human rights in targeted states. Peksen (2009) conducted a panel study covering the period 1981-2000, finding that economic sanctions increase the probability of frequent disappearances (by 115% for general sanctions or 50% for targeted sanctions), of frequent extra-judicial killings (by 64% and 29% respectively for general and targeted sanctions), of political imprisonment (by 57% and 27%) and of torture (61% and 30%). These findings are replicated for targeted sanctions specifically by Carneiro and Apolinário (2016) through a panel study focused on sanction events in Africa over the period 1992-2008. Similarly, a panel study by Peksen (2016) covering the period 1950-2003 finds evidence that sanctions are associated with “ethnic-based discriminatory economic and political practices in [targeted] multi-ethnic countries”, with a greater effect for comprehensive relative to targeted sanctions.

However, this evidence has been challenged more recently by Gutmann, et al. (2020). Like Peksen, they conduct a panel study (covering the period 1981-2011), but unlike him they deploy innovative econometric techniques to try and control for potential endogeneity between the decision to impose sanctions and declining respect human rights (i.e. the risk that an observed association between sanctions and negative human rights outcomes in fact reflects the fact that factors driving worsening human rights increase the likelihood of sanctions being imposed).⁶ They found that when deploying a standard approach a significant negative association was found between US sanctions and respect for human rights, but that this disappeared when applying endogeneity controls.

Looking beyond targeted states, there is evidence that sanctions may encourage third party states to improve their human rights practices. Peterson’s (2014) panel study covering the period 1976-2000 finds that the imposition of sanctions by the US designed to improve human rights in targeted states increases the probability that “similar” states will improve their human rights performance.⁷ Carneiro (2014) reaches similar conclusions in a panel study focused on Latin American countries over the period 1970-2004.

There is some evidence that sanctions undermine economic freedoms in targeted states, though this is not found in all relevant studies. A panel study by Lektzian and Mkrtchian

⁶ Their approach involved including control variables that are related to the decision to impose sanctions but should not be related to changes in human rights performance (namely, distance of the country’s capital from Washington DC and whether a country has voted in-line with the US in the UN General Assembly).

⁷ Similarity is determined by: (1) being in the same region; (2) having at least as bad a record for human rights; (3) scoring similarly in terms of levels of democracy; (4) having similar income; and (5) not being in an alliance with the sanctioning state.

(2021), covering the period 1950-2016, found that the imposition of sanctions is associated with a reduction in economic freedoms. Similarly, a panel study by Peksen (2017) covering the period 1960 to 2005 finds that economic sanctions are associated with a “deterioration of the economic security and private property rights of citizens in target countries.” The author argues that this likely reflects incentives for “politically insecure elites to engage in a policy of predation” to counter the negative economic effects of sanctions on themselves and their key constituencies. In contrast, Gutmann et al. (2020) find no significant relationship between sanction imposition and economic rights and indicates that endogeneity issues may have led to a slight overestimation of the negative impact of sanctions on economic rights in previous studies.

Conflict and extremism

Few studies have looked at the impact of sanctions on international conflict, but there are indications that sanctions may make targeted states vulnerable to attack. Peterson and Drury (2011), uses panel data spanning 1914-2000, finds that states targeted by sanctions are around 50% more likely to be attacked by other states; potentially reflecting the fact that the negative economic consequences of sanctions make them appear more vulnerable.

The impact of sanctions on internal conflict remains disputed, but generally the literature suggests that sanctions exacerbate conflict. Biersteker et al. (2013) review of qualitative case studies for all targeted UN sanctions from 1990 to 2013 finds evidence that they frequently strengthen political factionalism. Hultman and Peksen (2017) conduct a panel survey covering internal armed conflicts in Africa from 1989 to 2005, finding that both the threat and imposition of economic sanctions were associated with increased intensity of violent conflict (whilst arms embargoes were found to reduce conflict intensity). Similarly, a panel study by Lv and Xu (2017) covering the period 1984-2008 finds an association between economic sanctions and ethnic violence. In contrast, Lektzian and Regan (2016) find no significant effect of sanctions on civil conflict duration, except where combined with military enforcement, when they do appear to help shorten civil conflict. Similarly, a panel study by Escriba-Folch (2010) covering the period 1959-1999 concludes that sanctions are associated with reduced duration of civil conflicts; Özdamar and Shahin (2021) suggest this may represent a paradox rather than a contradiction, since more intense conflicts may be more likely to lead to rapid victory for one side.

Aita (2020) describes how sanctions affecting the formal Syrian banking sector led to a rapid growth in traditional hawala-based systems of money transfers, which “fuelled the uncontrolled financing of combatant groups.” Aita cites the example of how extremist groups ended up “controlling more than \$1.5 billion in yearly imports from Turkey” partly as a result of the sanctions regime. During the later stages of the conflict, the unilateral measures played a significant role in fuelling the war by indirectly generating, through informal war economics, significant financial resources to armed groups on all sides; as one example, extremist groups wound up controlling more than \$1.5 billion in yearly imports from Turkey to the whole of Syria. Aita (2020) also describes how sanctions fuelled the “rise of extremist groups” during the early stages of the conflict.

Consistent findings across several studies indicates that sanctions increase terrorism. Choi and Luo (2013) conduct an international panel study covering the period 1968-2004 finding that economic sanctions are with a 93% increase in the likelihood of international terrorism. Another international panel study covering the period 1970-2009 (Altmann & Giersch, 2021)

provides moderate support for the hypothesis that sanctions increase terrorism fatalities in target countries. McLean, et al.'s (2018) international panel study covering the period 1945 to 2005 finds that "comprehensive sanctions such as blockades" as well as export sanctions "negatively affect the ability of targets to suppress their terrorist challengers." Rosenberg (2016) reaches similar conclusions in a panel study focusing on US sanctions imposed from 2001-2016.

7. Impact on support for authoritarian governments

There is some evidence for an effect termed "rallying-around-the-flag" where sanctions enable autocrats to exploit nationalism and "portray regime support as a civic duty to defend the nation against a foreign enemy" (Hellmeier, 2021). Biersteker, et al. (2013) find that authoritarian rule in the target country was strengthened in 54% of UN targeted sanctions episodes from 1990-2013. Similarly, Hellmeier (2021) conducts a multiple regression analysis using panel data to identify that both sanctions and the threat of sanctions is associated with an increase in pro-government rallies in sanctioned countries, though this relationship is weakened when there is more media freedom in the targeted state.

The example of the aftermath of US President Obama's 2015 executive order renewing targeted measures against seven high-ranking Venezuelan government officials is cited by Hellmeier (2021) as an example of how sanctions are reframed to serve the purposes of the sanctioned government. Venezuela's President condemned Obama's "gringo imperialism", asked parliament for additional powers to fend off the supposed threat and mobilised his supporter base through a large rally. Similarly, Kabalira (2021) describes how Zimbabwe's ruling ZANU PF party blamed sanctions for the country's economic troubles, shifting attention for their own failings whilst simultaneously undermining support for the opposition MDC which was supportive of the sanctions regime. Similar stories emerge for the cases of Cuba and Iran.

However, some other studies suggest that economic sanctions have supported democratisation or regime change rather than strengthening autocratic governments. A panel study by Escriba-Folch (2010b) covering the period 1960-1997 finds that sanctions are associated with regime change for 'personalist' authoritarian states, though not for single-party or military regimes. Rosenberg (2016) – focusing on the 2001-2016 period – finds that US sanctions were associated with a decline in popular support for the targeted government. Similarly, Von Soest and Wahman (2015) use panel data for the period 1990-2010 to argue that whilst sanctions generally do not increase the level of democracy, there is a significant correlation between those economic sanctions regimes specifically designed to promote democratisation and increased levels of democracy in authoritarian target countries, with this relationship mediated by the impact of sanctions on the probability of regime and leadership change.

8. Gender-specific effects

There is some evidence that women are more severely impacted by the humanitarian consequences of economic sanctions. Gutmann et al. (2021) conducted a panel study that found a statistically significant gender differential in the impact of sanctions on life expectancy at birth, with the reduction for women being 0.3 years greater than for men.

Different econometric studies have reached contradictory conclusions regarding the impact of sanctions on women's rights, whilst case studies indicate that there is likely a

negative impact in at least some cases. A panel study by Drury and Peksen (2014) covering the period 1971-2005 find a negative impact of sanctions on women's rights, with a particularly pronounced negative effective for poorer sanctioned countries. However, Gutmann et al. (2020) have demonstrated that endogeneity between the decision to impose sanctions and factors driving declining respect for rights in targeted countries may have led to overestimation of the negative impact of sanctions on women's rights. Using panel data covering the period 1981-2011 they found no significant relationship between sanctions impositions and respect for women's rights in the absence of endogeneity controls – but once variables were included in their regression to control for endogeneity (see footnote 6 above) the imposition of sanctions was associated with improvements in women's rights.

Fathollah-Nejad (2014), in a qualitative study focused on Iran, argues that by hitting the economy, sanctions “fuel regressive social policies”, including by giving conservative political actors a platform to advance their agenda. The author argues that male dominated social structures frequently adjust in a way that “externalizes the costs of sanctions onto the female population”, including through policies that push women out of the labour market and through financially stretched families prioritising boys' over girls' education.

9. Geopolitical consequences

Credibility of the sanctioning entity

Both the decision to follow through on a threat to impose sanctions and the success or failure of a sanctions regime impact on the credibility of the sanctioning entity and its ability to use sanctions threats achieve its objectives in future. Peterson (2013), using panel data for the period 1971-2000, finds that the probability of a state acquiescing with US demands following a sanctions threat is higher where the US has recently applied sanctions after a state refused to acquiesce after a sanctions threat. There is evidence that following through on a sanctions threat may make it less likely that a state needs to apply sanctions in order to achieve its objectives in future. The other side of the coin is apparent in Biersteker et al.'s (2013) study which identifies that ineffective UN sanctions have had a negative impact on the credibility of the UN as an institution.

Nuclear proliferation

The evidence on the impact of sanctions designed to counter nuclear proliferation is mixed, with indications that sanctions may deter third parties from pursuing nuclear weapons, whilst spurring on the pace of development in the targeted regime. Miller (2014) uses panel data for the period 1950-2000 to build a regression model that supports the hypothesis that legal changes that increased the credibility of the US applying anti-nuclear proliferation sanctions from 1976 have reduced nuclear proliferation, with states that are more dependent on the US⁸ being less likely to pursue nuclear weapons after 1976. However,

⁸ Dependence score is the sum of four binary variables: (1) whether the state received economic aid from the U.S; (2) whether the state received military aid from the U.S; (3) whether the state stationed any U.S. troops; and (4) whether more than 1.67% of the state's GDP related to imports from or exports to the US.

Miyagiwa and Ohno (2015) provide evidence indicating that imposition of sanctions may actually accelerate the intensity of efforts of a target state to develop nuclear weapons.

Increasing linkages between sanctioned states and third-party states

Sanctions may lead to targeted states increasing their linkages to the rivals of sanctioning states and developing new commercial relationships. Harrell et al. (2017) note that post-2014 Western sanctions on Russia restricting investment by firms from sanctioning countries in the Russian oil and gas sector led to “other players, particularly from Asia” stepping in to provide an alternative source of finance for oil and gas project, providing the example of China’s Silk Road Fund which bought a 9.9% stake in the Yamal LNG plant after US sanctions hit the project’s operator Novatek and the 2017 decision by the Industrial and Commercial Bank of China to begin renminbi clearing services in Russia. Amuzegar (1997) reports a similar effect in the case of Iran, where US sanctions “heralded a shift to other sources of equipment for exporting oil and stronger ties with Asia, Africa, and Latin America.” Such effects will not only reduce the effectiveness of sanctions, but may also seem likely to have more complex long-term effects that may run contrary to the geopolitical interests of sanctioning countries, including by “reducing their leverage and competitive advantage” (p.5).

Impact on migration and refugee flows

The impact of sanctions on migrant flows has been under-explored to date. There are strong prima facie grounds to expect sanctions to increase migrant outflows, and media reporting is indicative of such effects. Lopez (2019) focuses on the case study of recent economic sanctions against Venezuela, arguing that sanctions were responsible for a “sudden increase in migration from Venezuela to Colombia in 2018.” However, given the complexity of the crisis faced by Venezuela the precise contribution of sanctions to emigration from the country is open to doubt. Unfortunately, this study appears to currently be something of a one-off; we found no other case studies and no econometric studies focused on this issue. This assessment is supported Ozdamar and Shahin (2021) who highlight the gap in the academic literature on the impact of sanctions on refugee numbers.

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