

SANCTIONS AND RUSSIAN AUTOCRACY

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ABSTRACT

This chapter studies how macroeconomic and political variables interact following a boycott of Russian oil (modelled as a reduction of per capita oil rents) and on how these factors codetermine the impact of sanctions and develop over time. We use an innovative approach to sanctions that provides a dynamic, forward-looking, perspective and deals with the economic and political outcome of sanctions simultaneously. The main methodological contribution of this chapter is that we show that success conditions evolve during a sanction episode. In our simulations the impact of an oil boycott on Russia is considerable, and economic costs act as powerful behavioral incentives. Initially these broad and comprehensive sanctions could strengthen the tendency toward autocracy in Russia somewhat, but this initially negative effect turns positive in the midterm (two to seven years) showing that the oil boycott contributes towards political change deemed necessary for a political solution. This contribution reaches its maximum in the fourth year. This window of opportunity, however, closes in the longer term due to adjustments in the economy and political system.

Keywords: Oil boycott, Russia, Sanction success, VAR

INTRODUCTION

The European response to the Russian war on Ukraine has been praised as unprecedented, but could also be characterized as too slow, too late, and too little (van Bergeijk 2022). The complicated political decision-making structure of the European Union and the unequal distribution of the costs of energy sanctions are key determinants of the focus on individuals and entities in EU's sanction packages and to a large extent explain why comprehensive sanctions were not agreed and announced until June 3, 2022. The sixth EU

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sanction package covered both a significant part of the Russian banking industry and introduced a boycott on Russian oil, although with exemptions for Hungary, Slovakia and the Czech Republic and with a slow pace of actual implementation with adjustment periods in excess of six months. The key question is whether this package could be successful. In order to answer this question two issues need to be considered: (a) will the sanctions bite economically? And, if so, (b) will this welfare loss lead to a change of Russian behavior? Typically, these two questions are discussed in two different scientific fields: (international) economics and International Relations/Political Science, respectively. As to the first question, several recent studies have reported estimates regarding the potential economic consequences of the sanctions against Russia in the context of the war on Ukraine (Table 1).

Table 1. Recent forecasts for Russian GDP in the context of its war on Ukraine

Study	Method	GDP
Evenett and Muendler (2022)	cModel (computational model developed by the Globalization and Prosperity Lab of the University of California)	-1.1%
Felbermayr et al. (2022)	CGE GTAP, a Computable General Equilibrium model developed by the Global Trade Analysis Project (GTAP)	-7% to -10%
IMF (2022)	Implied by the difference between <i>World Economic Outlook</i> forecast that were made before the conflict and the current outlook	-11%
Korhonen and Kortelainen (2022)	Global Integrated Monetary and Fiscal Model, an adjusted general equilibrium model originally developed by the IMF	-10.6%
Langot et al (2022)	Input Output/ multi-sector multi-country	-6% to -11%
Mahlstein et al. (2022)	CGE GTAP Model	-15% to -28%
Pestova et al. (2022)	Vector Auto Regression	-13% to -15%
World Bank (2022a,c)	Implied by the difference between <i>Global Economic Prospects</i> forecast that were made before the conflict and the current prospects	-11%
WTO (2022)	WTO Global Trade Model	At least -5%

The heterogeneity of the forecasts both between and within studies is significant. The between study heterogeneity is to a large extent driven by different methods and the within heterogeneity reflects that many studies have deployed several scenarios regarding the

harshness of the war and the sanctions regime. The fact that estimates have been produced with different methods, by different groups and under different assumptions regarding country participation and product coverage of the sanctions leads to differing projections, but also testifies of the robustness of the findings that Russia's Gross Domestic Product (GDP) will be under significant pressure (the median contraction of the forecasts in Table 1 is a reduction by 11%). The upshot of the studies summarized in Table 1 is that sanctions will, in all likelihood, result in a significant decrease of Russia's GDP.

The potential to deliver substantial damage is a necessary but by no means a sufficient condition for sanction success. In this chapter we analyze how macroeconomic and political variables interact following a boycott of Russian oil (modelled as a reduction of per capita oil rents) and on how these factors that codetermine the impact of sanctions develop over time. We have developed and applied this approach for the case of Iran (Dizaji and van Bergeijk 2013).

Our research strategy is motivated by the observation that a myriad of theories on the determinants and success and failure of sanctions has led to a great many – often contradictory – hypotheses that both seem to be supported by reported empirical findings and at the same time do not resolve the debate on economic sanctions (van Bergeijk 2019). Most findings are statistically weak (Bapat et al. 2013), publication bias is significant while the empirical literature also does not show a tendency towards a convergence of findings (Demena et al. 2021). Sanctions application has changed fundamentally throughout the last quarter of a century so that research dealing with the previous century may not be relevant in the current context (Early and Cilizoglu, 2020). A complicating factor is, moreover, that many data have been developed that cover different types of sanctions and research periods and analyze different measures for sanction success. Heterogeneity is not only significant between data sources but also with respect to the different vintages of the same data source (van Bergeijk, and Siddiquee, 2017). Finally, sanction cases are often determined by country and case specific characteristics on which we simply do not have sufficient comparable data to be included in large-N studies (van Bergeijk 2021). Our approach is based on country modelling and rather than enforcing a general statistical pattern or the *a priori* theoretical restrictions of a structural model we use a 'theory-free' stochastic process and allow for the possibility that the effects of sanctions due to the evolution of economic and political variables differ over time. The aim of the paper is not to provide an accurate forecast of the economic developments (as the studies in Table 1 do) as this would involve consideration of the repercussions on the world economy, the exact timing and size of the sanction measures as well as countervailing Russian policies (such as capital restrictions, interest rate policies and counter sanctions). Indeed, our goal is more modest as we aim to provide a numerical context that enables us to evaluate how economics and politics interact over the trajectory of an oil boycott.

The remainder of this chapter is organized as follows. The next section provides a review of the sanctions literature that focusses on potential economic impact, the

determinants of success and failure of economic sanctions and the political resource curse that links the fluctuations of oil rents to changes in the political system and also seems to be relevant for understanding why Europe's *Ostpolitik* seems to have failed to deliver peaceful coexistence. Then we move to a discussion of the building blocks for our analytical framework: a description of the data and an overview of the model (readers that are not interested in the econometric details can skip this part of the paper). The next section presents and discusses our findings, starting with some descriptive statistics followed by the estimated impulse response functions that show the development over time of four variables of interest: defense expenditures, imports, investment and the movement along the democracy-autocracy continuum. The final section concludes, offers some suggestions for further research and highlights policy conclusions.

LITERATURE REVIEW

Our analysis is informed by three strands of the political and economic literature on economic sanctions that deal with (a) their (potential) economic impact, (b) the success and failure of sanctions and (c) the political resource curse, in particular the association between autocracy and natural resources is specifically relevant in the case of Russia.

(Potential) economic impact of economic sanctions

Sanctions that restrict trade directly or indirectly would seem to be the mirror image of the narrative of the benefits from opening up to trade that is part and parcel of 'International Economics 101': limiting international trade reduces the opportunities for international specialization and this unambiguously reduces welfare of the targeted economy (see, for example, Frey, 1984). First principles stipulate that (a) this welfare loss is larger for more inelastic demand and supply, (b) restrictions that occur on imports also have an impact on exports (and *vice versa*) and (c) changing the terms-of-trade is also a potent instrument to induce quantity reductions. These first principles translate into three policy relevant determinants and a corollary that is often overlooked:

- (a) Sanctions that focus on goods and services for which no alternatives (substitutes, other sellers, other markets) are available create more economic damage and as elasticity increases over time, the economic impact of all sanctions erodes over time (van Bergeijk and van Marrewijk 1994)
- (b) It is not necessary that sanction measures deal with both exports and imports. It is straight-forward that restricting a target's imports by means of an embargo reduces the export capacity. Similarly, reducing exports reduces hard currency earnings necessary to pay for imports of intermediate products and raw materials.¹

¹ This point is illustrated below by the endogenous reduction of imports in our VAR model of an oil boycott.

- (c) An imposed terms of trade loss, for example by means of a strategic tariff, both reduces trade flows and shifts excess profits from sanction target to sanction sender (Gros 2022).

The overlooked corollary is that to be able to deliver any economic damage, economic exchange before the imposition of sanctions by necessity must be strictly positive. This would seem to be kicking in an open door, but many sanctions actually have been imposed on non-existing economic activities (van Bergeijk 2010).

Empirically, the impact of sanctions on trade has predominantly been investigated with applied gravity trade models. This line of research although already indicated by Linnemann (1966, p. 215) as an important extension for gravity modelling, started with Hufbauer et al. (1997) and Caruso (2003). Recent studies include Kohl (2021) and Dai et al. (2021) who using a newly available data set² consistently find significant short-term effects for economic sanctions and underline the importance of analyzing the dynamic development over time.³

The basic trade model of trade sanctions has been further developed in various directions. Several extensions build on the balance of payment constraint and bring in the sanctioning of other forms of hard currency receipts such as remittances (Makhlouf and Selmi, 2022), Foreign Direct Investment (Irkina 2021) and development aid (Early and Jadoon 2016), and, especially since the SWIFT sanctions against Iran, have considered restrictions on the use of the international payments system (Dizaji 2021). Also, anticipatory strategies such as stockpiling (Afesorgbor 2019) and redirection of trade flows before sanction threats materialize have been investigated.

Success and failure

In the end sanctions are not about imposing damage but about changing behavior. Effective sanctions that are effective in the sense that they create a lot of damage will be considered a failure if they do not change the target's behavior. The translation of economic damage into behavioral change is not straight-forward due to several aspects of the sanctioning process. First and foremost, sanctions are characterized by uncertainty regarding implementation, because a sanction that bites will hurt both the sanction target and the sanction sender that both have to forego the mutual benefits of international trade. Given these costs, senders may want to avoid the welfare loss of sanction application so that sanctions remain in the threat stage only. This fundamental uncertainty means that the credibility that the sanction will be effectively applied after a threat is a key determinant for behavioral change, that is: success. Indeed, sanctions application may be necessary to

² The Global Sanctions Data Base, see Kirilakha et al. (2021)

³ Rose (2018) using an alternative data source (the Threat and Imposition of Economic Sanctions data set developed by Morgan et al (2014) finds that the potential to apply sanctions, influences trade rather than their actual implementation implying that anticipation of sanctions acts as a strong incentive to adjust the economy even before the actual announcement of economic sanctions.

restore credibility (van Bergeijk 1994, van Bergeijk and van Marrewijk 1995). Second, sanctions can create rally-around-the-flag effects: external threats may bolster popular support for the regime (Seitz and Zazzaro 2020). Relatedly, sanctions may be eroded by third parties and sanction busting activities (Early 2015, Dizaji 2018).

The low success rate of economic sanctions has drawn attention from many observers, but often lead to the erroneous conclusion that sanctions do not work. Typically, this is a fallacy of hasty generalization that ignores the fact that sanction cases that do not meet the requirements for potential success should fail. For example, when pre sanction trade between sender and target is small (*i.e.* less than one percent of the target's GDP) then the failure rate is 80% while at a substantial level of pre sanction trade (more than 10% of the target's GDP) the chance that a sanction succeeds becomes slightly better than fifty-fifty (van Bergeijk 2010). Empirical research on the determinants of success and failure of economic sanctions has identified a number of factors that are instrumental for case selection, *i.e.* to determine *ex ante* if sanctions in a specific case could in principle succeed. In general, the research strategy has been to estimate quasi-reduced form equations without much consideration of conceptual measurement issues and/or theoretical backing linking a measure of sanction success to a set of explanatory variables and using one of the large sanction data bases in combination with secondary data for socio-economic and political variables. The sanction mechanism was generally approached as a black box, although science has progressed and uncovered many mechanisms such as imposition versus threat (Afesorbor, 2019), actual versus potential costs (van Bergeijk, 1989), sanction risk versus trade uncertainty (Golikova and Kuznetsov, 2017), the political system (Kaempfer and Lowenberg 1988, van Bergeijk 1997) or deterministic versus strategic (Tsebelis, 1989). Moreover, increasingly it was recognized that culture and institutions also are important components of the sanction mechanism. Driscoll et al. (2010) show the importance of cultural factors for both the choice to use economic sanctions and the outcome of economic sanctions. In addition, more socio-economic and political aspects were taken into consideration. For instance, Early and Peksen (2020) have recently raised the issue that developments in the informal sector may be drivers of sanctions outcomes especially in democracies. As already mentioned only a few policy recipes have statistically strong and robust support (see Bapat et al. 2013, van Bergeijk and Siddiquee 2017 and Demena et al. 2021):

- (d) 'No trade, no effect'. Sanction damage and pre sanction trade linkage are associated with political success of implemented sanctions.
- (e) 'Smash the hammer instead of turning the vice'. Sanctions should be applied quickly and be as strong as possible from the start. The longer it takes before the sanctions are fully in place the lower the probability of success.
- (f) 'Unilateral sanctions suck'. The involvement of international institutions is associated with larger sanction success.

- (g) ‘Don’t overreach’. The higher the aim or goal of sanctions the lower the probability of sanction success.

Political resource curse

For long the European approach to the economic relationship with Eastern Europe and Russia has been based on the concept of the Liberal Peace. The Liberal Peace is a theory that states that international trade, democracy and peace are mutual reinforcing factors and is, for example, one of the conceptual building blocks of the European Union and its Eastwards extension after the fall of the Berlin Wall and the Iron Curtain in 1990. Indeed, the *Ostpolitik* has been based on the ideas that welfare is associated with democracy, that international specialization increases welfare, and that international trade enhances the (implicit) costs of conflict thus increasing the benefits and likelihood of peaceful coexistence. It is also for these reasons important to understand why the Liberal Peace appears to have broken down in the case of Europe’s trade policy towards Russia. A potential explanation is that the Liberal Peace breaks down in situations where the Political Resource Curse dominates political dynamics. The main thrust of the political resource curse literature is that oil rents tend to hamper democracy and strengthen autocracy (Ross, 2001, 2011; Jensen and Wantchekon, 2004, Crespo Cuaresma 2011). The underlying mechanism is that natural resource rents stimulate rent-seeking behavior, rent grabbing and rivalry that hampers the transition towards democracy and may also induce movements towards autocracy (Mahdavy 1970, Mehlum et al. 2006, Ahmadov 2013). Moreover, natural resource rents both are a strong incentive and offer autocratic rulers the financial opportunity to strengthen the military to protect their power (Tsui, 2011, Perlo-Freeman & Brauner 2012, Cotet & Tsui, 2013).⁴ The political resource curse has been contested, and empirical research suggests, for example, that the validity of the hypothesis may be conditioned by the level of institutional and/or economic development (Ross 2012, Caselli and Tesei 2016). However, the key idea is that more trade in natural resources would not necessarily strengthen peaceful coexistence and democracy but could undermine the conflict-reducing potential of international trade relationships as supported by recent research that links the development of gas export hubs to increases in autocracy (Gallea et al. 2022), energy rents to larger defense expenditures and more autocracy (Dizaji 2022) and natural resource exports to lower levels of the Global Peace Index (Ghazalian, and Hammoud 2021). Externally, energy trade increases the importer’s economic vulnerability, and this may be the driver of both the finding that energy trade reduces conflict between exporter and importer (Gökçe et al. 2021) as well as the association between higher energy dependence and the lower probability that sanctions will be applied by the importer (Gallea et al. 2022). These findings suggest that policy makers should consider several issues:

⁴ Ali and Abdellatif (2015) point out that oil revenues directly provide finance for ‘potentially controversial expenditures’ such as large foreign arms purchases, and, in contrast to distorting taxation, do not lead to domestic political counter pressure.

- (h) Reduce dependence on autocratic natural resources suppliers both by developing substitutes, demand management as well as diversification.
- (i) Increase countervailing power by means of an export package that predominantly consists of goods and services that are essential for the energy exporter's economy.⁵
- (j) Sanction implementation against natural resource exporters may be necessary to restore credibility of sanction threats.

The findings of the three strands of the literature show that sanctions can work economically but that the translation of (potential) economic damage into political change is not straight forward and needs consideration. A problem with much of the sanctions literature is that economic and political impact have been studied in isolation or on the assumption of monocausal relations. Regarding the latter, the emerging consensus of the recent literature is that this naïve theory of sanctions (that is the hypothesis that a sender through imposed costs induces the sanction target to change its behavior) is too simplistic for a meaningful understanding of the complex interactions that are characteristic of economic sanctions and, moreover, that case and country specific conditions of time and place need to play a stronger role in assessments of sanctions (van Bergeijk 2021: 12). Our research strategy fits in this consensus as we build a case and country specific model that allows us to take bidirectional causality as well as economic and political adjustment on board.

METHOD

Data

Our time series are on the short side. Eastern European data during the Cold War period were often manipulated (van Bergeijk 1995) and we exclude the data produced under the Communist regime and the starting point is the political and economic break of the demise of the Union of Soviet Socialist Republics (USSR) in 1990. The end date of the estimation period is dictated by the fact that most data after 2020 are still preliminary. The data on economic variables are collected from World Bank's World Development Indicators (WDI) online database (World Bank, 2022b). The data on democracy/autocracy dimension is derived from the Polity5 project of the Center for Systemic (Marshall et al., 2017). This index that has customarily been used in sanctions research before represents combinations of autocratic and democratic features of institutions and ranges from -10 (full autocracy) to 10 (full democracy).

⁵ This is a more general recipe also applicable to trade in general, see Hirschman (1945).

Vector Auto Regressive (VAR)

This chapter estimates the interrelationships among economic variables and democracy/autocracy using a multivariate framework that relates changes in a particular variable to changes in its own lags and to changes in (the lags of) other variables:

$$y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + B x_t + \varepsilon_t \quad (1)$$

y_t is a vector of k endogenous variables, x_t is a vector of d exogenous variables, A_1, \dots, A_p and B are matrices of estimated coefficients, and ε_t is a vector of unexpected shocks that may be concurrently correlated but are uncorrelated both with their own lagged values and with all of the right-hand side variables. We thus treat all variables as jointly endogenous and do not impose *a priori* restrictions on structural relationships. The econometric details are reported in van Bergeijk and Dizaji (2022).

Our research strategy is based on a large family of VAR models with differing selections of variables from the trade channel, the macroeconomic channel and the political channel, respectively (see Figure 1; the variables used in this chapter have been indicated in **bold**). Estimating a large family of models is important to check if the results depend on the specification and in particular the measurement of the political variable. The key common finding of these models regards economic and political adjustment that in the medium term shifts the system towards less autocracy but in the longer term has an opposite impact. The model selected for presentation and discussion in this chapter illustrates these robust medium and long-term findings and provides an alternative perspective on the short term developments.

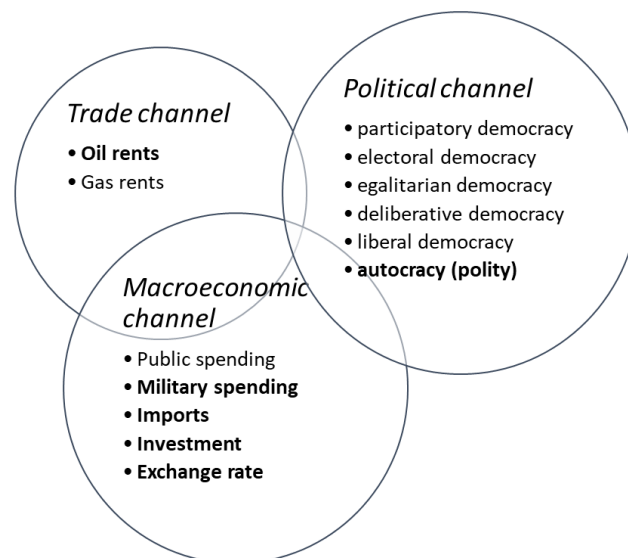


Figure 1. VAR model structure

The VAR model to be estimated is:

$$y_t = [\textit{oilrentpc}, \textit{defencepc}, \textit{importpc}, \textit{capitalpc}, \textit{exchange}, \textit{polity}] \quad (2)$$

Oil rents per capita (*oilrentpc*) impact directly on defence expenditures per capita (*defencepc*) and later on imports per capita (*importpc*), investment per capita (*capitalpc*), the exchange rate (*exchange*) and our measure of democracy/autocracy (*polity*). Oil rents basically depend on world market conditions, so this variable is the most exogenous among the variables included in the model. The negative development in oil rents due to the economic sanctions translates into lower defense expenditures and decreases firstly imports and secondly investment. The variations in these economic variables impact on the exchange rate and ultimately the economic variables codetermine *polity*.

RESULTS AND DISCUSSION

We analyze these dynamics below in more detail, estimating the VAR model described by equation (2) and then introducing a so-called innovation (a negative shock) in the per capita oil rents and letting lagged variables determine the developments of the whole VAR system. The analysis does not aim to give a more or less accurate prediction – both EU and Russian are wide ranging. At the time of writing (June 2022) on the EU side the sanction package comprises of a great many targeted sanctions, the exclusion of a significant part (but not all) Russian banks from the SWIFT system, an oil boycott (with significant exemptions with no clear end-date) and a threat to reduce future gas imports as well. On the Russian side countersanctions, monetary policy and capital restrictions aiming at stabilization of the exchange rate introduce further uncertainty. Moreover, the private sector's disinvestment and disentanglement of trade relations complicates prediction. So by necessity, our goal is rather modest namely to illustrate how economic and political variables interact in this particular case. The benefit of this approach is that we offer a clearcut scenario that shows the potential contribution of the oil boycott to the sanction's success.

Impulse response functions

An impulse response function (IRF) traces the effects of a one-time shock to one of the variables in the VAR model on current and future values of the endogenous variables. The shock on which we report in this chapter is a one standard deviation decrease in per capita oil rents.⁶ The interpretation of the impulse response is straightforward: a positive number

⁶ This amounts roughly to a reduction of oil rents by a third (calculated for the year 2019)

on the vertical axis indicates an improvement/increase and likewise a negative number implies a deterioration/decrease. The dotted lines are the 68% confidence bands around the impulse responses in the VAR models (Sims and Zha 1999). When the horizontal axis in the IRF graphs falls outside both confidence bands, the impulse responses are statistically significant. In other words, the null hypothesis of “no effects oil rents per capita” on the specific variable is rejected (Berument et al. 2010).

Figure 2 represents four selected impulse response functions focussing on the key variables of interest as the Russian economy moves from period 1 to period 10 (horizontal axis). Note again that this is not a forecasting exercise aiming at exact predictions. The goal is to arrive at more qualitative conclusions regarding the issues of the potential contribution of sanctions to the political process and the underlying dynamics along the sanction trajectory. With this caveat in mind Figure 2 provides a dynamic picture of how an oil boycott contributes to changes in Russian political developments.

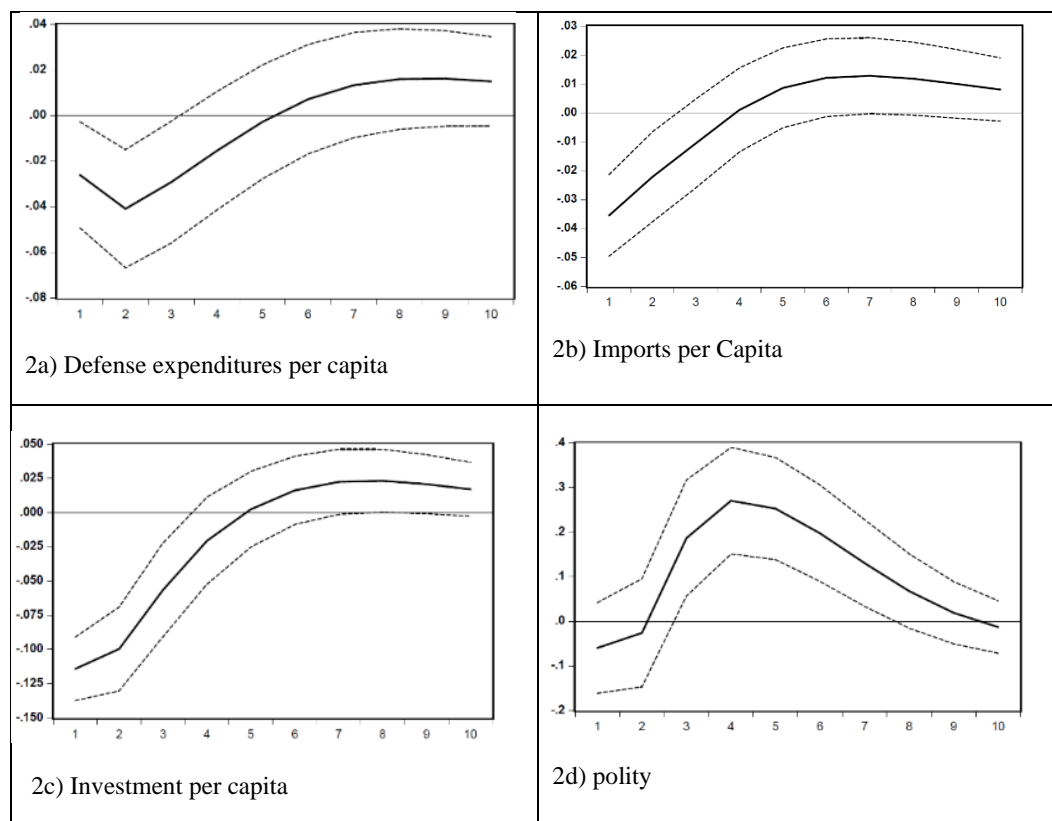


Figure 2. Selected impulse response functions for a negative shock in per capita oil rents (VAR model according to equation 2)

Figure 2 provides four impulse response functions for the variables that are key variables of interest in our VAR model. Panel 2a shows the development of per capita defence expenditures. Initially the reduction of oil income leads to a significant cut in defence

expenditures but after period 3 this is no longer significant. Imports per capita (Panel 2b) also decrease significantly in the first two years illustrating that the oil boycott endogenously reduces import. As illustrated in Panel 2c, investment per capita significantly decreases in the first four years. With respect to polity (Panel 2d) the IRF indicates an initial deterioration (a move towards more autocracy), but this is not a significant change. Starting in year 3 the response of Polity is positive and significant. The positive impact of oil sanctions reaches its maximum in year 4 and decreases afterwards until it becomes insignificant in year 8.

Variance decomposition

VAR modelling also enables a detailed analysis of the contribution that each of the variables in the VAR model makes to the changes in the other variables. This variance decomposition is illustrated for Polity in Figure 3 and 4. Figure 3 provides the contribution of each of the variables in year 1 and year 10. One point to note is that exchange rate movements that have been used as an indicator for sanction impact hardly contribute to changing political behavior as it only explains some two percent of the variations in Polity. In the first year Polity is to a large extent explained by its recent past (this is the usual pattern of any VAR analysis), but the impact over time for the shock in oil rents and investment grows over time and becomes as important.

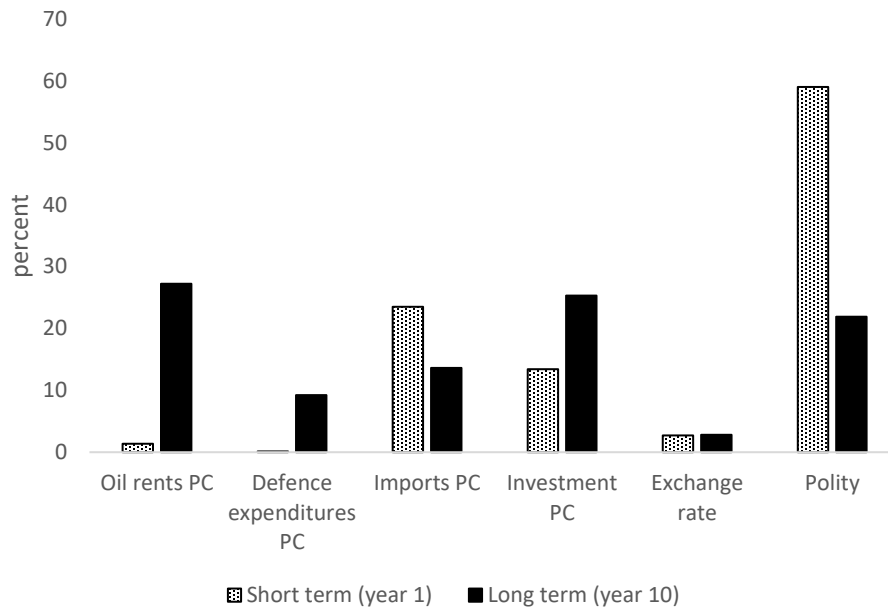


Figure 3 Variance decomposition of polity (start and end year)

For clarity of exposition, Figure 4 has grouped the three economic variables (imports per capita, investment per capita and exchange rate movements) into one category

(‘Economic’) and provides for all years the decomposition. The contribution of the shock in per capita oil rents and per capita defense expenditures to changes in Polity is initially small and indirect (that is: via the economic variables). As time passes the direct impact of these variables increases and VAR system by and large stabilizes around period 7. All in all, the variance decomposition substantiates that an oil boycott directly and indirectly influences Polity and thus contributed to the success of sanction in these cases. This does not mean that the sanctions will be successful as we can only establish a movement of Polity in the desired direction, but we cannot answer if this movement is sufficient. Rather the implication of the econometric findings is that the contribution of an oil boycott to a successful outcome over the medium term would be meaningful.

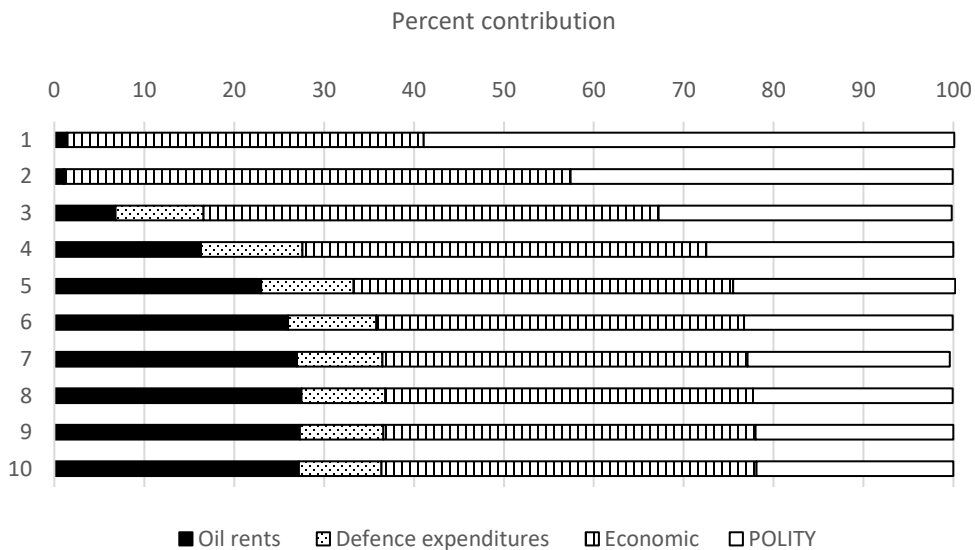


Figure 4 Variance decomposition of polity (all years)

Discussion

As alluded before, our findings should not be interpreted as predictions, but rather as a numerical assessment that establishes that the oil boycott of Russian oil meets a necessary condition for sanction success. We have shown that the boycott both indirectly and directly contributes towards moving the Russian political system away from autarky. We have not demonstrated that the sanctions meet a sufficient condition for success. Most important, the impact of sanctions on the political system is strongest in the fourth year of sanction implementation and after that impact wanes off until the impact turns insignificant in the eighth year. This means that sanctions do create a window of opportunity in this case, but also that this window closes in the medium to long term.

CONCLUSIONS AND POLICY IMPLICATIONS

It has been argued by others – on good grounds – that sanctions against Russia are less promising because of its (a) autocratic system, (b) its opportunity and ability to adjust and (c) the continuation and in some cases intensification of oil trade relations with countries that do not participate in the boycott measures. Our analysis clarifies that even under these conditions a boycott of Russian oil contributes to behavioral change. Indeed, it is important to note that this conclusion is based on a model that (a) endogenizes *Polity*, (b) puts adjustment at the center stage and (c) uses a shock in oil rents that allows for a significant part of oil trade to continue. From an economic point of view, it is also important that our approach is much less vulnerable to the Lucas critique (Lucas, 1976 van Bergeijk and Berk 2001) that states that structural change and transformation impact on the coefficients that drive the model and thus affect the results. The Lucas critique is relevant for structural models of sanction targets, since the limitation of international trade can be expected to significantly change behavioral patterns. The VAR approach enforces neither a general statistical pattern nor *a priori* theoretical restrictions, as the ‘theory-free’ stochastic process allows for the possibility that the effects of sanctions differ over time reflecting the evolution and interaction of economic and political variables. The trust in our main finding is further strengthened by two aspects: the country specificity of the VAR model (which means that Russian particularities are reflected in the stochastic processes) and the robustness of the main findings in a large family of VAR models (van Bergeijk and Dizaji 2022). All in all, a boycott of Russian oil can in the medium term be expected to contribute to a change of Russian behavior, but due to adjustment that effect wanes off in the longer term.

In addition to these case specific conclusions our analysis also contributes to the sanctions literature in general. The mainstream sanctions analysis follows Hufbauer and Schott (1985) by distinguishing two factors that build the success and failure of economic sanctions, namely: policy result and sanction contribution. The analysis in this chapter shows that both the sanction contribution and the political impact of the oil boycott vary over time and this has not only important methodological ramifications but is also highly relevant for contemporaneous policy making.⁷

Our main methodological point is that sanctions research needs to take the variations in contribution and impact into account in analyses of sanction success and its determinants. An evaluation of a sanction at a given moment in time offers only a snapshot – it is, moreover, a snapshot of a moving target since the target’s position on the autocracy-democracy continuum is not fixed during a sanction episode. Analyses that take the *status*

⁷ In Dizaji and van Bergeijk (2013) we provided a similar empirical framework for the case of sanctions against Iran with comparable findings, but we did not draw these conclusions with respect to sanctions research yet. In the same vein Van Bergeijk and van Marrewijk (1995) theoretically foreshadow these methodological conclusions by endogenizing adjustment and expectations of (continued) sanction implementation.

quo ante of the political system as a point of departure for determining the potential for sanction success miss the point that the political system is not exogenously given. Similarly looking only at the final stage of a sanction's trajectory misses the nuance that sanctions could have worked (better) in an earlier phase. Indeed, the foremost methodological contribution of this chapter is that we empirically show that success conditions evolve during a sanction episode.

Our findings also have important bearings on sanction policy that extend beyond this specific case. Timing appears to be even more important than has been recognized before by policy makers. The potential of sanctions to change unwarranted behavior varies over time and since sanctions are one element in the toolbox of (economic) diplomacy the other elements could be aligned to maximize the impact of diplomacy. A second implication is that sanctions need to be comprehensive and quick: slow and partial sanctions simply reduce the sanction impact spreading it out over time and reducing the likelihood that the impact will reach the critical level needed for behavioral change. A third implication is that the impact of sanctions decreases with the passage of time as the economic and political system adjusts. Sanctions may be instrumental in the creation of a window of opportunity for change – policy makers cannot expect that window remains open for very long. In this sense planning for an exit strategy is an important element of a viable sanction strategy.

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