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Sanctions and Public Opinion: The Case of the Russia-Ukraine Gas Disputes

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William Seitz* and Alberto Zazzaro**

Abstract

Economic sanctions usually fail, sometimes even provoking the opposite of the intended outcome. Why are sanctions so often ineffective? One prominent view is that sanctions generate popular support for the targeted government and its policies; an outcome referred to as the *rally-around-the-flag* effect. We quantify this effect in the context of a major trade dispute between Ukraine and the Russian Federation, which led to a cut in gas exports to Ukraine and a sharp increase of gas prices. Using individual data on political and economic preferences before and after the trade dispute and exploiting the cross section heterogeneity in the individual exposure to the price shock—measured by the connection to a centralized gas/heating system—we find that people more directly affected by the increase of gas prices were significantly more likely to change their opinions in support of Western-style political and economic systems preferred by the incumbent government, consistent with a *rally-around-the-flag* effect.

Keywords: Sanctions, Gas Dispute, Russia, Ukraine, Rally-Around-the-Flag

JEL Classification: F13, F51.

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Sanctions are a sign of irritation; they are not the instrument of serious policies.

- Sergey Lavrov, Foreign Minister of the Russian Federation

1. Introduction

In their fundamental work on economic sanctions, Hufbauer et al. (1990) define a sanction as the withdrawal or the threat of withdrawal of a customary trade or financial relationship imposed by a "sender" against a "target" to promote foreign political objectives. Senders can include international institutions such as the United Nations, coalitions of governments, or individual nations, while targets are most often governments or criminal organizations. The conventional rationale for using broad economic sanctions is that they impose economic deprivation on the population of the target state who responds by withdrawing their support for, or heightening their dissent against, the targeted leaders. These leaders are in turn expected to prefer conceding to the requests of the sender to avoid losing power. The apparent soundness and compelling force of this argument has made economic sanctions a common tool of foreign statecraft and nonviolent intervention since the end of the World War II. Nonetheless, most empirical studies find that sanctions are usually ineffective at producing the changes that senders desire, and at times have proven to be counter-productive (Hufbauer et al. 1990, 2007; Pape 1997; Allen 2005; Whang et al. 2013; Grauvogel and von Soest 2014).

Why are economic sanctions so often ineffective? While the circumstances under which economic sanctions are likely to succeed or fail remain widely debated in the literature (Kaempfer and Lowenberg 2007), one prominent explanation for the poor performance of sanctions holds that they can lead to a *rally-around-the-flag* sentiment in the population of the sanctioned country. According to this view, perceived political grievances and economic harm resulting from sanction policies gives rise to a popular backlash, at times manifesting itself in greater support for domestic policies, patriotism, and nationalism in the target country. Because sanctions generate greater popular support for the targeted regime and their policies, the response to sanctions in turn enables targeted political leaders to resist pressure from senders: "value-deprivation—Galtung (1967, p. 389) observes—may initially lead to political *integration* and only later – perhaps much later, or even never – to political *disintegration*."

Although well-recognized in theory (Galtung 1967; Kaempfer and Lowenberg 1988; Verdier and Woo 2011), the rally-around-the-flag hypothesis for countries suffering from economic sanctions has been relatively little studied empirically, mostly because of data availability on the political views of citizens in the target state.

We contribute to filling this gap by looking at a trade dispute between Ukraine and Russia, which resulted in a collapse of Russian natural gas exports to Ukraine and in a dramatic rise in gas prices.[4] As one of the most import-dependent countries in the world for natural gas, trade restrictions, agreements, and negotiated prices in the gas industry are politically sensitive in Ukraine. The country is fully integrated into the regional system due to the legacy of the Soviet gas distribution network, and has undergone several rounds of dispute regarding gas pricing and transport with the Russian Federation and Gazprom, a gas extraction and sales company majority-owned by the Russian government. These escalating confrontations took place during a politically volatile period in Ukraine. Protests twice led to the overthrow of Ukrainian governments since independence, and corruption allegations relating to negotiations on gas prices have played a pivotal role in several national elections.

The disputes between Ukraine and Russia also occurred alongside the expansion of Association Agreements (AA) between several Eastern European countries and the European Union (EU). The Russian government strongly discouraged Ukraine from signing an AA with the EU, and instead promoted membership in the Eurasian Customs Union (Russia was a founding member), alongside other former members of the Soviet Union. In treaty negotiations, low gas prices were offered by the Russian side to incentivize Ukraine to opt for the Eurasian Customs Union over EU membership or continued non-membership in either organization (Dragneva and Wolczuk 2012). The disputes eventually led Ukraine being cut off from Russian natural gas exports in January 2006, and dramatic and sustained increases in gas prices began immediately thereafter.

This case offers a unique opportunity to quantify the effect of trade sanctions on public opinion in a targeted country. The Ukrainian Longitudinal Monitoring Survey (ULMS) was conducted over three waves covering the period leading up to and following the trade dispute between Russia and

[4] Though the Russian Government has never, to our knowledge, referred to the events in 2005 and 2006 as sanctions preferring to refer to them as legitimate commercial restrictions in response to trading partner's misbehavior, the suspension of customary trade with Ukraine certainly took place and were associated with political aims, consistent with the classic definition of sanction in the literature (Hufbauer et al. 1990).

Ukraine between 2003 and 2007. The survey was administered to a nationally representative sample of Ukrainian households in a panel design. In addition to gathering information on household utility connections, the survey included political and economic opinion questions for individual household members and gathered information on preferences regarding the future of Ukraine with respect to integration in regional political and economic bodies.

We exploit the availability of information on political and economic preferences before and after the trade dispute and the individual cross-sectional heterogeneity on the exposure to the price increase to assess whether the sanctions lead to a rally-around-the-flag effect. A first look at the data shows that individuals who did not hold pro-Western views before the hike in gas prices in 2006 become somewhat more supportive of Western-style political and economic systems after the trade dispute, but that this shift is significantly stronger for those more exposed to higher gas prices. We validate this result in a multivariate setting, using two different approaches. The first one applies a semiparametric difference-in-differences (DID) approach that modifies a standard DID using propensity score matching to account for differences in baseline characteristics that can affect the parallel trends assumption (Abadie 2005). In this case, the outcome of interest is holding pro-Western views relating to either political or economic systems, and "treatment" is defined as those households that were connected to the central gas/and or heating system and were thus substantially more exposed to the effect of the sanction. Our second approach uses the same treatment in a multinomial logit framework, which allows us to analyze in more detail the formation of citizen preferences regarding political and economic systems in Ukraine after sanctions were applied, controlling for individual preferences beforehand.

We find evidence of a rally-around-the-flag effect using both approaches. In particular, we observe that individuals more exposed to the gas price escalation (i.e., individuals residing in a household connected to either a central gas or a central heating system, who could not easily substitute fuels or reduce consumption during disputes) were significantly more likely to change their opinions in support of Western-style political and economic systems. We also find additional suggestive evidence in a cross section that confirms that individuals more exposed to the effect of the gas dispute were more supportive of joining the European Union and more commonly held a negative view about a stronger institutional and economic integration with the Russian Federation. We also find that the effect is stronger for Ukrainian speakers.

In the following section, we review the literature on economic sanctions and highlight some of the debates on which the results may shed additional light. In section 3, we briefly describe the recent political history of the two countries as it relates to the disputes, as well as the relationship between the national political climate in Ukraine and the gas industry. Section 4 discusses the data. Section 5 describes the empirical approach and results, and section 6 concludes.

2. Economic Sanctions and Rally-Around-The-Flag Effects

Economic sanctions are increasingly used (or threatened) as diplomatic leverage to influence the policy and behavior of a foreign government, something between voicing criticism and harsh military measures. While it existed, the Soviet Union was one of the largest "sender" countries. During the Cold War, the Soviet Union was second only to the United States in the number of times the country used sanctions against a foreign target (Hufbauer et al., 1990). The Russian Federation continued several active sanction programs following the breakup of the Soviet Union.

But an enduring finding in the empirical literature is that despite their popularity, economic sanctions have limited effectiveness in coercing the target state to change its behavior in the direction desired by the sender. According to the detailed review of economic sanctions made by Hufbauer et al. (1990), out of the 115 sanction episodes that occurred between 1914 and 1990, only 40 were successful.[5] This figure is considered too high by Pape (1997), who argues that economic sanctions are basically not effective under any circumstances, finding that only 5 of 115 events on record were clear success.

A number of studies have explored the causes for this disappointing result.[6] Generally, empirical evidence confirms that high costs of sanctions for the target state and low costs for the sender are important determinants of sanctions' success (Hufbauer et al. 1990; Lam 1990; Drury 1998). However, there is also clear evidence that in order for sanctions to work effectively, the threat and use of this type of diplomatic leverage by the sender must be credible (Drezner 1999). Moreover, if the sanctioned regime is authoritarian, sanctions work better when they are tailored to affect the

[5] The same percentage of success was confirmed by Hufbauer et al. (2007) when including economic sanctions episodes in the 1990s.

[6] Eaton and Engers (1992), Drezner (1998, 1999), Kaempfer et al. (2004), Lacy and Niou (2004), Verdier and Woo (2011), among the others, provide theoretical discussions of the conditions under which a sanction can be either more effective or less effective.

political and economic elite of the target country rather than the entire population (Weiss 1999; Cortright and Lopez 2002; Shagabutdinova and Berejikian 2007; Drezner 2011).

Trade and financial sanctions coerce the targeted regime only insofar as sanctions generate political costs that are sufficiently large to incentivize targeted leaders to concede (Blanchard and Ripsman 1999, 2008; Allen 2005). The magnitude of these political costs depends on the institutional and political environment of the target state. For example, costs are more likely to be conspicuous when the target state is a democracy experiencing economic and political turmoil, and the incumbent government requires the support of a large share of population to be reelected (Bolks and Al-Sowayel 2000; Nooruddin 2002; Allen 2005; Lektzian and Souva 2007). Similarly, the political costs of sanctions are affected by the long-term political relationship between the sanctioned and the sanctioner states, as well as the number of senders, and the involvement of international organizations in the sanctioning process (Bonetti 1998; Drezner, 2000; Nooruddin 2002, Marinov 2005; Early 2011; Bapat et al 2013).

But the most-cited explanation for economic costs not translating into political costs in the target country is the rally-around-the-flag effect. The hypothesis has typically been defined as a sudden increase of support for incumbent governments or political leaders, alongside greater enthusiasm for the target's view regarding the policies under dispute. However, the recent literature has extended rally-around-the-flag effects to include the attitudes of the population towards the broad political and economic ideology promoted by the incumbent target government and the in-group and out-group relations that it sponsors (Grossman et al. 2018; Kobayashi and Katagiri 2018).

According to this broader view—which we adopt throughout the analysis—the economic hardship generated by sanctions can provoke popular opposition to the sending country's policies and increase the citizens' support of the ruling government and the policy agenda in the target state. In turn, the ruling government can rally the public opinion around its national leaders, policies and ideologies, by blaming the sanctioners and labeling their behavior as a threat to the integrity of the country and its values (Kernell 1978; Lian and Oneal 1993; Kazun, 2016). Overall, the political benefits induced by the rally-around-the-flag effect could reduce the likelihood that targeted governments will agree to the demands of the sender.

Galtung (1967) is one of the earliest scholars to remark the relevance of the rally-around-the-flag

effect in the context of economic sanctions.[7] He suggests that sanctions against Rhodesia were ineffective in changing the behavior of the ruling government because they encouraged a strong nationalistic sentiment in the population. Similarly, Hufbauer et al. (1990) note that the League of Nations sanctions against pre-World War II Italy encouraged national pride and undermined the policy goals of the participating counties. In the same vein, Nooruddin (2002) argues that the rally-around-the-flag effect is one of the principal reasons for the relative lack of success of sanctions to affect the policies of foreign governments. In sum, this relationship is seen to ultimately embolden the leaders and policies that foreign governments seek to contain.

Despite the consensus that sanctions can unite the targeted population in opposition, rather than encourage dissent against the targeted leaders, the empirical evidence on the mechanisms underpinning the rally-around-the-flag effect is still relatively limited. Some indirect evidence is provided by studies that analyze the impact of economic sanctions on the political stability of incumbent governments and the diffusion of anti-regime protests and repressive measures in targeted countries (Marinov 2005; Lektazian and Souva 2007; Allen 2008; Wood 2008; Grauvogel et al. 2017). Generally, these studies indicate that threatened and imposed sanctions are positively associated with antigovernment activity of the population within target states, which may work against a rally-around-the-flag effect. Marinov (2005) documents that economic sanctions increase the probability that government leaders in target states lose power by 28 percent. Allen (2008) finds that the presence of sanctions increases the likelihood of violent and nonviolent protests in targeted democratic states, however "sanctioned autocracies had fewer riots than non-sanctioned autocracies" (Allen 2008, p. 936). Grauvogel et al. (2017) distinguish between threats and imposition of economic sanctions and find that only the former increases the likelihood of antigovernment protest.

Consistent with the limited impact of economic sanctions on popular acceptance of and support to the sanctioned regime, Wood (2008) documents an increase of repressive actions in these countries—especially if autocratic—to restrain dissent and shore up support among population. In many cases, regimes question the legitimacy of sanction actions against them, at times avoiding

[7] International conflicts, war and terrorist attacks are considered the most typical events triggering a rally-around-the-flag effect, which can suddenly increase the popularity of national leaders among citizens (Oneal and Bryan 1995; Baum 2002).

the need to increase internal repression (Kaempfer et al. 2004; Grauvogel and Von Soest 2014). In this respect, Kazun (2016) show that the intensive use of media to "deproblematize" the effect of economic sanctions against the Russian Federation in 2014 was responsible for the increasing popular support for Vladimir Putin during that period.

However, the literature on sanctions and regime stability leaves many important questions about the relevance, diffusion, and causes of a rally-around-the-flag effect unanswered. Aggregate analyses of the response of targeted populations and governments to sanctions often fail to clearly establish the most important channels through which sanctions affect the sentiments of population towards the targeted regimes and policies. Nor do existing studies clarify which groups are more likely to either dissent or rally, and the mechanisms that determine the propensity of anti-government or pro-government sentiments among the population. This gap in the literature is mostly due to a lack of suitable data at the individual level. Sanctions are relatively rare, and data on individual political opinion about local governments, foreign government, international alliances, economic and policy regimes at the time of sanctions are not often available.

Two very recent exceptions, closely related to our analysis, are Frye (2018) and Grossman et al. (2018). Frye (2018) analyzes the impact on political opinion of a large sample of Russians of the economic sanctions imposed by the European Union and the United States in response of the annexation of Crimea to the Russian Federation in March 2014 and subsequent events in eastern Ukraine. The findings provide only partial evidence in support of the rally-around-flag effect: exposure to information that EU and the US were responsible for economic sanctions against Russia increased hostility of Russians towards these countries but did not increase support for the Russian government. However, respondents who believed that external economic sanctions were associated with declining economic conditions were less critical of the Russian political leaders.

Grossman et al. (2018) explore the impact of economic sanctions on public opinion in Israel by analyzing the public reaction to the European Union's decision to label products from the West Bank as "made in settlements" in 2015. In line with the rally-around-flag hypothesis, they document that Israelis, both government supporters and opponents, significantly increase their support for the government policy of settlements in the West Bank and for a more resistant response to the EU's pressure.

However, the question as to what channels lead people to rally around the government remains under-explored in the literature. Hufbauer et. al. (1990) and Nooruddin (2002) suggest that the rally-around-the-flag effect is primarily driven by patriotism and nationalism, which push political opinions in the target country away from the position of the sender. Consistent with this hypothesis, Frye (2018) finds that the rally effect across the Russian population reflected the partisan preferences of respondents: supporters of President Putin were more likely to rally against the sanctioners, while Putin opponents are more likely to blame the Russian government for the economic sanctions. In a similar vein, Koyabashi and Katagiri (2018), analyzing the China-Japan territorial dispute over the Senkaku/Diaoyu Islands document that the rally-around-the-flag effect is not equally shared across the Japanese population, but it is mostly limited to liberal-oriented people who significantly increase their support for the conservative government of Prime Minister Shinzo Abe.

Our study adds to these analyses by identifying a key mechanism that, in our context, triggered the rally-around-the-flag effect. In Ukraine, the sanction policy had a direct economic impact on specific groups of individuals, through an increase in gas prices. In response to the sanction, those people were more likely to change their political views and oppose to Russia's preferred policies than those who were only indirectly affected by the sanctions. Either alternatively, or alongside a general "patriotism" effect, we argue that economic harms might just as easily provoke a backlash, just as popular opposition to domestic policies commonly follows price increases on consumers.

It has often been argued that a rally-around-the-flag effect is more likely when economic harms are not targeted, particularly in the literature on the humanitarian effects of sanction policies. Western sanctions against Saddam Hussein's Iraq is a well-known and widely criticized example. In that case, senders launched sanctions on many trade goods that directly harmed the well-being of the population at large, rather than targeting the upper echelons of Iraq's elite policy makers.[8] The program failed to achieve its objectives despite causing a 250-fold increase in food prices over the first five years of the sanctions regime (Drezner 2011; Hoskins 1997) and blocking between $175 billion and $250 billion in oil revenue (O'Sullivan 2003). The backlash to these policies is thought to have empowered Saddam Hussein more than they hindered him (Pape 1997).

[8] For more examples of the direct effect of sanctions on well-being, see Barry (2000); Garfield et al. (1995); Peksen (2011).

Especially following this high-profile failure, many scholars argued that targeted or "smart" sanctions would be more likely to achieve senders' goals. In contrast to blanket sanctions against an entire country, smart sanction policies zero-in on political leaders, while sparing the general population from direct economic harms (Weiss 1999; Cortright and Lopez 2002, Brzoska 2003; Wallensteen and Staibano 2005).

But targeted sanctions may lack coercive force. If sanctions work "from-the-bottom-up" when citizens in targeted countries put pressure on their leaders, senders would be foregoing a potentially useful policy lever. Cortright and Lopez (2002) argue that "comprehensive sanctions are more effective than targeted or selective measures." Drezner (2011) also notes that "there is no systematic evidence that smart sanctions yield better policy results vis-a-vis the targeted country." The Ukraine-Russia gas dispute offers a unique opportunity to directly investigate these effects. In this episode, sanctions were untargeted; directly affecting a large share of the population.

3. Political Instability and Natural Gas in Ukraine

The breakup of the Soviet Union set the stage for resource confrontations between Russia and Ukraine. Because the gas network in the region was organized to accommodate the heating, industrial, and export needs of the Soviet Union as a whole, considerations were not taken to enable the straightforward parceling out of the system for the smaller economic units of the independent CIS countries. After separating in 1991, Ukraine remained reliant on gas imports from Russia, while Russia became dependent on Ukraine to transport gas to Europe for export. This produced bilateral monopoly power between the two countries in the supply of gas and transportation pipelines with significant effects on negotiated prices before and after the gas dispute in 2006.

There are two main players in the gas production, trade, and transport landscape between Russia and Ukraine, both of which are successors of the Soviet Ministry of Gas Industry.[9] In 1989, the Ministry was converted into a corporation called Gazprom, though it remained under majority-government control. With independence, the Ukrainian government gained control of the company's assets in Ukraine, and created Ukrgazprom, a national oil and gas company. Ukrgazprom was reorganized and changed its name to Naftogaz in 1998, and, while remaining

[9] The Ministry was the largest gas extractor in the world in the early 1990s, a title the Russian firm still held in 2015.

state-owned, was given a mandate to operate both gas distribution and transit in Ukraine. In 2013, about three trillion cubic feet of natural gas flowed through Ukraine, about 16 percent of consumption in Europe that year.

The Russian branch of Gazprom was privatized in 1993, and shares were largely allocated to Russian citizens, though the Russian state maintained its ownership of about 40 percent of the company. In 2000, Russian President Vladimir Putin began reasserting government control over Gazprom.[10] In 2005, the Russian government further solidified its control by taking controlling positions in several of the company's subsidiaries. State ownership of the company is often used as evidence that Gazprom's actions can be interpreted as government policy.

The stakes remained high in trade negotiations conducted between the governments of Ukraine and Russian in the early 2000s. The gas industry is economically significant for both Russia and Ukraine: Gazprom is Russia's largest company, and in 2012, the IMF estimated that direct budgetary and quasi-fiscal subsidies for natural gas alone accounted for nearly 5 percent of Ukraine's GDP on average. According to more recent analysis from the World Bank, this figure has since risen to as much as 7 percent of GDP.[11]

A multi-party presidential system was formalized in Ukraine in 1996, and competitive elections often brought clashes between Western-oriented political parties (largely drawing support from the Western part of Ukraine) and Russian-oriented political parties (largely drawing support from the Eastern part of the country). In 2004, a constitutional crisis erupted during an election. Opposition leader Viktor Yushchenko, viewed as the preferred candidate among US and European governments, ran against the incumbent Prime Minister Viktor Yanukovych, who was viewed as the preferred candidate of the Russian government. Initial results indicated a victory for Yanukovych, drawing mostly from supporters in east, and especially in provinces such as Donetsk and Luhansk. The election was widely viewed as flawed however and popular protests, often referred to as the Orange Revolution, followed. The protests ultimately forced a rerun election.

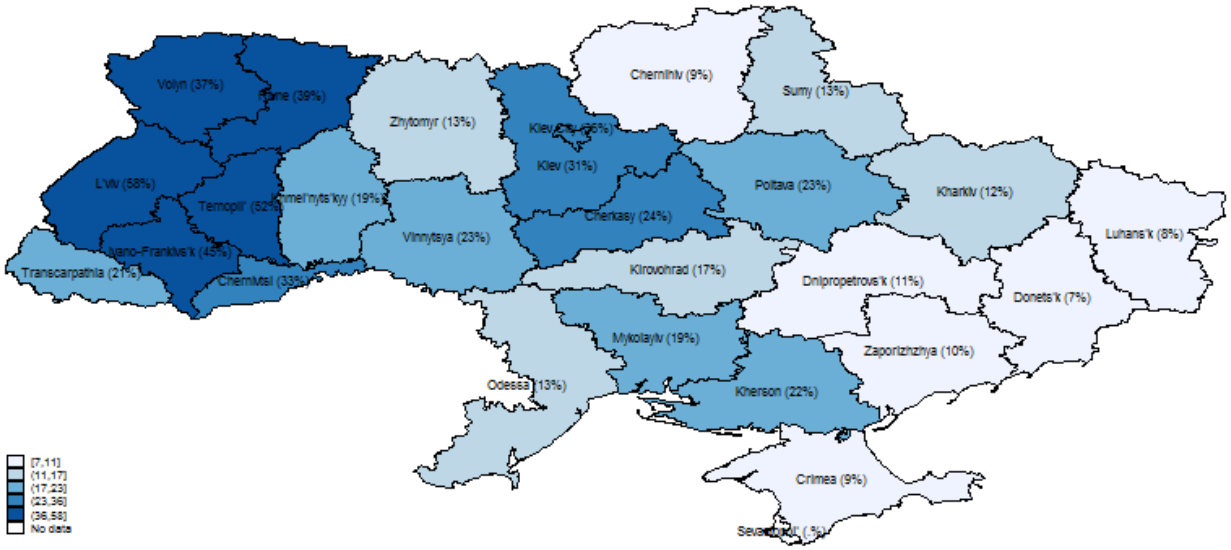
[10] Replacing the company's previous leadership with Dmitry Medvedev, then Putin's political campaign manager, and Alexei Miller, another past associate.

[11] In 2012, residential subsidies amounted to about US$8.1 billion (UAH 65 billion), or 4.6 percent of GDP. Naftogaz provided a US$422 (UAH 3,378) subsidy for every tcm of gas used for residential district heat. In 2012, this subsidy amounted to about US$3.75 billion (UAH 30 billion), or 2.1 percent of GDP. The Government also provides direct budget support to district heating companies for the difference between their costs and revenues. The estimated size of this support has been about US$0.6 billion (5 UAH billion) annually, or over 0.3 percent of GDP.

The opposition party won, and Yushchenko was elected president alongside Yulia Tymoshenko as Prime Minister.[12] Yushchenko and Tymoshenko were critical of joining a union with Russia, supported a closer relationship with NATO and the EU, and were in office at the time of the most eventful dispute with Russia at issue in this study.

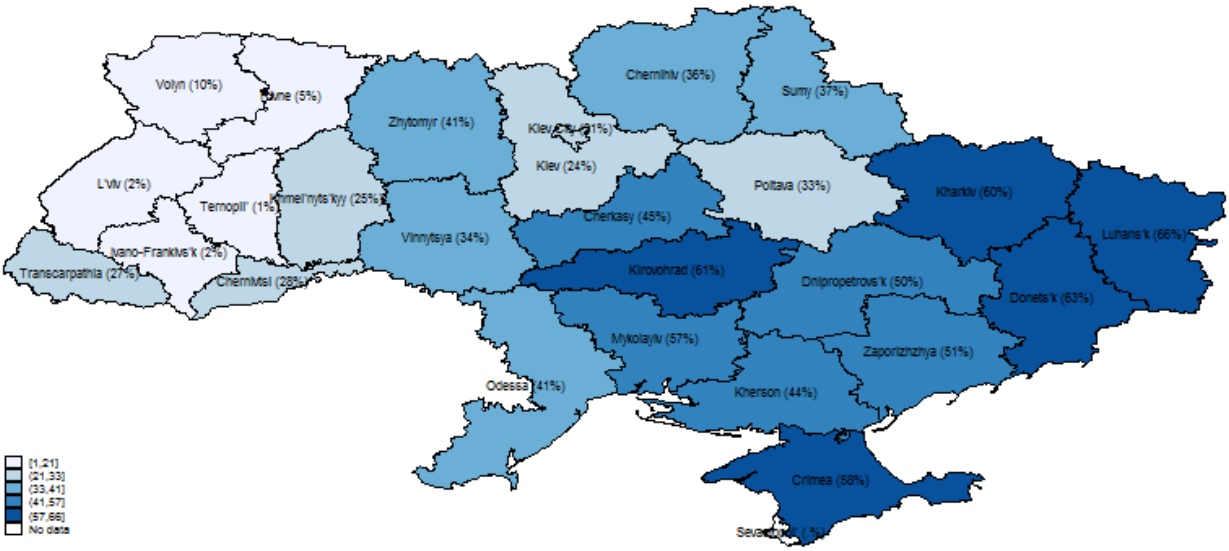
Supporters of each of the two leaders held strongly contrasting views on international agreements and several salient identity issues. The former President Yanukovych advocated for Russian language becoming a state language in Ukraine for instance, in contrast to pro-Yushchenko groups among whom this was unpopular.[13] The large political parties in Ukraine were also divided on the issue of market integration in the EU, potential NATO membership, and membership in the Eurasian Customs Union (EACU). In particular, signing on to an AA with the EU was seen as crucially polarizing issue (Figures 1 and 2).[14]

Figure 1 - Share of Respondents Preferring to Enter EU, Source: ULMS 2007



[12] In 2011, Yulia Tymoshenko was charged and found guilty of abuse of power and embezzlement relating to her 2009 gas imports contract negotiated with Vladamir Putin. She was cleared of these charges in 2014.
[13] Russian was spoken as a first language by about 30 percent of the population in 2001, according to the national Census.
[14] Indeed, the government's refusal to sign the AA in 2013 was instrumental in setting off the Euromaidan protests that overthrew the government, and culminated in the conflict that followed.

Figure 2 - Share of Respondents Preferring to Enter Union with Russia, Source: ULMS 2007

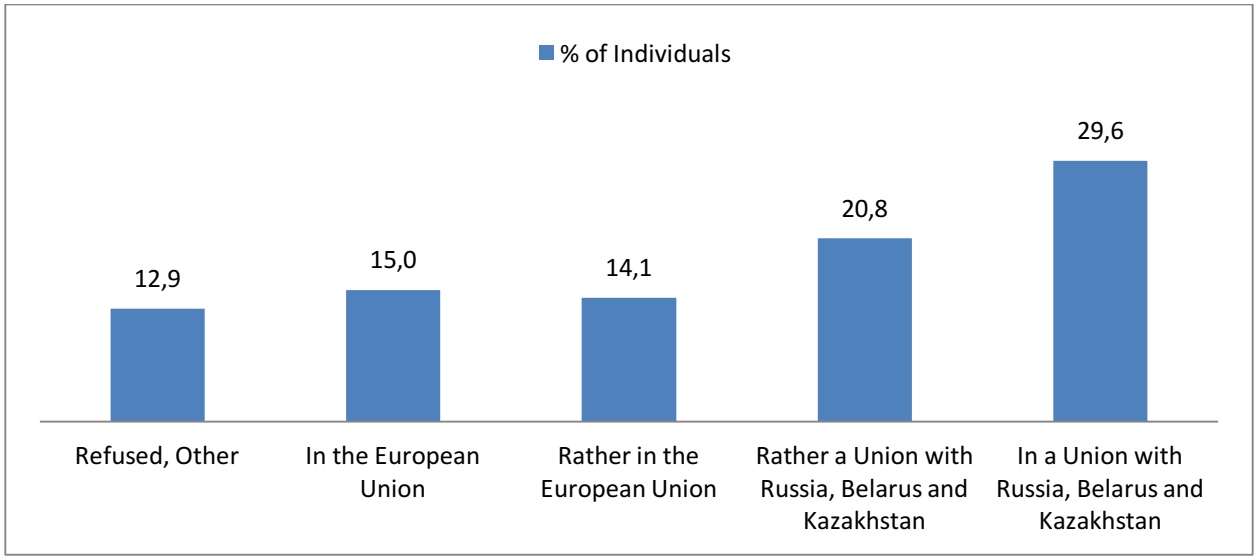


Sporadic trade and integration negotiations with the EU had been conducted since independence. The AA was expected to include several controversial components, including Ukrainian convergence with the EU's Common Security and Defense Policy (CSDP), and an agreement on establishing a Deep and Comprehensive Free Trade Area. In contrast, the EACU was designed as an intermediate step on the path to creating the Eurasian Economic Union (EEU). The objective of the EEU was to create deeper economic integration and political cooperation between former Soviet states as an alternative to the EU. Joining either the EACU or agreeing to the AA precluded the other.

The electorate, like the parties, was divided on the issue of economic integration. However, according to the nationally representative data used in this study, in 2007 the majority preferred a union with other former Soviet countries (Figure 3).[15] Despite some popular support however, no political party in Ukraine in the early 2000s was prepared to join the EACU without reservations. As negotiations proceeded, Russia offered subsidized gas prices and other benefits to draw Ukraine (among others) onto the side of the EACU.

[15] According to the EDB Integration Barometer, conducted by the Eurasian Development Bank of the Eurasian Customs Union, support in 2015 for joining the EAEU stood at just 19% in Ukraine

Figure 3: Preference of State Union, Source: ULMS 2007



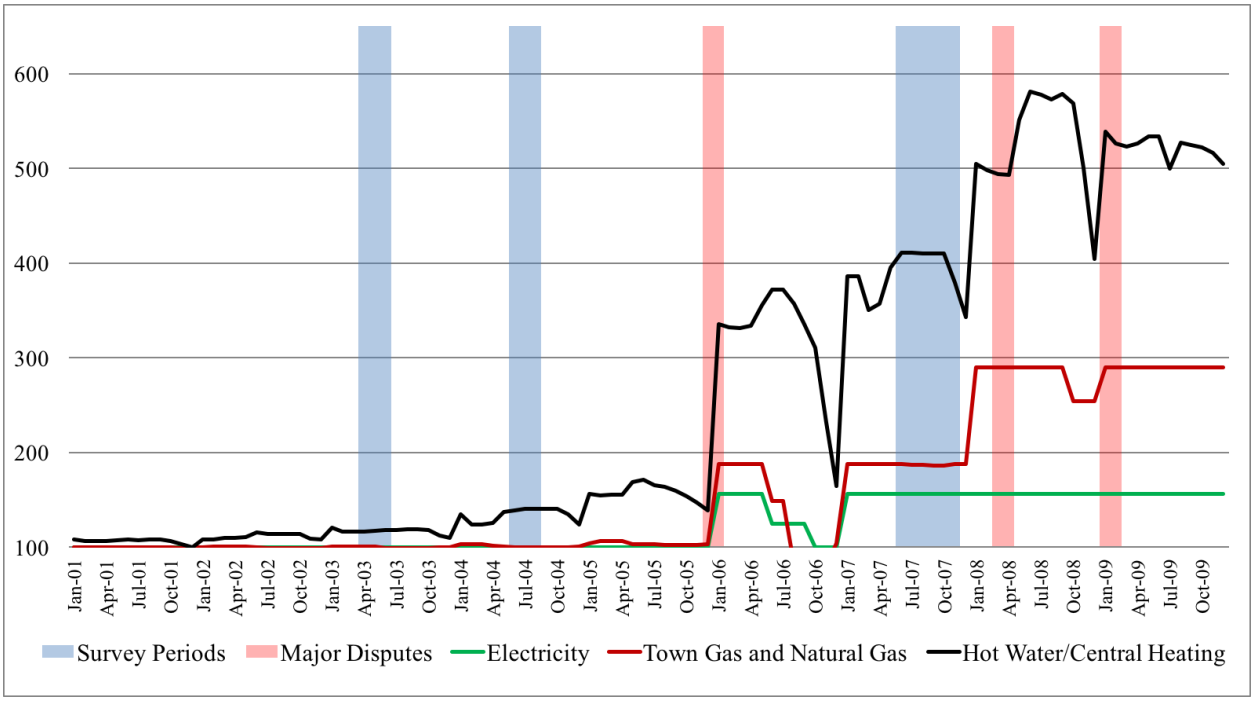
Ukraine had two main foreign sources of natural gas in the early 2000s: Russia and Turkmenistan.[16] In early 2004 (before the events of the Orange Revolution in December 2004), Ukraine arranged for debt consolidation through a loan from Gazprom, and a stable supply and price for gas supplies from Turkmenistan. These agreements fell apart following the Orange Revolution. Russia claimed that Ukraine had not paid debts owed and accused Ukraine of stealing Russian gas destined for Europe, while Turkmenistan cut supplies and requested new price negotiations affecting both Russia and Ukraine, and Russia began exerting greater pressure on Ukraine to pay higher rates for gas. Gazprom announced that it would charge "market" or "European" prices throughout the system, including for Moldova, Ukraine and Georgia.[17] As a contract deadline at the end of December 2005 approached, Gazprom cornered the foreign gas supply to Ukraine, Stern (2006) recounts:

> Gazprom['s] press release revealed that the company had contracted for 30 Bcm of Turkmen gas in 2006 at a price of $65/mcm, with half of that volume to be delivered in the first quarter of the year. Given the capacity of the Central Asian gas network, this meant that Gazprom had purchased all available gas from Turkmenistan for the first quarter of 2006, leaving nothing for Ukraine.

[16] Ukraine produces about 20% of its gas needs domestically.
[17] More leeway was given to countries that subsequently sold greater control of the gas transportation system to Gazprom, including Armenia and Belarus.

Ukraine refused the Russian offer in the last week of 2005, and Gazprom cut supplies to Ukraine on January 1, 2006. Gas prices jumped, and despite a temporary resolution to the crisis several days later, prices continued to erratically climb through 2007 (Figure 4). While the increase in gas prices did not materialize as a pure surprise—as gas disputes had been lingering for some time—the magnitude of the change in prices, which more than doubled in January 2006, is unprecedented and sustained over time. In this respect, it constitutes a significant variation to exploit to test the effect of trade disputes. In particular, the price increase is almost exactly in the middle between the 2004 and the 2007 household surveys that measure political preferences and, apart from a short-lived decline in December 2006, prices remained significantly higher after the shock (2006 and the first half of 2007) than before the shock (the second half of 2004 and 2005). In this respect, respondents in 2007 had been exposed to higher prices for a period of time long enough to potentially affect their political views.

Figure 4: Prices for Heating, Electricity, and Gas in Ukraine: January 2001 = 100, Source: State Statistics Service of Ukraine.



4. Data

The data used in this paper are drawn from the Ukrainian Longitudinal Monitoring Survey (ULMS). The survey sample was nationally representative of households in Ukraine, and primarily intended to assess working conditions in the country. The survey was implemented by the Institute for the Study of Labor (IZA), and included 4,055 households in 2007, representing a total population in Ukraine of approximately 46.51 million. The results described in the empirical section of this paper are weighted for representativeness of the national population of Ukraine. In the following analysis, information from the 2004, and 2007 waves of the ULMS is used in a panel design.

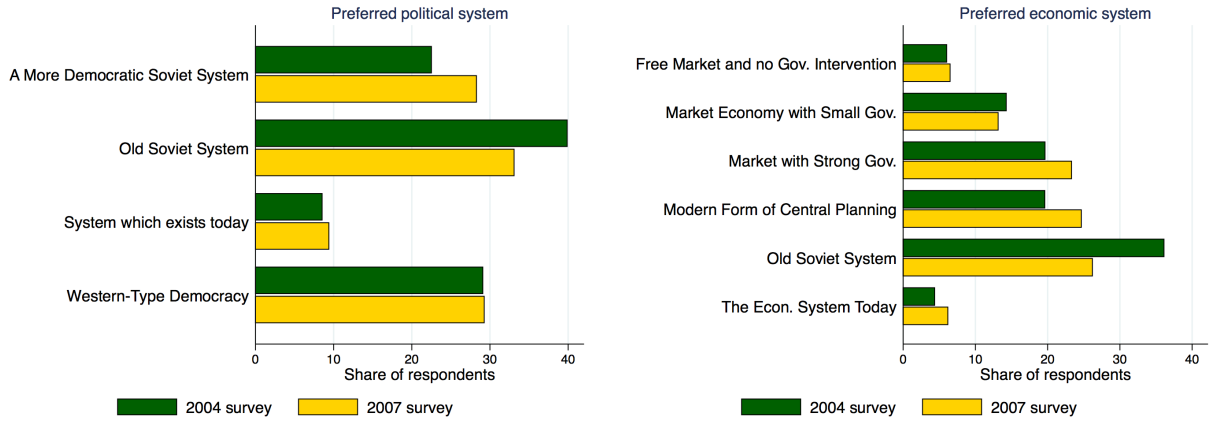
Responses were gathered at two levels using separate instruments: (i) a household-level questionnaire, and (ii) an individual-level questionnaire, completed by respondents of working age. Each of the modules was available in Ukrainian and Russian languages. The questionnaire included a module on political views in each round, though the 2007 round contains more detail, and a subset of the uniquely 2007 questions is analyzed in the following analysis for that year only. Appendix A[18] provides the key questions used in our empirical analysis. The total number of respondents in 2004 was 6,953. Appendix B reports the reasons for non-response described in the accompanying materials. Among the original sample, 4,921 individuals were interviewed in both 2004 and 2007, and almost all of them are included in our baseline estimates, with less than 5 percent of observations dropped because of missing data. Our key variables of interest, such as having a connection to the central gas system or a connection to the central heating system, are uncorrelated with participation both in the 2004 and 2007 rounds of the survey when controlling for location, gender, household size, density, and religion. Also, there are no differences in economic preferences and only small and marginally significant differences in political preferences.

Because only a subset of the questions on attitudes and preferences are available for all years, the comparability between one's own response in the past to responses at a later date are limited to those questions that were maintained from 2004 to 2007. These questions focus on views of the respondent's preferred political and economic systems for Ukraine, ranging on a spectrum from "Western-style" views, strongly supported by the orange movement and the incumbent

[18] Technical appendixes to this paper are available Review of International Organizations' website.

government of President Viktor Yushchenko and Prime Minister Yulia Tymoshenko, to "old Soviet-style" views, closer to the pro-Russia positions expressed by Viktor Yanukovych (see Appendix A, questions 107 and 108).[19] Specifically, 4,897 respondents provided valid responses on preferred economic and political systems in both waves of the ULMS. This is our baseline sample. Comparing the respondents' preferences on political and economic systems in 2004 and 2007 shows an overall trend for a lower preference of the old soviet system in favor of a more democratic political system and a more market-oriented economic system (Figure 5).

Figure 5: Preferences on the political and economic systems, Source: ULMS 2007



5. Empirical Approach

The objective of our analysis is to explain the extent to which respondents change their political opinions and whether this change is related to the major trade dispute of January 2006 and the resulting hike in gas prices. To understand how political and economic preferences evolved after the trade dispute we exploit the fact that the same individuals were interviewed in 2004 and 2007—before and after the dispute—and were differently exposed to the sharp increase in gas prices.

[19] The survey also includes a question on voting intentions, which asks: "If the parliamentary election were held this coming Sunday, for which political party would you vote?" This question would allow for a test of the narrow rally-around-the-flag hypothesis as an increase of popular support for the targeted government and leaders. However, we cannot pursue this route because of large number of missing values: 50% of observations in the baseline (2004) survey and 40% in the 2007 survey. This is not completely surprising, given that this question is more direct and "personal" that those of political and economic preferences and therefore people are less likely to answer. A final complication is that the composition and positions of the parties changed between 2004 and 2007.

Much of the gas exported to Ukraine was used for heating, and gas was the most common heating fuel. Because the crisis began during winter, the gas price increases had particular salience for consumers in Ukraine. Not all consumers were affected in the same way however; there were several common types of gas heating systems and important differences between them.

The key distinction for the purposes of the analysis that follows is whether a household was connected to a centralized heating system. Heat on central systems was usually provided by district heating companies, and substitution with other heating was either difficult or impossible. Individual meters were rare, in most cases there was no simple way to reduce consumption when prices rose; connected households were charged for their connection regardless of the amount consumed. In contrast, households using non-centralized heating systems had more autonomy, particularly in terms of their responses to price increases. For households using primarily wood, electricity, coal, or liquefied gas purchased outside of the centralized system, options were available to cope with sudden cost increases either through substitution or by reducing consumption. For robustness, the presence of a connection to a centralized gas system is used as an alternative exposure variable, in substitution of the centralized heating indicator (Section 6).

To look at the data in a more intuitive way, we create two dummy indicators to identify individuals who express pro-Western political and economic views ("Pro West"), separately for 2004 and 2007. When looking at political preferences, the dummy is equal to one for individuals who express a preference for "Western-type democracy" and zero otherwise. When considering economic preferences, the indicator is equal to one for individuals who express a preference for market economies (free markets with no government intervention, market economy with small government, or market with strong government) and zero otherwise. Table 1 shows the transition matrix between being "pro-West" and "not pro-West" in 2004 and 2007, separately for individuals with and without access to centralized gas (Panel A) and centralized heating systems (Panel B). Consistent with the findings of Frye (2018) for Russia and Kobayashi and Katagiri (2018) for Japan, the descriptive evidence shows that the rally-around-the-flag effect was not generalized across the population of Ukraine. However, among those who were more exposed to the gas price increase—living in a house with a centralized gas or heating system—there was a clear move toward the support of Western-style political and economic systems. If we focus on individuals who did not have pro-West political views in 2004 and without access to centralized gas, we can observe that 8.5 percent of them become pro-West in 2007 (131 out of 1539 individuals). In

contrast, in the subsample of individuals with ex-ante access to centralized gas, the share of individuals who become closer to Western views increased to 21 percent (470 out of 2237 individuals). Similarly, when considering economic views, the share of people that move from not pro-West to pro-West views increased from 11 to 21 percent comparing individuals with and without access to centralized gas. A very similar picture emerges when considering central heating as a proxy of the individual sensitivity to the price shock (Panel B).

While the descriptive evidence is already suggestive of a rally-around-the-flag effect, in the following we test this hypothesis in a multivariate setting. Although we can exploit cross section variation in the exposure to the trade dispute and look at political opinions before and after the trade dispute, the empirical set-up precludes the use of a conventional difference-in-differences (DID) estimator due to the interaction between two features of this case and the available data. First, the outcome of interest is categorical and the space of potential outcomes is bounded. Put differently, if a respondent is already "pro-West" in the measure we have available, they cannot become more so over time. Second, the selection in the treatment was not random: respondents who were connected to the central heating (or central gas) system at that time were already more likely to hold more pro-Western views in comparison to those without a connection. Table 1 shows that 71(60) percent of respondents who support a market economy in 2004 (pro-West) were connected to centralized gas (heating) systems. Very similar ratios apply when considering the preference for a Western-type democracy. Because the share of respondents in the two groups who could potentially change their view in either direction is not balanced, the parallel trends assumption required for a traditional DID approach is violated.

Ignoring the differences in average baseline views of respondents when conducting a standard DID strategy leads to biased estimates and can also lead to an incorrect understanding of the effect. An unmodified DID approach suggests an average treatment effect on the treated (ATT) of -.046 (rse= .0162; p = 0.004) relating to changes to more Western political views and an ATT of -.0158 (rse= .0186; p = 0.396) related to more Western economic views.[20] The negative sign of these ATT coefficients is the opposite of the relationship supposed by the rally around the flag hypothesis and runs counter to the circumstantial evidence we find elsewhere in the survey. This, as stated above, can reflect the bounded structure of our dependent variables and the unbalanced distribution of

[20] Please see appendix C for full table of results

respondents between "pro-West" and not pro-West" groups before the treatment. However, there are several common methods to account for these issues. We apply two preferred specifications in the following section to address them.

5.1 Difference-in-differences

The first approach modifies the standard difference-in-differences method to account for the complications presented by this case. One way to do so is to simply restrict the sample to respondents who were not "pro-West" in 2004, avoiding the issue of boundedness and the imbalance present in the pre-treatment period. This approach comes at the cost of a non-trivial reduction in sample size, which could bias the results. An alternative approach draws from Abadie (2005), who proposes a semiparametric difference-in-differences method that addresses the non-random selection into treatment, adjusting for observable differences between treatment and control groups at the baseline by using a propensity score matching. This approach is mostly suited for longitudinal surveys with a baseline and a follow-up rounds, similar to our context, and it can be used to estimate parsimonious parametric approximations to conditional versions of the ATT Consider a basic DID case with two periods in which the outcome variable is support of the "pro-West" position, the treatment is the connection to a centralized heating (or gas) system, and the population is composed of all respondents. No respondents are treated in the first period (in the sense that no people in 2004 had yet experienced a price shock due to gas disputes). The term $Y_t(w)$ is the counterfactual outcome for treatment level, w, where $w = 0,1$ in the second period. The parameter of interest is the average treatment effect on the treated:

$$\tau_{ATT} = E[Y_1(1) - Y_1(0)|w = 1] \qquad (1)$$

But in this case, a two-step procedure is needed to account for the imbalance due to pre-treatment characteristics that are associated with the dynamics of the outcome variable and are unbalanced between the treated and the untreated. First, a propensity score $p(X)$ is estimated using a set of pre-treatment vector of control variables, which in our case include dummy variables for gender, household size, respondent age, six categories of the population density of the community where the respondent lives, the four macro-regions of residence, and the religious group to which the respondent is affiliated (if any). Second, the propensity score enters into the calculation of τ_{ATT}:

$$\tau_{ATT} = \frac{E\left\{\frac{[W - p(X)](Y_1 - Y_0)}{[1 - p(X)]}\right\}}{P(W = 1)} \qquad (2)$$

Where Y_t, $t = 0,1$ are the observed outcomes (for the same respondent) and $p(X) = P(W = 1|X)$ is the propensity score.

5.2 Multinomial Logit

Our second approach deals with the concern that the connection to a centralized heating system (our baseline "treatment" variable) could be systematically correlated with views on political and economic systems at baseline (Table 1) by conditioning on a respondent's previous response in the 2004 survey and estimating the likelihood that the respondent provides any of the different responses available to the same question in 2007. More precisely, we employ the following multinomial logistic which allows for greater nuance than the DD as we can preserve the multinomial dimension of the outcome variable rather than collapsing this information in a dummy indicator:

$$PREFERENCE_{ki}^{2007} = \alpha PREFERENCE_{ki}^{2004} + \beta CENTRAL\ HEATING_i^{2004} + \gamma X_i + \epsilon_{ki} \qquad (3)$$

where k refers to the response outcome for the questions on political and economic preferences, and i refers to the individual. $PREFERENCE_{ki}^{2004}$ refers to the view (k) recorded in the baseline round of the survey (i.e. 2004).[21] We use the multinomial logit rather than ordered logit due to the unordered nature of some of the response categories. The key coefficient is β, which identifies the differential effect between individuals who live in households served or not by a centralized heating system (*CENTRAL HEATING*) on political preferences. The set of control variables X includes a number of individual and household characteristics, which may contribute to explain why respondents favor a Western or Old-Soviet style system independent of the presence of trade disputes. Two key variables are binary indicators which identify: (i) whether the respondent prefers to speak Russian or Ukrainian, and (ii) whether the household received government subsidies for

[21] The regression output can be interpreted by comparisons across groups. As such, one category of response is needed as a base against which comparisons are made. In all cases described, use the most popular "old soviet" response as the base category, for ease of interpretation.

gas consumption. The former could inform whether the respondent's identity interacts with views while the latter could provide an additional measure of the exposure of the individual to price changes. In addition, we control for the respondent's age to take into account having lived during and under the Soviet system. The full set of control variables also includes a measure of per capita household income, household size, individual gender, and religion.

To account for the concern that connections to a central system were correlated with population density and location, which in turn is associated with particular political views, the regressions also control for six levels of settlement density and a set of regional dummies.[22] Because selection in survey participation took place at the household level, rather than the individual level, standard errors are clustered by household to take into account serial correlation within households. We also weight observations by their sample weights to preserve national representativeness. Results are qualitatively similar using un-weighted regressions.[23]

6. Results

6.1 Difference-in-differences

The results from the difference-in-differences using the semiparametric approach (Abadie 2005) and the restricted sample are summarized in Table 3. Panel A shows the average treatment effect on the treated (ATT) estimated with the semiparametric DID, which uses the propensity score estimated in the first step to balance the selection in the treatment and in the second step derives the ATT with respect to holding a pro-West view on political and economic systems. The results show that the ATT with respect to holding a pro-West view on political systems is 13.3 percent (p-value of 0.000) with respect to those who have a central gas connection and 7.6 percent (p-value of 0.000) with respect to those who have a central heating connection. For the pro-West economic systems outcome, the ATT with respect to is 12.1 percent (p-value of .000) with respect to those who have a central gas connection, and 8.9 percent (p-value of 0.000) for those with a central heating connection. These results are robust to using a different approach to circumvent the fact

[22] Village; urban settlement; small town (up to 20 thousand); medium town (20 – 99 thousand); city (100 - 499 thousand); large city (above 500 thousand).
[23] For details on the relatively low rate of non-response (attrition), please see Appendix B. Table 2 reports the definition and descriptive statistics for all the variables.

that our dependent variable is bounded and the sample imbalanced. In particular, we run a standard DID estimator on a restricted sample which drops all cases in which the respondent was pro-West in the pre-treatment period and we find that the ATT are close to those obtained following the approach by Abadie (2005) and precisely estimated (Table 3, Panel B).

These results are economically large: they imply that, Russian trade restrictions caused individuals directly exposed—through the connection to a centralized heating and/or gas system—to change their political or economic preferences and become more supportive of Western-style systems much more often than similar individuals not directly exposed to the hike in gas prices.

6.2 Multinomial Logit

The results of the multinomial logit for the preferred political and economic systems, summarized in equation (3), are included in Tables 4 and 5, respectively, which report the estimated coefficients transformed into relative-risk ratios.[24] Since we control for preferences at the baseline, the estimates capture variation among respondents who changed their views. In this respect, the positive (e.g. larger than one) and significant coefficients relating to central heating connections suggest that respondents living in a household connected to a central heating system were significantly more likely to change their preference towards Western-style systems, in comparison to preferences for the old Soviet-style system, in response to the spike in energy prices following the trade dispute.

Focusing on political views, people connected to a centralized heating system were 52 percent more likely to prefer the "status quo" governing system in 2007, 46 percent more likely to support a more democratic Soviet-style system, and were nearly twice as likely to prefer a western-style democratic system if they were more directly affected by the spike in gas prices (Table 4). The results for preferences over economic systems are qualitatively similar, even though the magnitude of the effects is larger. In comparison to preferring the old Soviet system, people connected to a centralized heating system were 65 percent more likely to support a more modern form of central planning, 133 percent more likely to support a market economy with strong regulation, and 129

[24] The relative risk ratio (RRR) is the exponentiated coefficient of the multinomial logit regression and it is the ratio of risk of the event (the preference for a certain political/economic outcome) for the treated group (for instance, the one with the centralized heating system) over the risk of the event for the untreated groups (i.e. without centralized heating system). Hence, a RRR greater than one indicates that the treatment increases the likelihood of the given outcome, while the opposite is true id RRR<1.

percent more likely to support a market economy with minimal government intervention (Table 5).

These results control for the political and economic preferences at the baseline, which should in large part absorb individual unobserved heterogeneity. In fact, the set of demographic characteristics do not seem to play a strong role. An interesting exception is the coefficient on age, which signals that younger individuals are more likely to change their opinion from a preference for the old Soviet system to more democratic and market-oriented systems. Differences between Ukrainian and Russian speakers are rarely significant, as they are likely absorbed in large part by the regional dummies. However, Russian speakers were less likely to support Western-style democracy than Ukrainian speakers. Although not statistically significant in most cases, the coefficient on the dummy for receiving subsidies for gas consumption uniformly suggests that a lower propensity to prefer Western-style economic and political systems, consistent with the hypothesis that government subsidies would work to offset the economic harm caused by increasing gas prices.

In appendix Table C1 and C2 we report the results that replicate the analysis using the centralized gas system as a measure to exposure to the trade dispute. Results are qualitatively similar and confirm that individuals living in a house with a centralized gas system is are those more likely to re-orient their political and economic preferences towards Western-type institutions in response to the increase in gas prices caused by the trade dispute.

6.3 Cross-Sectional Variation in 2007

The 2007 questionnaire included a richer module on political views than the previous rounds. These questions allow us to undertake a set of additional cross-sectional analyses, descriptive in nature, but helpful to provide additional evidence on the economic and political preferences of the Ukrainian population after the gas disputes with Russia.

To this purpose, we estimate a set of standard probit regressions, in which the dependent variables are binary indicators that assume value one in correspondence to the positive outcome response to questions relating to political preferences. In particular, we consider a dummy equal to 1 if the respondent supported joining the EU, and a second dummy variable equal to 1 for respondents who supported joining an economic union with Russia, Belarus and Kazakhstan (see Section A, question 110). Then, we explore a question that zooms in on the relationship between Russia and

Ukraine (see Section A, question 109) to define two other binary indicators: one that identify individuals who think that Ukraine and Russia should have normal relationship as any other pair of states, and a second that instead identifies who think that Ukraine and Russia should be unified. The set of explanatory variables mimics the one used in the panel analysis and the key explanatory variable is the binary indicator for the centralized heating connection, as reported at the household level in 2004. The results of these analyses are reported in Table 6, which show the average partial effects.

Since the set of control variable could not absorb all individual heterogeneity, this analysis could suffer from omitted variable bias and, therefore, the estimated coefficients should not be interpreted as causal. With this caveat in mind, it is still interesting to note that the results are broadly consistent with findings obtained from the panel estimates, and suggest that individuals residing in households that are connected to a heating system are significantly more likely to support joining the EU (column 1) and a more direct separation between Ukraine and Russia (column 3), while they are significant less likely to support an economic union with Russia, Belarus and Kazakhstan, and a process directed at the unification of Russia and Ukraine. In a cross section, as large part of the individual heterogeneity is not absorbed by initial preferences, the other control variables are often statistically significant. In particular, Russian speakers are more likely to prefer joining an economic union and unification with Russia than are Ukrainian speakers. A similar effect is visible with respect with age, as younger people are more inclined to join the EU and prefer a clearer separation between their country and Russia.[25]

7. Conclusion

We focus on a trade dispute between Ukraine and the Russian Federation—which led to a cut in gas exports to Ukraine and a sharp increase of gas prices for consumers—to shed more light on the effects of economic sanctions. Our empirical analysis is particularly suited to test the hypothesis that the economic harm from sanctions could provoke a *rally-around-the-flag* effect. Exploiting the availability of a panel household survey in Ukraine that collects data on political and economic preferences before and after the trade dispute, together with the fact that individuals

[25] As for the panel regressions, even in the cross-section results are robust to considering the central gas system as a measure of exposure to the trade dispute (see appendix table C3).

have been differentially exposed to the gas dispute—depending on their reliance on the centralized heating system—we estimate the effect of the cut in Russian gas exports and the associated price hike using a nonparametric difference-in-differences approach and a multinomial logit model, which allows for a more granular understanding in the change of political and economic views.

Our findings lend support to the hypothesis that individuals who were more exposed to the direct effects of the gas dispute were significantly more likely to change their view regarding more Western-oriented institutions, including both economic and political systems. Suggestive, but less conclusive, evidence points to an association between experience of (or vulnerability to) adverse impacts were more likely to support joining the EU, and less likely to support a further economic and institutional integration with the Russian Federation.

In light of these findings, it is interesting to note that, even in the midst of the dispute with Russia, consumers paid remarkably low rates for gas in Ukraine. These low rates were the result of large direct and indirect government subsidies to consumers. Ukraine's heating tariffs for consumers were 50 percent of those in Poland and 40 percent of those of Baltic countries in 2012. On average, Ukrainian households paid around 20 percent of the full import price of gas in 2012. This suggests that the effect of trade sanctions on political views was driven more by changes in price, rather than price levels.

To conclude, we find no evidence that the drastic cut in gas exports brought about changes in political views that were consistent with the preferences of the Russian government. On the contrary, the effects appear to have provoked a rally-around-the-flag backlash among those most directly affected. Our results suggest that if, as the opening quote from Minister Lavrov suggests, sanctions are signs of irritation rather than policy, demonstrating irritation can have unexpected costs.

Though the specifics of the Russia-Ukraine gas dispute may limit the external validity of the results to some extent, the case speaks to a large class of policy questions. In the broadest sense, the results demonstrate the presence of a rally-around-the-flag effect that can act to limit the coercive strength of sanctions. The results also identify a channel through which such an effect can arise: sanctions that generate direct negative economic impacts on consumers may provoke a rally-around-the-flag effect specifically among those individuals affected, above and beyond any potential general sense of "nationalism" generated by sanction policies. Put into practice, these results provide evidence

in support of one of the main points in favor of targeted sanctions—that they avoid economic impact on the general population. The results also suggest that if provoked, a rally-around-the-flag sentiment may spread beyond the specific issues in dispute and erode support for the broader policy positions advocated by the sender.

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Tables

Table 1: Transition matrix of preferred political and economic systems views between 2004 and 2007

Panel A:	No Central Gas		Central Gas	
	Not Pro West 07	Pro West 07	Not Pro West 07	Pro West 07
Political System				
Not Pro West 04	1,408	131	1,767	470
Pro West 04	186	102	421	412
Economic System				
Not Pro West 04	1,128	217	1,384	501
Pro West 04	319	163	688	497

Panel B:	No Central Heat		Central heat	
	Not Pro West 07	Pro West 07	Not Pro West 07	Pro West 07
Political System				
Not Pro West 04	1,765	217	1,410	384
Pro West 04	257	180	350	334
Economic System				
Not Pro West 04	1,465	300	1,047	418
Pro West 04	428	226	579	434

Notes: When considering preferences for the political system, the "Pro West" indicator identifies individuals who express a preference for Western-type democracy, while the "Not Pro West" indicator identifies all other individuals. When considering preferences for the economic system, the "Pro West" indicator identifies individuals who express preferences for market economies (free markets with no government intervention, market economy with small government, or market with strong government), while the "Not Pro West" indicator identifies all other individuals. In Panel A (B) the sample is split between individual with and without connection to a centralized gas (heating) system.

Table 2: Variables, definitions and descriptive statistics

Variable	Description	# obs.	Mean	St. dev.	Min.	Max.
Central Gas System (2004)	Dummy equal to one for individuals living in houses with a centralized gas system, and zero otherwise	4,897	0.627	0.484	0	1
Central Heating System (2004)	Dummy equal to one for individuals living in houses with a centralized heating system, and zero otherwise	4,897	0.506	0.500	0	1
Speak Russian	Dummy equal to one for individuals who chose the Russian language version of the survey, and zero for those who answered in Ukranian	4,883	0.525	0.499	0	1
Receive Gas Subsidy	Dummy equal to one for individuals who live in households that received government subsidies for gas consumption, and zero otherwise	4,851	0.206	0.405	0	1
Per Capita HH Income	Logarithm of per capita household income (total household income from sales from agricultural production, or any payments/transfers received in the form of money, goods, or services)	4,897	6.032	1.435	0	8.6
Male	Dummy equal to one for men, and zero for women	4,897	0.408	0.492	0	1
Household Size	Number of individuals in the household	4,881	3.400	1.498	1	9
Age	Age of the respondent	4,897	47.136	12.766	15	84
Location of the household						
Village		4,897	0.368	0.482	0	1
Urban settlelement		4,897	0.124	0.330	0	1
Small town		4,897	0.016	0.124	0	1
Medium town		4,897	0.127	0.333	0	1
City		4,897	0.193	0.395	0	1
Large city		4,897	0.172	0.378	0	1
Macro-region of the household						
East		4,714	0.269	0.443	0	1
South		4,714	0.227	0.419	0	1
Center		4,714	0.298	0.457	0	1
West		4,714	0.206	0.405	0	1
Religion of the respondent						
Orthodox		4,896	0.583	0.493	0	1
Catholic		4,896	0.080	0.272	0	1
No religion		4,896	0.272	0.445	0	1
Other		4,896	0.033	0.180	0	1
Not available		4,896	0.031	0.172	0	1
Economic space, EU	Dummy equal to one for individuals answering that Ukraine shoud join the European Union, and zero otherwise	4,276	0.306	0.461	0	1
Economic space, Russia	Dummy equal to one for individuals answering that Ukraine should join the Single Economic Space with Russia, Belarus and Kazakhstan, and zero otherwise	4,276	0.607	0.488	0	1
Ukraine-Russia relations, separation	Dummy equal to one for individuals answering that the relationships between Ukraine and Russia should be the same as with other states, with closed borders, visas and customs, and zero otherwise	4,585	0.122	0.327	0	1
Ukraine-Russia relations, unification	Dummy equal to one for individuals answering that Ukraine and Russia should unite in one state, and zero otherwise	4,585	0.251	0.434	0	1

Table 3: Difference-in-Differences Results

Outcome	Treat = Central Heat			Treat = Central Gas			Obs.
	Coef.	Std. Err.	P>|z|	Coef.	Std. Err.	P>|z|	
Panel A: Abadie (2005) modified difference-in-differences							
ATT - Pro West, Politics	0.076	0.015	0.000	0.133	0.011	0.000	9316
ATT - Pro West, Economics	0.089	0.016	0.000	0.121	0.013	0.000	9316
Panel B: Standard difference-in-differences on a restricted sample							
ATT - Pro West, Politics	0.072	0.012	0.000	0.076	0.012	0.000	7586
ATT - Pro West, Economics	0.098	0.015	0.000	0.091	0.015	0.000	6938

Notes: Panel A reports the result of the semiparametric difference-in-differences estimator (Abadie 2005) in which the outcome variable is the support of the "pro-West" position (political or economic) and the treatment is the dummy identifying individuals with central heating or with central gas systems. When considering preferences for the political system, the "Pro West" indicator identifies individuals who express a preference for Western-type democracy, while the "Not Pro West" indicator identifies all other individuals. When considering preferences for the economic system, the "Pro West" indicator identifies individuals who express preferences for market economies (free markets with no government intervention, market economy with small government, or market with strong government), while the "Not Pro West" indicator identifies all other individuals. The dataset has two periods, 2004 (the pre-treatment period) and 2007 (the post-treatment period). See section 5.1 for details. The estimation is performed using the Stata command *absdid*. Panel B reports the result of a standard difference-in-differences estimator in which the sample is restricted to all individuals who do not have a "Pro West" (political or economic) view in 2004.

Table 4: Multinomial Logit—Preferred political system

	Base Category = Old Soviet System			
	A More Democratic Soviet System	System which exists today	Western-Type Democracy	Other/No Response
Central Heating System (2004)	1.4606***	1.5161**	1.9693***	1.4315***
	(0.1739)	(0.2688)	(0.2660)	(0.1854)
Speak Russian	0.8922	1.0642	0.6722**	0.8459
	(0.1381)	(0.2909)	(0.1205)	(0.1472)
Receive Gas Subsidy	0.9183	0.7033	0.8927	0.8871
	(0.1237)	(0.1673)	(0.1400)	(0.1340)
Per Capita HH Income	0.9716	1.0204	0.9807	0.9258*
	(0.0410)	(0.0791)	(0.0444)	(0.0368)
Male	1.1441	1.1418	1.4401***	1.0593
	(0.1075)	(0.1573)	(0.1464)	(0.1036)
Household Size	0.9978	1.1165*	1.0502	1.0737
	(0.0407)	(0.0722)	(0.0476)	(0.0481)
Age	0.9852***	0.9731***	0.9690***	0.9724***
	(0.0047)	(0.0071)	(0.0052)	(0.0050)
Past Response (2004)				
A More Democratic Soviet System	1.2294	0.3638***	0.4972***	0.8572
	(0.2970)	(0.1042)	(0.1252)	(0.2061)
System which exists today	0.5477***	0.1447***	0.1553***	0.3672***
	(0.1267)	(0.0419)	(0.0386)	(0.0815)
Western-Type Democracy	1.5145	1.3485	2.1294***	1.8896**
	(0.4034)	(0.3963)	(0.5428)	(0.4783)
Other/No Response	0.8329	0.4715***	0.5446**	1.1828
	(0.2082)	(0.1349)	(0.1346)	(0.2766)
Number of observations	4,679			
Settlement size fixed effects	Yes			
Region fixed effects	Yes			
Religion fixed effects	Yes			
Adjusted R^2	0.110			

Notes: The table reports the relative risk ratios from the estimation of the multinomial logit presented in equation (1), in which the dependent variable is a categorical indicators listing the types of political system that the respondent could indicate in 2007 as the most suitable for Ukraine. The omitted category is the preference for the old soviet system. Past responses refer to the 2004 survey. Observations are weighted to preserve national representativeness. Standard errors, clustered at the household level, are reported in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Multinomial Logit—Preferred economic system

	Base Category = Old Soviet System					
	Modern Form of Central Planning	The Econ. System Today	Market with Strong Gov.	Market Economy with Small Gov.	Free Market and no Gov. Intervention	Other/No Response
Central Heating System (2004)	1.6492***	1.6409**	2.3341***	2.2848***	1.4824*	1.5095***
	(0.2288)	(0.3278)	(0.3357)	(0.3943)	(0.3276)	(0.2066)
Speak Russian	1.1664	1.6182	1.0013	0.7882	0.6577	0.7527
	(0.2163)	(0.4783)	(0.1985)	(0.1835)	(0.1817)	(0.1328)
Receive Gas Subsidy	0.8949	0.6123*	0.9621	0.9689	0.8649	0.8576
	(0.1301)	(0.1740)	(0.1588)	(0.1931)	(0.2232)	(0.1315)
Per Capita HH Income	0.9794	0.9698	1.0375	1.0321	1.0537	0.8845***
	(0.0423)	(0.0875)	(0.0487)	(0.0617)	(0.0754)	(0.0352)
Male == 1	1.1788	0.9533	1.2075*	1.4816***	1.2902	0.8612
	(0.1184)	(0.1499)	(0.1288)	(0.1884)	(0.2049)	(0.0893)
Household Size	1.0566	1.1151	1.0668	1.0995	1.2023***	1.0583
	(0.0480)	(0.0811)	(0.0511)	(0.0719)	(0.0790)	(0.0533)
Age	0.9867***	0.9741***	0.9754***	0.9700***	0.9700***	0.9732***
	(0.0050)	(0.0079)	(0.0055)	(0.0065)	(0.0080)	(0.0053)
Past Response (2004)						
Modern Central Planning	2.2181***	1.7364*	2.9116***	3.3665***	3.0010***	2.2972***
	(0.3535)	(0.5184)	(0.5499)	(0.7852)	(1.0951)	(0.4153)
The Econ. System Today	1.3991	2.8313**	3.8864***	6.4010***	2.6360*	2.5949***
	(0.4505)	(1.3387)	(1.2472)	(2.3616)	(1.4740)	(0.8639)
Market with Strong Gov.	2.1746***	2.1945**	4.5902***	8.2756***	8.8829***	2.4159***
	(0.3952)	(0.6771)	(0.8975)	(1.9334)	(2.8107)	(0.4637)
Market with Small Gov.	2.8935***	5.8115***	8.6317***	17.9889***	16.7479***	4.4605***
	(0.7497)	(2.1258)	(2.3100)	(5.6735)	(6.2348)	(1.2121)
Market/ No Gov. Interv.	3.1657***	11.9018***	8.6266***	14.6598***	30.3654***	4.6767***
	(1.2196)	(5.7328)	(3.2532)	(5.9009)	(13.3939)	(1.7930)
Other/No Response	1.7468***	3.5303***	3.4202***	4.4520***	4.4461***	3.7977***
	(0.2731)	(0.8785)	(0.6195)	(1.0225)	(1.3912)	(0.5810)
Number of observations	4,665					
Settlement size fixed effects	Yes					
Region fixed effects	Yes					
Religion fixed effects	Yes					
Adjusted R^2	0.0928					

Notes: The table reports the relative risk ratios from the estimation of the multinomial logit presented in equation (1), in which the dependent variable is a categorical indicators listing the types of economic system that the respondent could indicate in 2007 as the most suitable for Ukraine. The omitted category is the preference for the old soviet system. Past responses refer to the 2004 survey. Observations are weighted to preserve national representativeness. Standard errors, clustered at the household level, are reported in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Cross-section—Opinions about economic unions and the relationship with Russia

	Economic space:		Ukraine-Russia relations:	
	EU	Russia	Separation	Unification
Central Heating System (2004)	0.0899***	-0.0861***	0.0323**	-0.0609***
	(0.0255)	(0.0269)	(0.0134)	(0.0174)
Speak Russian	-0.0771***	0.1025***	-0.0550***	0.0628***
	(0.0282)	(0.0315)	(0.0169)	(0.0231)
Receive Gas Subsidy	0.0004	0.0014	0.0143	0.0424**
	(0.0260)	(0.0292)	(0.0141)	(0.0197)
Per Capita HH Income	0.0059	-0.0083	-0.0092***	-0.0146**
	(0.0073)	(0.0081)	(0.0031)	(0.0058)
Male == 1	0.0325**	-0.0293*	0.0224**	-0.0029
	(0.0162)	(0.0177)	(0.0088)	(0.0123)
Household Size	0.0029	-0.0030	-0.0018	-0.0139**
	(0.0074)	(0.0086)	(0.0040)	(0.0060)
Age	-0.0051***	0.0055***	-0.0016***	0.0036***
	(0.0009)	(0.0010)	(0.0005)	(0.0007)
Observations	4,113	4,113	4,397	4,397
Settlement size fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Religion fixed effects	Yes	Yes	Yes	Yes
Pseudo R^2	0.211	0.241	0.193	0.136

Notes: The table reports the average partial effects from the estimation of a probit model, in which the dependent variables are, alternatively: a dummy equal to one for individuals answering that Ukraine should join the European Union, and zero otherwise (column 1); a dummy equal to one for individuals answering that Ukraine should join the Single Economic Space with Russia, Belarus and Kazakhstan, and zero otherwise (column 2); a dummy equal to one for individuals answering that the relationships between Ukraine and Russia should be the same as with other states, with closed borders, visas and customs, and zero otherwise (column 3); and a dummy equal to one for individuals answering that Ukraine and Russia should unite in one state, and zero otherwise (column 4). All outcome variables refer to the 2007 survey. Observations are weighted to preserve national representativeness. Standard errors, clustered at the household level, are reported in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

Appendix A – Main survey questions used

2004 - SECTION I. ATTITUDES, HEALTH, AND ECOLOGY

Subsection 1 "Attitudes"

I01	If the parliamentary election were held this coming Sunday, for which political party would you vote? CHART I01 DS…97 RA…99 |__|__| 620
I02	What kind of political system would you like your children to live under? CHART I02 1 The Soviet system which was in our country until perestroika 2 The Soviet system, but in a different, more democratic form 3 The political system which exists today |__| 621 4 Western-type democracy 5 Other DS…7 RA…9
I03	What kind of economic system, in your opinion, is most suitable for Ukraine? CHART I03 1 Centrally-planned economy which was in our country until perestroika 2 Centrally-planned economy, but with elements of a market economy 3 The economic system which exists today 4 Market economy with strong government regulation |__| 622 5 Market economy with relatively small government interventions 6 Free market economy without government regulation 7 Other DS…97 RA…99
I04	To what extent are you satisfied with your life in general at the present time? CHART I04 1 Fully satisfied 2 Satisfied 3 Rather satisfied |__| 623 4 Less than satisfied 5 Not satisfied at all DS…7 RA…9

I05	What religion/confession do you practice? CHART I05 1 I don't follow any religion 9 Baptism/Evangelism 2 Ukrainian Orthodox (Kyiv Patriarchy) 10 Islam 3 Ukrainian Orthodox (Moscow Patriarchy) 11 Hinduism 4 Russian Orthodox 12 Judaism |__|__| 624 5 Orthodox without any partition 13 Buddhism, Lamaism 6 Catholicism (Rome) 14 Krishnaism 7 Greek Catholicism 15 Jehovah's witnesses 8 Protestantism 16 I believe in God by don't belong to any confession DS…97 RA…99 17 OTHER]RECORD].....

2007 - Subsection 1 "Attitudes and Expectations"

I01	In the following questions I would like you to give me a number from 1 to 5, where you are supposed to grade from the most negative (1) to the most positive (5) outcome. *Generally speaking, how was Ukraine doing two years ago?* Very poorly Very well 1……..…2..……..…3.……..…4..……..…5 1602|__| DS…7 RA…9
I02	*Generally speaking, how is Ukraine doing today?* Very poorly Very well 1……..…2..……..…3.……..…4..……..…5 1603|__| DS…7 RA…9
I03	*Generally speaking, how were you doing two years ago?* Very poorly Very well 1……..…2..……..…3.……..…4..……..…5 1604|__| DS…7 RA…9
I04	*Generally speaking, how are you doing today?* Very poorly Very well 1……..…2..……..…3.……..…4..……..…5 1605|__| DS…7 RA…9

I05	*Generally speaking, how much do you care about politics?* Not at all Very much 1……..…2..……..…3……..…4..……..…5 1606|__| DS…7 RA…9
I06	If the parliamentary election were held this coming Sunday, for which political party would you vote? CHART I06 DS…97 RA…99 1607|__|__|
I07	What kind of political system, in your opinion, is most suitable for Ukraine? CHART I07 1 The Soviet system which was in our country until perestroika 2 The Soviet system, but in a different, more democratic form 3 The political system which exists today 1608|__| 4 Western-type democracy 5 OTHER [RECORD]…… …. DS…7 RA…9
I08	What kind of economic system, in your opinion, is most suitable for Ukraine? CHART I08 1 Centrally-planned economy which was in our country until perestroika 2 Centrally-planned economy, but with elements of a market economy 3 The economic system which exists today 4 Market economy with strong government regulation 1609|__|__| 5 Market economy with relatively small government interventions 6 Free market economy without government regulation 7 OTHER [RECORD]…… … DS…97 RA…99
I09	What sort of relationship would you like to see between Ukraine and Russia? CHART I09 1 They should be the same as with other states, with closed borders, visas and customs. 2 Ukraine and Russia should further develop their independent but friendly relationship, with open borders and no visas or customs. 1610|__| 3 Ukraine and Russia should unite in one state. DS…7 RA…9

I10 In your opinion, which state union would be better for Ukrainian people to live in, the European Union or in the union with Russia, Belarus and Kazakhstan (Single Economic Space)?

CHART I10

1 In the European Union
2 Rather in the European Union
3 Rather in the union with Russia, Belarus and Kazakhstan 1611|__|
4 In the union with Russia, Belarus and Kazakhstan
5 No union with any other country
DS…7 RA…9

I11 Tell me, please, if your rights are outraged, are you ready to defend them by participation in:

CHART I11

	Yes	No	DS	RA	
1 Election campaigns	1	2	7	9	1612|__|
2 Collecting signatures	1	2	7	9	1613|__|
3 Legal meetings and marches	1	2	7	9	1614|__|
4 Legal strikes	1	2	7	9	1615|__|
5 Boycotts	1	2	7	9	1616|__|
6 Illegal meetings and marches	1	2	7	9	1617|__|
7 Illegal strikes	1	2	7	9	1618|__|
8 Hunger strikes	1	2	7	9	1619|__|
9 Picketing government offices	1	2	7	9	1620|__|
10 Seizure of buildings	1	2	7	9	1621|__|
11 Military units creation	1	2	7	9	1622|__|

Appendix B - Reasons for household not taking part in 2004

Households interviewed in 2003		4056
1 Questioning members of panel households in 2004		3394
2 Questioning household members, but getting refusal to fill in the household questionnaire		3
3 Questioning household formed as a result of separation		55
4 Data removed as a checkup result		16
	Total	*3468*
5 Household moved house		101
6 Long absence of household members		49
7 Household refused to take part in the survey		186
8 No people aged 15-73 in the household		27
9 Household members are seriously ill (stroke, blindness etc) or deceased		28
10 Other reason of not taking the interview		252
	Total	*7579*
Sum total		4111

Individuals interviewed in 2003		8641
1 Respondent questioned in 2004		6889
2 Individual data removed as a checkup result		86
3 Respondent questioned as a result of expanding household or reaching working age		311
	Total	*7286*
4 Respondent moved house		269
5 Respondent's long absence		225
6 Refusal to take part in the survey		410
7 Respondent deceased		52
8 Respondent being ill, drunk etc.		43
9 Respondent exceeded the working age		106
10 Other reason for not taking the interview		561
	Total	*1666*
Sum total		8952

Appendix C – Results from Unmodified Differences-in-Differences estimate

			Treat = Central Heat			Treat = Central Gas		
Outcome	DID Method	Obs.	Coef.	Std. Err.	P>|z|	Coef.	Std. Err.	P>|z|
ATT - West Politics	Standard	9824	-0.031	0.017	0.068	-0.046	0.016	0.004
ATT - West Econ	Standard	9824	-0.005	0.019	0.773	-0.016	0.019	0.396

Appendix D - Using connection to central gas as the variable of interest

Table C1: Multinomial Logit—Preferred political system

	Base Category = Old Soviet System			
	A More Democratic Soviet System	System which exists today	Western-Type Democracy	Other/No Response
Central Gas System (2004)	1.2472*	1.1031	1.6525***	1.4567***
	(0.1520)	(0.2053)	(0.2303)	(0.1923)
Speak Russian	0.8769	1.0364	0.6625**	0.8356
	(0.1359)	(0.2829)	(0.1196)	(0.1445)
Receive Gas Subsidy	0.9118	0.7020	0.8688	0.8641
	(0.1232)	(0.1677)	(0.1367)	(0.1315)
Per Capita HH Income	0.9723	1.0219	0.9825	0.9261*
	(0.0409)	(0.0794)	(0.0449)	(0.0369)
Male	1.1393	1.1314	1.4327***	1.0584
	(0.1066)	(0.1554)	(0.1444)	(0.1031)
Household Size	1.0033	1.1258*	1.0605	1.0757*
	(0.0408)	(0.0732)	(0.0480)	(0.0476)
Age	0.9848***	0.9728***	0.9688***	0.9717***
	(0.0047)	(0.0072)	(0.0052)	(0.0050)
Past Response (2004)				
A More Democratic Soviet System	1.2153	0.3584***	0.4867***	0.8511
	(0.2930)	(0.1020)	(0.1208)	(0.2048)
System which exists today	0.5443***	0.1425***	0.1558***	0.3695***
	(0.1257)	(0.0411)	(0.0381)	(0.0822)
Western-Type Democracy	1.5186	1.3617	2.1324***	1.8833**
	(0.4044)	(0.3996)	(0.5396)	(0.4765)
Other/No Response	0.8203	0.4631***	0.5306***	1.1734
	(0.2051)	(0.1318)	(0.1295)	(0.2746)
Number of observations	4,679			
Settlement size fixed effects	Yes			
Region fixed effects	Yes			
Religion fixed effects	Yes			
Adjusted R^2	0.109			

Notes: The table reports the relative risk ratios from the estimation of the multinomial logit presented in equation (1), in which the dependent variable is a categorical indicators listing the types of political system that the respondent could indicate in 2007 as the most suitable for Ukraine. The omitted category is the preference for the old soviet system. Past responses refer to the 2004 survey. Observations are weighted to preserve national representativeness. Standard errors, clustered at the household level, are reported in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.

Table D2: Multinomial Logit—Preferred economic system

	Base Category = Old Soviet System					
	Modern Form of Central Planning	The Econ. System Today	Market with Strong Gov.	Market Economy with Small Gov.	Free Market and no Gov. Intervention	Other/No Response
Central Gas System (2004)	1.5388***	1.2884	1.8781***	1.6049**	1.4886*	1.4587***
	(0.2135)	(0.2803)	(0.2847)	(0.2960)	(0.3077)	(0.2049)
Speak Russian	1.1352	1.5746	0.9712	0.7643	0.6429	0.7355*
	(0.2104)	(0.4656)	(0.1926)	(0.1818)	(0.1764)	(0.1288)
Receive Gas Subsidy	0.8752	0.6093*	0.9322	0.9508	0.8462	0.8394
	(0.1281)	(0.1740)	(0.1529)	(0.1903)	(0.2202)	(0.1297)
Per Capita HH Income	0.9814	0.9720	1.0424	1.0380	1.0548	0.8863***
	(0.0422)	(0.0875)	(0.0494)	(0.0630)	(0.0755)	(0.0356)
Male == 1	1.1790	0.9485	1.2018*	1.4680***	1.2872	0.8616
	(0.1182)	(0.1490)	(0.1276)	(0.1857)	(0.2044)	(0.0892)
Household Size	1.0604	1.1229	1.0794	1.1144*	1.2047***	1.0609
	(0.0479)	(0.0813)	(0.0521)	(0.0721)	(0.0789)	(0.0531)
Age	0.9856***	0.9733***	0.9745***	0.9695***	0.9688***	0.9721***
	(0.0050)	(0.0079)	(0.0056)	(0.0065)	(0.0080)	(0.0053)
Past Response (2004)						
Modern Central Planning	2.2074***	1.7494*	2.8821***	3.3262***	2.9849***	2.2971***
	(0.3496)	(0.5228)	(0.5417)	(0.7734)	(1.0879)	(0.4130)
The Econ. System Today	1.3702	2.8025**	3.7499***	6.1926***	2.5855*	2.5496***
	(0.4450)	(1.3307)	(1.2106)	(2.2941)	(1.4433)	(0.8511)
Market with Strong Gov.	2.1852***	2.2413***	4.6526***	8.4412***	8.9124***	2.4229***
	(0.3970)	(0.6931)	(0.9116)	(1.9798)	(2.7983)	(0.4691)
Market with Small Gov.	2.8200***	5.8002***	8.3821***	17.6952***	16.1472***	4.3521***
	(0.7309)	(2.1288)	(2.2442)	(5.5992)	(5.9727)	(1.1806)
Market/ No Gov. Interv.	3.0271***	11.6229***	8.0707***	13.9220***	29.2359***	4.4965***
	(1.1464)	(5.5708)	(2.9764)	(5.5014)	(12.7374)	(1.6976)
Other/No Response	1.7213***	3.5223***	3.3607***	4.4004***	4.3944***	3.7489***
	(0.2683)	(0.8749)	(0.6112)	(1.0132)	(1.3692)	(0.5736)
Number of observations	4,665					
Settlement size fixed effects	Yes					
Region fixed effects	Yes					
Religion fixed effects	Yes					
Adjusted R^2	0.0907					

Notes: The table reports the relative risk ratios from the estimation of the multinomial logit presented in equation (1), in which the dependent variable is a categorical indicators listing the types of economic system that the respondent could indicate in 2007 as the most suitable for Ukraine. The omitted category is the preference for the old soviet system. Past responses refer to the 2004 survey. Observations are weighted to preserve national representativeness. Standard errors, clustered at the household level, are reported in parenthesis. *** p<0.01, ** p<0.05, * p<0.1

Table D3: Cross-section—Opinions about economic unions and the relationship with Russia

	Economic space:		Ukraine-Russia relations:	
	EU	Russia	Separation	Unification
Central Gas System (2004)	0.1184***	-0.1276***	0.0275*	-0.0688***
	(0.0272)	(0.0289)	(0.0144)	(0.0180)
Speak Russian	-0.0783***	0.1040***	-0.0551***	0.0652***
	(0.0282)	(0.0314)	(0.0170)	(0.0231)
Receive Gas Subsidy	-0.0078	0.0117	0.0129	0.0482**
	(0.0263)	(0.0295)	(0.0142)	(0.0199)
Per Capita HH Income	0.0061	-0.0085	-0.0091***	-0.0151**
	(0.0074)	(0.0081)	(0.0032)	(0.0059)
Male == 1	0.0338**	-0.0305*	0.0222**	-0.0027
	(0.0162)	(0.0177)	(0.0088)	(0.0123)
Household Size	0.0034	-0.0030	-0.0014	-0.0140**
	(0.0074)	(0.0086)	(0.0040)	(0.0060)
Age	-0.0052***	0.0056***	-0.0016***	0.0037***
	(0.0009)	(0.0010)	(0.0005)	(0.0007)
Observations	4,113	4,113	4,397	4,397
Settlement size fixed effects	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes
Religion fixed effects	Yes	Yes	Yes	Yes
Pseudo R^2	0.214	0.245	0.192	0.137

Notes: The table reports the average partial effects from the estimation of a probit model, in which the dependent variables are, alternatively: a dummy equal to one for individuals answering that Ukraine should join the European Union, and zero otherwise (column 1); a dummy equal to one for individuals answering that Ukraine should join the Single Economic Space with Russia, Belarus and Kazakhstan, and zero otherwise (column 2); a dummy equal to one for individuals answering that the relationships between Ukraine and Russia should be the same as with other states, with closed borders, visas and customs, and zero otherwise (column 3); and a dummy equal to one for individuals answering that Ukraine and Russia should unite in one state, and zero otherwise (column 4). All outcome variables refer to the 2007 survey. Observations are weighted to preserve national representativeness. Standard errors, clustered at the household level, are reported in parenthesis. *** p<0.01, ** p<0.05, * p<0.1.