Language Affinity, Russian Media and Sanctions Evasion

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Abstract

Does language affinity with a former colonizing power make countries vulnerable to outside influence? By combining multiple survey waves, online search statistics, a survey experiment, and international trade data, we study this question for Kazakhstan. We show a shift towards pro-Russian opinions among the Russian-speaking population after Russia's full-scale invasion of Ukraine, even among ethnically Kazakh citizens. We relate this shift in opinion to a substantial increase in Russian online news and social media consumption after February 2022. We demonstrate that the consumption of Russian propaganda increases the justification for circumventing sanctions against Russia. Finally, using detailed trade data, we document that re-exports of sanctioned products to Russia increased disproportionately after February 2022 from regions where the population is more exposed to Russian propaganda. Our results shed light on the mechanisms by which former colonial powers can influence beliefs and economic behavior in their former colonies in wartime.

Keywords: media, language, sanctions evasion, Kazakhstan, Russia-Ukraine war
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1 Introduction

Even after their demise, empires can keep an influence over their former colonies through language. English – the language of the former British Empire – has become a global language that has developed into an important channel through which Western concepts and values are distributed across the world (Phillipson 2008; Crystal 2012). Similarly, through "la Francophonie", France has managed to promote its economic, political, and cultural interests in its former colonies, many years after the end of the French empire (Neathery-Castro and Rousseau 2005; Vigouroux 2013). Often, the mechanism through which values and concepts are communicated is not even an intentional propaganda campaign, but citizens of former colonies self-selecting into consuming specific content because the language they speak in their everyday lives is that of the former colonizing nation.[1]

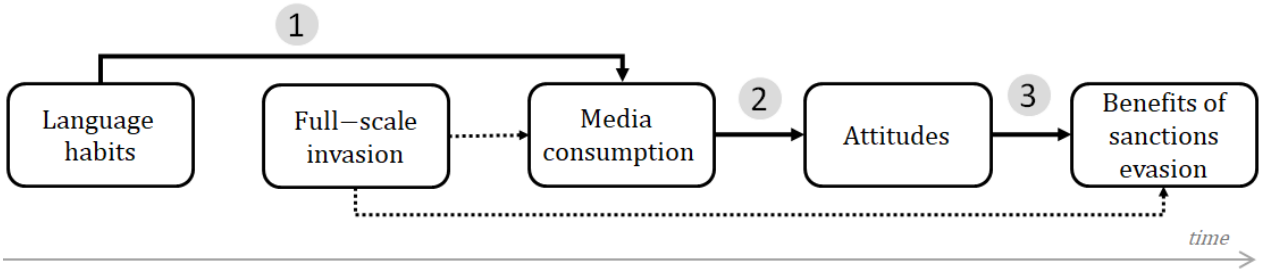
In this paper, we explore this channel and its relevance in the Russia-Ukraine war for Kazakhstan – one of Russia's former colonies in Central Asia. Kazakhstan is particular in that more than 30 years after its independence, and despite the state language being Kazakh, the first language of a large percentage of the population remains Russian. Many of these Russian-speaking citizens of Kazakhstan are torn between loyalty to their home country and a close cultural affinity to what Russian state media is increasingly describing as the "Russian world" ("Russkiy mir"). Through their language, they are also exposed to Russian propaganda, much more than their fellow citizens whose first language is not Russian.

We investigate whether this language affinity makes the Russian-speaking population in Kazakhstan more susceptible to Russian propaganda and examine the political and economic implications of propaganda exposure. Specifically, we investigate the role of Russian propaganda in shaping political beliefs, such as the justification of the Russian full-scale invasion of Ukraine and the willingness to help Russia circumvent sanctions, as well as its potential role in increasing the export of sanctioned goods from Kazakhstan to Russia after February 2022.

Figure 1 illustrates our line of argument. When the full-scale invasion of Ukraine occurred on February 24, 2022, it sparked significant interest in the events among the Kazakh popula-

[1] A good case in point are Radio France Internationale or the BBC World Service, which for many years continued to be crucial sources of information in former French and British colonies in sub-Saharan Africa, long after these countries had become independent (Vaillant 2017; Leyris 2022).

Figure 1: Conceptual Framework



Note: The figure shows how we conceptualize the relationship between the events happening in Kazakhstan after the full-scale invasion of Ukraine in February 2022. The full-scale invasion and the ensuing sanctions triggered economic opportunities and increased individuals' interest in news (dotted arrows). The selection of specific news sources was determined by language habits (1). The exposure to a specific news source shaped attitudes (2). Finally, attitudes with respect to the acceptability of sanctions circumvention determine the extent to which people exploit the opportunity to benefit from re-exporting sanctioned goods to Russia (3).

tion. Depending on the language they felt most comfortable in, Kazakh citizens chose media sources that were either in Russian or in Kazakh (1). As the primary source of information for Kazakh citizens is online news, the media sources most frequently chosen were either Russian online media from Russia or Kazakh online media from Kazakhstan. The invasion also triggered a wave of trade sanctions against Russia by Western countries aimed at blocking the export of goods that can be used either directly or indirectly for defense purposes. The sanctions opened unprecedented opportunities for Central Asian countries and allowed them to reap substantial benefits from helping Russia circumvent sanctions. We argue that the choice of media source influenced attitudes towards the war and shaped the extent to which a given individual considered it acceptable to circumvent the economic sanctions against Russia (2). Finally, we argue that these attitudes had a direct effect on the extent of sanctions circumvention against Russia in Kazakhstan in 2022-2023 (3).

To test if there is indeed a link from language habits to the choice of media sources, attitudes, and economic behavior, we employ a range of different data sources. First, we use data from six waves of a telephone survey conducted biannually by the Central Asia Barometer (CAB) in Kazakhstan.[2] The first two waves were carried out before the Russian full-scale invasion of Ukraine in the spring and fall of 2021; the other waves were carried out after the invasion in the spring and fall of 2022 and 2023. We complement these data with an

[2] https://ca-barometer.org/en/cab-database

original online survey conducted in November 2023, which contains several list experiments. Additionally, we utilize Yandex search data to track the shift in Russian news consumption patterns depending on the penetration of Russian language in different Kazakh regions around the time of the invasion. The combination of these data enables us to identify how language habits influence the choice of media sources and how media consumption influences political beliefs. Finally, we utilize transaction-level export data to examine whether language habits, media consumption choices, and attitudes towards Russia influence the increase in war-related exports from Kazakhstan to Russia after the full-scale invasion.

Our findings can be grouped into three parts. First, we show that the share of Kazakh citizens using online media and online queries for news increased substantially from February 2022 onward, suggesting that the full-scale invasion triggered interest in internet news and information. We show that Russian-speaking citizens of Kazakhstan are more likely to consume online news as well as pro-Kremlin social media (such as VK and Telegram, see e.g. Oleinik (2024)), as compared to Kazakh-speaking citizens. Moreover, Russian speakers increased their search for pro-Kremlin media disproportionately after February 2022. These results suggest that Russian-speaking citizens were more likely to access pro-Kremlin online media after the full-scale invasion triggered interest in news about the war (arrow 1 in Figure 1).

In a second step (arrow 2 in Figure 1), we hypothesize that Russian media consumption might have positively affected support for the war among Russian-speaking Kazakh citizens. Indeed, we find that Russian-speaking respondents in Kazakhstan, even those that are ethnically non-Russian, were 42% more likely to justify Russia's invasion of Ukraine than non-Russian-speaking respondents. They were also 22% less likely to attribute responsibility for the war to Russia and 75% more likely to attribute responsibility to the US, the EU, and NATO. These results remain relatively stable until the end of 2023. As questions about the war were not asked until after February 2022, we assess the evolution of opinions over time by using questions about general attitudes towards Russia and the US, which were also asked in 2021. Here we see that opinions towards Russia diverge between Russian-speaking and non-Russian-speaking respondents only after February 2022, but not before. Indeed, before the invasion, Russian-speaking respondents even had a significantly more positive view of the US than non-Russian-speaking respondents. For a more precise estimation of the effect of

Russian media consumption on political beliefs, we turn to the pre-registered online survey conducted in November 2023. Using language habits as an instrument for media choice, while controlling for Russian language knowledge and ethnicity, we show that the consumption of Russian media increases the justification of sanctions circumvention against Russia. A list experiment conducted in the survey confirms this result.

Finally (arrow 3 in Figure 1), using detailed regional trade data, we identify a surge in sanctions-related exports from Kazakhstan to Russia after February 2022. This surge is particularly pronounced in Kazakh regions with larger shares of Russian speakers, as well as larger shares of people trusting Russian media and condoning Russia's invasion. Using regional production data, we show that the exposure to pro-Kremlin propaganda does not increase regional production, suggesting that the circumvention of sanctions is based on re-export rather than local production of sanctioned goods.

Taken together, our interpretation of these findings is as follows. When the start of the full-scale invasion of Ukraine triggered interest in the event in Kazakhstan, those Kazakh citizens who mainly used Russian in their daily lives were more likely than other Kazakh citizens to end up on Russian websites and social media platforms in their search for information. Consuming propaganda content on these platforms led to a divergence in opinions about the war and Russia's role in it, a divergence that did not exist before February 2022. This divergence was then also reflected in a higher propensity to condone the circumvention of economic sanctions against Russia, convincing a certain number of Kazakh entrepreneurs to participate in making war-related deliveries to Russia. Importantly, we do not argue that Russian propaganda was the only determinant of Kazakhstan's prominent role in sanctions circumvention (Borozna and Kochtcheeva 2024). However, we show how it played a significant role in shaping attitudes and, through this, contributed to economic actions in favor of Russia's war in Ukraine.

Our paper makes five distinct contributions to the literature. First, we show how an increase in media consumption triggered by an exogenous event can lead to changes in public opinion. In this, we contribute to a vast literature that has investigated the effects of the media and political propaganda on political attitudes and behavior. The persuasive power of traditional media, such as television and newspapers, has been extensively documented,

both for democracies (DellaVigna and Kaplan 2007; Gerber et al. 2009; Durante and Knight 2012) and autocracies (Yanagizawa-Drott 2014; Schneider 2014; Adena et al. 2015; Peisakhin and Rozenas 2018a; Leber and Abrahams 2019; Mattingly and Yao 2022; Pan et al. 2022). A literature focusing on Russia has shown that on traditional platforms such as TV, media independent of the state can effectively oppose the government and influence voting behavior, even in authoritarian states (Enikolopov et al. 2011, 2022). To some extent, the effect we identify for Kazakhstan is similar, as pro-Kremlin media that are independent of the Kazakh state shift public opinion in the country.

Second, we show how this effect is driven in particular by online and social media, rather than by traditional media sources. In this, our study contributes to the literature that shows how online and social media have started to play an increasingly important role in shaping public opinion (Bond et al. 2012; White 2014; Lorenz 2023). Initially often hailed as a "liberation technology" (Morozov 2011), social media allowed the opposition in autocracies to coordinate protests (Enikolopov et al. 2020) or mobilize voters (Enikolopov et al. 2022). In recent years, however, authoritarian regimes have caught up, employing different methods from "flooding" popular platforms and hashtags with positive or distracting misinformation to shaping public opinion by providing different – and sometimes objectively wrong – narratives (Roberts 2018). Russia has been a particularly active player in this field (Geissler et al. 2023), to the extent that countries like Ukraine started to actively ban Russian platforms on their territory (Golovchenko 2022). In our paper, we document how content produced by Russian influencers and the Russian state on social media was able to shift public opinion in Kazakhstan.

Third, we shed light on how authoritarian propaganda can spread beyond borders as a tool of foreign influence. Although China is often mentioned as an example in this respect (Edley 2014; Brady 2015),[3] there is increasing evidence that for Russia, influencing popular opinion and elections abroad has become an important political objective (Snyder 2018), with the Brexit referendum and the 2016 US presidential elections as two prominent examples (Martin et al. 2019; Eady et al. 2023). As part of this strategy, Russian-speaking communities abroad

[3]How China uses the news media as a weapon in its propaganda war against the West. Reuters Institute, 2021.

have become an important tool in the Kremlin's foreign policy strategy. Since February 2022, several pro-Kremlin events were organized by the Russian diaspora in Germany that then were also joined by right-wing extremists.[4] A similar pattern can be observed in the US, where the Russian-speaking community was active in spreading a pro-Kremlin agenda.[5] Russian foreign influence is thus not limited to its neighboring countries but can be described as a worldwide phenomenon. Sometimes, the results of exposure to Russian propaganda might not even be intentional, as in the case of Latvia, where the discrediting of Western vaccines on Russian TV led to a significant drop in vaccination rates among the ethnic Russians (Larreguy and Martinez 2024). In our paper, we show how the consumption of Russian media led not only to a shift in public opinion but also to a change in economic behavior, which benefited the foreign policy objectives of the Russian state.

Our fourth contribution is to highlight the mechanism behind this shift in public opinion, i.e., the role of language distinguished from ethnicity (Desmet et al. 2017). While some research exists on the role of former colonial languages in ex-colonies (see e.g. Phillipson (2008) and Crystal (2012) for the British Empire, Neathery-Castro and Rousseau (2005) and Vigouroux (2013) for the French Empire, or Mar-Molinero (2000) and Stavans (2021) for the Spanish Empire), we are not aware of any studies that quantify the effect of former colonial languages on beliefs and economic behavior in a former colony. There are, however, several recent studies that highlight the importance of Russian ethnicity for Russia's influence in the former Soviet republics, with Peisakhin and Rozenas (2018b) and Korovkin and Makarin (2023) focusing on Ukraine, and Larreguy and Martinez (2024) on Latvia. We contribute to this literature by emphasizing the distinguished role of language, which is not limited by ethnicity. Our theoretical argument regarding language as the mechanism at play is based on Guiso and Makarin (2020), in which we hypothesize that Russian speakers perceive information conveyed in Russian as *trustworthy*. According to this theory, genetic, cultural, or religious affinity increases trust (Guiso and Makarin 2020). In our paper, we emphasize language as a crucial trait of cultural affinity, distinguishing it from other connections, such as ethnicity

[4] Compatriots 2: How Kremlin organizes pro-Putin rallies in Germany and why neo-Nazis participate. The Insider, 2022. See also Sablina (2023), who shows the role of social media in mobilizing the Russian-language community in Germany.

[5] Compatriots: How the Russian diaspora serves the Kremlin in the U.S. The Insider, 2022.

and familial ties with individuals working in Russia.

Finally, we also contribute to the recent literature on the economic consequences of the conflict in Ukraine and the literature on the effect of economic sanctions. Section 6 of our paper builds on Korovkin and Makarin (2023), who find that Ukrainian firms from districts with fewer ethnic Russians experienced a more profound decline in trade with Russia, after the Russian annexation of Crimea in 2014. Along a similar vein, we document that firms in regions with a higher share of Russian speakers are more likely to circumvent Western sanctions and export war-relevant goods to Russia, after the onset of Russia's full-scale invasion of Ukraine. Our paper highlights the importance of language affinity and media in trade decisions of sanctioned goods, complementing recent evidence on patterns for import sanctions evasion by Russia (Chupilkin et al. 2023; Egorov et al. 2025) and Russian attempts to circumvent export sanctions (Babina et al. 2023). We also contribute to the broader literature studying the effectiveness of international trade sanctions (Drezner 2024).

The remainder of our paper is organized as follows. Section 2 introduces the background and context of our study, and section 3 presents our data and provides summary statistics. Section 4 documents how Russian speakers increased their consumption of Russian media after February 2022, while simultaneously their views of Russia improved and their views of the West deteriorated, compared to the rest of the population in Kazakhstan. Section 5 uses our original survey to show how Russian media consumption is indeed related to being more likely to condone Russia's actions in the war and to support the circumvention of economic sanctions. Section 6 connects these findings with our trade data and documents how Kazakh regions with a higher share of Russian speakers are significantly more likely to export war-related goods to Russia after February 2022, but not before. Section 7 concludes.

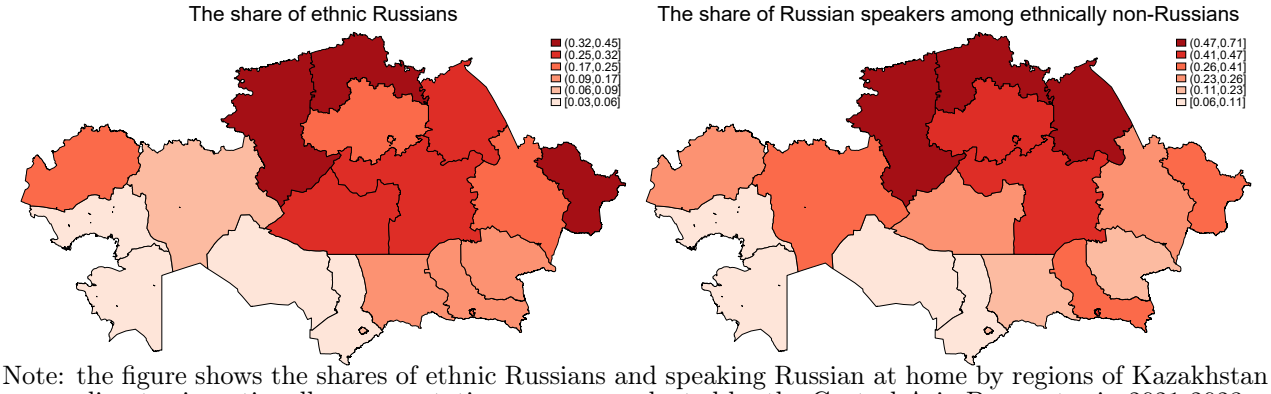
2 Background and Context

One of the successor states of the Golden Horde, the Kazakh Khanate was gradually conquered and absorbed by the Russian Empire from the late 18th to the mid-19th century. Following the Russian Revolution, the territory became part of the Soviet Union. After several territorial reorganizations, Kazakhstan's modern borders were established in 1936 with the formation of the Kazakh Soviet Socialist Republic. Kazakhstan declared its independence from the Soviet

Union on December 16, 1991 and has since been an independent state.

As a result of two centuries of Russian colonization, a significant Russian minority continues to live in Kazakhstan. Although Kazakh is the official state language, Russian also holds the status of an official language, and a substantial portion of the population continues to speak Russian daily. According to the 2021 census, the share of ethnic Kazakhs is 70% and that of ethnic Russians is 15.5%. The share of people speaking and reading Russian is 83.7%, and among ethnic Kazakh, this share is 79.5%.[6] Moreover, according to nationally representative surveys, more than 40% of respondents indicate Russian as the language they speak at home.[7] Map 2 illustrates the distribution of ethnic Russians and Russian speakers across Kazakh regions, showing how Russian speakers are concentrated in the north of the country, as well as in the two main cities – Astana and Almaty. We show throughout the paper that this regional variation in language affinity is linked to differences in media consumption, political opinions, and economic behavior in the form of trading sanctioned products to Russia.

Figure 2: Regional heterogeneity by ethnicity and home language



Note: the figure shows the shares of ethnic Russians and speaking Russian at home by regions of Kazakhstan according to six nationally representative surveys conducted by the Central Asia Barometer in 2021-2023. Regions are three major cities – Astana, Almaty, and Shymkent – and 17 other sub-national regions. For more details, see Section 3 for the survey data.

Since the start of Russia's war in Ukraine in 2014, the Kazakh government has been careful to maintain a low profile with respect to the conflict, avoiding too extensive coverage of the conflict in the official media and employing "strategic silence" Dadabaev and Sonoda (2023), in order not to antagonize neither Russia nor the West, even though at times concerns and

[6] Results of the National Population Census 2021

[7] See Table 1 in Section 3 for the survey data.

criticism about the war are voiced.[8] As a result, almost all of the Kazakh- and Russian-language media published within Kazakhstan take either a neutral or a moderately critical stance towards Russia when covering the conflict.[9] However, at the same time, Russian-language media from Russia is widely available in Kazakhstan. Especially when searching for information on the internet, the probability that Russian speakers will end up on a site from Russia featuring pro-Russian content is high, while Kazakh speakers are more likely to find content that is more neutral with respect to Russia's invasion of Ukraine.

While the Kazakh government has been careful to maintain a neutral stance towards the conflict in its official statements, economically, Kazakhstan has taken a pro-Russian stance. Exports from Kazakhstan to Russia have increased significantly since February 2022. However, as illustrated by Figure 3, this is *only* the case for electronic goods and machines, i.e. products on which Western countries imposed sanctions after Russia's full-scale invasion of Ukraine in February 2022, while exports of other goods have remained remarkably stable. This sanctions circumvention was revealed by investigative journalists,[10] and US Secretary of State Antony Blinken visited Kazakhstan in February 2023 to discuss specifically the issue of sanctions circumvention.

In our paper, we investigate whether Kazakhstan's role in circumventing the sanctions is related to Russia's continuing influence on the Russian-speaking community in Kazakhstan. In other words, are Russian speakers more likely to condone the war and approve of sanctions circumvention? If such an effect exists, what is the role of Russian media, and does it result in increased exports of sanctioned goods to Russia?

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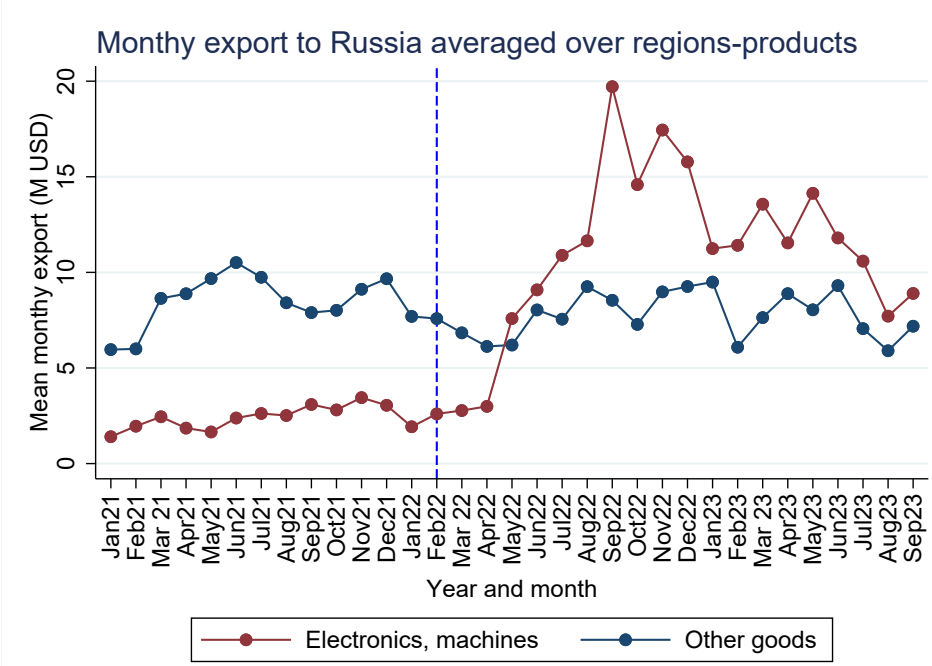
[8] Steppe change: How Russia's war on Ukraine is reshaping Kazakhstan. European Council on Foreign Relations, 2023.

[9] This is also a result of Kazakh media being largely state-controlled. According to Freedom House, "the dominant media outlets in Kazakhstan are either in state hands or owned by government-friendly businessmen".

[10] See. e.g. Kazakhstan Has Become a Pathway for the Supply of Russia's War Machine. Here's How It Works. Organized Crime and Corruption Reporting Project, 2023. or Now through Kazakhstan: devices from the United States, Germany and France, which can be used for electronic warfare, continue to go to Russia. The Insider, 2024. or Shooting Ukraine in the back: Sniper rifles and ammunition from the EU and U.S. are being supplied to Russia despite sanctions. The Insider, 2024. or Russian businessman extradited to Estonia for selling $50 million worth of foreign equipment to Russian defense enterprises. The Insider, 2025.

Figure 3: Export from Kazakhstan to Russia



Note: the figure shows the monthly export of Kazakhstan to Russia averaged over 5 product classes and regions for 2021-2023. For more details, see Section 3 for the international trade data.

3 Data

To answer these questions, we use four distinct sources of data. Our first dataset contains six waves of a nationally representative telephone survey conducted by the Central Asia Barometer in Kazakhstan in 2021 – 2023. This dataset enables us to test for a possible divergence in political views and media consumption between Russian speakers and other Kazakh citizens after the start of the full-scale invasion. Second, using a dataset of Yandex online searches, we test whether this divergence in political views can be explained by a divergence in online search patterns and news consumption after February 2022. Third, we conducted an original online survey including several list experiments in November 2023, to investigate how media consumption affects attitudes toward the war and sanctions circumvention. Fourth, we use transaction-level trade data between Kazakhstan and the Eurasian Economic Union (EAEU) for the period 2021 to 2023. It enables us to investigate whether Russian language affinity and trust in Russian media across Kazakh regions affect the growth in export of sanctioned goods from Kazakhstan to Russia after February 2022.

3.1 Central Asia Barometer

Since June 2017, the Central Asia Barometer (CAB) has been conducting regular public opinion surveys in the four Central Asian republics of Kazakhstan, Kyrgyzstan, Uzbekistan, and Tajikistan.[11] For our study, we use waves 9 to 14 of the CAB data for Kazakhstan. Surveys were carried out in April-June and September-November of each year, for the years 2021, 2022, and 2023. In addition to detailed demographics, all six survey waves include questions about attitudes toward Russia, the United States, China, and the Eurasian Economic Union. The waves starting from June 2022 also include several questions related to Russia's full-scale invasion of Ukraine, of which we use the following two: (i) *"In your view, who is mainly responsible for the situation in Ukraine?"*, and (ii) *"To what extent do you think Russia's special military operation in Ukraine is justified or unjustified?"*.

All six survey waves also include an extensive block of questions related to: (i) the *main* source of news most often used to get information about what is going on outside of Kazakhstan (including relatives and friends, national and Russian traditional media, and the internet), (ii) the messaging apps most often used (WhatsApp, Telegram, etc.), (iii) the social media platform most often used (Facebook, Odnoklassniki, VKontakte, Instagram, Twitter, TikTok, etc.), (iv) the language that is spoken at home, (v) and a full set of standard demographics, including ethnicity. Finally, the wave of September 2023 also includes a question about trust in media news from different countries, including Russia.

Columns 3 and 4 of Table 1 provide descriptive statistics for the language, ethnicity, and attitudes from these six survey waves. The share of respondents speaking Russian at home in our sample is 47.3% for 2021, 41.1% for 2022, and 45.3% for 2023. For all three years, this share is more than twice the share of ethnic Russians, allowing us to separate the effects of ethnicity from those of language use. Notably, between 12.7% and 16.3% of respondents are business owners or heads of firms or company departments. Their views are of particular interest because their attitudes may directly affect economic behavior.

When asked who is responsible for the conflict in Ukraine, about a quarter of respondents

[11] These are CATI surveys with randomly generated mobile phone numbers according to the spectrum of numbers of mobile operators in a respective country. For more details, see https://www.ca-barometer.org/en.

Table 1: Descriptive statistics for the language, ethnicity, and attitudes

		Russian (%)		Firm	War responsibility (%)			SMO is (%)		Favorable opinion of (%)			EAEU is
Year	Obs.	Lang.	Ethn.	head	Russia	Ukraine	West	justif.	not justif.	Russia	US	China	benefic. (%)
2021	3,500	47.3	22.2	12.7						70.5	51.9	44.9	57.9
2022	3,020	41.1	17.9	15.4	27.5	20.8	10.8	26.3	45.7	50.9	49.4	51.5	59.5
2023	3,000	45.3	20.5	16.3	24.9	19.4	12.1	25.0	51.0	57.1	51.4	60.3	54.1

Note. The table uses six CAB survey waves for 2021-2023. The wave of May 2021 includes 2000 observations, and other waves include around 1500 observations each. All the percentages are calculated as shares of respondents in the corresponding years without re-weighting. "SMO is justified"=1 for "Completely justified" or "Somewhat justified", and 0 otherwise. "SMO is not justified"=1 for "Completely unjustified" or "Somewhat unjustified", and 0 otherwise. War responsibility is denoted "West" if a respondent has chosen US, EU, or NATO. In the question "Favorable opinion of Russia/US/China" 1 means "Very favorable" or "Somewhat favorable", and 0 otherwise. In the question "EAEU is beneficial," 1 means "Strongly agree" or "Somewhat agree" that joining the Eurasian Economic Union has benefited Kazakhstan's national economy, and 0 otherwise.

believe it to be Russia, 20% indicate Ukraine, and less than 12% think that the West is primarily responsible for the conflict. When asked if Russia's "Special Military Operation" (SMO) is completely or somewhat justified, around 50% indicate that it is not justified. This question seems to be particularly sensitive, with about 25% of respondents preferring not to answer – a fact that motivated us to supplement the CAB survey data with several list experiments in our own survey.

More than 70% of respondents had a favorable opinion of Russia in 2021, but this share significantly dropped to about 51% in 2022 and moved back to 57% in 2023. On average, around half of the population held favorable opinions of the US and China, with almost no dynamics for the former and an improved attitude for the latter. Most respondents agree that joining the Eurasian Economic Union has benefited Kazakhstan's national economy, and the attitudes are quite stable.

Table 2 illustrates various media sources. Notably, the Internet emerged as the primary source of news regarding events outside of Kazakhstan, with approximately two-thirds of the population utilizing it by 2023. Slightly more than 10% of the sample access international news primarily via local or national TV, radio, and newspapers. Although as the *primary source of news*, Russian TV, radio, and newspapers are marginal (4-7%), around 62-65% of respondents consume Russian content for news or entertainment, and nearly 37% trust Russian news. In terms of social media and messaging apps, WhatsApp and Instagram are the most popular. The usage of Russian social media – Vkontakte and Odnoklassniki – substantially dropped between 2021 and 2023, while TikTok and Telegram experienced increasing

popularity. Finally, about 10% of households surveyed depended on remittances from abroad, with the percentage slightly decreasing over time.

Table 2: Descriptive statistics for media consumption

	2021	2022	2023
Panel A: Main news source for events outside Kazakhstan			
Internet	59.4	64.6	67
National/local TV, radio, newspapers	10.6	12.2	10.1
Russian TV, radio, newspapers	7.2	5	4.4
Panel B: Russian media consumption			
Use Russian media		65.5	62.1
Trust in news from Russia			36.8
Panel C: Messenger usage (most often)			
Use Telegram	6	8.5	10.1
Use Whatsapp	88.3	87.5	86.7
Panel D: Social media usage (most often)			
Use VK or OK	16.2	11.6	9.2
Use Facebook	8.7	8.2	7.7
Use Instagram	50.8	48.8	47.4
Use Tiktok	7.7	17.1	22.5
Panel E: Reliance on remittance from abroad			
Absence of remittance	88.3	91.9	92.9

Note. Table shows the percentage of media usage from six CAB survey waves for 2021–2023. No weights are applied. The row "*Trust in news from Russia*" shows the share of respondents from September 2023 who strongly or somewhat trust news from Russia. The row "*Absence of remittance*" shows the share of the households that do not rely on remittance. All the percentages are calculated as shares of respondents in the corresponding years without re-weighting.

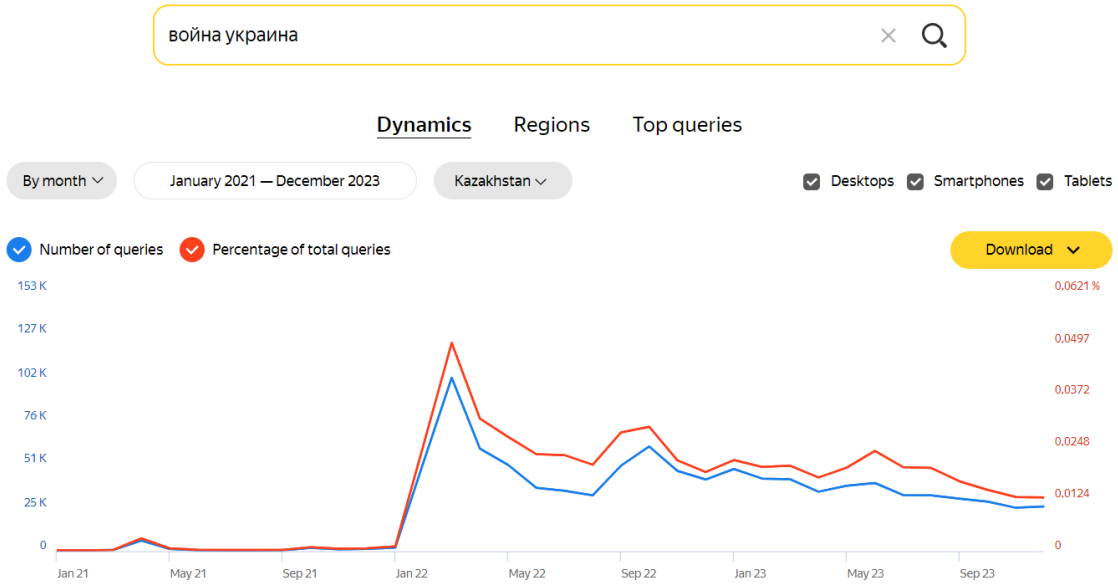
3.2 Yandex Search Data

We use Yandex search data to study how the regional language patterns affect online search behavior for information about the war.[12] The data is taken from wordstat.yandex.kz. It shows the overall number and percentage of searches for a specific phrase per month and

[12]Yandex has a market share of roughly 15% in Kazakhstan, whereas Google carries out the vast majority of searches. However, Google search data is not accessible in a systematic and reliable manner due to several limitations. Google Trends relies on a subsampling methodology, which means that the provided statistic is based only on a subset of searches, making the search statistics inconsistent over time. Additionally, Google Trends provides only data on the relative popularity of search terms, making it difficult to assess actual search volumes or to make accurate comparisons over time or across keywords and regions. In contrast, Yandex Wordstat offers absolute search counts, providing more stable and reliable data for analysis.

region. Figure 4 shows a substantial spike in searches for the phrase "war in Ukraine" in Russian in February 2022, with a smaller spike around the Russian mobilization in September 2022 and a stabilization after that.[13] Figures A4, A5, A6 and A7 in Appendix A document that interest in internet news also spiked in February 2022. In addition, we see that while searches for information from pro-Kremlin news aggregators Yandex Dzen and Yandex News (Figures A5 and A6 of Appendix A) were significant and growing after February 2022, there is only a minor increase in searches for Euronews, the most popular pro-Western news channel in Kazakhstan (Figure A7 of Appendix A).

Figure 4: Search for "War Ukraine" on Yandex



3.3 Online survey on media consumption and sanctions circumvention

The third dataset that we use is an original online survey that contains several list experiments conducted in November 2023 in Kazakhstan. The purpose of the survey was to gather information about media consumption patterns and attitudes regarding sanction circumvention. We use list experiments in addition to direct questions to address issues related to

[13]Figure A2 of Appendix A presents the search results for the same phrase, "war in Ukraine", in Kazakh. The number of searches does not exceed 130 per month, while queries in Russian reach tens of thousands, justifying our exclusive focus on search keywords in Russian. Moreover, Google Trends was unable to estimate the phrase's popularity in Kazakh, displaying a message about insufficient data, as shown in Figure A3 of Appendix A.

question sensitivity and social desirability bias. The survey was pre-registered[14] and carried out by NAC Analytica, a leading public opinion pollster in Kazakhstan.[15] Participants were recruited through advertisements on Instagram.

The survey quality controls included attention checks (two questions on the respondent's age had to match), speeding filters (a minimum of 200 seconds), allowing only two complete responses per IP address, and allowing phone numbers to participate only once (payment was carried out by phone number). Out of 28,201 participants who clicked on the survey ad on social media to read the consent form, 5,025 completed the survey, passed quality checks, were unique respondents, and were compensated 700 Tenge (approx. 1.50 USD).[16] Since the list experiment is a cognitively intensive task, for the analysis, we keep only respondents of age below 70, leaving us with 4,904 respondents.

The survey began with a consent form in a randomly assigned language (Kazakh or Russian). At any stage of the survey, the respondents could change the language.[17] Upon confirming the consent form, the respondent was asked a set of demographic questions. It included several questions related to language habits, including (i) a set of languages respondents know well, (ii) a language they use most often at home, (iii) a language they use most often outside (at work, school, or with friends), and (iv) a language they use most often for news about political or economic events outside of Kazakhstan. After that, the survey asked a set of questions related to news: (i) the general interest in news outside of Kazakhstan, (ii) the four most essential sources of news,[18] including names of channels, (iii) the intensity of consumption of these sources, and countries of origin. Table C1 of Appendix C shows the descriptive statistics.

After answering demographic questions, participants were presented with a set of list experiment questions in random order. The set included two sensitive questions about the war in

[14] https://aspredicted.org/YPM_LSH

[15] https://nacanalytica.com/en/

[16] Most of the participants who left the survey before completion did so on the consent page or during the initial demographic questions.

[17] Our data shows that if respondents changed the language, they did it on the consent form or the first demographic question, and completed the survey using the selected language.

[18] Including TV, Websites, YouTube, Vkontakte, Instagram, Twitter, Telegram, Yandex, TikTok, Facebook, Odnoklassniki, or other social media and websites.

Ukraine and helping Russia circumvent sanctions, one sensitive question about participating in protests for political change, and a non-sensitive (placebo) question to check for the design effect of list experiments. All the list experiments were framed with the following sentence: "*In your opinion, HOW MANY of the things or actions below are generally justified?*". Each list experiment included three control items and one treatment item in random order. The sensitive treatment items about the war in Ukraine were "*Helping Russia avoid Western sanctions*" and "*Russia's Special Military Operation in Ukraine/ Russia's invasion of Ukraine*",[19] the sensitive treatment item about domestic politics was *"Participating in protests for political change"*, while the placebo treatment item was "*Working more than 50 hours per week*". The set of control items was unique for each list experiment question. For more details on the design and specific questions of the list experiment, see Section C.2 of Appendix C. After the block of list experiments, we also asked direct questions on the same topics.[20]

Table 3 shows the descriptive statistics for ethnicity, language usage, and the direct question of interest, including sensitive and placebo questions. Note that the share of respondents justifying the invasion of Ukraine is 25.7%, similar to what we find in the CAB survey. Moreover, the share of respondents in favor of sanctions circumvention is 30%, while the share of those not approving of this is 37.5%, with a high number of non-responses highlighting the sensitivity of the direct question. Note also that consumers of Russian media are 4.9 percentage points (p.p.) more likely to approve of the Russian invasion, and 12.2 p.p. more likely to indicate that helping Russia circumvent sanctions is justified.

3.4 Data on international trade and domestic production

Finally, we use data from international trade between Kazakhstan and Russia to study the economic consequences of pro-Kremlin propaganda. Our dataset was collected from the Bu-

[19]The framing *Special Military Operation in Ukraine* and *invasion of Ukraine* was assigned at random to balance invoked framing effects. Arguably, the way one asks about Russia's invasion of Ukraine reveals their view on this topic and thus may invoke social desirability bias from the respondents.

[20]The direct sensitive questions about the war in Ukraine were *In your opinion, is helping Russia avoid Western sanctions generally justified or not justified?* and *In your opinion, is Russia's Special Military Operation/ invasion of Ukraine generally justified or not justified?*. The direct sensitive questions about domestic politics was *"In your opinion, is participating in protests for political change generally justified or not justified?"*. The direct placebo question was: *In your opinion, is working more than 50 hours per week generally justified or not justified?*.

Table 3: Descriptive statistics for online survey

					Justified action or event (direct quest.) %			
	Obs	Russian ethnicity	Russian language (%) knowledge	news	Protest particip.	Evade sanct.	Invasion/ SMO	Work $\geq$ 50 hours
Panel A: Overall								
	4904	24.8	62.6	45.4	31.2	30.0	25.7	31.2
Panel B: Split by *"Russian media is mentioned at least once among the four main news sources"*								
No	3416	21.3	54.0	38.5	31.1	26.3	24.2	32.8
Yes	1488	32.7	82.5	61.4	31.5	38.5	29.1	27.6

Note. The table summarizes the characteristics of the participants in the online survey. It shows the shares of ethnically Russian, those who know Russian, consume Russian news, and those who justify actions or events in response to direct questions. Panel A refers to the entire sample, while Panel B presents subsamples based on whether Russian media is mentioned at least once among the four main news sources. All the percentages are calculated as shares of respondents without re-weighting.

reau of National Statistics of Kazakhstan (www.stat.gov.kz). It consists of all transactions between Kazakhstan and the countries of the Eurasian Economic Union for the period January 2021 – September 2023. Each transaction contains information on the traded product classification code (TNVED), the region of the trading firm in Kazakhstan, the country of the trading partner, the declared product value (in USD and KZT), and the weight. Focusing on export activity from Kazakhstan to Russia, we identify 810,000 individual transactions, which we classify into five product classes: (i) electronics and machines, (ii) food, (iii) textiles, (iv) metals, and (v) others.[21] Most of the products from class (i) are under Western sanctions, prohibiting their re-export from Kazakhstan to Russia. We therefore call them *sanctioned products*, even when discussing the pre-war period. We aggregate the export data, calculating the export value in millions of USD at the regional (20 regions), monthly (33 months), and product class (5 classes) levels, which yields a final dataset of 2,899 observations. Figure 3 shows the dynamics of exports from Kazakhstan to Russia averaged over regions and product classes for electronics/machines and other products (product classes (ii)-(v)). Finally, the Bureau of National Statistics of Kazakhstan also provides industrial production output data for each region and month for 36 OKED product categories, we can aggregate these categories

[21] We allocate the 2-digit TNVED product classifications as follows: electronics (85,88,90,91), machines (84,86,87,89), food (01-24), textiles (41-43, 50-67), metals (72-83), with "others" covering the rest.

into the same 5 product classes.[22] Figure A8 of Appendix A shows the dynamics of Kazakhstan's production averaged over regions and product classes for electronics/machines and other products.

4 Language Habits, Media and Public Opinion

4.1 Language Habits and Justification of the War in Ukraine

We begin by examining the relationship between linguistic habit in speaking Russian and attitudes toward the war in Ukraine. We use four CAB survey waves conducted after February 2022 and consider the following two-way fixed-effects linear specification:

$$y_{irt} = \alpha L_{irt} + \mathbf{X_{irt}}\beta + \kappa_r + \lambda_t + \epsilon_{irt} \tag{1}$$

The subscript i denotes a respondent from region r and wave t.[23] The binary variable $L_{irt} = 1$ if a respondent speaks Russian as their daily language at home, and 0 otherwise. The vector $\mathbf{X_{irt}}$ includes the following set of control variables: gender, five age categories, a dummy variable for education at the university level or higher, five categories of household size, dummy variables for urban/rural settlement and ethnicity (Russian and Kazakh, compared to others), as well as the interviewer's assessment of the respondent's survey comprehension and comfort with answering the survey. Note that data on ethnicity enables us to separate language habits from ethnic background. The variables κ_r and λ_t are the region and survey wave fixed effects, respectively. As dependent variables y_{irt}, we consider answers to the following two questions about the war in Ukraine: (i) the extent to which the SMO is justified (both as a binary and a scaled measure) and (ii) who is mainly responsible for the war (Russia, Ukraine or the West). Our primary focus is on the coefficient α, which shows the association between attitudes toward the war and language habits, while controlling for socio-demographics and ethnicity.

Table 4 shows the results for the binary measure "the SMO is justified" for the whole sample (column 1) and for different relevant sub-samples: column 2 zooms in on firm heads, columns

[22] We allocate the 2-digit OKED product classifications as follows: electronics (26,27), machines (28,29,30), food (10,11,12), textiles (13,14,15), metals (24,25), with "others" covering the rest.

[23] Regions are three major cities, Astana, Almaty, and Shymkent, and 17 other sub-national regions.

3 and 4 on respondents older or younger than 40 years of age, column 5 looks at respondents who indicated to pay a lot of attention to information about the war, and column 6 considers ethnically non-Russian respondents. We find that Russian-speaking respondents are 11 p.p. more likely to agree that SMO is justified, which is equivalent to 42% when referring to the sample average. For all the above-mentioned sub-samples, the results are similar, with some heterogeneity by age. Notably, even among the group of ethnic non-Russians, those who mainly speak Russian in their daily lives are 10 p.p. more likely to justify the war than those who mainly speak Kazakh. Table B1 in Appendix B provides the regression output demonstrating all control variables. Table B2 in Appendix B shows the estimates for the non-binary outcome variable. The results are essentially the same, except for the result for firm heads being no longer significant. Finally, Table B3 in Appendix B uses "the SMO is not justified" as a binary dependent variable, showing that Russian speakers are about 8 p.p. less likely to condemn the war than non-Russian speakers.

Table 4: Russian language habit and war justification

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	SMO is justified (binary)					
Russian language	0.11***	0.090**	0.16***	0.077***	0.13***	0.10***
	(0.015)	(0.037)	(0.026)	(0.019)	(0.019)	(0.015)
Observations	6,020	955	2,366	3,654	3,889	4,864
R-squared	0.140	0.154	0.223	0.082	0.178	0.078
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows the regression results (1) for a binary dependent variable, "SMO is justified". Robust standard errors are in parentheses.

As the next step, we consider a set of binary variables that assign responsibility for the war to three possible actors — Russia, Ukraine, or the West — as the dependent variable y_{irt} in equation (1). Table 5 shows the results with a breakdown by dependent variables and sub-groups of respondents. Column 1 of panel A shows that, in general, Russian-speaking respondents are 5.7 p.p. less likely to blame Russia for being the main culprit of the war, which is equivalent to 21.7% when referring to the sample average. The association is even

stronger for respondents who are particularly interested in information about the war (column 5 of panel A), while for firm heads and younger respondents, it is not significant (columns 2 and 4 of panel A). Panel B shows that Russian-speakers are not more likely than non-Russian speakers to assign responsibility for the war to Ukraine. However, Panel C shows that Russian speakers are 8.7 p.p. more likely to blame the West, which is equivalent to 72% when referring to the sample average. This association is significant for all sub-samples, including firm heads (column 2 of panel C) and younger respondents (column 4 of panel C).

Table 5: Russian language habit and responsibility for the situation in Ukraine

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Panel A. War responsibility: Russia					
Russian language	-0.057***	-0.025	-0.094***	-0.034	-0.070***	-0.058***
	(0.017)	(0.042)	(0.028)	(0.021)	(0.022)	(0.017)
	Panel B. War responsibility: Ukraine					
Russian language	0.013	-0.028	0.028	0.0058	0.0012	0.013
	(0.014)	(0.033)	(0.024)	(0.018)	(0.018)	(0.014)
	Panel C. War responsibility: US, EU, NATO					
Russian language	0.087***	0.079***	0.13***	0.063***	0.10***	0.083***
	(0.012)	(0.031)	(0.024)	(0.013)	(0.016)	(0.012)
Observations	6,020	955	2,366	3,654	3,889	4,864
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows the results of regression (1) for binary dependent variables assigning responsibility for the war to Russia, Ukraine or the West. Robust standard errors are in parentheses.

We conclude that Russian-speaking respondents are more likely to justify the war, are less likely to blame Russia, and are more likely to blame the West as compared to non-Russian speakers.[24] These results underline the critical role of language habits in shaping political

[24]Figure B1 in Appendix B shows the dynamics of the association between language habit and war attitudes (i.e. coefficients α_t for $L_{irt} \times \lambda_t$ keeping other controls from specification (1).) All war attitude variables exhibit a strong association with the language in the first wave and stabilization at a lower magnitude

views, in addition to ethnicity and other factors.

4.2 Language Habits and Media Consumption

In this section, we examine a set of *potential mechanisms* that explain why Russian speakers are more likely to justify the war, a finding that holds even for the part of the Kazakh population that is ethnically non-Russian. We consider information channels that have traditionally played a significant role in Central Asia, namely, Russian traditional media (TV and Radio) and labor migration. We use them as dependent variables in equation (1).

Table 6: Russian language habit and channels for Russian propaganda

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Panel A. News from Russian TV, radio, newspapers					
Russian language	0.022***	0.0074	0.037***	0.010*	0.029***	0.016***
	(0.0063)	(0.012)	(0.014)	(0.0060)	(0.0089)	(0.0061)
	Panel B. Absence of remittances					
Russian language	0.0082	0.024	0.0033	0.010	0.0032	0.013
	(0.010)	(0.025)	(0.016)	(0.014)	(0.012)	(0.011)
	Panel C. News from the Internet					
Russian language	0.038**	-0.017	0.0063	0.052***	0.046**	0.038**
	(0.016)	(0.036)	(0.030)	(0.020)	(0.019)	(0.017)
Observations	6,020	955	2,366	3,654	3,889	4,864
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows the results of regression (1) for binary dependent variables indicating consumption of international news from Russian TV, Radio, Newspapers and from the Internet, as well as binary dependent variables indicating that respondents received remittances. Robust standard errors are in parentheses.

Panel A of Table 6 shows that Russian-speaking respondents are more likely than non-Russian speakers to consume Russian traditional media (TV news, radio, and newspapers). This association is stronger for elder respondents and those who pay special attention to

afterward.

information about the war. However, a relatively small share of the population uses Russian traditional media as the main source of information (see Table 2). There is no evidence that Russian speakers are more or less likely to receive remittances from Russia (Panel B of Table 6), suggesting that this is unlikely to be a channel for the difference in political attitudes.

Panel C of Table 6 then examines Russian-speaking respondents who primarily consume news from the Internet (the main source of information for citizens of Kazakhstan, as shown in Table 2). We see that Russian-speaking respondents are 3.8 p.p. more likely to consume internet news than non-Russian speakers, with the effect being especially prominent for younger respondents. The combined results from panels A and C suggest that while traditional Russian media still play a role for older respondents, younger respondents with similar language habits get their information mostly online.[25]

The CAB survey only includes a question about news consumption from the Internet, without asking for news consumption from social media or specific websites. However, there is a question about the preferred social media that respondents use most frequently. Combining this question with the question about internet news consumption enables us to study the role of specific social media platforms as channels for information. We consider eight different social media platforms. Vkontakte (VK) and Odnoklassniki (OK) are platforms controlled by the Russian government, with VK being more popular among younger people and OK among older people. Since February 2022, VK, OK, and Telegram have been intensely used by Russian government propaganda. Telegram, in particular, has become a platform where pro-Kremlin bloggers with large audiences are providing information about the war from a pro-Kremlin perspective.[26] Facebook and Instagram, on the other hand, are blocked in Russia. TikTok hosts entertainment content, while WhatsApp is primarily used as a messaging app; therefore, these platforms are less relevant as channels for Russian propaganda.

Columns 1 and 2 of Table 7 show that Russian-speaking respondents are significantly more likely to use VK, OK, or Telegram together with the Internet news, while they are less

[25] Appendix B shows that Russian speakers are more likely to use the internet in daily life (Tables B4 and B5), less likely to consume Kazakh national media for international news (Table B6) and more likely to consume Russian media for news and entertainment (Table B7). Ethnic non-Russians speaking Russian are more likely to trust Russian news (Table B8).

[26] See e.g. Russian war bloggers: Pawns in a political game? DW, 2023.

likely to use platforms that the Russian government does not control (columns 3 to 6). These results suggest that online news consumption from Russian social media platforms could be one potential channel driving the difference in war attitudes we identify above.

Table 7: Russian language habit, social media and internet news

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Internet news and the following Social Media:					
VARIABLES	VK or OK	Telegram	Instagram	TikTok	Facebook	WhatsApp
Russian language	0.055***	0.028***	-0.026**	-0.027***	-0.040***	-0.045***
	(0.0063)	(0.0068)	(0.012)	(0.0085)	(0.0058)	(0.013)
Observations	6,020	6,020	6,020	6,020	6,020	6,020
R-squared	0.014	0.003	0.001	0.002	0.007	0.002
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	All	All	All	All	All
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows the results of regression (1) for a set of binary dependent variables that are a combination of using the Internet for international news and frequently using one of the indicated social media platforms. Robust standard errors are in parentheses.

4.3 Language Habits and Long-Term Political Attitudes

So far, we have demonstrated that language habits are associated with a specific set of attitudes regarding the war (Section 4.1). They are also associated with specific patterns of media consumption that increase the likelihood of receiving pro-Russian content (Section 4.2). However, we were not yet able to establish a causal link between language patterns and attitudes, i.e., that people in Kazakhstan select specific media sources due to their language and that these sources, in turn, influence their opinions. The findings in Tables 4 and 5 could just stem from Russian speakers in Kazakhstan having always been more pro-Russian than non-Russian speakers, as they could share long-term historical and cultural ties with Russia. If this is the case, we would expect that this group always held a more favorable view of Russia and a less favorable view of the US than the group of non-Russian speakers.

To examine this argument, we use questions from the CAB survey that measure opinions about Russia, the US, and China from 2021 to 2023, allowing us to estimate the following

DID specification from Korovkin and Makarin (2023):

$$y_{irt} = \alpha L_{irt} + \gamma Post_t + \delta L_{irt} \cdot Post_t + \mathbf{X_{irt}}\beta + \kappa_r + \lambda_t + \epsilon_{irt} \tag{2}$$

Here, i denotes a respondent from region r and survey wave t. The binary variable L_{irt} equals one for respondents speaking Russian at home and zero otherwise. The binary variable $Post_t$ equals one for the period after February 2022. The vector $\mathbf{X_{irt}}$ includes the same set of control variables as in (1), λ_t is the survey wave fixed effect, and κ_r is the region fixed effect. The regression specification is similar to a standard DID design, even though there is no pure (unaffected) control group. That is, the coefficient α shows the gap in y_{irt} between the Russian and non-Russian speaking respondents before the war, and the coefficient δ shows the change in this gap after February 2022. The coefficient δ can be interpreted as the differential treatment effect. We use respondents' opinions about Russia, the US, and China from all six CAB survey waves (binary as well as scaled from 1 to 4) as dependent variables.

Table 8: Opinion of Russia, US and China in dynamics

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	Favorable opinion of Russia (bin.)			Favorable opinion of the US (bin.)			Favorable opinion of China (bin.)		
Russian language (α)	-0.00010	0.033	-0.017	0.092***	0.087***	0.093***	0.17***	0.19***	0.16***
	(0.018)	(0.030)	(0.023)	(0.018)	(0.030)	(0.023)	(0.019)	(0.030)	(0.024)
After Feb. 2022 (γ)	-0.13***	-0.14***	-0.13***	0.029	0.042	0.019	0.16***	0.12***	0.17***
	(0.020)	(0.033)	(0.025)	(0.020)	(0.033)	(0.025)	(0.019)	(0.032)	(0.025)
Russian language ×	0.13***	0.16***	0.098***	-0.078***	-0.11***	-0.060**	0.015	0.031	-0.0016
After Feb. 2022 (δ)	(0.019)	(0.031)	(0.025)	(0.020)	(0.032)	(0.026)	(0.020)	(0.031)	(0.026)
Observations	9,520	3,732	5,788	9,520	3,732	5,788	9,520	3,732	5,788
R-squared	0.111	0.126	0.108	0.137	0.094	0.088	0.141	0.169	0.127
Waves	All	All	All	All	All	All	All	All	All
Sample	All	Above 40	Below 40	All	Above 40	Below 40	All	Above 40	Below 40
Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wave FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Table shows the results of regression (2) for binary dependent variables: "Favorable Opinion of Russia" (columns 1-3), "Favorable Opinion of the US" (columns 4-6), "Favorable Opinion of China" (columns 7-9). Robust standard errors are in parentheses.

Table 8 shows the estimates for (2).[27] Before the full-scale invasion, Russian-speaking respondents had the same opinion of Russia ($\alpha = 0$ in column 1) and a *more favorable* opinion

[27]Figure B3 of Appendix B shows the result of an event-study analysis and justifies the parallel trend assumption for attitudes to Russia and the US. The results of DID estimates from Table 8 can therefore be interpreted as causal.

of the US ($\alpha > 0$ in column 4) than non-Russian-speaking respondents. These results change substantially after February 2022 (coefficient δ). After February 2022, Russian-speaking respondents had a significantly better opinion of Russia than non-Russian-speaking respondents ($\delta > 0$), while the way non-Russian speakers saw Russia deteriorated substantially ($\gamma < 0$) (column 1). These results hold for both younger and older respondents (columns 2 and 3).

Column 4 shows that the positive attitude of Russian-speaking respondents toward the US decreased significantly ($\delta < 0$), while the attitude toward the US of non-Russian speakers remained stable ($\gamma = 0$). Again, the results appear to hold for respondents both below and above age 40. Finally, for comparative purposes, we also examine opinions towards China, a country that de jure maintains a neutral position in the conflict. Here we find that Russian-speaking respondents had a more favorable opinion of China before the invasion, and that this did not change after February 2022.

Overall, our results suggest that the argument that Russian-speakers in Kazakhstan are more supportive of the war because they have always been closer to the Russian world is not valid. In the following sections, we argue that the habit of using the Russian language makes these people more likely to consume Russian media, which in turn shifts their opinion towards pro-Kremlin narratives.

4.4 The Effect of Language Habits on Media Choice

So far, we have shown that Russian speakers are more likely to justify Russia's war in Ukraine and to blame the West for the conflict. We demonstrated that this gap in opinions emerged only after February 2022, and that Russian speakers are more likely to consume pro-Russian news from the Internet, traditional Russian media, and Kremlin-controlled social media. However, we still need to explain precisely why the divergence of opinions occurred only after February 2022, and not before.

To explain this phenomenon, our hypothesis is as follows. When Russia's full-scale invasion triggered interest in a conflict that until then had not been on the front pages for most people in Kazakhstan, those Kazakh citizens speaking mainly Russian in their daily lives used Russian-language keywords to search for information about the conflict. Due to the dominance of pro-Kremlin media on the Russian-language Internet, most of these people ended up on pro-Kremlin news sites, which subsequently influenced their opinions towards

pro-Kremlin narratives. Kazakh-speaking individuals, on the other hand, ended up on more neutral Kazakh-language media outlets.

In this section, we use Yandex search statistics at the month-regional level to test this hypothesis. To see whether Russian language habits affected the frequency of searches for war-related information, we use the CAB survey data to calculate the share of Russian speakers at the regional level and match this information with regional search statistics from Yandex. We consider the following event study specification:

$$y_{rt} = \sum_t \beta_t \cdot SL_r \cdot \lambda_t + \kappa_r + \lambda_t + \epsilon_{rt} \tag{3}$$

The dependent variable $y_{rt} = \frac{\text{Num. of searches in region } r \text{ in month } t}{\text{Population in region } r} \cdot 1000$ is the number of searches for a specific keyword per month-region for 1000 inhabitants. SL_r is the share of respondents speaking Russian at home in region r, κ_r is the region fixed effect, and λ_t is the year-month fixed effect. Coefficient β_t shows the differential effect of regional Russian language penetration on the frequency of online searches in month t.

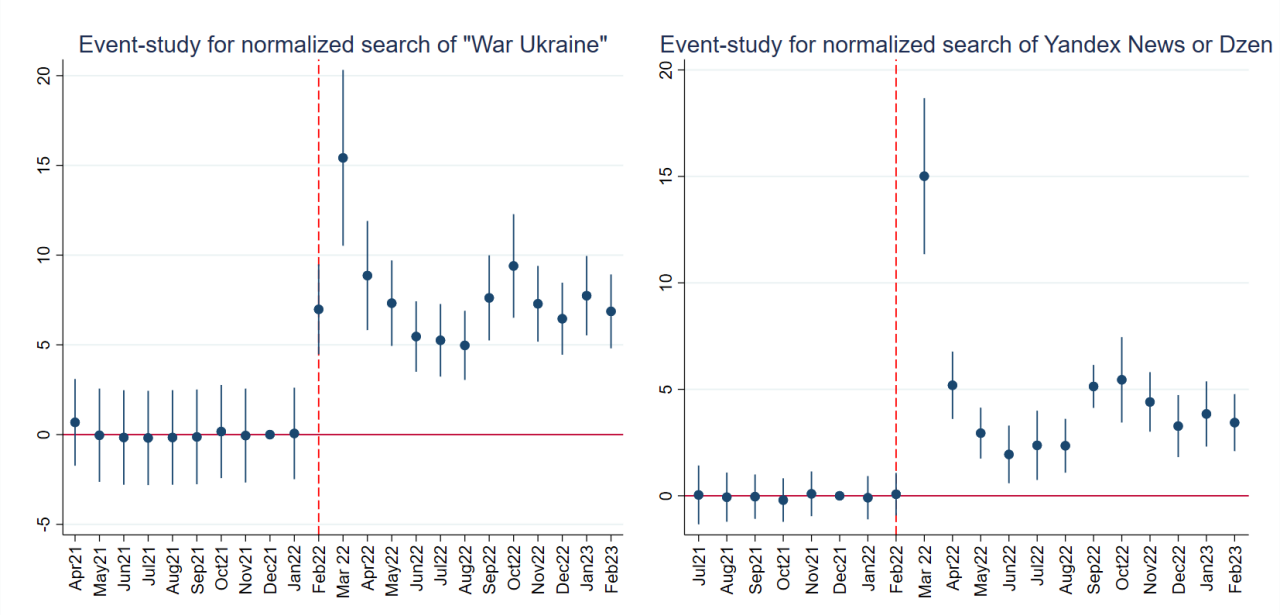
The left graph of Figure 5 shows the results for the keywords "vojna Ukraina" ("war Ukraine", see also Figure 4).[28] It shows that regions with a higher share of Russian speakers experienced a significant increase in searches for war-related keywords compared to regions with a lower share of Russian speakers, following the February 2022 event. Specifically, increasing the share of Russian speakers from 8% to 83% in a region (that is, from the lowest to the largest share in Kazakhstan) increases the search for war-related keywords by 11.3 times per 1000 people.[29] This language gap spike in search for war-related information in Russian does not mean that people automatically ended up on pro-Kremlin websites. To investigate this further, we examine the search patterns for specific news aggregators and outlets.

First, we estimate equation (3) for searches for Yandex Dzen and Yandex News – the

[28]The Yandex search statistics is insensitive to letter cases, prefixes, endings, pronouns, and prepositions, as a search phrase is first lemmatized and stopwords are removed.

[29]Figure B6 in Appendix B shows that the large-scale protests that occurred in Kazakhstan in January 2022 – the most significant protests that ever happened in Kazakhstan's history as an independent country – led to a much smaller language gap in the search for information, highlighting that the interest of Russian speaking population in search for information induced by Russia's full-scale invasion of Ukraine was truly exceptional.

Figure 5: Event study design for Yandex search “war Ukraine”, "Yandex news" or "Yandex Dzen"



Note. The figure shows coefficients β_t from (3) over time. We calculate the regional share of speaking Russian at home from the CAB 2022-2023 surveys. The vertical axis shows the effect of the regional share of Russian speakers on the number of keyword searches per 1000 regional inhabitants.

largest pro-Kremlin news aggregator.[30] The right graph of Figure 5 shows that the effect of the regional share of Russian speakers on searches for Yandex News is comparable to what we find when investigating the keywords “war Ukraine”. This suggests that Yandex News is an important source of news in the Russian-speaking regions of Kazakhstan after February 2022. Figure B4 of Appendix B shows that other pro-Kremlin TV shows and media, such as “Evening with Solovyov”, RIA News, and RBC News, also experienced a significant surge after February 2022 in Russian-speaking regions. Searches for Russian-language versions of the BBC and Euronews (the most popular pro-Western media in Kazakhstan), on the other hand, only showed a very small spike in Russian-speaking regions, suggesting that Western outlets were not able to compete in the Russian-language information space in Kazakhstan (Figure B5 in Appendix B). Finally, Figure B7 of Appendix B shows that the news search after February 2022 is specific to war in Ukraine, and other generic searches like weather, online games, or movies are not connected to this event. All in all, the analysis of online search

[30] Yandex News was acquired by the Russian state-owned social media VK in 2022, and renamed Yandex Dzen.

statistics shows that the Russian language penetration in Kazakhstan significantly increases the search for pro-Kremlin news after February 2022, and this media, in turn, induces the divergence in opinions we documented in section 4.1.

5 Russian Media and Attitudes About Sanctions Circumvention

In this section, we present the results from our own original survey, allowing us to pinpoint the effect of Russian media consumption on political beliefs, with a specific focus on attitudes toward the war and sanctions circumvention. Combining direct questions with list experiments permits us to address issues with social desirability bias and the sensitivity of war-related questions, which might have distorted answers to the direct questions in the CAB survey.

We start with the analysis of attitudes towards war and sanctions using the direct questions. We consider the following linear specification:

$$y_{ir} = \alpha RM_{ir} + \mathbf{X_{ir}}\beta + \kappa_r + \epsilon_{ir} \tag{4}$$

The subscript denotes respondent i from region r. The variable RM_{ir} is the number of media sources originating from Russia among the four main news sources on political and economic issues reported by respondent i. The vector $\mathbf{X_{ir}}$ includes a binary variable of *knowledge of the Russian language*, a binary variable about *completing the survey in Russian*, as well as controls for Russian ethnicity, gender, age, the number of kids, higher education, occupation, financial state, the intensity of internet use, the extent of interest in news, and living in a rural area. The variable κ_r is a regional fixed effect. As dependent variable y_{ir}, we use binary responses to direct questions that ask respondents if they find it justified to (1) participate in protests, (2) help Russia avoid sanctions, (3) that Russia invaded Ukraine, and (4) to work more than 50 hours a week.

A problem we encounter is that consumption of Russian media RM_{ir} is endogenous to our main dependent variables of interest – justifying to help Russia evade sanctions and justifying the invasion of Ukraine. As an instrument RL_{ir}, we therefore use the extent to which Russian is being used in daily life. We construct the variable RL_{ir} as the sum of three binary variables that measure using Russian as the main language (i) at home, (ii) with friends/colleagues, and (iii) for media consumption. We assume that after controlling for Russian ethnicity

(which may create a cultural connection), knowledge of Russian (making content in Russian available), and completing the survey in Russian (revealed instant language preference), the habit of using Russian in daily life affects attitudes to the war in Ukraine and sanctions against Russia *only* via consumed media.[31]

Table 9 presents our results of the IV estimations for direct questions, both for justifying and explicitly not justifying the four actions we are interested in. Columns 3 and 4 show that respondents who consume Russian media are 18 p.p. more likely to think it is justified to help Russia evade sanctions, and 22 p.p. less likely to explicitly state that this is not justified. Column 5 shows no significant effect of Russian media consumption on the justification of the invasion/SMO. However, column 6 shows a strong negative effect of Russian media consumption on the explicit non-justification of the invasion. This could imply that these respondents either hide their preferences, answering *"prefer not to answer"*, or they do not have a well-determined attitude.

Columns 1 and 2 show results for the direct question about participating in a protest for political change in Kazakhstan. Despite the political sensitivity of the topic, consumption of Russian media does not have a significant effect.[32] This aligns with our previous findings that Russian media primarily influences the attitudes of Kazakh citizens regarding Russia-related events, but not for other political issues. Columns 7 and 8 show results for the dependent variable that is not related to politics, i.e., working more than 50 hours per week. Similarly, there is no effect of Russian media consumption on opinions about this topic.

To reduce the preference falsification in direct questions and for ethical reasons, we gave option *Prefer not to answer* in all the direct questions considered as dependent variables in Table 9.[33] To better understand the non-revealed preferences with respect to helping

[31] **Knowledge** of Russian is a proxy for Russian media exposure of the second order, while **usage** of Russian in daily life is a proxy of the first order. If respondents do not know Russian, they cannot be exposed to Russian news directly, but only via re-published content in other languages. If they know Russian but have no habits of using it in daily life, they are unlikely to be exposed to Russian media intensively. The more intensively they use Russian in daily life, the more they are exposed to Russian media.

[32] After the events of "Bloody January" in 2022, discussing protest participation has become a very sensitive topic in Kazakhstan.

[33] The shares of respondents selecting *Prefer not to answer* in direct questions of justification for: (i) protest participation - 30.3%, (ii) help in sanctions evasion - 32.5%, (iii) invasion of Ukraine - 33.2%, (iv) working more than 50 hours per week - 21.1%. We find that around 10% of respondents select *Prefer not to answer*

Table 9: Russian media and justification of actions/events: Direct Question

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Protest participation		Sanctions evasion		Invasion/SMO		Work $\geq$ 50 h.	
VARIABLES	Justified	Not justif.	Justified	Not justif.	Justified	Not justif.	Justified	Not justif.
Russian media (scale)	-0.0081	-0.074	0.18***	-0.22***	0.082	-0.23***	0.016	0.064
	(0.063)	(0.067)	(0.064)	(0.073)	(0.057)	(0.075)	(0.060)	(0.067)
Know Russian	-0.050	-0.0090	-0.17***	0.11**	-0.10***	0.11**	-0.090**	0.023
	(0.037)	(0.039)	(0.037)	(0.043)	(0.035)	(0.044)	(0.035)	(0.039)
Survey in Russian	-0.023	-0.045**	0.030	-0.072***	-0.013	-0.055**	-0.027	-0.021
	(0.018)	(0.020)	(0.019)	(0.021)	(0.017)	(0.022)	(0.019)	(0.020)
Ethnical Russian	-0.081***	0.0067	0.068**	-0.12***	0.018	-0.14***	-0.070***	-0.041
	(0.025)	(0.029)	(0.027)	(0.030)	(0.023)	(0.032)	(0.024)	(0.029)
Observations	4,904	4,904	4,904	4,904	4,904	4,904	4,904	4,904
R-squared	0.137	0.021	0.039	-0.082	0.113	-0.123	0.129	0.083
Region FE	Y	Y	Y	Y	Y	Y	Y	Y
Estimat.	IV	IV	IV	IV	IV	IV	IV	IV
Kleib.-Paap Wald rk F	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows results of IV estimates for specification (4), where dependent variables are the binary variables of "justified" or "not justified" to the question *In your opinion, is* [item] *generally justified or not justified?*. The wording is in Section 3.3. The endogenous variable – Russian media (scale) – ranges from 0 to 4 and shows how many sources out of the four main news sources are of Russian origin. The instrument – Usage Russian – is the sum of binary variables related to Russian as the main language: at home, with friends/colleagues, for media consumption. The heteroskedasticity robust F-statistics shows that the instrument is strong ($\geq$ 20) for the standard inference (Andrews et al. 2019). The additional controls not shown in the table are gender, age, number of kids, education, occupation, financial state, the intensity of internet usage, the extent of interest in news, rural binary indicator, and regional fixed effects. Robust standard errors are in parentheses. OLS results with control for Usage Russian are in Table C4 of Appendix C.

Russia evade sanctions and justifying the invasion, and their relation with Russian media consumption, we use a set of list experiment questions on the same topics. Section C.2 of Appendix C describes the list experiments design in detail, and Table C3 of Appendix C shows the balance statistics.

Table 10 shows the results from the list experiments, estimated by OLS with controls for Russian media consumption and its interaction with the treatment group.[34] The coefficients for the treatment group in Columns 3-4 (5-6) show that around 30% of respondents *who do not* indicate Russian media as their main source of information justify sanctions circumvention, while 24% justify the invasion of Ukraine. The coefficient for the interaction shows that consumers of Russian media were 6.5 p.p. more likely to justify sanctions circumvention,

to direct politically sensitive questions, but not to other questions related to religion, media, and trust in government.

[34]The results cannot be interpreted causally. The IV approach reveals a weak instrument for the interaction of the treatment group with Russian media consumption.

while there is an insignificant association between consuming Russian media and justifying the invasion of Ukraine. Taken together, the results of Tables 9 and 10 indicate that the consumption of Russian media indeed increased the justification of helping Russia to evade sanctions and decreased the explicit non-justification of the full-scale invasion. These results also link our previous discussion of Russian media consumption and attitudes towards the war with the re-export of sanctioned goods from Kazakhstan to Russia that we will discuss in the next section.

Table 10: Russian media and justification of actions/events: List Experiment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Number of chosen items in a list experiment question. Treatment item:							
VARIABLES	Protest particp.		Evade sanctions		Invasion/SMO		Work $\geq$ 50 h.	
Tr. Gr.	0.32***	0.33***	0.30***	0.32***	0.24***	0.23***	0.22***	0.21***
	(0.039)	(0.037)	(0.039)	(0.037)	(0.037)	(0.036)	(0.039)	(0.037)
Tr.Gr.×Rus.media	0.023	0.024	0.065**	0.066**	0.00061	0.0047	0.0059	0.0016
	(0.029)	(0.029)	(0.030)	(0.030)	(0.029)	(0.029)	(0.030)	(0.030)
Russian media	0.076***	0.056***	0.017	0.021	0.049***	0.056***	0.086***	0.067***
	(0.018)	(0.019)	(0.019)	(0.020)	(0.018)	(0.020)	(0.019)	(0.020)
Usage Russian		0.076***		0.056**		-0.00071		0.023
		(0.024)		(0.025)		(0.023)		(0.024)
Know Russian		0.13***		0.055		0.095**		0.093*
		(0.049)		(0.049)		(0.047)		(0.048)
Survey in Russian		-0.23***		-0.34***		-0.27***		-0.17***
		(0.048)		(0.048)		(0.047)		(0.048)
Ethnical Russian		-0.28***		-0.17***		-0.096*		-0.20***
		(0.056)		(0.056)		(0.053)		(0.056)
Observations	4,904	4,904	4,904	4,904	4,904	4,904	4,904	4,904
R-squared	0.029	0.100	0.026	0.109	0.015	0.074	0.018	0.102
Controls	N	Y	N	Y	N	Y	N	Y
Estimat.	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Linear regression models, where the dependent variable is the number of items chosen in a list experiment setting. The binary variable *Treat. group* equals one for participants receiving a treated list. The wording is in Table C2 of Appendix C. Odd columns do not have controls. Even columns have additional controls. Controls not shown in the table are similar to the ones in Table 9. Robust standard errors are in parentheses.

6 The Effect of Russian Propaganda on Sanctions Circumvention

In this section, we study how exposure to Russian propaganda affects the export of sanctioned goods from Kazakhstan to Russia. Our aggregate export data includes 2899 observations at

the region, month, and product-class levels (20 regions, 33 months, and 5 product-classes).

Figure 3 shows that before the full-scale invasion, exports of subsequently sanctioned goods from Kazakhstan to Russia were small and relatively stable. While non-sanctioned goods were exported to Russia at the level of 8.4 million USD on average per month-region, the export of goods that were subsequently sanctioned stood at around 2.4M USD per month-region. In the months after the start of the full-scale invasion, these exports increased multiple times, reaching a spike of 20M USD per month-region in September 2022, while the export of non-sanctioned goods remained stable at pre-invasion levels. In this section, we examine if this spike in the re-export of sanctioned goods can – at least partially – be attributed to the influence of Russian propaganda on the citizens of Kazakhstan.

To begin with, we estimate the average effect of the full-scale invasion and the sanctions on exports of sanctioned goods to Russia. We use a difference-in-differences estimation, where the treatment group is composed of sanctioned products (electronics and machines), the control group includes all non-sanctioned products, and February 2022 is the treatment date. We consider the following linear equation:

$$Value_{rtp} = \beta \cdot S_p \cdot Post_t + [\delta \cdot Capital_r \cdot S_p Post_t] + \kappa_r + \lambda_t + \mu_p + \varepsilon_{rtp} \tag{5}$$

The subscript r denotes region, t denotes time (year-month) and p product class. The outcome variable $Value_{rtp}$ is exports in million USD. The binary variable S_p denotes sanctioned products, $Post_t$ the period after February 2022, and $Capital_r$ the current capital city Astana or the former capital city Almaty. Variables κ_r, λ_t, and μ_p are regional, time, and product class fixed effects, respectively.

We first consider specification (5) without the term in brackets. Coefficient β captures the average treatment effect of sanctions on the region-monthly export value of sanctioned products to Russia. Column 1 of Table 11 shows that after February 2022, the export of sanctioned goods to Russia increased by 9.7M USD per month-region.[35] Considering that the production output of electronics and machines has been very stable in Kazakhstan since 2021 (see Figure A8 in Appendix A) and that a substantial spike in the export of these products to

[35] Section D.1 of Appendix D discusses the parallel trend assumption test, and Figure D1 of Appendix D shows the results of an event-study analysis for equation (5).

Russia occurred after February 2022 (Figure 3), this result suggests that Kazakh firms started to substantially re-export sanctioned goods to Russia after February 2022.

As Kazakhstan's two largest regions Astana and Almaty feature a substantial concentration of businesses (and might therefore distort our results), so we analyze them separately. We now consider specification (5) including the term in brackets. The coefficient δ now illustrates how the monthly growth in exports of sanctioned goods after February 2022 differs between Astana and Almaty and the other Kazakh regions. Column 2 of Table 11 shows that monthly growth in the export of sanctioned goods from Astana and Almaty is 46.5M USD higher than that for other regions. At the same time, monthly growth for Kazakhstan's other regions is also significant, with 4.9M USD per month-region.[36] Due to these substantial differences between Almaty and Astana and the rest of the country, we either exclude Astana and Almaty in the following estimations or analyze them separately.

After looking at the effect of the full-scale invasion on re-exports, we now investigate the potential heterogeneity of coefficient β with respect to exposure to pro-Kremlin information at the regional level. In other words, we want to study if exposure to pro-Kremlin information contributed to the increase in sanctioned exports to Russia. To answer this question, we consider the following triple DID specification:

$$Value_{rtp} = \alpha \cdot S_p \cdot Treat_r + \beta \cdot S_p \cdot Post_t + \gamma \cdot S_p \cdot Treat_r \cdot Post_t + [\delta \cdot S_p \cdot Capital_r \cdot Post_t] + \kappa_r + \lambda_t + \mu_p + \varepsilon_{rtp} \quad (6)$$

The variable $Treat_r$ uses information from the CAB surveys and captures three different regional measures of treatment exposure: (1) the share of Russian-speaking respondents, (2) the share of respondents who justify the war, (3) the share of respondents who trust Russian news. All other variables are the same as in equation (5). When considering all Kazakh regions (including Almaty and Astana), we include the term in brackets in (6); otherwise, we exclude it. When we exclude Astana and Almaty, the coefficient α measures differences in the export of (not yet) sanctioned products before the full-scale invasion depending on the the treatment exposure. The coefficient β measures the change in export of sanctioned goods after

[36] Figure D1 of Appendix D justifies the assumption of a parallel trend for the two capital cities and the rest of Kazakhstan.

February 2022 for a hypothetical region with zero treatment exposure, while the coefficient γ captures the additional contribution of treatment exposure to this effect. When we include Astana and Almaty, the interpretation of coefficients β and γ stays the same, while δ measures the additional contribution of these two cities to the export after February 2022 compared to the hypothetical region with zero treatment exposure.

Table 11 presents the results for model (6).[37] Columns 4, 7, and 10 exclude Astana and Almaty, while columns 3, 6, and 9 include both cities. The coefficient β is smaller in all these models compared to the baseline model of column 2 and, in most cases, is either negative (Columns 9, 10) or insignificant (Columns 3, 6, 7). This suggests that in a hypothetical region with zero treatment exposure, the full-scale invasion either leads to a negative or insignificant effect with respect to the export of sanctioned goods to Russia. The coefficient γ, on the other hand, is positive and significant in all considered models, suggesting that exposure to pro-Kremlin information stimulates firms in these regions to export more sanctioned products. Among the three measures of treatment exposure, the *share of respondents speaking Russian* demonstrates the weakest effect, while the *share of respondents trusting Russian news* has the strongest effect, slightly above the *share of respondents justifying the war*. These results suggest that exposure to Russian media has indeed a strong effect on sanctions circumvention, much stronger than cultural proximity per se. Figure 6 shows $\beta + \gamma \cdot Treat$ as a function of $Treat$. It can be interpreted as the growth in the export of sanctioned goods to Russia after February 2022, depending on exposure to treatments. At mean treatment exposure, the export of sanctioned goods to Russia increases by 5.6M USD per month and region in regions excluding Almaty and Astana, after the start of the full-scale invasion.[38] This effect is stronger for regions more exposed to pro-Kremlin propaganda.

Figure D4 of Appendix D shows $\beta+\gamma\cdot Treat$ for specification (6), where treatment exposure is calculated only with respect to answers by firm owners and managers, a group particularly relevant for our hypothesis.[39] The results we find are very close to those presented in Figure 6, suggesting that respondents with real economic responsibility are equally susceptible to pro-

[37] Section D.2 of Appendix D discusses the parallel trend assumption test, and Figure D2 (Panel A) of Appendix D shows the result for the event-study analysis for equation (6).

[38] Mean values: 0.42 for Russian language, 0.27 for war justification, and 0.37 for trust in Russian media.

[39] See Table D3 of Appendix D for the parallel trends assumption check.

Kremlin propaganda in their economic decisions. Figure D8 shows results of estimation for specification (6), where we recalculate the treatment exposure measures excluding ethnically Russian respondents from CAB surveys. It shows that the growth in exports of sanctioned goods to Russia after February 2022 remains higher in regions with higher exposure to treatment, demonstrating that pro-Kremlin information plays a role in sanctions evasion that goes beyond that of Russian ethnicity per se.[40]

One potential concern for the interpretation of our results in Figure 6 could be that the full-scale invasion led to *both* an intensification of pro-Kremlin propaganda and increased economic opportunities through the re-export of sanctioned goods to Russia. Rather than the cause of sanctions circumvention, the narrative provided by pro-Kremlin media could be used as a welcome justification for those Kazakh firms that profited from re-exporting sanctioned goods to Russia. To address this issue, we use the percentage of respondents who explicitly *do not justify* the full-scale invasion (or who explicitly blame Russia as the main aggressor) as a regional proxy for moral restraint in doing business with Russia. Based on model (6), the right panel of Figure D6 of Appendix D shows that in regions with a higher share of respondents not justifying the invasion, the growth in exports of sanctioned products is lower and nearly negligible in the upper quartile. Moreover, for a hypothetical region where more than 60% of people blamed Russia as the main aggressor, we would observe a significant reduction in the re-export of sanctioned products to Russia after February 2022 (left panel of Figure D6). This suggests that moral restrictions and convictions do influence economic activity, and conversely, Russian propaganda can play a role in convincing economic actors to export sanctioned goods to Russia.[41]

Figure 7 shows $\beta + \gamma \cdot Treat$ for the same specification (6), but for monthly-regional

[40] We also estimate the following extension of model (6) for regions excluding Astana and Almaty:

$$Value_{rtp} = \alpha \cdot S_p \cdot Treat_r + \beta \cdot S_p \cdot Post_t + \gamma \cdot S_p \cdot Treat_r \cdot Post_t + \delta \cdot S_p \cdot RusEth_r + \theta \cdot S_p \cdot RusEth_r \cdot Post_t + \kappa_r + \lambda_t + \mu_p + \varepsilon_{rtp} \quad (7)$$

Here $RusEth_r$ is the share of ethnic Russians in region r. All other variables are similar to equation (6). Figure D5 shows the results. Despite wide confidence intervals, the results are similar to those of the baseline model (6).

[41] Figure D7 shows the graph for treatment exposures based on the shares of respondents who blame Ukraine or the West for the invasion. Similar to Figure 6, higher exposure to the treatments induces higher re-export growth for sanctioned goods.

production output in USD for five product classes. The regional exposure to pro-Kremlin propaganda does not affect the production growth of sanctioned products after February 2022 in Kazakhstan. This suggests that the circumvention of sanctions is based on re-export rather than local production of sanctioned goods.

Finally, we restrict our attention to the subsample of export data, including only sanctioned goods, and estimate a DID specification similar to the one in Korovkin and Makarin (2023):

$$Value_{rt} = \gamma \cdot Post_t \cdot Treat_r + \kappa_r + \lambda_t + \varepsilon_{rt}, \tag{8}$$

with a treatment exposure $Treat_r$ similar to the one in equation (6).[42] In this specification, coefficient γ identifies the differential export growth of sanctioned goods after February 2022 between regions with high and low degrees of treatment exposure. For the same reasons as before, we exclude Astana and Almaty from the sample. Columns 5, 8, and 11 of Table 11 show the results for the regional share of respondents mainly speaking Russian, justifying the war, and trusting Russian news, respectively.[43] Similar to our previous findings, growth in exports of sanctioned goods to Russia is higher in regions with higher exposure to pro-Kremlin information, with the magnitude depending on the respective measure of exposure. An increase in the share of Russian-speaking respondents from the first quartile (.204) to the third quartile (.605) increases additional exports by 3.14M USD per month and region. Similarly, increasing the share of respondents justifying the war and trusting Russian news by one inter-quartile range (0.111 and 0.071, respectively) increases additional exports of sanctioned products by 2.4M USD and 0.86M USD per month and region, respectively. In line with our previous findings, these results suggest that exposure to pro-Kremlin information directly affects incentives by Kazakh firms and entrepreneurs to export sanctioned goods to Russia.

[42] One can think of regions with low and high treatment exposure as control and treatment groups, respectively, in a binary treatment setting.

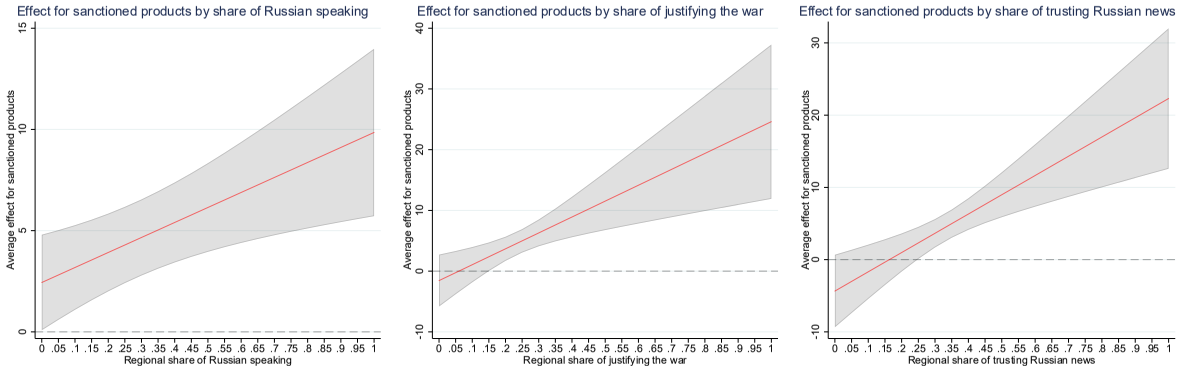
[43] Section D.3 of Appendix D discusses the parallel trend assumption test, and Figure D2 (Panel B) of Appendix D shows the result of the event-study analysis for (8).

Table 11: The effect of pro-Kremlin information exposure on sanctions circumvention

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
VARIABLES	Dependent variable: value of region-month-product export to Russia (in M USD)										
Sanctioned products ×			-8.71***	-7.98***		-17.3**	-30.9***		-14.6**	-21.8***	
Treatment exposure (α)			(2.42)	(2.44)		(8.09)	(7.90)		(7.37)	(7.05)	
Sanctioned products ×	9.76***	4.90***	0.78	2.44**		-1.87	-1.56		-6.13**	-4.35*	
Post-invasion (β)	(1.35)	(0.96)	(1.18)	(1.20)		(2.41)	(2.18)		(2.89)	(2.57)	
Sanctioned products × Post-			9.56***	7.41***	7.84***	25.2***	26.2***	21.9***	29.7***	26.7***	12.1***
invasion × Treatment exposure (γ)			(2.65)	(2.61)	(1.59)	(9.14)	(8.37)	(5.75)	(8.08)	(7.23)	(3.03)
Sanctioned products ×		46.5***	46.4***			47.1***			47.2***		
Post-invasion × Capitals (δ)		(6.18)	(6.18)			(6.24)			(6.19)		
Constant	18.1***	18.0***	18.0***	15.0***	2.21***	18.0***	15.0***	0.41	18.0***	15.0***	1.36*
	(0.88)	(0.90)	(0.90)	(0.80)	(0.38)	(0.90)	(0.80)	(0.96)	(0.90)	(0.80)	(0.72)
Observations	2,899	2,899	2,899	2,569	531	2,899	2,569	531	2,899	2,569	531
R-squared	0.289	0.352	0.353	0.298	0.612	0.353	0.298	0.602	0.353	0.298	0.590
Year-Month FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Region FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Product class FE	Y	Y	Y	Y	-	Y	Y	N	Y	Y	-
Product class	All	All	All	All	Sanctioned	All	All	Sanctioned	All	All	Sanctioned
Sample	All regions	All regions	All regions	No capitals	No capitals	All regions	No capitals	No capitals	All regions	No capitals	No capitals
Regional treatment exposure	No	No	Share of speaking Russian at home			Share of justifying the war			Share of trusting Russian news		

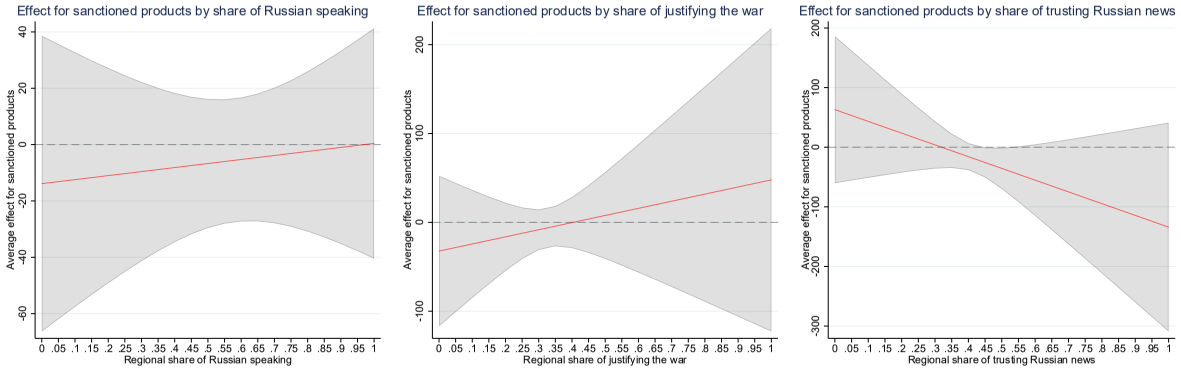
Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Column 1 shows the results of regression (5) without brackets, while Column 2 uses (5) with brackets. Columns 3-11 use regional measures of treatment exposure: Share of speaking Russian at home (Columns 3-5), Share of justifying the war in Ukraine (Columns 6-8), Share of trusting Russian news (Columns 9-11). Columns 3, 6, and 9 use all regions and estimate (6) including the term in brackets. Columns 4, 7, and 10 exclude Astana and Almaty and estimate (6) without the term in brackets. Columns 5, 8, and 11 exclude Astana and Almaty and estimate (8). Robust standard errors are in parentheses.

Figure 6: Re-export growth for sanctioned products by regional treatment exposure



Note. The figure shows $\beta + \gamma \cdot Treat$ from the specification (6), where β and γ are taken from Columns 4, 7, and 10 of Table 11. The dependent variable is the value of exports to Russia in a region-month. It uses CAB 2022-2023 surveys to calculate regional measures of treatment exposure.

Figure 7: Production growth for sanctioned products by regional treatment exposure



Note. The dependent variable is the production output in USD for a product class in a region-month. For the rest, see note of Figure 6.

7 Conclusion

Can language affinity facilitate the export of propaganda by authoritarian regimes during times of war? To test this question, we use data from six waves of a telephone survey conducted in Kazakhstan, and complement it with Yandex search data, our own original survey, as well as detailed trade data on exports from Kazakhstan to Russia. We find that Russia's full-scale invasion of Ukraine in February 2022 caused a spike in searches for news on the topic in Kazakhstan. Searching for information on the internet, Russian-speakers in Kazakhstan were significantly more likely to end up on pro-Kremlin media platforms than non-Russian speakers. We document how the consumption of pro-Kremlin media led to a persistent change and division in beliefs between Russian-speaking and non-Russian-speaking Kazakh citizens, a division that so did not exist before February 2022. After February 2022, Russian-speakers had a significantly more negative view of the West and a more positive view of Russia than non-Russian speakers. They were also more likely to condone Russia's invasion of Ukraine, and to justify the circumvention of economic sanctions imposed against Russia. Using detailed trade data, we show how these beliefs map into a significant increase in trade with Russia after February 2022, with the increase being particularly strong in those Kazakh regions where people are more likely to speak Russian and to consume pro-Kremlin media.

We argue that Russia's ability to influence popular beliefs and economic behavior in Kazakhstan, as well as Russia's invasion of Ukraine itself, are both legacies of empire - the Russian and the Soviet one. As evidenced elsewhere, Russia's full-scale invasion of Ukraine cannot be explained by rational choice theories of authoritarian politics alone, that depict the dictator as a rational actor (Sonin 2024). Instead, Russia's imperial past has become reason and motivation for Putin's renewed interest in territorial expansion (Schulze-Wessel 2023). Those ethnic Russians who found themselves outside of Russia after the fall of the Soviet Union have started to play a pivotal role in this respect (Zevelëv 2001). Putin has made the Russian diaspora an essential part of his foreign policy and a way of exercising soft power (Decker 2021). The annexation of Crimea in 2014, the war in the Donbass, as well as the start of the full-scale invasion in 2022 were all at least partially justified with the need to protect Russian-speakers abroad (Pieper 2020).

The Russian diaspora has become object and actor alike in Putin's effort to rebuild the

Russian empire. In our paper, we identify an additional factor – beyond ethnicity – that makes populations particularly vulnerable to Russian propaganda: the Russian language. Our findings are consistent with the literature on media effects in autocracies, and underscore the importance of language and online media in this respect. Other studies have found that Russian narratives often refer to a specific Russian identity (Tolz and Hutchings 2023), which is beyond the scope of this study, but certainly warrants further investigation. We instead add to an emerging literature that underscores the difference between identity and language (Marquardt 2022; Chapman and Zhandayeva 2025). However, neither identity and language nor their interplay fully explain how propaganda is transferred to other contexts, as the adoption of Russian propaganda narratives in China (Hanley et al. 2025) or in English-speaking political discussions on Reddit (Hanley et al. 2023) show, suggesting additional avenues for research on this topic.

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Online Appendix

A Appendix

Figure A1: Opinions of different countries and the Eurasian Economic Union (EAEU) in dynamics

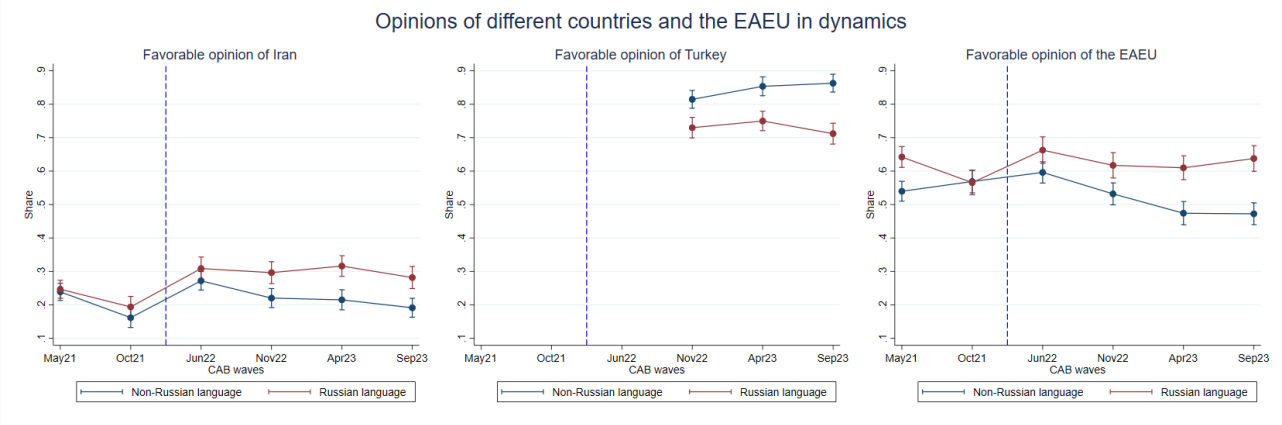


Figure A2: Search for "War Ukraine" in Kazakh language on Yandex

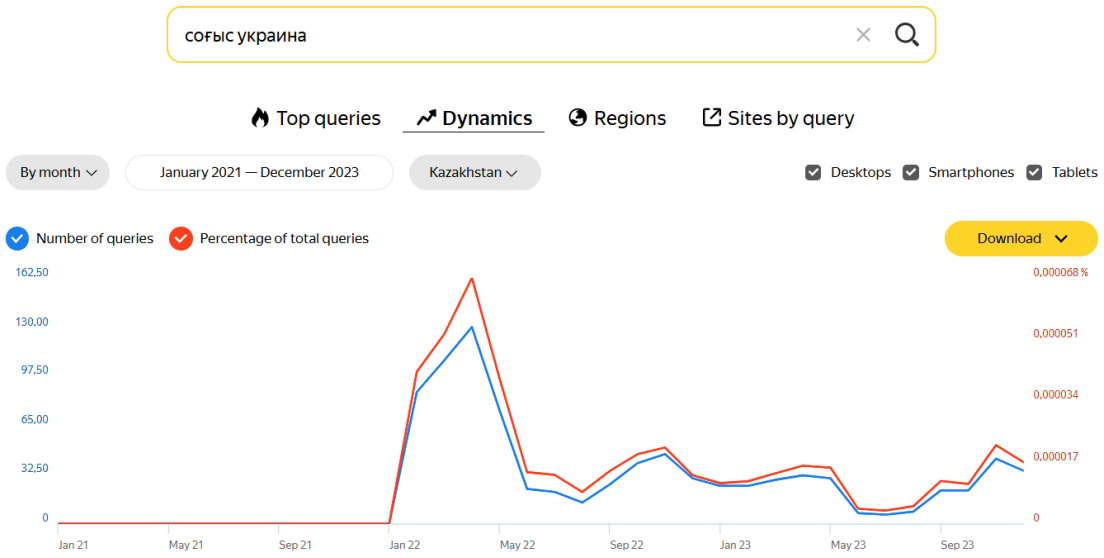


Figure A3: Search for "War Ukraine" in Kazakh language on Google Trends

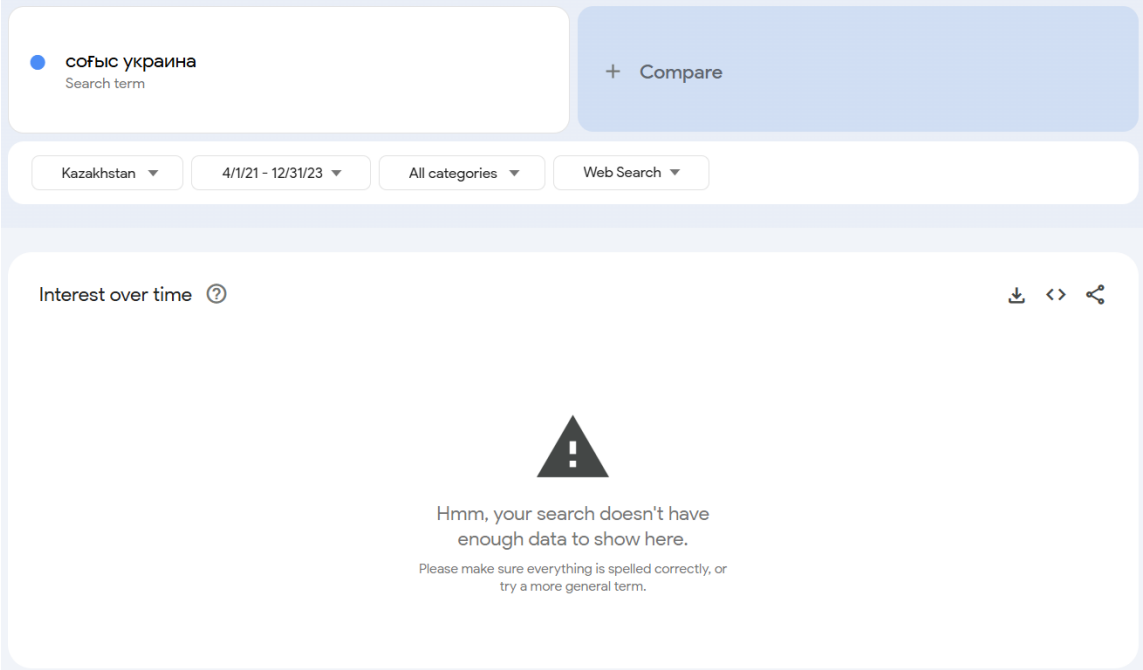


Figure A4: Search for "News" on Yandex

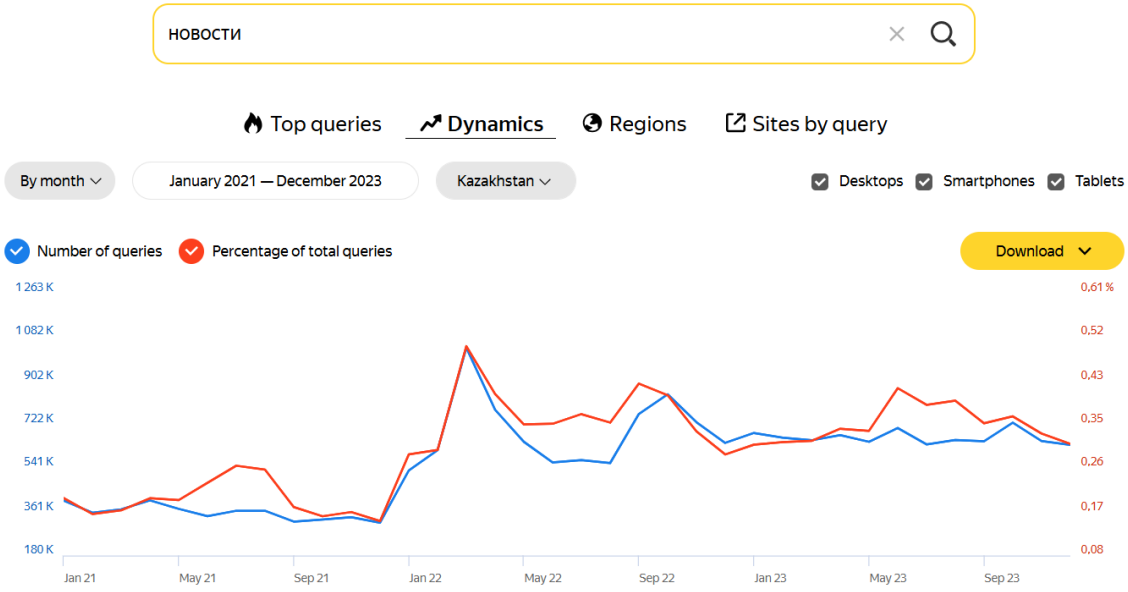


Figure A5: Search for "Yandex Dzen" on Yandex

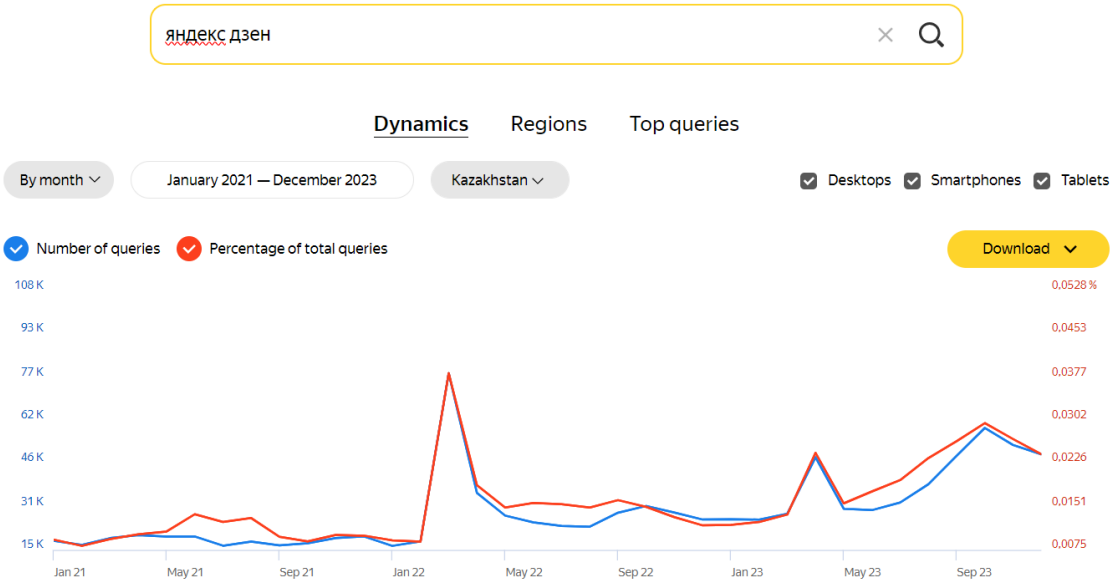


Figure A6: Search for "Yandex News" on Yandex

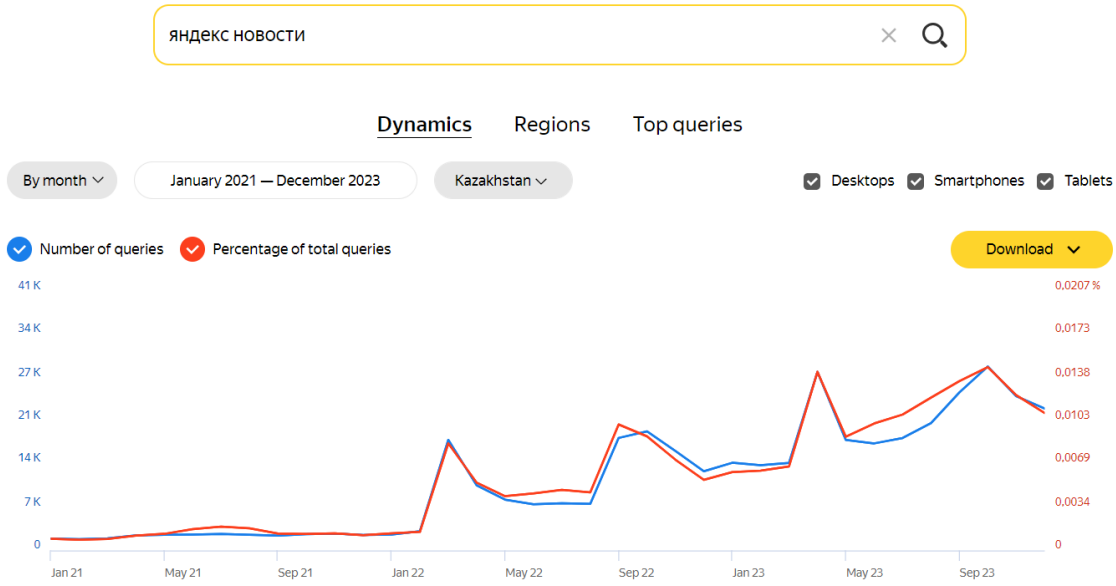


Figure A7: Search for "Euronews" on Yandex

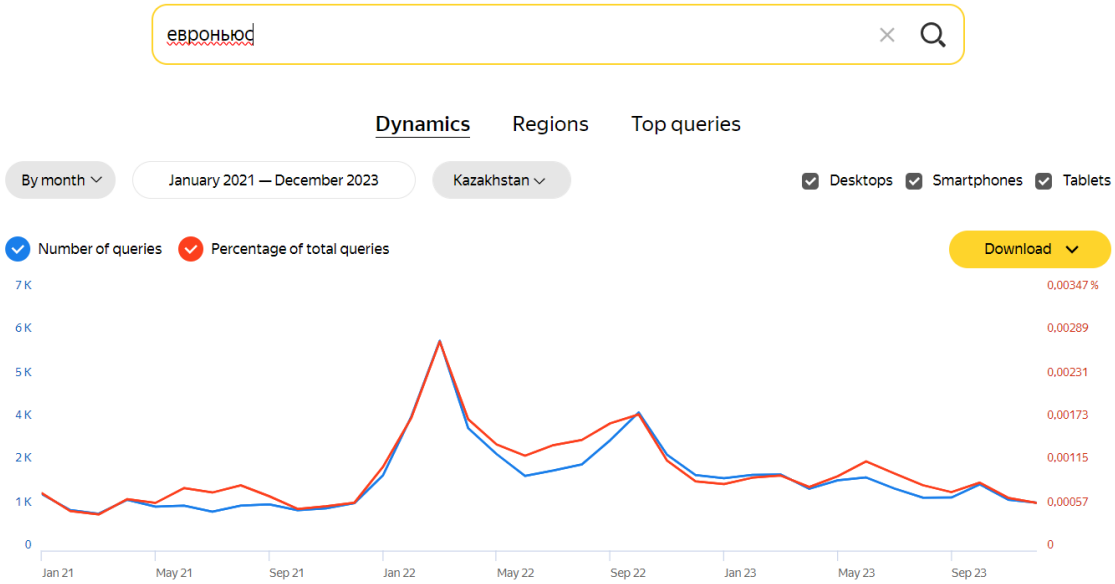
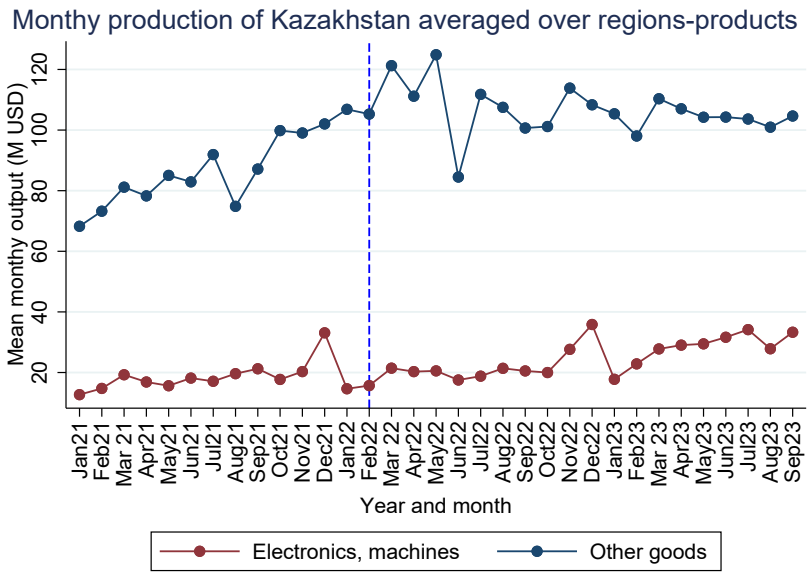


Figure A8: The production output of Kazakhstan



B Appendix

B.1 Tables of Appendix B

Table B1: Russian language habit and war justification

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	SMO is justified (bianary)					
Russian language	0.11***	0.090**	0.16***	0.077***	0.13***	0.10***
	(0.015)	(0.037)	(0.026)	(0.019)	(0.019)	(0.015)
Female	-0.018*	-0.012	-0.056***	0.0056	-0.012	-0.012
	(0.011)	(0.031)	(0.017)	(0.014)	(0.014)	(0.011)
30-39 years old	0.0072	-0.052		0.016	0.021	0.0073
	(0.014)	(0.034)		(0.014)	(0.018)	(0.014)
40-49 years old	0.045***	0.043			0.054***	0.020
	(0.015)	(0.039)			(0.020)	(0.016)
50-59 years old	0.043**	0.015	-0.00090		0.046**	0.012
	(0.018)	(0.053)	(0.020)		(0.022)	(0.019)
60+ years old	0.13***	0.013	0.084***		0.13***	0.053**
	(0.021)	(0.088)	(0.022)		(0.024)	(0.023)
Higher education	-0.040***	-0.074**	-0.030*	-0.049***	-0.054***	-0.041***
	(0.011)	(0.029)	(0.018)	(0.014)	(0.014)	(0.011)
Medium household size	0.0015	0.0095	-0.0066	0.010	0.0021	0.0056
	(0.012)	(0.030)	(0.019)	(0.015)	(0.015)	(0.013)
Above medium household size	0.016	0.015	-0.024	0.037	0.030	0.011
	(0.019)	(0.050)	(0.032)	(0.024)	(0.024)	(0.019)
Large household size	-0.018	0.053	-0.056	0.00076	-0.022	-0.0088
	(0.033)	(0.092)	(0.052)	(0.042)	(0.043)	(0.033)
Missing household size	0.0051	0.12	-0.042	0.026	0.071	-0.014
	(0.037)	(0.098)	(0.067)	(0.045)	(0.058)	(0.037)
Rural area	0.015	-0.016	-0.024	0.047***	-0.0036	0.015
	(0.013)	(0.041)	(0.021)	(0.018)	(0.017)	(0.014)
Ethnically Kazakh	-0.17***	-0.19***	-0.20***	-0.14***	-0.22***	-0.17***
	(0.019)	(0.048)	(0.031)	(0.024)	(0.025)	(0.019)
Ethnically Russian	0.080***	0.042	0.11***	0.034	0.065**	
	(0.022)	(0.057)	(0.034)	(0.029)	(0.029)	
Understood most	0.012	0.020	0.019	0.0081	0.026	0.023
of the questions	(0.015)	(0.038)	(0.023)	(0.019)	(0.018)	(0.015)
Understood most of the	0.015	0.12	0.0074	0.020	0.017	0.022
questions but with some help	(0.023)	(0.078)	(0.035)	(0.030)	(0.030)	(0.023)
Had difficulty understanding most	-0.042	-0.073	0.023	-0.10**	-0.047	-0.045
of the questions, even with help	(0.043)	(0.12)	(0.075)	(0.040)	(0.064)	(0.041)
Was comfortable with	-0.035**	-0.0052	-0.050**	-0.027	-0.033*	-0.037**
most of the questions	(0.014)	(0.036)	(0.022)	(0.017)	(0.017)	(0.014)
Was comfortable with	-0.15***	-0.13	-0.15***	-0.14***	-0.14***	-0.12***
only some of the questions	(0.030)	(0.087)	(0.051)	(0.036)	(0.047)	(0.031)
Was generally uncomfortable	-0.17***	-0.24***	-0.13**	-0.18***	-0.14**	-0.13***
with the survey questionnaire	(0.038)	(0.089)	(0.058)	(0.046)	(0.062)	(0.039)
Wave 12	-0.049***	-0.080**	-0.037	-0.052***	-0.041**	-0.020
	(0.015)	(0.040)	(0.025)	(0.020)	(0.019)	(0.016)
Wave 13	-0.069***	-0.11***	-0.053**	-0.071***	-0.063***	-0.063***
	(0.015)	(0.040)	(0.024)	(0.019)	(0.019)	(0.016)
Wave 14	-0.037**	-0.031	-0.040	-0.028	-0.027	-0.0089
	(0.016)	(0.041)	(0.025)	(0.021)	(0.020)	(0.017)
Constant	0.33***	0.40***	0.39***	0.31***	0.37***	0.33***
	(0.029)	(0.073)	(0.047)	(0.035)	(0.037)	(0.029)
Observations	6,020	955	2,366	3,654	3,889	4,864
R-squared	0.140	0.154	0.223	0.082	0.178	0.078
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows the regression results (1) for a binary dependent variable, "SMO is justified". Robust standard errors are in parentheses.

Table B2: Russian language habit and war justification (scale from 1 to 4)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	SMO is justified (scale)					
Russian language	0.27***	0.13	0.44***	0.16***	0.31***	0.26***
	(0.042)	(0.11)	(0.074)	(0.051)	(0.051)	(0.043)
Observations	4,458	740	1,818	2,640	3,200	3,566
R-squared	0.207	0.227	0.309	0.137	0.241	0.133
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows the regression results (1) for a discrete dependent variable measured from 1 "SMO is completely unjustified" to 4 "SMO is completely justified". Responses "No answer" and "Don't know" are excluded. Robust standard errors are in parentheses.

Table B3: Russian language habit and war condemnation

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	SMO is not justified (binary)					
Russian language	-0.078***	-0.070	-0.11***	-0.053**	-0.10***	-0.077***
Observations	6,020	955	2,366	3,654	3,889	4,864
R-squared	0.123	0.167	0.189	0.096	0.172	0.104
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table shows the regression results (1) for a binary dependent variable, "SMO is not justified". Robust standard errors are in parentheses.

Table B4: Russian language habit and daily use of the Internet via a phone

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Daily Internet use					
Russian language	0.042***	0.017	0.040*	0.043***	0.047***	0.040***
	(0.012)	(0.024)	(0.023)	(0.013)	(0.014)	(0.012)
Observations	6,020	955	2,366	3,654	3,889	4,864
R-squared	0.076	0.089	0.090	0.039	0.094	0.083
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Table shows the results of regression (1) for a binary dependent variable, "Daily use of the Internet via a phone". Robust standard errors in parentheses.

Table B5: Russian language habit and frequency of Internet use via a phone (scale 1-5)

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Frequency of Internet use (from 1 daily to 5 never)					
Russian language	-0.069***	-0.038	-0.082	-0.061**	-0.080***	-0.065**
	(0.026)	(0.043)	(0.054)	(0.027)	(0.029)	(0.026)
Observations	6,020	955	2,366	3,654	3,889	4,864
R-squared	0.080	0.090	0.089	0.038	0.093	0.089
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Table shows the results of regression (1) for a discrete dependent variable, "Frequency of using the Internet via a phone", with values from 1 (daily) to 5 (never). Robust standard errors in parentheses.

Table B6: Russian language habit and channels for Russian propaganda: national or local TV, radio, newspapers

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	News from national or local TV, radio, newspapers					
Russian language	-0.036***	-0.012	-0.035	-0.035***	-0.046***	-0.033***
	(0.010)	(0.016)	(0.023)	(0.0097)	(0.013)	(0.010)
Observations	6,020	955	2,366	3,654	3,889	4,864
R-squared	0.072	0.061	0.063	0.038	0.089	0.087
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Table shows the results of regression (1) for a binary dependent variable, "News from national or local TV, radio, newspapers". Robust standard errors in parentheses.

Table B7: Russian language habit and media consumption from different countries for news or entertainment

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Use media from Russia					
Russian language	0.11***	0.039	0.11***	0.11***	0.13***	0.11***
	(0.020)	(0.049)	(0.033)	(0.026)	(0.024)	(0.021)
VARIABLES	Use media from the US					
Russian language	0.054***	0.080	-0.036	0.098***	0.047*	0.060***
	(0.021)	(0.050)	(0.035)	(0.026)	(0.026)	(0.021)
VARIABLES	Use media from Turkey					
Russian language	-0.11***	-0.14***	-0.13***	-0.099***	-0.15***	-0.11***
	(0.021)	(0.049)	(0.036)	(0.026)	(0.027)	(0.021)
VARIABLES	Use media from China					
Russian language	-0.018	-0.060	-0.020	-0.018	-0.031	-0.015
	(0.017)	(0.043)	(0.031)	(0.022)	(0.023)	(0.018)
Observations	4,511	741	1,768	2,743	2,872	3,611
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Table shows the results of regression (1) for binary dependent variables, "Use media for news or entertainment from Russia/ the US/ Turkey/ China". Robust standard errors in parentheses.

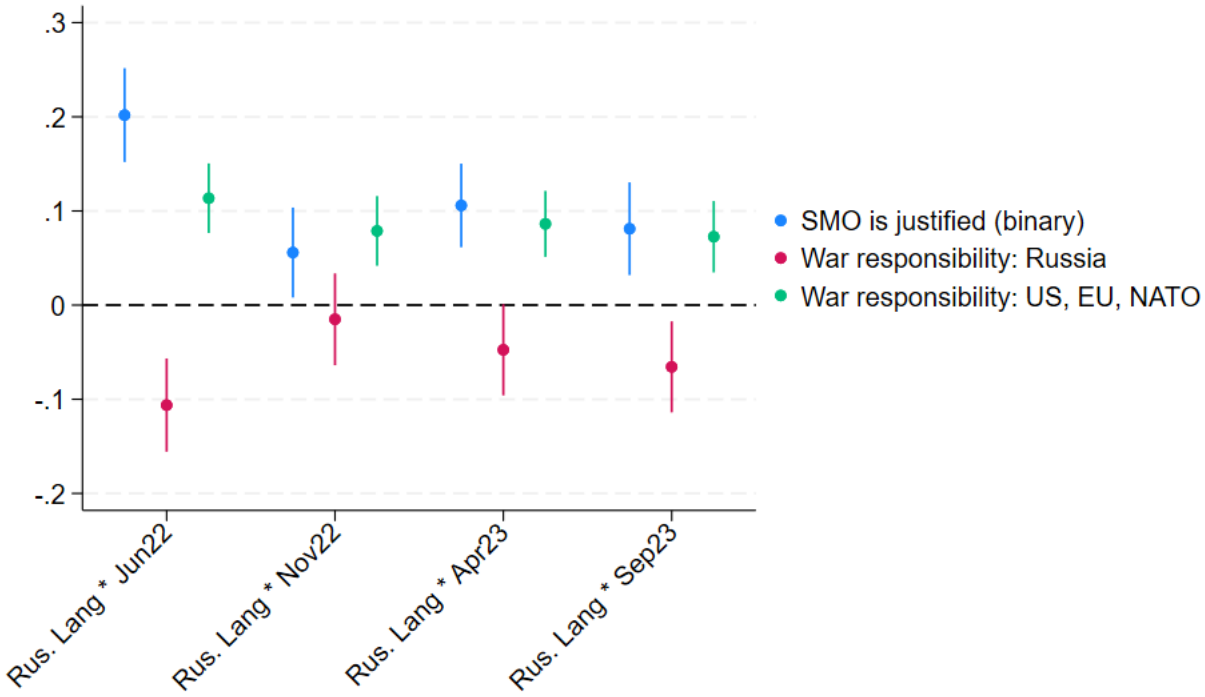
Table B8: Russian language habit and trust in news or information from different countries

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Trust news or information from Russia					
Russian language	0.070*	-0.10	0.10	0.052	0.066	0.076**
	(0.036)	(0.087)	(0.063)	(0.045)	(0.048)	(0.037)
VARIABLES	Trust news or information from the US					
Russian language	0.017	-0.088	-0.013	0.032	0.032	0.019
	(0.034)	(0.082)	(0.053)	(0.045)	(0.046)	(0.035)
VARIABLES	Trust news or information from Turkey					
Russian language	-0.090**	-0.31***	-0.14**	-0.062	-0.12**	-0.089**
	(0.039)	(0.093)	(0.065)	(0.049)	(0.051)	(0.040)
VARIABLES	Trust news or information from China					
Russian language	0.068**	-0.051	0.12**	0.037	0.088**	0.060*
	(0.031)	(0.073)	(0.049)	(0.040)	(0.043)	(0.032)
Observations	1,500	245	621	879	963	1,209
R-squared	0.076	0.174	0.138	0.076	0.100	0.062
Waves	After 2022	After 2022	After 2022	After 2022	After 2022	After 2022
Sample	All	Firm head	Above 40	Below 40	Informed	No Russians
Region FE	Yes	Yes	Yes	Yes	Yes	Yes

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Table shows the results of regression (1) for binary dependent variables, "Trust news or information from Russia/ the US/ Turkey/ China". Robust standard errors in parentheses.

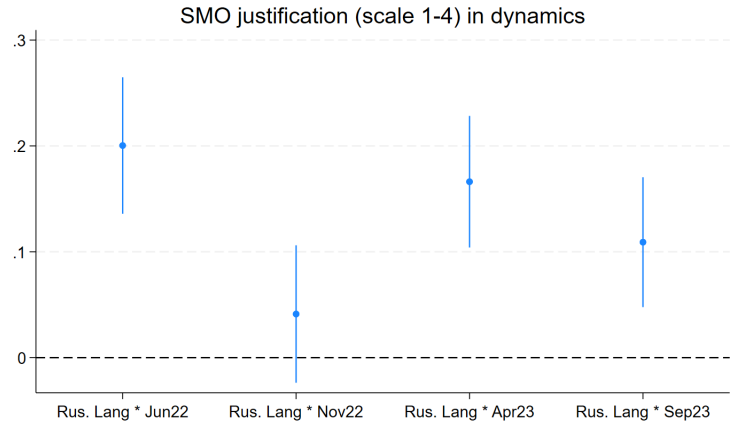
B.2 Figures of Appendix B

Figure B1: The dynamics of association between the Russian language habit and war attitudes



Note. The figure shows the dynamics of the association between Russian language habit and war attitudes, i.e. coefficients α_t for $L_{irt} \times \lambda_t$ keeping other controls from specification (1). The dependent are binary variables "SMO justification", "Russia is mainly responsible for the war", "West is mainly responsible for the war".

Figure B2: The dynamics of association between the Russian language habit and the ordinal SMO justification measure



Note. Note. The figure shows the dynamics of the association between Russian language habit and war attitudes, i.e. coefficients α_t for $L_{irt} \times \lambda_t$ divided by the mean of dependent variable and keeping other controls from specification (1). The dependent variable is "SMO justification" (scale 1-4). The interpretation of dots is increase in war justification for Russian speakers as the percentage of the mean.

Figure B3: Event study design about favorable opinion of countries

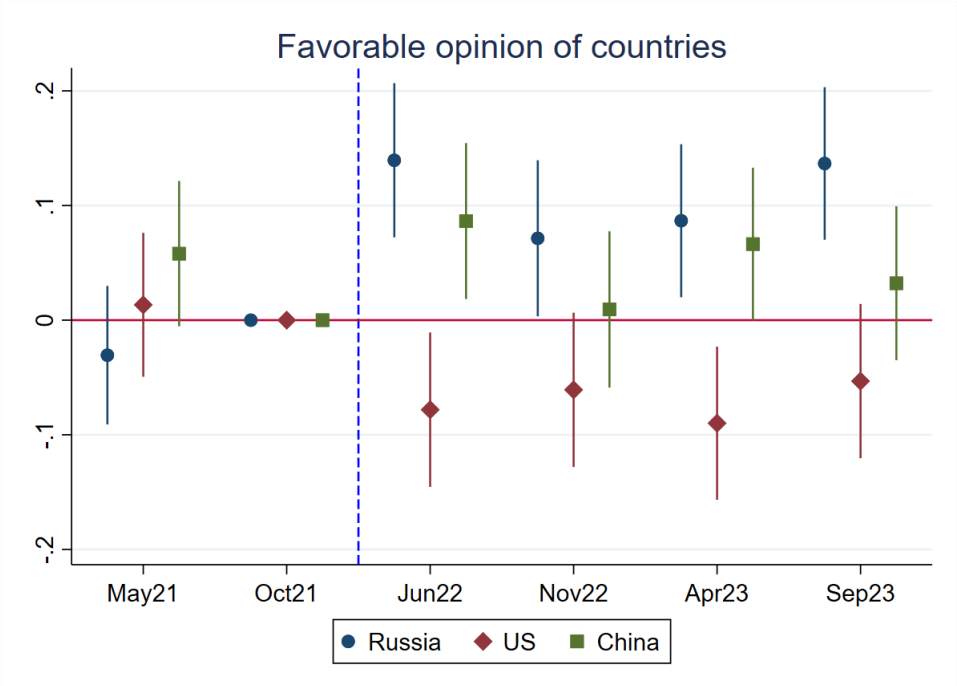


Figure B4: Event study design for Yandex search of pro-Kremlin channels and news

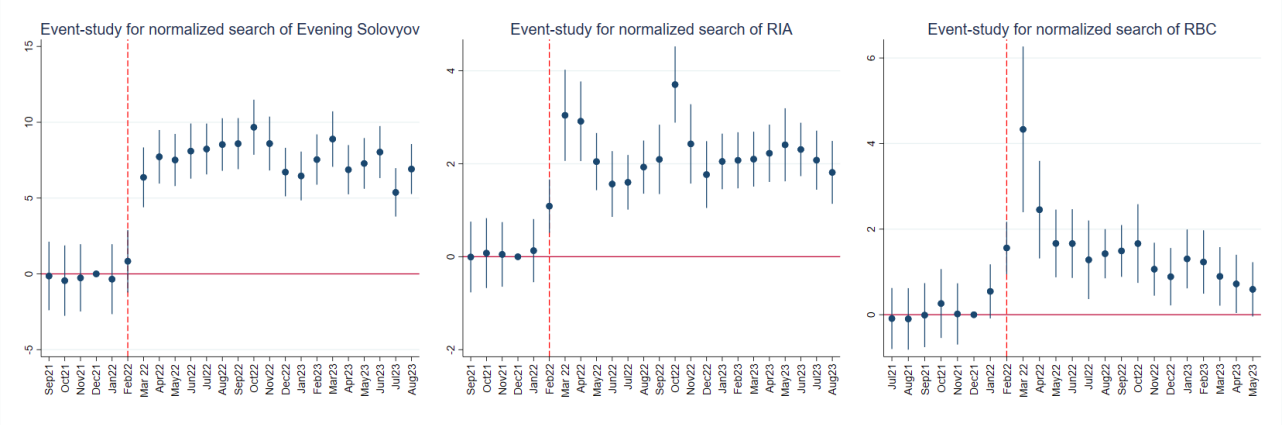


Figure B5: Event study design for Yandex search of western and Telegram news

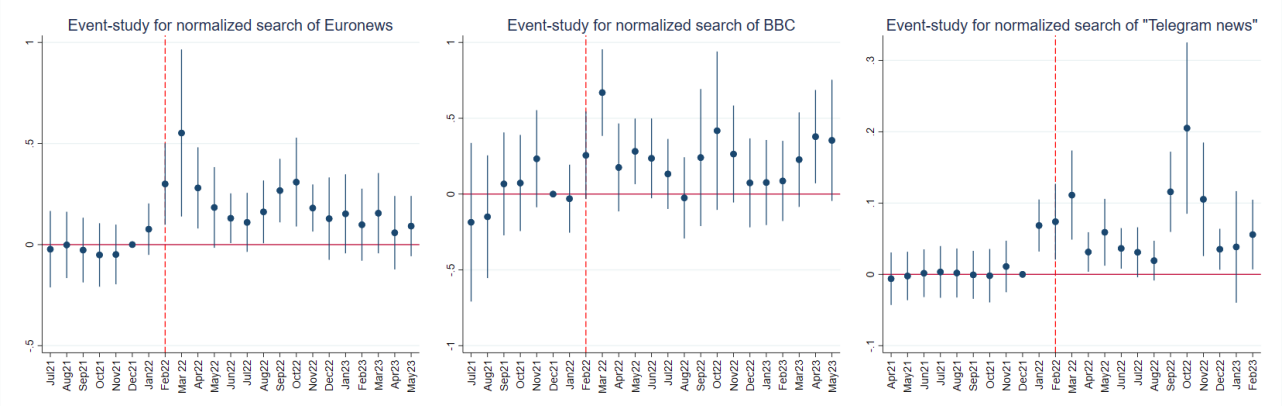


Figure B6: Event study design for Yandex search of January 2022 protest in Kazakhstan

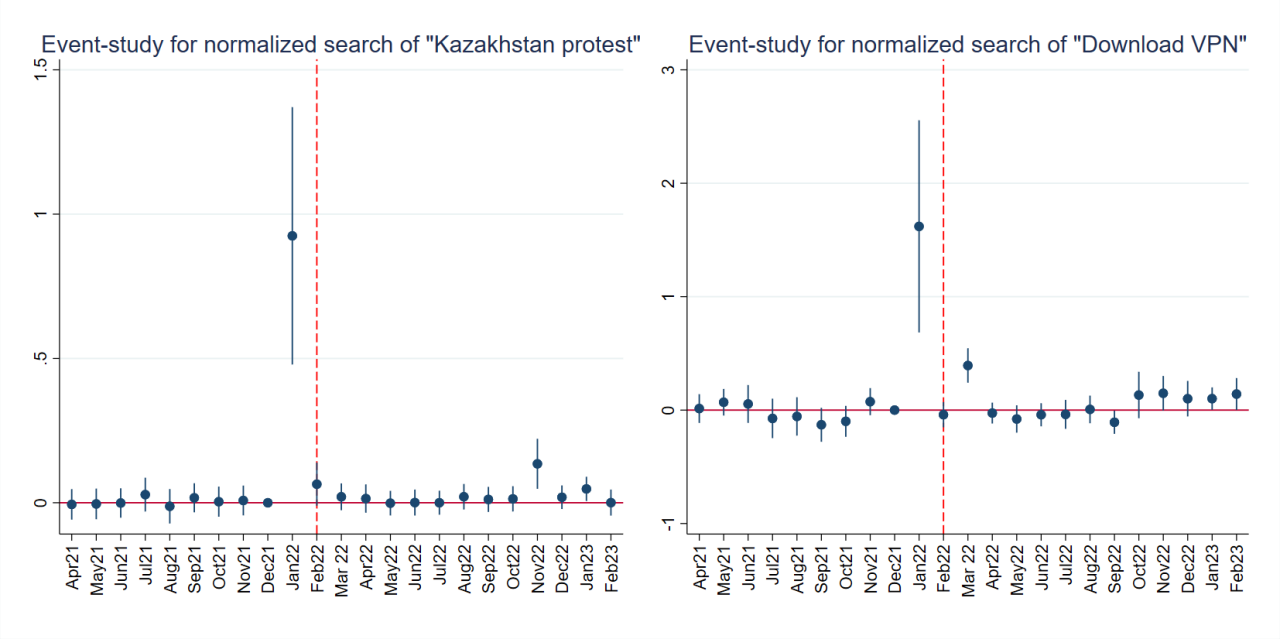
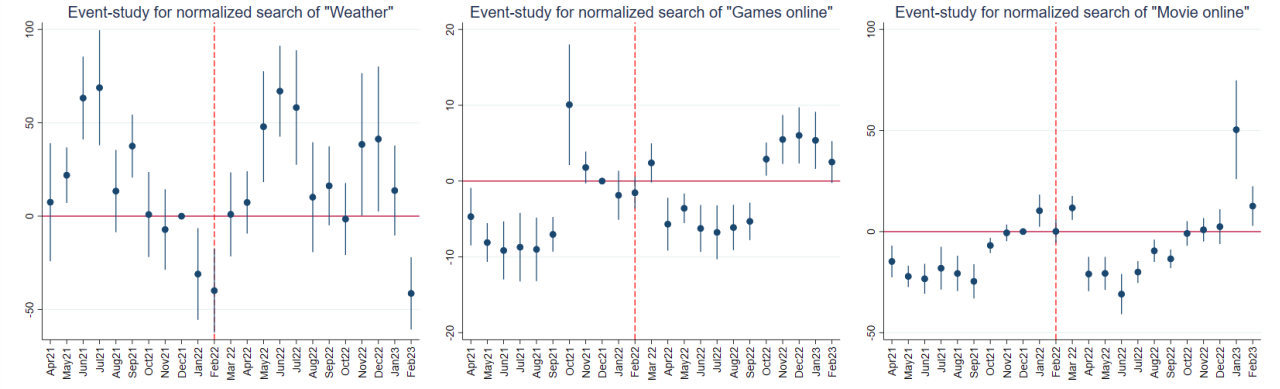


Figure B7: Event study design for Yandex search of weather and entertainment



C Appendix

C.1 List experiment

Table C1: Summary statistics for the online survey

	N	Mean	SD
Survey in Russian	4904	0.54	0.50
Ethnical Russian	4904	0.25	0.43
Know Russian	4904	0.63	0.48
Usage Russian (scale 0-3)	4904	1.26	1.33
Russian media (scale 0-4)	4904	0.63	1.13
Female	4904	0.50	0.50
Age	4904	41.82	15.39
Number of children	4904	1.22	1.43
Higher education (including incomplete)	4904	0.31	0.46
Work full-time or part-time	4904	0.62	0.49
Intensity of Internet usage (scale 1-6)	4904	4.48	1.79
Extent of interest in news (scale 1-4)	4904	2.87	0.84
Financial state: Not enough money even for food	4904	0.15	0.35
Financial state: Enough money for food but not clothes	4904	0.23	0.42
Financial state: Enough money for food and clothes but not TV or refrigirator	4904	0.32	0.47
Financial state: Enough money for everything but not car or apartment	4904	0.24	0.43
Financial state: Enough money for everything	4904	0.06	0.24
Rural area	4904	0.15	0.36
Region: Almaty city	4904	0.14	0.34
Region: Astana city	4904	0.09	0.28
Region: other	4904	0.78	0.42
Participating in protests for political change is justified	4904	0.31	0.46
Participating in protests for political change is not justified	4904	0.38	0.49
Helping Russia avoid Western sanctions is justified	4904	0.30	0.46
Helping Russia avoid Western sanctions is not justified	4904	0.38	0.48
Russia's Special Military Operation/ Invasion of Ukraine is justified	4904	0.26	0.44
Russia's Special Military Operation/ Invasion of Ukraine is not justified	4904	0.41	0.49
Working more than 50 hours per week is justified	4904	0.31	0.46
Working more than 50 hours per week is not justified	4904	0.48	0.50

Note. The table summarizes the characteristics of the participants in the online survey, including demographics, language use, media consumption, socioeconomic status, and regional indicators. The table also shows responses to the direct questions of justification: *In your opinion, is* [item] *generally justified or not justified?*, with items including protest participation, sanctions evasion, SMO/invasion of Ukraine, and work over 50 hours per week.

C.2 List experiment

List experiments – also known as the item count technique – is used to measure an unbiased share of people with a specific attitude, when revealing the true opinion to the direct questions can be sensitive (Blair et al. 2014).

Participants are exposed to either J or $J + 1$ items and then asked to count the number of items that apply to them, with the additional (J + 1th) item being the sensitive item of interest.[44] The premise of list experiments is that when a sensitive question is asked indirectly, respondents are more likely to give a truthful answer, even if social norms encourage them to answer the question in a particular way (Blair and Imai 2012). Fear of being judged or punished by others leads to a change in behavior best known as social desirability bias, a subset of what is known as sensitivity bias (Blair et al. 2020). More sophisticated statistical methods allow analysis beyond mean comparisons so that sensitivity bias can be shown, but also which sociodemographic factors and personality traits play a role (Blair and Imai 2012).

In list experiments, inevitable *nonstrategic* misreporting can be be kept at a minimum by specific design choices (Kuhn and Vivyan 2022). Nonstrategic measurement errors are, for example, floor and ceiling effects (Ahlquist 2018), and complexity (Kramon and Weghorst 2019). Floor and ceiling effects appear when either all or none of the statements in the list are true, and survey participants thus must reveal their preference over the sensitive item in order to remain giving truthful answers. In this case, one would have to expect strategic misreporting, i.e., lying. List experiments thus help to elicit true preferences, but, by design, suffer from overwhelming or confusing study participants. By careful consideration of the design, these measurement errors can be minimized for example by choosing a suitable control list (Agerberg and Tannenberg 2021). Is it furthermore common practice to validate experiments before going into the field.

Our list experiment takes this literature into account and is designed accordingly. Nonstrategic measurement errors were tried to be minimized according to suggestions from the literature:

First, floor and ceiling effects were avoided by (1) choosing items where the prevalence

[44] J is commonly equal to 3 or 4. Higher values substantially increase complexity, while lower values are risking to compromise the privacy of the participants (floor effect).

among the population was known beforehand, and (2) choosing control list items that are negatively correlated. For example, the items 'homosexuality' and 'holding on to religious values' are strongly negatively correlated. It is very unlikely that respondents agree with both items. Furthermore, it is unlikely that none of the items are true, statistically. Items were taken and adapted from the World Value Survey and Central Asian Barometer. Thus, ceiling effects and floor effects could, by design, be minimized. Second, sensitive control list items were chosen, in order to conceal the item of interest and not evoke demand effects (Zizzo 2010). Third, a placebo item is used in order to test whether there are design effects. Fourth, a pre-test was run with 400 subjects in order to validate the lists. Last, a double list experiment was employed in order to enhance statistical power. In a double list experiment the sample is split into two groups, and each half acts as a control group for the other half, see Table C2.

Table C2: List experiment design

In the next section, you will be presented with a number of items. Please read the list of items carefully. After you have read the items, please indicate HOW MANY of the items (things or actions) below are generally justified in your opinion. We will not be able to know which items are justified for you.	
[GROUP A]	[GROUP B]
In your opinion, HOW MANY of the things or actions below are generally justified? Prioritizing industrial development above environmental safety Protecting the environment even if costs are high Prostitution Participating in protests for political change [selection:] 0, 1, 2, 3, 4	In your opinion, HOW MANY of the things or actions below are generally justified? Prioritizing industrial development above environmental safety Protecting the environment even if costs are high Prostitution [selection:] 0, 1, 2, 3
In your opinion, HOW MANY of the things or actions below are generally justified? Homosexuality Full time work for women Holding on to religious values [selection:] 0, 1, 2, 3	In your opinion, HOW MANY of the things or actions below are generally justified? Homosexuality Helping Russia avoid Western sanctions Full time work for women Holding on to religious values [selection:] 0, 1, 2, 3, 4
In your opinion, HOW MANY of the things or actions below are generally justified? Suicide Being proud of national traditions Russia's Special Military Operation in Ukraine/ Russia's invasion of Ukraine Aspiring to Western values [selection:] 0, 1, 2, 3, 4	In your opinion, HOW MANY of the things or actions below are generally justified? Suicide Being proud of national traditions Aspiring to Western values [selection:] 0, 1, 2, 3
In your opinion, HOW MANY of the things or actions below are generally justified? Death penalty Violating traffic rules Banning smoking in public places [selection:] 0, 1, 2, 3	In your opinion, HOW MANY of the things or actions below are generally justified? Death penalty Violating traffic rules Working more than 50 hours per week Banning smoking in public places [selection:] 0, 1, 2, 3, 4

Note. The table presents the list experiments as reported in section 5. Group A and Group B consist of subsamples, where each participant is assigned randomly to one of the two groups. A detailed description of double list experiments can be found in appendix C.2. Group A corresponds to the left column and Group B to the right column of Table C3. The framing of the item corresponding to Russia's full-scale invasion of Ukraine was assigned at random, in order to account for framing effects: *Russia's Special Military Operation/Invasion of Ukraine*.

Table C3: Balance table for the list experiment

	Group A	Group B	Difference
Ethnical Russian	0.24	0.26	0.01
	(0.43)	(0.44)	(0.01)
Know Russian	0.63	0.62	-0.01
	(0.48)	(0.49)	(0.01)
Usage Russian (scale 0-3)	1.23	1.28	0.05
	(1.32)	(1.33)	(0.04)
Survey in Russian	0.53	0.55	0.02
	(0.50)	(0.50)	(0.01)
Russian media (scale 0-4)	0.63	0.64	0.01
	(1.13)	(1.14)	(0.03)
Female	0.51	0.50	-0.01
	(0.50)	(0.50)	(0.01)
Age	41.74	41.90	0.16
	(15.41)	(15.37)	(0.44)
Number of children	1.21	1.24	0.02
	(1.41)	(1.44)	(0.04)
Higher education (including incomplete)	0.31	0.31	0.00
	(0.46)	(0.46)	(0.01)
Work full-time or part-time	0.61	0.63	0.02
	(0.49)	(0.48)	(0.01)
Intensity of Internet usage (scale 1-6)	4.51	4.46	-0.05
	(1.77)	(1.81)	(0.05)
Extent of interest in news (scale 1-4)	2.85	2.89	0.04
	(0.84)	(0.84)	(0.02)
Financial state: Not enough money even for food	0.15	0.14	-0.01
	(0.36)	(0.35)	(0.01)
Financial state: Enough money for food but not clothes	0.23	0.22	-0.00
	(0.42)	(0.42)	(0.01)
Financial state: Enough money for food and clothes but not TV or refrigirator	0.31	0.33	0.01
	(0.46)	(0.47)	(0.01)
Financial state: Enough money for everything but not car or apartment	0.25	0.24	-0.01
	(0.43)	(0.43)	(0.01)
Financial state: Enough money for everything	0.06	0.06	0.00
	(0.24)	(0.24)	(0.01)
Rural area	0.15	0.16	0.01
	(0.36)	(0.37)	(0.01)
Region: Almaty city	0.13	0.14	0.01
	(0.34)	(0.35)	(0.01)
Region: Astana city	0.09	0.08	-0.00
	(0.28)	(0.28)	(0.01)
Region: other	0.78	0.77	-0.01
	(0.42)	(0.42)	(0.01)
Observations	2,478	2,426	4,904

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. The table presents the balance of characteristics between Group A and Group B subsamples in the list experiment, including demographics, language use, media consumption, socioeconomic status, and regional indicators. Group A corresponds to the left column and Group B to the right column of Table C2. Columns Group A and Group B report means and standard deviations (in parentheses) of chosen characteristics for corresponding subsamples. Column Difference reports the difference in means between Groups A and B, and associated robust standard errors in parentheses.

Table C4: Russian media and justification of actions/events: Direct Question. OLS estimate

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Protest participation		Sanctions evasion		Invasion/SMO		Work $\geq$ 50 h.	
VARIABLES	Justified	Not justif.	Justified	Not justif.	Justified	Not justif.	Justified	Not justif.
Russian media (scale)	0.012*	0.014**	0.051***	-0.0076	0.027***	0.0011	-0.0030	0.038***
	(0.0065)	(0.0070)	(0.0066)	(0.0063)	(0.0061)	(0.0066)	(0.0061)	(0.0071)
Usage Russian	-0.0030	-0.013	0.020**	-0.032***	0.0083	-0.035***	0.0029	0.0038
	(0.0095)	(0.0099)	(0.0091)	(0.010)	(0.0086)	(0.010)	(0.0092)	(0.010)
Know Russian	-0.058***	-0.045**	-0.12***	0.023	-0.078***	0.017	-0.082***	0.034
	(0.020)	(0.021)	(0.019)	(0.021)	(0.019)	(0.021)	(0.020)	(0.021)
Survey in Russian	-0.022	-0.039*	0.022	-0.059***	-0.016	-0.041**	-0.028	-0.022
	(0.020)	(0.020)	(0.019)	(0.020)	(0.018)	(0.020)	(0.020)	(0.021)
Ethnical Russian	-0.083***	-0.0029	0.082***	-0.14***	0.024	-0.17***	-0.068***	-0.039
	(0.021)	(0.024)	(0.022)	(0.022)	(0.020)	(0.023)	(0.020)	(0.024)
Observations	4,904	4,904	4,904	4,904	4,904	4,904	4,904	4,904
R-squared	0.139	0.056	0.124	0.122	0.130	0.110	0.131	0.086
Region FE	Y	Y	Y	Y	Y	Y	Y	Y
Estimat.	OLS	OLS	OLS	OLS	OLS	OLS	OLS	OLS

Note. Significance levels: *** p<0.01, ** p<0.05, * p<0.10. Linear regression models, where the dependent variable is responding "justified" to the question *In your opinion, is* [item] *generally justified or not justified?*. The wording is in Section 3.3. Russian media (scale) varies from 0 to 4 and shows how many sources out of four main news sources are of Russian origin. Usage Russian – is the sum of binary variables related to Russian as the main language: at home, with friends/colleagues, for media consumption. The additional controls not shown in the table are gender, five age groups, number of kids, higher education, occupation, financial state, the intensity of internet usage, the extent of interest in news, rural binary indicator, and regional fixed effects. Robust standard errors are in parentheses.

D Appendix

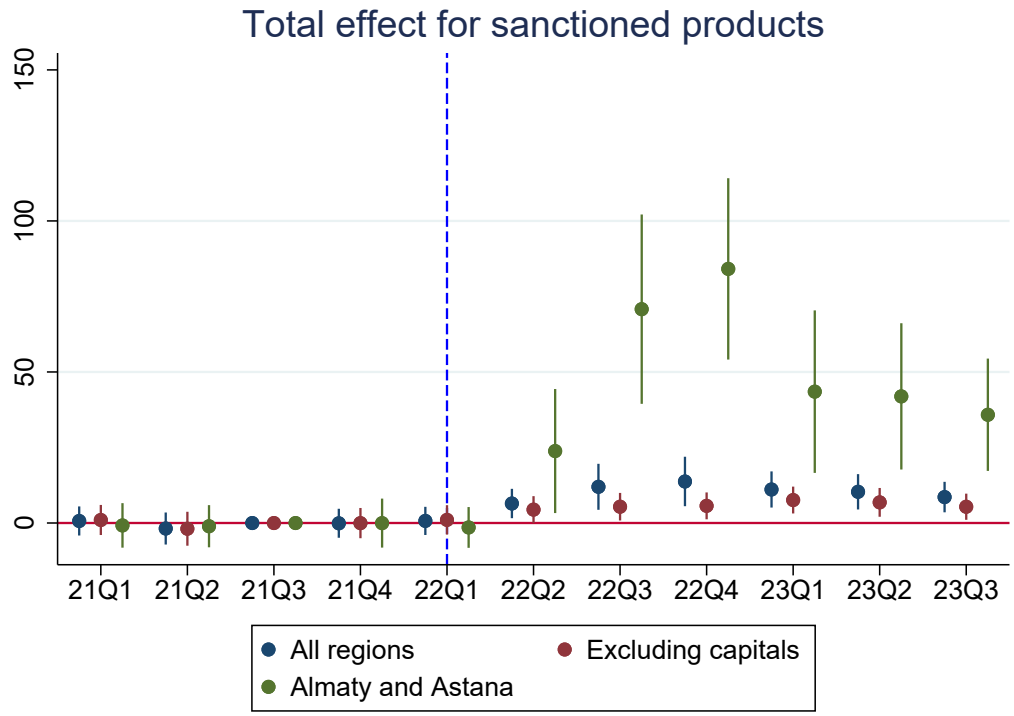
D.1 Parallel trend assumption for the overall export (specification (5))

To test the parallel trend assumption for specification (5), we use the Event Study coefficients β_τ and δ_τ from the following specification:

$$Value_{rtp} = \sum_{\tau=21Q1}^{23Q3} \beta_\tau \cdot S_p \cdot I(t=\tau) + \left[\sum_{\tau=21Q1}^{23Q3} \delta_\tau \cdot Capital_r \cdot S_p \cdot I(t=\tau) \right] + \kappa_r + \lambda_t + \mu_p + \varepsilon_{rtp}, \quad (9)$$

For the notation, see Section 6 of the main text. Figure D1 shows the estimation results of specification (9), justifying the parallel trend assumption.

Figure D1: The dynamics of the gap in trade between sanctioned and other products



Note. The graph shows the event study coefficients from (9) to test the parallel trend assumption for specification 5. Blue dots show the coefficients β_τ when all regions are included and specification (9) without brackets is estimated. Green dots show the coefficients δ_τ when only Astana and Almaty are included in specification (9). Red dots show the coefficients β_τ when Astana and Almaty are excluded and specification (9) without brackets is estimated. The 95% confidence intervals are calculated w.r.t. robust standard errors.

D.2 Parallel trend assumption under regional treatment (specification (6))

To test the parallel trend assumption for specification (6), we consider Event Study coefficients γ_τ from the following specification:

$$Value_{rtp} = \alpha S_p Treat_r + \beta S_p Post_t + \sum_{\tau=21Q1}^{23Q3} \gamma_\tau S_p I(t=\tau) Treat_r + \kappa_r + \lambda_t + \mu_p + \varepsilon_{rtp}, \quad (10)$$

For the notation, see Section 6 of the main text. For estimation of (10), we exclude Astana and Almaty. Panel A of Figure D2 shows the estimation results of specification (10), justifying the parallel trend assumption for all treatment exposures in specification (6): share of Russian speakers, share of justifying the war, share of trusting Russian news.

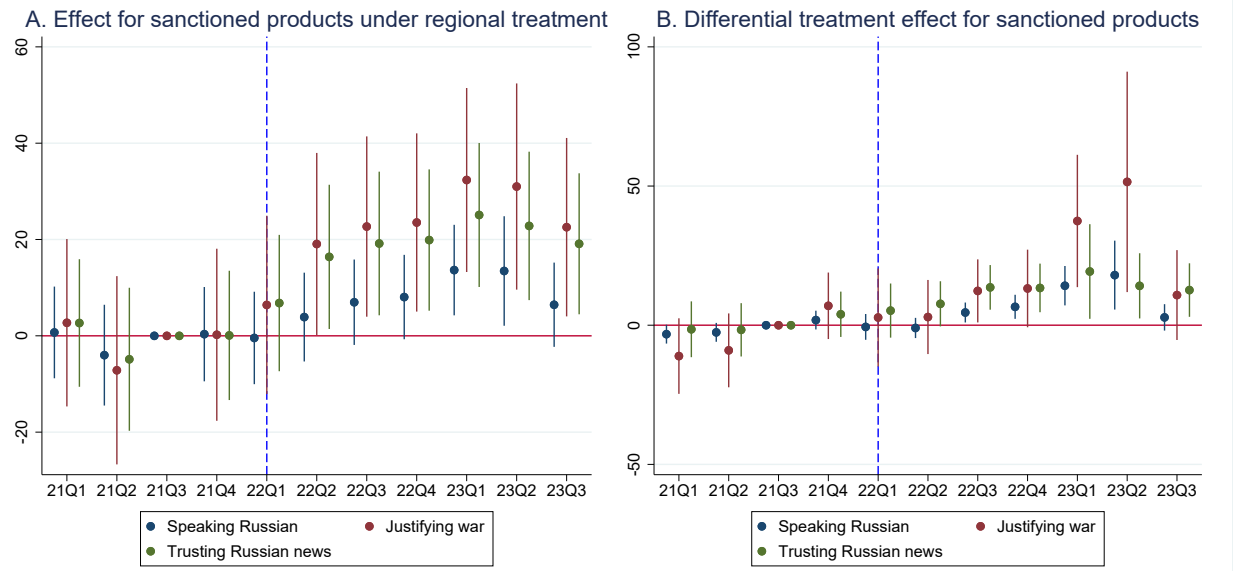
D.3 Parallel trend assumption under differential treatment (specification (8))

To test the parallel trend assumption for specification (8), we consider Event Study coefficients γ_τ from the following specification:

$$Value_{rt} = \sum_{\tau=21Q1}^{23Q3} \gamma_\tau I(t=\tau) Treat_r + \kappa_r + \lambda_t + \varepsilon_{rt}, \quad (11)$$

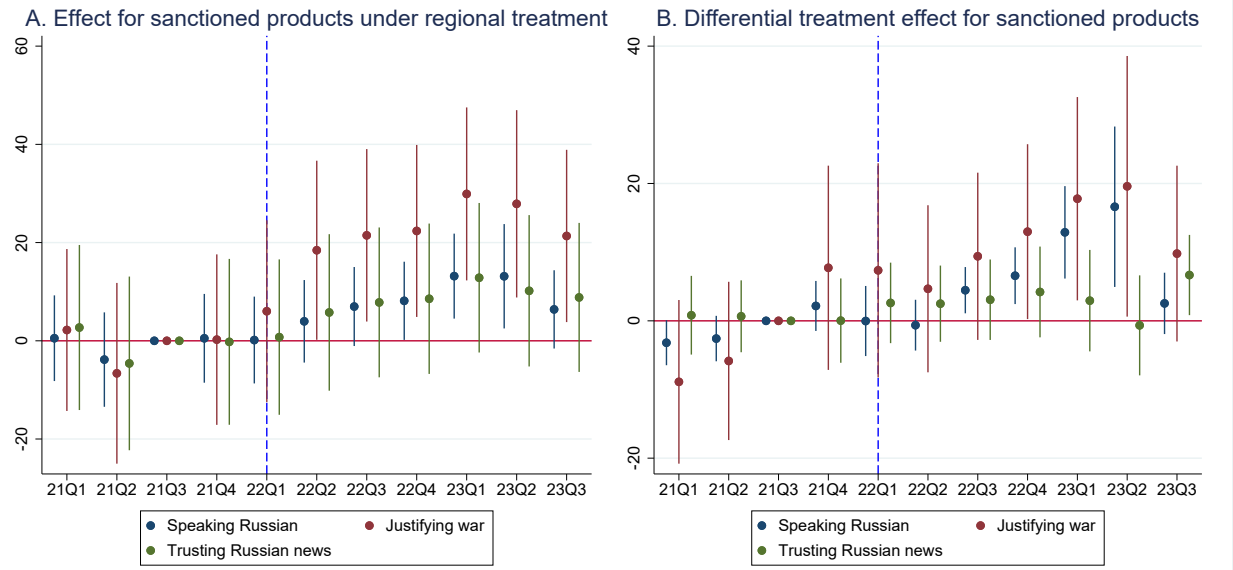
For the notation, see Section 6 of the main text. For estimation of (11), we exclude Astana and Almaty. Panel B of Figure D2 shows the estimation results of specification (11), justifying the parallel trend assumption for all treatment exposures in specification (8): share of Russian speakers, share of justifying the war, share of trusting Russian news.

Figure D2: The dynamics of the effect of Russian propaganda on sanctions circumvention



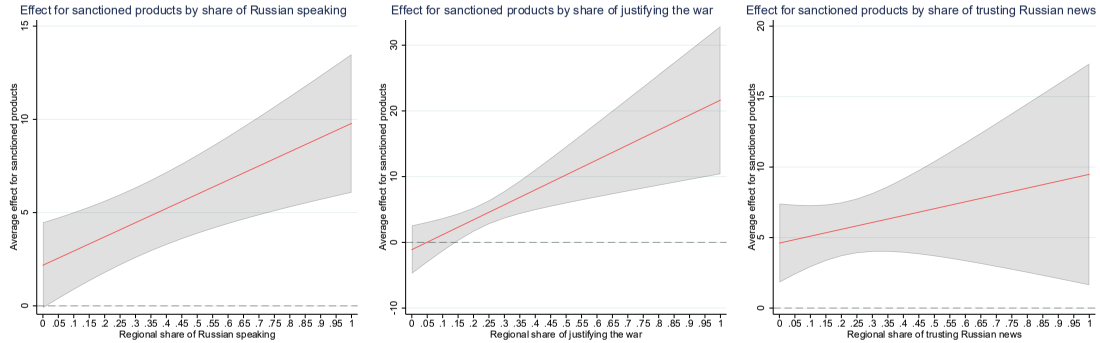
Note. The graph shows the event study coefficients from (10) (Panel A) and (11) (Panel B) to test the parallel trend assumption for specifications 6 and 8, respectively. All models exclude Astana and Almaty. Blue dots show the coefficients γ_τ (in both specifications) for the share of speaking Russian as a regional treatment exposure measure. Green dots show the coefficients γ_τ for the share of trusting Russian news as a regional treatment exposure measure. Red dots show the coefficients γ_τ for the share of justifying the war as a regional treatment exposure measure. The 95% confidence intervals are calculated w.r.t. robust standard errors.

Figure D3: The dynamics of the effect of Russian propaganda on sanctions circumvention, based on answers of firm owners and managers from CAB



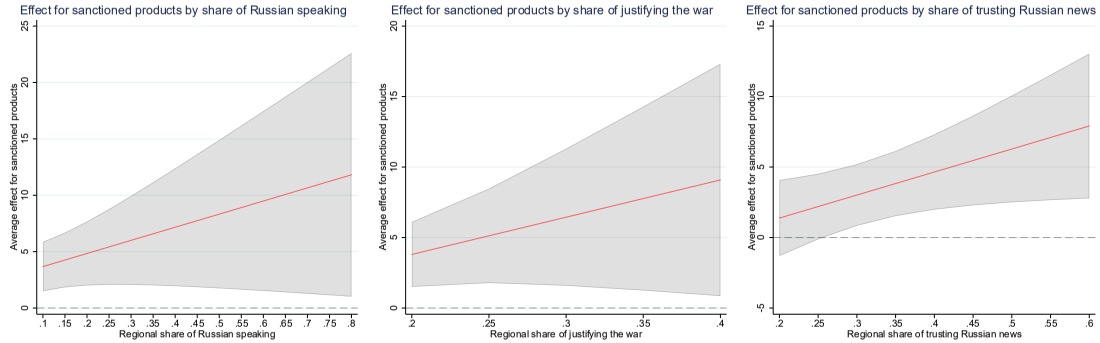
Note. The graph shows the event study coefficients from (10) (Panel A) and (11) (Panel B). As a measure of treatment exposure, it considers firm heads' answers from CAB 2022-2023 surveys. For the rest, see note of Figure D2.

Figure D4: Sanctions circumvention by regional treatment exposure, based on answers of firm owners and managers from CAB



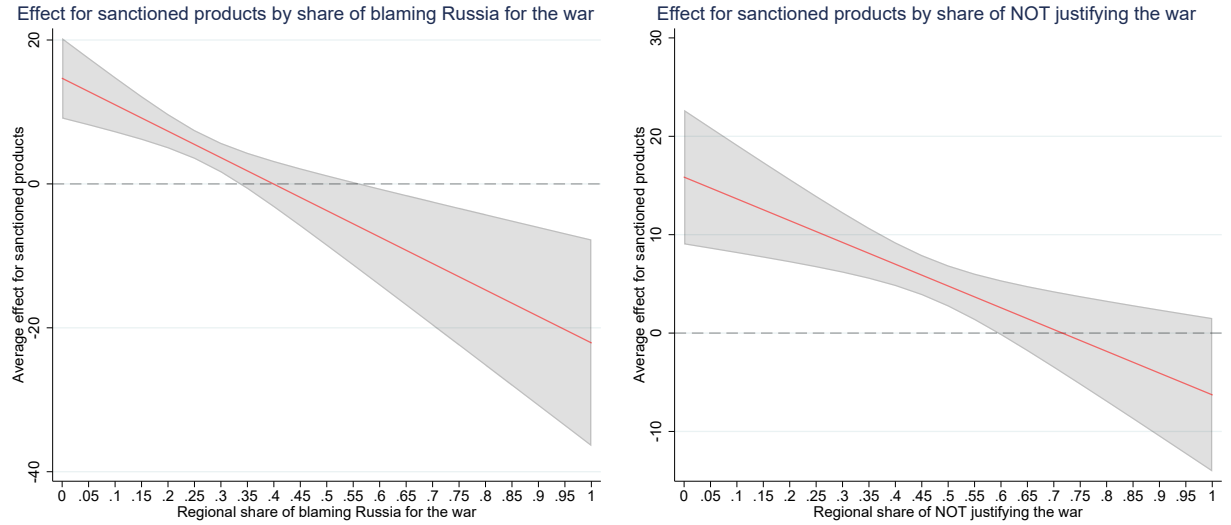
Note. The figure shows $\beta + \gamma \cdot Treat$ as a function of $Treat$ from the specification (6). As a measure of treatment exposure, it considers firm heads' answers from CAB 2022-2023 surveys. For the rest, see note of Figure 6.

Figure D5: Sanctions circumvention by regional treatment exposure, cleaned of Russian ethnicity exposure



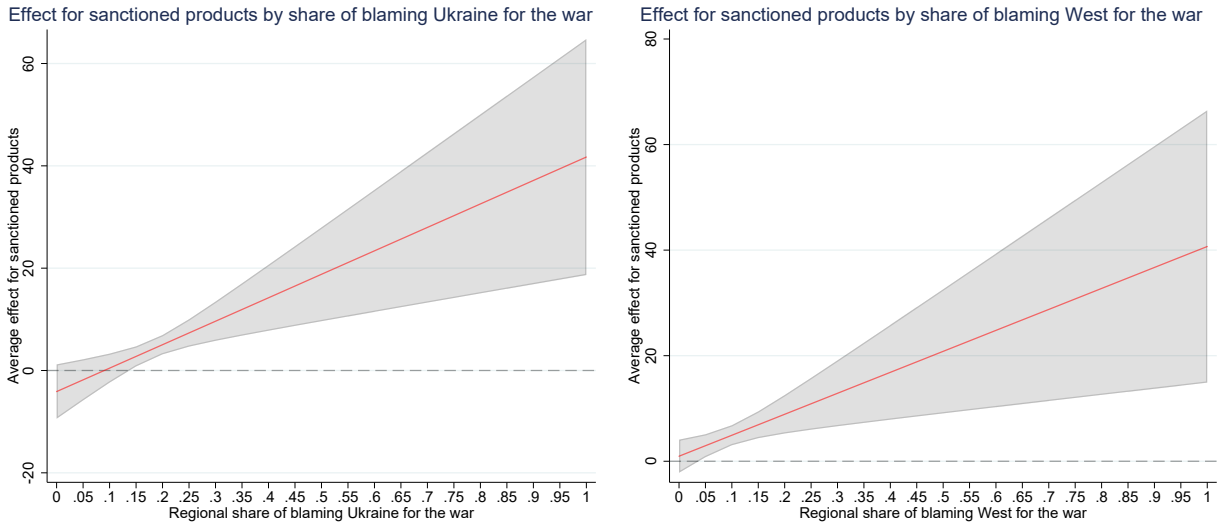
Note. The figure shows $\beta + \gamma \cdot Treat$ as a function of $Treat$ from the specification (7). Treatment exposures are the share of Russian speakers, the share of justifying the war, and the share of trusting Russian news cleaned of Russian ethnicity from CAB 2022-2023 surveys. For the rest, see note of Figure 6.

Figure D6: Sanctions circumvention by regional treatment exposure: share of blaming Russia and NOT justifying the war in Ukraine



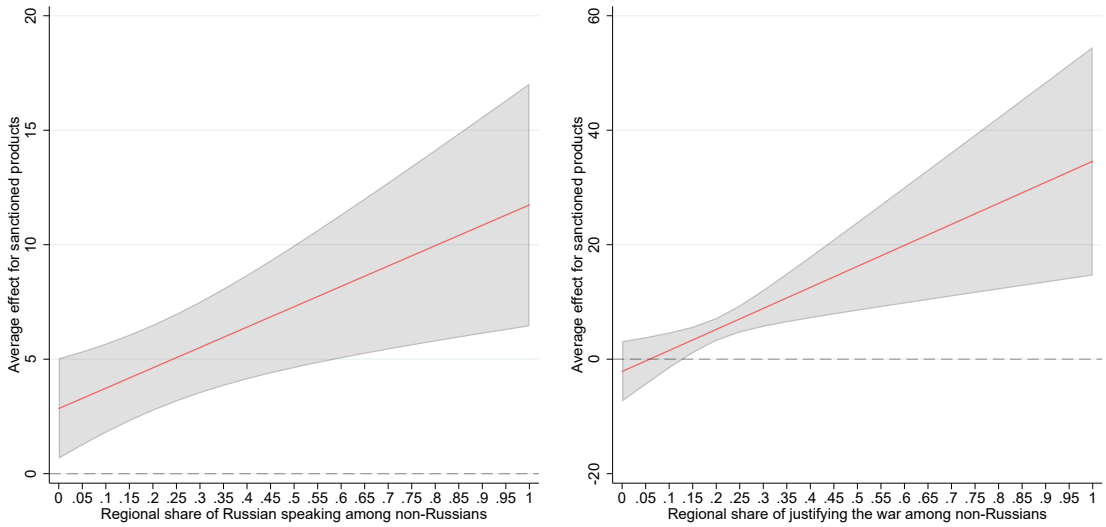
Note. The figure shows $\beta + \gamma \cdot Treat$ as a function of $Treat$ from the specification (6). The treatment exposures are the shares of respondents blaming Russia as the most responsible for the war in Ukraine(left) and claiming that the war is NOT justified (right) using CAB 2022-2023 surveys. The dependent variable is the value of exports to Russia in a region-month (M USD). For the rest, see note of Figure 6.

Figure D7: Sanctions circumvention by regional treatment exposure: share of blaming Ukraine and Western countries



Note. The figure shows $\beta + \gamma \cdot Treat$ as a function of $Treat$ from the specification (6). The treatment exposures are the shares of respondents blaming Ukraine(left) and Western countries (right) as the most responsible for the war in Ukraine using CAB 2022-2023 surveys. The dependent variable is the value of exports to Russia in a region-month (M USD). For the rest, see note of Figure 6.

Figure D8: Sanctions circumvention by regional treatment exposure: shares of Russian speaking and justifying the war among ethnically non-Russians



Note. The figure shows $\beta + \gamma \cdot Treat$ as a function of $Treat$ from the specification (6). The treatment exposures are the share of Russian-speaking respondents (left) and the share of respondents justifying the war (right) among ethnically non-Russians from CAB 2022-2023 surveys. The dependent variable is the value of exports to Russia in a region-month (M USD). For the rest, see note of Figure 6.