Attitudes to Migration and the Market for News[*]

Razi Farukh[†]   Matthias Heinz[‡]   Anna Kerkhof[§]   Heiner Schumacher[¶]

Version: August 3, 2023

Abstract

Do news outlets push overly positive or negative attitudes to migration in their coverage, or do they try to maintain a neutral and holistic perspective on the topic? To study media slant in the context of migration, we collect and code migration-related pictures that news outlets publish and – to establish a benchmark – compare them to the pictures that pro- and anti-migration ideological campaigns use in promotion materials. We find that most national news outlets in Germany adopt an attitude to migration that is closer to pro- than to anti-migration campaigns. All news outlets except one tabloid newspaper maintain their attitude to migration even when consumers become more critical of migration over time. Moreover, all news outlets use pictures with very diverse evaluations. Their position on migration largely follows their political orientation. We also use our method to compare the media slant in the context of migration between Germany, Hungary, and the US.

Keywords: News Markets, Media Slant, Polarization
JEL Classification: D83, L82, O15

1 Introduction

The recent migration waves to Europe and the US have caused significant interest in citizens' perceptions and attitudes towards migrants and the extent to which these can be changed (e.g., Tabellini 2020, Alesina et al. 2023). Migration often has positive effects on economic growth and social welfare (e.g., Foged and Peri 2016, Tabellini 2020), especially in the context of declining fertility in rich countries. However, many people exhibit negative attitudes towards migrants, for a variety of reasons and potentially due to misperceptions (Alesina et al. 2023). In many Western countries, an important consequence of migration therefore was the rise of far-right parties (e.g., Halla et al. 2017, Dustmann et al. 2018, and Steinmayr 2021). These propose policies against the integration of migrants into society and often impede the formation of stable governments.

An important factor that shapes citizens' attitudes towards migration is the market for news. Many citizens neither interact with migrants directly on a daily basis, nor do they have precise information about the economic and social consequences of migration. Instead, they receive information about events involving migrants through media. News outlets frame public policy and the discussion about migration. Indeed, the media coverage of migration affects peoples' attitudes and behaviors (e.g., Couttenier et al. 2022, Djourelova 2023). This raises the question which attitudes towards migration the market for news transmits to citizens. Does it present migration in an excessively negative tone, mostly focusing on topics such as criminality or integration problems of migrants? Or does it rather highlight the positive long-term consequences of migration or its humanitarian aspects? How does the market for news adjust its coverage of migration if negative events – like major criminal cases – change the mood of citizens?

In this paper, we address these questions and examine the coverage of migration in different markets for news. We first consider the coverage of the national news outlets in Germany during the 2015-16 migration crisis[1] and we contrast this coverage to the presentation of migration by ideological campaigns; these are political parties, publishing companies, or NGOs who advocate either pro or anti-migration policies. We therefore can evaluate whether a news outlet's reports about migration are very positive (close to the presentation by pro-migration campaigns), or very negative (close to the presentation by anti-migration campaigns), or some-

---

[1]Within a few months in this period, Germany received the largest inflow of migrants since the years after the Second World War. It absorbed the largest absolute number of refugee migrants (mostly from Syria) of all countries in the European Union: Between 2015 and 2016, more than 2.5 million migrants crossed borders to Europe and applied for an asylum in states of the European Union. More than 1.2 million migrants arrived in Germany within a couple of months between 2015 and 2016. The management of the migration inflow during this crisis polarized the country and paved the way for the rise of a right-wing party, which in 2017 became the largest opposition party in the German parliament.

where in between these extremes. In addition to the German setting, we consider the news coverage in Hungary during the 2015-16 migration crisis and in the US during the 2020-21 US-Mexico border crisis.[2]

So far, the economic literature on media slant and media bias mostly focused on news outlets' positioning in the political left-right spectrum. Nevertheless, there exist strong views on how media outlets portray the topic of migration. For the US, Alesina et al. (2023) paint a bleak picture: "[M]uch of the political debate about migration takes place in a world of misinformation about immigrants. [...] Anti-immigration parties have an incentive to maintain and even foster stereotypes, which can lead to a vicious cycle. The more people are misinformed, the more they may look for confirmation of their stereotypes in the media. The media may then have an incentive to offer information supporting these views in order to cater to their customers. For instance, immigrants who commit crimes or who free-ride on the welfare system may receive more media coverage than non-immigrants engaging in these same behaviors" (Alesina et al. 2023, page 37). Similar views are expressed by researchers from psychology and political science (e.g., Esses et al. 2013).

However, there also exists the view that media outlets portray migration in an overly positive manner. Baron (2006) proposes that news organizations have incentives to hire journalists who are willing to sacrifice wages in order to be able to push a certain world view through biased coverage. Consumers are then more skeptical of news items that are potentially biased. In line with this theory, the German media outlets were accused that their coverage of migrants during the 2015-16 migration crisis was too positive and paid too little attention to the problems for society that occur when too many migrants arrive in a country at the same time.[3] In October 2015, the majority of participants of a representative survey in Germany rejected the statement that the media reports accurately on migration.[4] Far-right parties exploited this view to stir up opposition to established media.

In order to study which of these opposing views (if any) is true, we define a measure for media slant in the context of migration, and we apply it to examine attitudes to migration in the market for news. The most common method to measure media slant in the political domain is to compare the language of news outlets with the language used by political parties in speeches and publications (e.g., Groseclose and Milyo 2005, Gentzkow and Shapiro 2010).

---

[2]During the fiscal year of 2021, there were more than 1.6 million encounters between migrants and the US border control along the US-Mexican border. This was the highest number of encounters recorded in a single fiscal year up to that point and four times larger than in the previous fiscal year. Migrants originated mostly from Mexico, Honduras, Guatemala, and El Salvador, but also from countries further away such as Ecuador, Brazil, Nicaragua, and Venezuela. A large fraction of these encounters resulted not in migration, but expulsion from the US (Gramlich and Scheller 2021).

[3]See Haller (2017) for a description of this discussion.

[4]Allensbacher Archiv, IfD-Umfrage 11049 (survey), December 2015.

We use a similar method, but rely on news pictures instead of language, for the following reasons. First, a large literature in psychology and economics documents that pictures can have persuasive effects (e.g., Graber 1990, Huddy and Gunnthorsdottir 2000, Veneti et al. 2019, Brandts et al. 2023, or Caprini 2023). In particular, pictures may influence consumers even if they do not read the news article or only the headline. Second, pictures draw a lot of attention. Indeed, we find in a survey (which we conducted with a sample of journalists) that grabbing the readers' attention is one of the most important reasons for using pictures. Third, the language of news articles is partly determined by events. For example, a national news outlet with a pro-migration attitude must report on major events, even when they involve criminal acts of migrants. However, news outlets can freely choose which, if any, pictures they wish to attach to their articles. Fourth, using pictures instead of language allows us to examine the news coverage of migration in different countries in a coherent manner.

To obtain a one-dimensional measure for media slant in the context of migration, we collect, examine, and code the pictures that the national news outlets and ideological campaigns published on the topic of migration. These pictures show very diverse motives: portraits of individual migrants, large groups of migrants, migrants as victims, or migrants involved in violent or illegal actions. We evaluate each picture by asking human coders from a representative sample how the picture would influence an observer's attitude towards migrants. By aggregating the ratings of all pictures of a news outlet, we obtain a measure for its attitude to migration. Applying the same procedure to pictures of pro- and anti-migration campaigns allows us to determine to what extent news outlets push positive or negative views on migration relative to the political extremes. While this method is fairly simple, it uncovers a number of important patterns on attitudes to migration that have not been documented so far.

Our first main result is that almost all German national news outlets adopt an attitude to migration that is closer to pro- than to anti-migration campaigns. The only exception from this pattern is a news outlet with fairly small reach. At the same time, all news outlets are significantly more critical of migration than pro-migration campaigns. Thus, neither of the two extreme views on how media report on migration receives full support according to our data. Nevertheless, we can confirm that the German news outlets' reporting style tends to be more positive than negative. Therefore, the suspicion that the German news outlets' reporting on the 2015-16 migration crisis was fairly positive contains a grain of truth.

This view can be further qualified. We find that – somewhat surprisingly – the German national news outlets keep their attitude towards migration constant over time, even after several adverse events related to migration and a change in public opinion on the topic. There is, however, one notable exception. The tabloid *Bild*, the largest newspaper in Europe (Hermann 2018), systematically altered its attitude towards migration and, roughly, followed the trend in

public sentiment. In mid-2015, it adopted the most migration-friendly attitude among all news outlets, while in mid-2016 it was one of the most migration-critical news outlets. Nevertheless, we conclude that the national news outlets' attitudes to migration are not easily changed and remain largely constant over time.

A further important qualification of our first main result is that all news outlets publish pictures with very diverse ratings. For almost all news outlet in our sample, the average rating of the most negative half of pictures is roughly comparable to that of anti-migration pictures, while the average rating of the most positive half of pictures is more positive than that of pro-migration pictures. While the news outlets' attitudes to migration differ substantially, they all expose their consumers to different aspects of the topic of migration.

Next, we find that the national news outlets' attitude to migration largely follows their political orientation: Left-leaning news outlets on average report in a more positive manner on migration than right-leaning news outlets. Our picture ratings can be compared directly to a measure for political media slant from Garz et al. (2020), which is based on a text-based method. We find a high correlation between these two measures.

The second main result is an international comparison of media slant in the context of migration. To the best of our knowledge, such a comparison is new in the literature. We collect and code news pictures on migration from the major news outlets in Hungary and the US. Hungary is led by a right-wing government since 2010 and implemented severe measures as well as public harassment against migrants, especially during the 2015-16 migration crisis when many migrants passed through the country on their way to Northern Europe. Its news market is infamous for the government's interference in media outlets, e.g., through the allocation of advertising funds (Szeidl and Szucs 2021). Meanwhile, the US market for news has been subject of a lot of research in economics and political science. It is well-known for its polarization in politics and society (Newman et al. 2022). We examine to what extent the circumstances in these two countries are reflected in the news markets' attitudes to migration.

For the case of Hungary, we indeed find that the media coverage of the 2015-16 migration crisis is significantly more negative than in Germany. Almost all news outlets in the Hungarian sample adopt an attitude to migration that is closer to anti- than to pro-migration campaigns. The Hungarian market for news therefore seems to be more in line with the description of Alesina et al. (2023) from above. For the case of the US, we find relatively large degrees of polarization between the major news outlets. Specifically, the difference in attitude to migration between the most migration-friendly news outlet (*New York Times*) and the most migration-critical news outlet (*FOX News*) in our sample is much larger than between the major news outlets in Germany. Nevertheless, according to our data, the news outlets' attitudes to migration in the US market for news are similar to those in the German market for news.

Related Literature. The formal basis of our approach to studying media slant in the context of migration is the market model of Mullainathan and Shleifer (2005). They examine how media companies choose their location (media slant) on a Hotelling street which may represent, for example, political orientation. The interpretation of our results follows their model of horizontal product differentiation.

We mostly contribute to the empirical literature on media bias and media slant, see Groeling (2013), Puglisi and Snyder (2015a), and Gentzkow et al. (2015) for comprehensive reviews. This literature focuses on media slant in politics, e.g., whether the news outlets in a given country are left- or right-leaning. Groseclose and Milyo (2005), Ho and Quinn (2008), Gentzkow and Shapiro (2010), and Puglisi and Snyder (2015b) provide evidence for media slant in the US, while Garz et al. (2020) and Freitag et al. (2021) study the German market for news. Prat (2018) derives from data on media consumption an upper bound on the potential of media outlets to change voters' decisions. Our first main result is somewhat reminiscent of the main finding in Groseclose and Milyo (2005). They measure how many times news outlets and members of Congress cite the output from political organizations (think tanks and policy groups), and then compare citations between news outlets and politicians. They find that the US news media exhibit a significant slant to the left. Analogously, we find that almost all national news outlet in Germany adopt an attitude to migration that is closer to pro- than to anti-migration campaigns.

Within the economics literature, only Ash et al. (2022) and Caprini (2023) use pictures to evaluate news media content. Ash et al. (2022) study the presence of stereotypes, i.e., whether certain identity groups are under- or over-represented in the news coverage of the *New York Times* and *FOX News*. Indeed, they find that men and whites are over-represented while women and Hispanics are under-represented relative to their population share. Caprini (2023) examines polarization through news pictures in the US news market and shows that news pictures can impact on political attitudes. Outside economics, there is a small literature in political sciences that uses pictures to describe political positions. For example, Hehman, et al. (2012) and Peng (2018) analyze how US presidents or presidential candidates are displayed in news outlets. They establish that the extent to which presidents or candidates are displayed favorably or unfavorably on pictures depends on a news outlet's political orientation.

Finally, our paper also complements a growing literature on attitudes to migration. Bansak et al. (2016) conduct a large-scale survey experiment to study which personal characteristics of refugee migrants influence respondents' willingness to grant asylum. Refugee migrants with higher employability or severe vulnerabilities receive the most support. Alesina et al. (2023) conduct a large-scale survey experiment to measure how natives in the US perceive migrants. They detect a number of misperceptions. For example, the number of migrants

is greatly overestimated by respondents. Overall, respondents hold fairly pessimistic views towards migrants, and support for redistribution decreases with the share of migrants within a region. Cotofan et al. (2022) show that a person exhibits more negative attitudes to migration if she grew up during bad macroeconomic conditions. Couttenier et al. (2022) demonstrate that increased news coverage of migrant criminality raised the support for a minaret ban in the 2009 Swiss minaret ban referendum. Djourelova (2023) employs text analysis techniques to show that the use of slanted language (i.e., the term "illegal immigrant") in media outlets affects people's attitudes to migration in the US. Our paper examines the attitudes to migration that are pushed by the national news outlets.

The rest of the paper is organized as follows. Section 2 sets the stage for our analysis and presents the results from a survey with journalists on how news outlets select pictures for their news coverage. In Section 3, we describe our main datasets from Germany. In Section 4, we study (for the German case) media slant in the context of migration. In Section 5, we conduct an international comparison of media slant in the context of migration between the media markets in Germany, Hungary, and the US. Finally, Section 6 concludes. The appendix contains instructions, materials, and additional analyses.

2 News Coverage Survey

In order to get some first-hand information on how news pictures are selected and how much discretion news outlets have in their news coverage, we conducted an online survey with journalists. The survey is structured in three parts. In the first part, we ask about the process of picture selection: Who chooses the pictures that complement a news article (e.g., journalists, editors) and from which set are these pictures chosen? The second part elicits to what extent news outlets and journalists can freely choose the content of news articles. Finally, the last part of the survey ask about the motives in the selection of news pictures. All questions and results are presented in Appendix A.1.

We invited alumni from the *Cologne School of Journalism* (*Kölner Journalistenschule*), the leading German private college for journalism, with a focus on politics and economics. In total, 66 journalists participated in the survey. Around 44 percent of our participants are female. About 50 percent of them report to be working for national news outlets; 25 percent are working for local news outlets, magazines, private or public service broadcasting, respectively; and 18 percent work for weekly news outlets (participants could select multiple options). Around half of our participants consider journalism as their main occupation, the remaining participants as a side or occasional job. On average, they have 6.7 years of experience in journalism.

The main results from the survey are as follows. First, news pictures are selected both by journalists and by image editors; each party chooses roughly 50 percent of the pictures. On average, around ten news pictures are considered for a given news article before a choice is made. Next, according to our participants, news outlets can freely choose the news pictures they would like to publish. The corresponding score for pictures on politics, economics, and society is on average 7.8 points (sd = 2.47) on a scale from 0 to 10, where 0 means no discretion at all and 10 maximal discretion. For pictures on migration, this score is on average 8.0 points (sd = 2.24). Individual journalists seem to have slightly less discretion than news outlets. Thus, the decision authority seems to reside mainly on the news outlet level.

To examine the motives for picture selection, we ask to what extent participants agree on a scale from 0 to 10 (where 0 means no agreement at all and 10 maximal agreement) that pictures are selected in such a way that (a) they reflect the main theme of the report, (b) they reflect the key messages of the report, (c) they reflect the mood and emotions that a report should arouse in the reader, (d) they support the political orientation of the news outlet, (e) they objectively reflect the event, (f) they draw the readers' attention to the report, or (g) the selection of pictures does not follow any of the above criteria.[5] We are especially interested in how much participants agree with statement (d), which asks about the motivation for political media slant through pictures. Figure 1 provides an overview of the results, separately for pictures on politics, economics, and society, as well as pictures on the topic of migration.

The most important selection criteria for a picture are that it reflects the main theme of the report and that it draws the readers' attention to the report. Interestingly, for pictures on migration, grabbing the readers' attention is the most important motive to select a picture.

According to our respondents, support of the political orientation of the news outlet is somewhat less important for the picture selection. However, there is a significant difference in the motives for picture selection between the topic of migration and politics, economics, and society. Support of political orientation is significantly more important for the topic of migration. The difference is statistically significant (two-sided t-test, p-value < 0.001). For pictures on migration, support of political orientation is roughly as important as an objective representation of the event. We therefore conclude that a news outlet's attitude to migration is likely to be reflected in its selection of news pictures. In the rest of the paper, we exploit this result.

---

[5]We chose these categories after extensive discussions with various journalists.
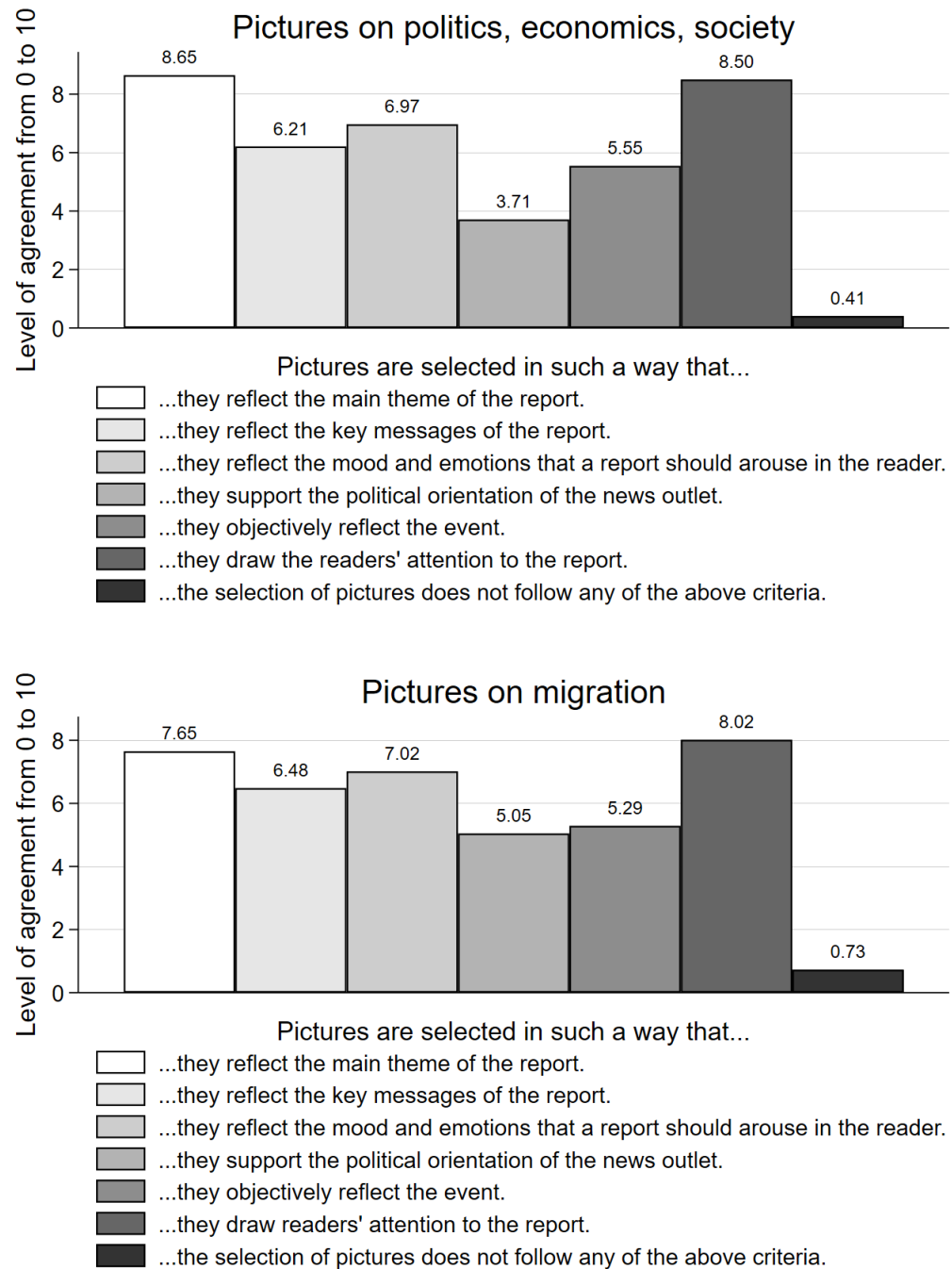
Figure 1: Motives for Picture Selection by News Outlets

3 Data

In this and the next section, we examine the media slant in the context of migration in the German market for news. The cases of Hungary and the US will be considered in Section 5. For the German case, we evaluate the coverage of migration in the national newspapers from April 2015 to September 2016. These news outlets are *Junge Welt* (*JW*), *Tageszeitung* (*TAZ*), *Sueddeutsche Zeitung* (*SZ*), *Bild-Zeitung* (*Bild*), *Frankfurter Allgemeine Zeitung* (*FAZ*), *Die Welt* (*Welt*), and *Junge Freiheit* (*JF*), ordered by political orientation from left- to right-leaning (henceforth, we use the abbreviation in brackets). To evaluate the content of these news outlets, we collect the following datasets.

3.1 Dataset A: Pictures on Migration from National News Outlets

For each news outlet, we hand-collected all pictures from news stories related to migration and the 2015-16 migration crisis that were published in its print version. These are typically also used in the news outlet's online content. In total, we collected 2,600 pictures from news outlets: 223 from *JW*, 399 from *TAZ*, 695 from *SZ*, 410 from *Bild*, 310 from *FAZ*, 416 from *Welt*, and 147 from *JF*. For each picture, we manually elicited several measures that capture its content: the gender composition of migrants, the number of migrants, and the topic of the picture. Regarding gender composition, we distinguish between males, females, and children.[6] Regarding the number of migrants, we classify a picture according to whether it shows one person, a small group (2 to 4 individuals), an intermediate group (5 to 14 individuals), a large group (15 to 24 individuals), or a very large group (25 or more individuals).[7] Regarding the topic, we group pictures according to the following contents: sea/vessel (migrants on a vessel crossing the sea), land route (migrants on their journey or at a boarder control), asylum homes (migrants in a home for asylum seekers), integration (migrants in the context of work and education), new life (migrants at social or cultural events), security issues (migrants in the context of security and criminal acts), socio-economic challenges (overloading of social and economic systems), portraits, and other topics (pictures that do not fall in one of the other categories).

---

[6]We define children as individuals of twelve years or less, following a conservative age threshold used by the Federal Office for Migration and Refugees in Germany. Whether a person on a picture is a child or not was determined via sense of proportion by several research assistants.

[7]A similar classification in the context of migration has been adopted by Zhang and Hellmueller (2017).

3.2 Dataset B: Pictures on Migration from Ideological Campaigns

The second dataset is a collection of pictures on migration that ideological campaigns use to advertise their cause. We define an ideological campaign (in the context of migration) as a campaign that explicitly either supports or intends to reduce the acceptance of migrants in Germany. To define the set of these campaigns, we apply three criteria: First, a campaign's website is maintained on a regular basis and shows pictures of migrants. Second, a campaign explicitly expresses its views and attitudes towards migration. Third, the 2015-16 migration crisis is an important event for the campaign's agenda.

Following these three criteria, we examined a vast set of candidate campaigns (political parties, media companies with extreme positions, citizen associations, and non-government organizations). In Appendix A.2, we provide a comprehensive documentation of this process. We ended up with eight ideological campaigns, four pro- and four anti-migration campaigns. Each side contains one major political party in Germany: The *Green Party* on the pro-migration side and the *Alternative für Deutschland* (*AfD*) on the anti-migration side.[8] In the process of collecting pictures, we considered the websites, news articles, publications, and social media accounts of these campaigns. In total, we collected 783 pictures, 397 from pro-migration campaigns and 386 from anti-migration campaigns.

3.3 Dataset C: Evaluation of Pictures through Human Coders

For all pictures in Dataset A and Dataset B, we obtained ratings on their potential effects on an observer's attitude to migration. These ratings stem from a representative survey with 4,000 subjects in Germany. The survey was conducted in collaboration with *Forsa*, one of the leading German polling organizations in Germany. We conducted the survey at two different points in time. Since there are no significant differences in the main outcome variables between the two survey waves, we combine the data from both waves in one dataset; see Appendix A.3 and Appendix A.4 for details.

At the beginning of the survey, we inform subjects that they are going to see pictures on the topic of migration. We then show to each subject a set of randomly chosen pictures from various news outlets and campaigns. For each picture, we ask subjects the following question: *How does this picture influence an observer's attitude towards economic migrants?* The answer has to be provided on a scale from -5 (very negative, against acceptance of economic migrants) to +5 (very positive, in favor of acceptance of economic migrants). Additionally, subjects could choose the option "do not know/no indication", but this option was only chosen

---

[8]Additionally, we collected the pictures from *Caritas International*, *Medico International*, and *Pro Asyl* on the pro-migration side, and from *Abakus.News*, *Compact Magazin*, and *Tichys Einblick* on the anti-migration side.

in very few instances. The reference to economic migrants (instead of refugees) is important since a large majority would support helping refugees on a temporary basis. Migration out of economic reasons is much more controversial and therefore the main focus of this paper. We obtained around 20 individual ratings for every picture. In the following, a picture's rating is defined as the average value of its individual ratings.

We chose an indirect method since asking indirectly about potential effects or choices has been proven an effective tool to collect data on sensitive issues such as voting behavior (e.g., Galesic et al. 2018). An alternative procedure to obtain picture ratings would be to directly measure their influence on subjects' choices or opinions through a survey experiment. However, this method would be much more expensive as one would need many more subjects in order to obtain ratings for a sizable number of pictures.

3.4 Dataset D: Media Use Survey

To obtain a measure for the reach of our news outlets, we additionally conducted a media use survey with a subset of subjects from the *Forsa* survey. The media use survey took place after the picture evaluation. In the survey, we ask each subject about the media sources he or she uses to obtain information about the latest events in politics, business/economics, and society. We show an extensive list of media sources – TV stations, newspapers, magazines, social media – and additionally ask for the radio stations and podcasts that subjects may consider on a regular basis; subjects can indicate multiple sources. The reach of the national news outlets in our sample (i.e., the percentage of subjects who indicate that they consider a particular news outlet for news consumption) is as follows: *JW* 0.6 percent, *TAZ* 9.6 percent, *SZ* 20.5 percent, *Bild* 13.7 percent, *FAZ* 15.9 percent, *Welt* 16.6 percent, and *JF* 1.0 percent. We also ask subjects about their basic demographics as well as their political preferences. Finally, we ask them to predict the mean ratings of the pictures used by ideological campaigns and news outlets. At a later stage, these predictions will facilitate the interpretation of our results.

3.5 Determinants of Picture Ratings

We expected that the news pictures in our sample receive varying ratings. Specifically, we expected that a higher share of women and children as well as smaller group sizes lead to more positive ratings. In the following, we motivate these hypotheses.

Gender Composition. We anticipated that the gender composition on pictures matters for their rating since females are seen as more deserving of (humanitarian) help than males, raise less controversy about their migration motives, and are seen as less threatening for security.

First, several papers show that females (and children) are seen as more deserving of help than males. Bansak et al. (2016) show in a conjoint experiment, that people are more willing to accept female than male asylum seekers. Similarly, Frey et al. (2011) show that people are more willing to help women and children in the context of the 1912 RMS Titanic disaster. Cappelen et al. (2023) conduct an experiment in which impartial spectators can make transfers from a more to a less productive worker. They show that this transfer is 15 percent lower if the less productive worker is male. Overall, Cappelen et al. (2023) argue that males falling behind are judged more critically by society than females falling behind.

Next, females are also seen as having better motives to migrate. A message that right-wing politicians frequently pushed during the 2015-16 migration crisis is that individual men are not migrating to avoid persecution, but only for economic reasons; otherwise, they would not leave their family behind.[9] Barrera et al. (2020) show that this narrative is effective in increasing support for right-wing populist parties that wish to restrict migration.

Finally, male migrants are often perceived as a greater threat to security than female migrants. Several psychological studies show that gender-specific stimuli affect beliefs and behavioral responses. Specifically, Becker et al. (2007) find that anger is on average more often correctly identified at a male's face, while happiness is easier to identify on a female's face. Navarrete et al. (2009) show that fear reduction takes longer when participants are exposed to facial male pictures, suggesting that gender categorization may play a key role in moderating stranger anxiety.

Number of Migrants. Next, we expected that a picture receives a lower rating when it shows a larger number of migrants. Several studies show that large numbers of victims elicit less altruism than individuals (or small groups). Kogut and Ritov (2005) find that contributions for a single needy individual exceed those for a group of eight needy individuals.[10] Further, in the context of large-scale human disasters, Slovic (2007) argues that "psychic numbing" occurs when a large number of people suffers. It is relatively easy to elicit compassion when there is an identified individual victim "with a name and a face" (Slovic 2007, p. 86). However, humans experience less affection when disasters (like genocide) occur and the number of victims is large. Finally, pictures of large numbers of migrants may elicit fears of security threats and loss of cultural identity, see, e.g., Fitzgerald et al. (2012) and Bloom et al. (2015).

---

[9]For example, Marine Le Pen stated during the 2017 French election campaign that "[a] very small minority of them are really political refugees [...]. I have seen the pictures of illegal immigrants coming down, who were brought to Germany, to Hungary, etc... Well, on these pictures there are 99 percent of men [...]. Men who leave their country leaving their families behind, it is not to flee persecution but of course for financial reasons" (see Barrera et al. 2020, page 5).

[10]Andreoni (2007) studies how donations depend on the number of receivers. He finds that when the number of receivers doubles, the value of a donation to the giver increases by a factor less than two. Schumacher et al. (2017) even find that individuals and groups receive roughly the same weight in the decider's utility function.

4   Media Slant in the Context of Migration

In this section, we examine how the national news outlets in Germany position themselves on the topic of migration. Is their coverage of migrants excessively negative or positive? How polarized is the German market for news on this topic? In Subsection 4.1, we describe the picture ratings and what determines them, as well as the positions of the ideological campaigns. In Subsection 4.2, we present our main results on the media slant in the context of migration. In Subsection 4.3, we examine whether news outlets change their position on migration in response to news events or a shift in public sentiment. In Subsection 4.4, we study to what extent news outlets show pictures with diverse ratings. Finally, in Subsection 4.5, we relate migration media slant to political media slant.

4.1   Picture Ratings and Ideological Campaigns

We first provide an overview of the picture ratings from the *Forsa* survey. Figure 2 below shows the distribution over the ratings of all pictures in our sample. The most negative rating is -4.20 and the most positive rating is 3.62, with the 5th percentile at -2.21 and the 95th percentile at 1.95. The mean rating is -0.10 ($sd = 1.26$). In Appendix A.5, we provide examples of pictures with very negative ratings around -3.5, pictures with intermediate ratings around zero, and pictures with very positive ratings around 3.0. Additionally, Figure A1 in the appendix shows the distribution over ratings separately for each news outlet as well as for the pro- and anti-migration campaigns.
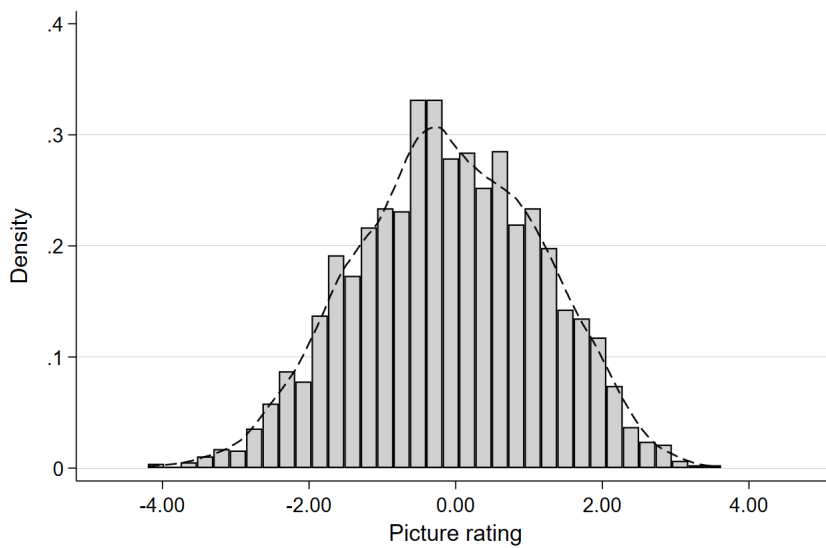

Figure 2: Distribution over News Pictures' Ratings

Unsurprisingly, pro- and anti-migration campaigns show fairly different pictures. The average rating of the pictures shown by pro-migration campaigns is 0.42 (sd = 1.07), while the average rating of the pictures from anti-migration campaigns is −0.99 (sd = 1.20). The difference of 1.41 units between pro- and anti-migration campaigns is statistically significant (one-sided t-test, p-value < 0.001) and can be interpreted as the length of our "Hotelling street."

To provide some context, we examine which factors are associated with the picture ratings in the linear regression

$$\text{Rating}_i = \beta_0 + \beta_{\text{gender}}\text{ShareNonMales}_i + \beta_{\text{group}}\text{GroupSize}_i + \beta_{topic}\text{Topic}_i + \beta_{outlet}\text{Outlet}_i + \varepsilon_i, \quad (1)$$

where Rating_i is the rating of picture i, ShareNonMales_i is the share of women and children shown on picture i, GroupSize_i a vector of group size dummies, Topic_i a vector of topic dummies (see Subsection 3.1 for details on group sizes and topics), and Outlet_i is a vector of news outlet and campaign dummies that controls for news outlet specific differences in picture ratings.[11] The OLS estimates are shown in Table A5 in the appendix. As expected, all three factors – ShareNonMales_i, GroupSize_i, and Topic_i – are significantly associated with the rating of a picture. The gender coefficient in Column (5) of Table A5 indicates that a 10 percentage point increase in the share of women and children increases a picture's rating by 0.11 units on the Likert Scale on average, which corresponds to almost one standard deviation in the dependent variable. Group size has a negative effect on the rating of a picture. If a picture shows a very large group (25 or more individuals) instead of a single individual, its rating decreases on average by about one unit on the Likert Scale. Finally, pictures that display the negative aspects of migration (socio-economic challenges, security issues) obtain more negative ratings, while pictures that display integration topics obtain more positive ratings.

4.2 Positions of News Outlets

We examine how the national news outlets position themselves on the topic of migration. Figure 3 below shows the average ratings of the news outlets in our sample as well as the average ratings of the pro- and anti-migration campaigns. It also indicates for each average rating the standard deviation in brackets and the differences between average ratings of news outlets or ideological campaigns that are significant at least on the 10-percent level. The dashed line indicates the midpoint between the average rating of pro- and anti-migration campaigns (this value equals −0.285).

---

[11]It is possible that pictures with similar gender composition, group size, and topic receive on average more negative ratings for one particular news outlet than for another news outlet (because of other picture features). News outlet and campaign dummies control for such inherent differences.
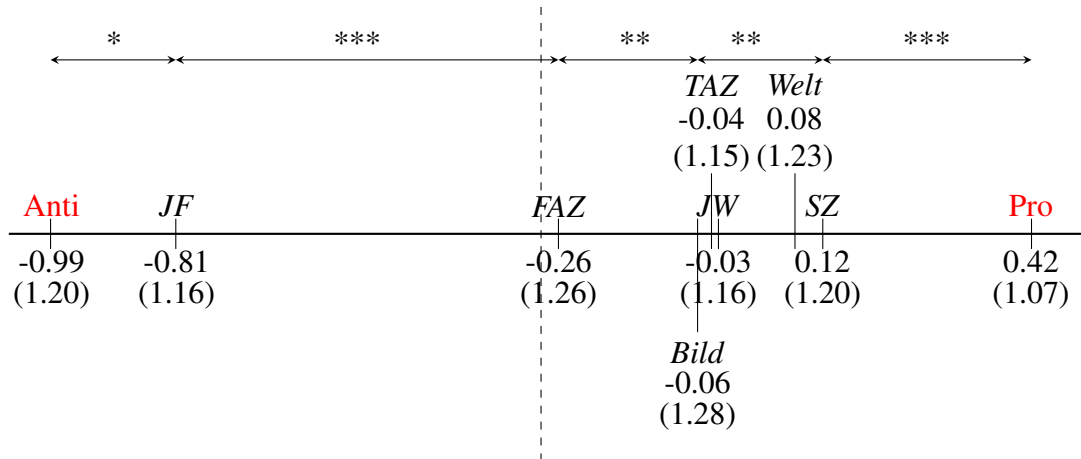
Figure 3: Attitudes to migration in the German market for news. The dashed line represents the midpoint between pro- and anti-migration campaigns. Stars indicate significant differences according to one-sided t-tests; significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. The differences between *Bild* and *TAZ*, *TAZ* and *JW*, *JW* and *Welt*, as well as *Welt* and *SZ* are not statistically significant.

We observe four important patterns. First, the positions of all German news outlets are significantly different from those of the ideological campaigns. The right-leaning *JF* exhibits the most negative attitude to migration with an average rating of −0.81. Nevertheless, its pictures are significantly more positive than those published by anti-migration campaigns (one-sided t-test, *p*-value = 0.066).[12] Also all other news outlets exhibit average ratings that are significantly higher than those of anti-migration campaigns (one-sided t-tests, *p*-values < 0.001). Moreover, the average ratings of all news outlets in our sample are significantly smaller than those of the pro-migration campaigns (one-sided t-tests, *p*-values < 0.001). This result is important as it shows that, overall, the market for news does not display an overly positive or negative picture of migration.

Second, almost all news outlets in the sample are located on the right of the midpoint value of our Hotelling street, indicating that their attitude towards migration tends to be closer to pro- than to anti-migration campaigns. The difference between these news outlets' positions and the midpoint is statistically significant, except for the *FAZ*. This result suggests that the coverage of migration during the 2015-16 migration crisis was slightly more positive than negative. The *JF* is the only news outlet in our sample which adopts an attitude to migration which is closer to that of anti- than to pro-migration campaigns. Recall, however, that this news outlet has a fairly small reach: Only around 1 percent of our survey participants indicate that they consider the *JF* for news consumption.

Third, the news outlets partially exhibit differentiated ratings and hence differ in their atti-

---

[12]We conduct a one-sided t-test here, because we want to test the null hypothesis that the position of the *JF* is equal to the position of the anti-migration campaigns.

tudes towards migration. The news outlet with the most positive attitude towards migration is the *SZ* with an average rating of 0.12, while the most negative news outlet is the *JF* with an average rating of −0.81; the difference is highly significant (one-sided t-test, *p*-value < 0.001).[13] There is a cluster of news outlets with very similar average ratings around zero: *Bild*, *TAZ*, *JW*, and *Welt*. In particular, the differences between *Bild* and *TAZ*, *TAZ* and *JW*, *JW* and *Welt*, as well as *Welt* and *SZ* are not statistically significant. All other differences are significant at least on the 10-percent level.[14]

Fourth, we obtain an intermediate degree of polarization in the market for news. The distance between pro- and anti-migration campaigns is 1.41 units, while the distance between the news outlet with most negative and the news outlet with the most positive attitude towards migration is 0.93 units. Therefore, the news outlets in our sample use 66 percent of the maximal possible degree of differentiation. As indicated above, the differences between the average picture ratings of news outlets and ideological campaigns are significant. Hence, the news outlets in our sample are not only less polarized than the ideological campaigns, but also more modest in their attitude to migration. Further, the degree of polarization is mostly driven by the *JF*, which is a fairly small relative to the other news outlets in our sample. If we focus on the large national news outlets in our sample (those with a reach of at least 10 percent), then only 27 percent of the maximal possible degree of differentiation is exploited.

4.3 Changes in Positions and Public Sentiment

So far, we adopted a static perspective on media slant in the context of migration. This may mask significant changes in the news outlets' attitudes to migration over time. For example, they may adjust their coverage on migration in response to news events or to a change in public sentiment. In this subsection, we therefore examine to what extent the national news outlets' attitude to migration is stable over time.

In the course of the 2015-16 migration crisis, the public opinion on migration in Germany worsened significantly. Potential reasons for this may have been several adverse events related

---

[13]Again, we conduct a one-sided t-test, because we want to test the null hypothesis that the position of the *SZ* is equal to the position of the *JF*, which is to the left of the *SZ*.

[14]These results are also corroborated in the picture statistics. Figure A2 in the appendix shows the news outlets' and ideological campaigns' positions according to the share of non-males and the group size, respectively. The share of women and children shown on the news outlets' pictures is significantly smaller than on the pro-migration campaign pictures, and – with the exception of the right-leaning *JF* – significantly larger than on the anti-migration campaigns pictures. The average group size shown on these pictures is slightly larger than on the pictures of pro-migration campaigns, and substantially smaller than on the anti-migration campaigns. In terms of picture topics, both news outlets and ideological campaigns show a wide variety of topics and there does not seem to be a general pattern.

to migration[15], the very large number of migrants that had to be taken care of, organizational problems, as well as the consequences of mass migration for society and public finance. Table A6 in the appendix provides an overview of how preferences on migration issues changed over time according to opinion polls. For the question "Do you think it is appropriate that Germany takes in refugees who have fled because they have no work and no livelihood in their home country?" the share of participants who agree with this statement drops from 40 percent in January 2015 to 25 percent in February 2016. For the question "In general, do you think that Germany could welcome more asylum seekers or do you think that the number is already too high?" the share of participants indicating "too high" as an answer increased from 43 percent in September 2015 to 55 percent in November 2015, and further to 62 percent in January 2016. Accordingly, also political preferences changed substantially. Table A7 in the appendix presents the polling numbers for the largest political parties in Germany. We observe a substantial shift from the *CDU/CSU* (the party in government at that time, with *Angela Merkel* as chancellor) towards the right-wing party *AfD* during the 2015-16 migration crisis. The vote share of the *CDU/CSU* decreased from 41 to 33 percent, while the vote share of the *AfD* increased from 4 to 14 percent.

To study how news outlets adjust their coverage of migration in response to these developments, we compute for each news outlet the average rating in each quarter from Q2/2015 to Q3/2016.[16] Figure 4 shows the evolution in the average ratings over time. In order to facilitate the comparison between news outlets, we normalize each news outlet's attitude to migration in the baseline quarter Q2/2015 (when public option on migration was fairly positive) to zero. Figure 4 therefore displays each news outlet's absolute change in the average rating over time.

We can observe two patterns from Figure 4. First, all news outlets in our sample except one do not systematically change their coverage over time. The absolute change in their average rating relative to Q2/2015 oscillates between +0.5 and −0.5. Second, this pattern does not hold for the tabloid newspaper *Bild*. The average rating of this news outlet drops by almost 1.25 units from Q2/2015 to Q2/2016 and then roughly remains at this level. Recall that the difference in attitude to migration between pro- and anti-migration campaigns is 1.41 units. Hence, *Bild* essentially moves from a strong pro-migration to an anti-migration position: from 0.74 in Q2/2015 to −0.48 in Q3/2016.

---

[15]The most significant of these events outside of Germany were the November 2015 Paris attacks in which 130 civilians were killed in a mass shooting. They were featured extensively in German news media. Possibly the most important turning point regarding the public opinion on migration in Germany were the events around New Year's Eve 2015-16: In Cologne and other German cities, hundreds of women were sexually assaulted by groups of mainly refugee migrants at large public spaces. This event became quickly one of the most relevant topics in German news media. Anti-migration campaigns leveraged it extensively to highlight the negative aspects of migration.

[16]Table A8 in the appendix shows the number of pictures per news outlet and quarter.
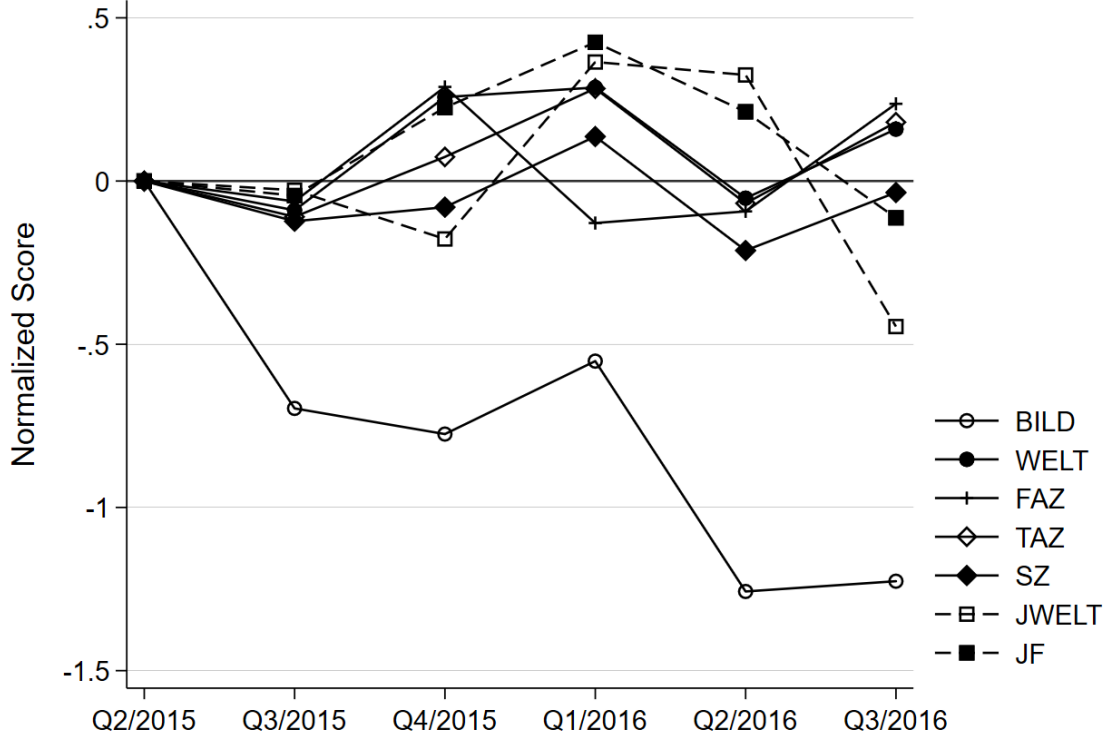
Figure 4: Changes in Attitudes to Migration in the German Market for News

To examine which changes are statistically significant, we regress for each news outlet the rating of picture i on a series of quarter dummies, using Q2/2015 as omitted category:

$$\text{Rating}_{it} = \beta_0 + \sum_{t=2}^{6} \beta_{1,t} \text{Quarter}_t + \varepsilon_{it}. \tag{2}$$

The coefficient $\beta_{1,t}$ indicates the absolute change in a news outlet's attitude between quarter t and the baseline quarter Q2/2015. Table A9 in the appendix shows the results. The OLS estimates confirm that only *Bild* adopted a significantly more critical coverage of migration. The coefficients of all quarter dummies (except for Q1/2016) are statistically significant at the 5-percent or at the 1-percent level. The corresponding change in attitude to migration is substantial, e.g., 1.23 units in Q3/2016 relative to the baseline quarter. All other news outlets seem to adopt a slightly, but not significantly more negative coverage of migration in later quarters.[17]

---

[17]Additionally, Table A9 shows the regression results when we compare attitudes to migration before and after New Year's Eve 2015-16. We observe a drop in *Bild*'s attitude to migration after this event that is significant at the 1-percent level. Two other news outlets, *JW* and *TAZ*, seem to adopt a slightly more positive attitude to migration after the event on average, but this change is significant only at the 10-percent level.

The evolution in *Bild*'s attitude to migration is remarkable. In our media use survey (Dataset D), subjects predicted that, within the news outlets in our sample, *Bild* has the most negative attitude towards migration (as reflected by the average picture rating). Also the difference between predicted and actual average rating is largest for *Bild* among the major news outlets in our sample; see Appendix A.6 for detailed results. One explanation could be that *Bild*'s fairly negative attitude to migration at the end of our observational period is what our subjects have in mind when predicting the news outlet's average rating.

However, at the beginning of the migration crisis, *Bild* deliberately emphasized the humanitarian aspects of this event[18] and adopted an attitude to migration that is close to that of pro-migration campaigns. It only later changed its attitude, probably in order not to lose too many customers who expected more critical reporting. The other news outlets largely maintain constant attitudes to migration, which is reflected by relatively small differences between predicted and average ratings.

Does *Bild* adopt a more critical coverage of migration in response to the change in sentiment in the population? Or is the change in its coverage driving the shift in people's attitudes towards migration? We can present some suggestive evidence that *Bild* is indeed reacting to the change in sentiment in the population. We use a linear regression to examine how government support (the joint vote share of the *CDU/CSU* and the *SPD*, the two parties in government during the migration crisis) in the months $t-1$ and $t+1$ is correlated with our dependent variable Rating$_i$ in month t.[19] The idea is that vote shares for the government parties can be interpreted as approval rates for migration. If news outlets follow the peoples' attitudes, government support in month $t-1$ should be significantly positively correlated to their average rating in month t. However, if news coverage predominantly drives peoples' attitudes, we should see a significant positive correlation between the picture ratings in month t and government support in month $t+1$.

Table A10 in the appendix shows the results. For *Bild*, the estimate for government support in month $t-1$ is positive and statistically significant. A 10-percentage point decrease in vote share for the migration-friendly government parties translates into a 0.70 unit decrease in the average rating, which corresponds to 0.55 standard deviations in the dependent variable. This finding is consistent with the theory that *Bild* follows the consumers' attitudes to migration.

---

[18]The chief editor of *Bild* at that time (Julian Reichelt) stated in 2016 in an interview with German public media that "[t]he reason for this was that we saw from personal experience – as reporters or in our private lives – that we were dealing with people who actually had no other choice [...] And our feeling was that not helping these people and closing the door on them is in no way compatible with all the values that we stand for [...]" (own translation from German); see www.ndr.de/fernsehen/sendungen/zapp/medienpolitik/Es-ist-unsere-Pflicht-Fluechtlingen-zu-helfen,reichelt112.html (March 2023).

[19]We obtain similar results when we conduct the analysis on a quarterly rather than on a monthly basis.

4.4   Within-Outlet Heterogeneity

A further notable result is that all news outlets use pictures with very diverse ratings. To illustrate this, we calculate for each news outlet the "within-outlet range", which we define as the difference between the means that the sample split creates, that is, the mean of the most positive pictures of an outlet minus the mean of the most negative pictures of the same outlet.

Table 1: Within-Outlet Range

Ideological Campaign/ News Outlet	Average Rating	Av. Rating most neg. Half	Av. Rating most pos. Half	Within-Outlet Range
Pro-migration	0.42	-0.42	1.27	1.69
JW	-0.03	-0.99	0.91	1.90
TAZ	-0.04	-0.99	0.87	1.86
SZ	0.12	-0.86	1.08	1.94
Bild	-0.06	-1.12	0.94	2.06
FAZ	-0.26	-1.29	0.74	1.96
Welt	0.08	-0.94	1.06	2.03
JF	-0.81	-1.75	0.11	1.86
Anti-migration	-0.99	-1.95	-0.02	1.93

Notes: The within-outlet range corresponds to the difference between the average rating of the most positive half of pictures and the average rating of the most negative half of pictures.

Table 1 shows the results. For all news outlets, the negative half of pictures is on average rated almost as negative as (or even more negative than) the pictures of the anti-migration campaigns, which have an average rating of -0.99. The positive half of pictures is typically rated as more positive than the pictures of the pro-migration campaigns, which have an average rating of 0.42. For all news outlets, the within-outlet range is 1.86 or larger and hence exceeds the difference between pro- and anti-migration campaigns. Therefore, all news outlets provide fairly diverse perspectives on the topic of migration; see also the distribution of picture ratings for each individual news outlet in Figure A1 in the appendix.

There are several potential explanations for this finding. First, news outlets may deliberately publish a wide variety of pictures in order to provide information for consumers. However, the within-outlet range is also relatively large for the ideological campaigns (1.69 for pro-migration and 1.93 for anti-migration campaigns) which would speak against this theory. An alternative explanation is that news outlets (and ideological campaigns) wish to show pic-

tures that generate attention. Such pictures necessarily show a variety of motives, i.e., motives that express an attitude in favor or against migration. This would explain why the within-outlet range is large for both news outlets and ideological campaigns, and it would be also consistent with the results from our survey with journalists.

We think that this result is significant, for the following reason. Most theory papers on media slant such as Mullainathan and Shleifer (2005) suppose that news outlets pick one particular position on the left-right spectrum, and the presentation of our main results follows this assumption. However, it is probably impossible for news outlets to tailor all contents according to one particular position. For example, there might be news events that provide support for or that go against a specific position, yet news outlets must cover them in some way. Therefore, consumers of any major news outlet will be exposed to a range of different aspects of any given topic. Our result on the heterogeneity of news reports quantifies this process.

4.5   A Comparison of Political and Migration Media Slant

We examine whether the news outlets' attitude to migration reflects their political orientation in the left-right spectrum. For the case of Germany, Garz et al. (2020) provide a measure of political media slant for a time frame that includes our study period (January 2012 to January 2017). Their approach is similar to that of Gentzkow and Shapiro (2010). It compares the language used in the news outlets' Facebook posts to the language used by political parties. Roughly, it works as follows: First, Garz et al. (2020) identify for each political party the most characteristic terms, such as "climate crisis" for the *Green Party* and "people's sovereignty" for the *AfD*. Next, they compute an outlet-party index which indicates the similarity between the posts of news outlets and the language of each party (according to the most characteristic terms). Using an existing left-right score for each party, they then compile for each news outlet a measure of left-right media slant by multiplying the outlet-party indices with the left-right party scores. This measure takes on values between -1 (political left) and 1 (political right).

In Figure 5, we show in the upper graph our media slant measure, and in the lower graph the media slant measure from Garz et al. (2020) for the news outlets in our sample. To allow for a direct comparison of these two measures on the political left-right spectrum, we re-scale them as follows: The media slant measure from Garz et al. (2020) is multiplied by a factor of five and our media slant measure by a factor of -1 (so that a position on the right indicates a more conservative attitude).

We observe that, on the right-leaning side, *FAZ* and *JF* occupy similar positions in the political domain and in the context of migration. On the left-leaning side, there are a few differences. The *SZ* exhibits the most positive coverage of migration, but politically it is rather close to the center. The *TAZ* and *JW* exhibit more balanced coverage of migration, while

Migration Media Slant
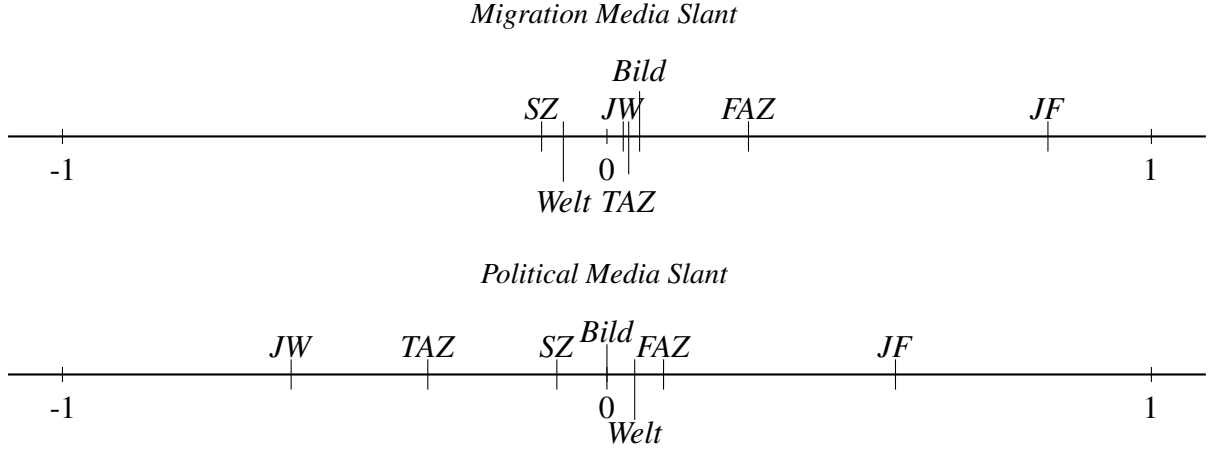

Political Media Slant

Figure 5: Comparison of media slant in the domain of migration (upper graph, based on the present study) and media slant in the political domain (lower graph, based on Garz et al. 2020).

politically they are located quite far on the left. The correlation between the two media slant measures is 0.72. Overall, we find that the news outlets in our sample adopt an attitude to migration that roughly follows their political orientation.[20]

5   An International Comparison of Migration Media Slant

In the previous sections, we examined media slant in the context of migration for Germany. An important feature of our approach is that it can be applied to compare the coverage of a given topic between different countries since news pictures from any set of (domestic or foreign) news outlets can be evaluated by the same human coders. Exploiting this feature, we consider two further news markets – Hungary and the US – and compare their news outlets' positions on migration with those in the German market for news. For Hungary, we examine the coverage of the same event as for Germany, the 2015-16 migration crisis. For the US, we consider the coverage of a different event, the 2020-21 US-Mexico border crisis. We briefly describe these two settings and our expectations regarding the media slant in the context of migration.

Since 2010, Hungary is governed by the right-wing party *Fidesz* under Viktor Orbán. During the 2015-16 migration crisis, Hungary implemented various drastic policies to reduce migration and strictly tightened its border control. The media market is infamous for the role the government plays to influence contents. Szeidl and Szucs (2022) show that the Hungarian government was able to influence media coverage through channeling advertising expenses.

---

[20]There exist two further studies that provide measures of political media slant in Germany, Dewenter et al. (2020) and Freitag et al. (2021). The correlation between their political media slant measures and our measure is positive, but somewhat smaller than the correlation with the measure from Garz et al. (2020), i.e., 0.32 in the case of Dewenter et al. (2020) and 0.12 in the case of Freitag et al. (2021). However, in both cases, the subset of news outlets for which both measures exist is fairly small (5 in both cases).

Given this influence and the government's negative narrative of migration during the 2015-16 migration crisis, we expected that the media coverage of migration during this time frame is more negative in Hungary than in Germany.

The US market for news has been studied extensively in the economics and political science literature. Currently, the large news outlets cater to polarized audiences. Indeed, the US society is fairly polarized in its views on a variety of policy issues, including migration. Alesina et al. (2020, 2023) document that *Republicans* are more pessimistic than *Democrats* regarding the educational achievements and job market performance of migrants. These two groups typically obtain information from different sources. Thus, we expected that the media coverage of migration is more polarized in the US than in Germany.

For both Hungary and the US, we compiled datasets of migration pictures published by large news outlets, and we evaluated them jointly in our *Forsa* survey. We then compare the news outlets' positions on migration and the degree of polarization in Germany, Hungary, and the US. We proceed as follows. In Subsection 5.1 and Subsection 5.2, we describe the details of the new picture datasets for Hungary and the US, respectively. In Subsection 5.3, we explain which pictures we evaluate in the *Forsa* survey. Finally, in Subsection 5.4, we conduct an international comparison of media slant using the data from all countries.

5.1   Dataset E: Pictures on Migration from Hungarian News Outlets

From CEU MicroData (2022) we obtained the news pictures published in the Hungarian news outlets during the 2015-16 migration crisis, i.e., from April 2015 to September 2016, as for the German case. The news outlets in our sample are the largest online news websites *444* (*444*), *Origo* (*Origo*), *Index* (*Index*), *24.hu* (*24.hu*), and *hvg* (*hvg*), as well as the national daily newspapers *Magyar Hírlap* (*Magyar*), *Népszabadság*[21] (*Nol*), and *Népszava* (*Nep*). The political orientation of the news outlets *444*, *hvg*, *Nol*, and *Nep* is left-leaning, *24.hu* can be classified as liberal, and *Origo*, *Index*, as well as *Magyar* are right-leaning. We first identified all news stories on the 2015-16 migration crisis by searching for a number of keywords. From this sample of news stories we downloaded all pictures showing migrants. Dataset E comprises 4,067 pictures, 131 from *444*, 530 from *Origo*, 642 from *Index*, 405 from *24.hu*, 604 from *hvg*, 448 from *Magyar*, 942 from *Nol*, and 365 from *Nep*.

---

[21]This newspaper was discontinued in October 2016.

5.2 Dataset F: Pictures on Migration from US News Outlets

Next, we collected the news pictures on the topic of migration published online in five major US-based news outlets from December 2020 to May 2021. These are *New York Times* (*NYT*), *CNN* (*CNN*), *BuzzFeedNews* (*BFN*), *FOX News* (*FOX*), and *New York Post* (*NYP*). According to the Pew Research Center, the audiences of *NYT*, *CNN*, and *BFN* are left-leaning, while the audiences of *FOX* and *NYP* are right-leaning.[22] The context of these news pictures is the 2020-21 US-Mexico border crisis. The collection procedure was as follows. We first identified all stories on migration through the search function of the news outlets' websites. Then we selected all news stories with a topic related to the US-Mexico border crisis. From this material, we downloaded all pictures that show migrants. In total, Dataset F comprises 1,194 pictures; 158 from *NYT*, 137 from *CNN*, 90 from *BFN*, 277 from *FOX*, and 532 from *NYP*.

5.3 Dataset G: Evaluation of News Pictures from Hungary and the US

We obtain ratings for all US pictures and a randomly selected sample of pictures from Hungary (all pictures from news outlets who published fewer than 490 pictures and a random sample from news outlets who published more than 490 pictures); 131 from *444*, 490 from *Origo*, 490 from *Index*, 405 from *24.hu*, 490 from *hvg*, 448 from *Magyar*, 490 from *Nol*, and 365 from *Nep*. For each picture, we obtained around 20 ratings. The evaluation took place jointly with the pictures from the German setting (news outlets and ideological campaigns), i.e., subjects may see pictures from all three countries; see Subsection 3.3 for details.

5.4 International Comparison

Figure 6 compares the distributions over the picture ratings between Germany, Hungary, and the US. Additionally, Figure 7 shows the average ratings of all news outlets in our samples, separately for each country. To provide context, each graph also shows the average ratings of the German pro- and anti-migration campaigns, and the dashed line again indicates the midpoint between these average ratings. For each average rating, the graphs indicate the standard deviation in brackets. Further, the graphs show the differences between the average ratings of news outlets or ideological campaigns that are significant at least on the 10-percent level.

---

[22]E.g.,   www.pewresearch.org/journalism/2021/04/28/biden-administration-100-days-appendix-a-grouping-outlets-by-audience-ideology-and-grouping-surveyrespondents-by-media-diet (viewed: March 2023).
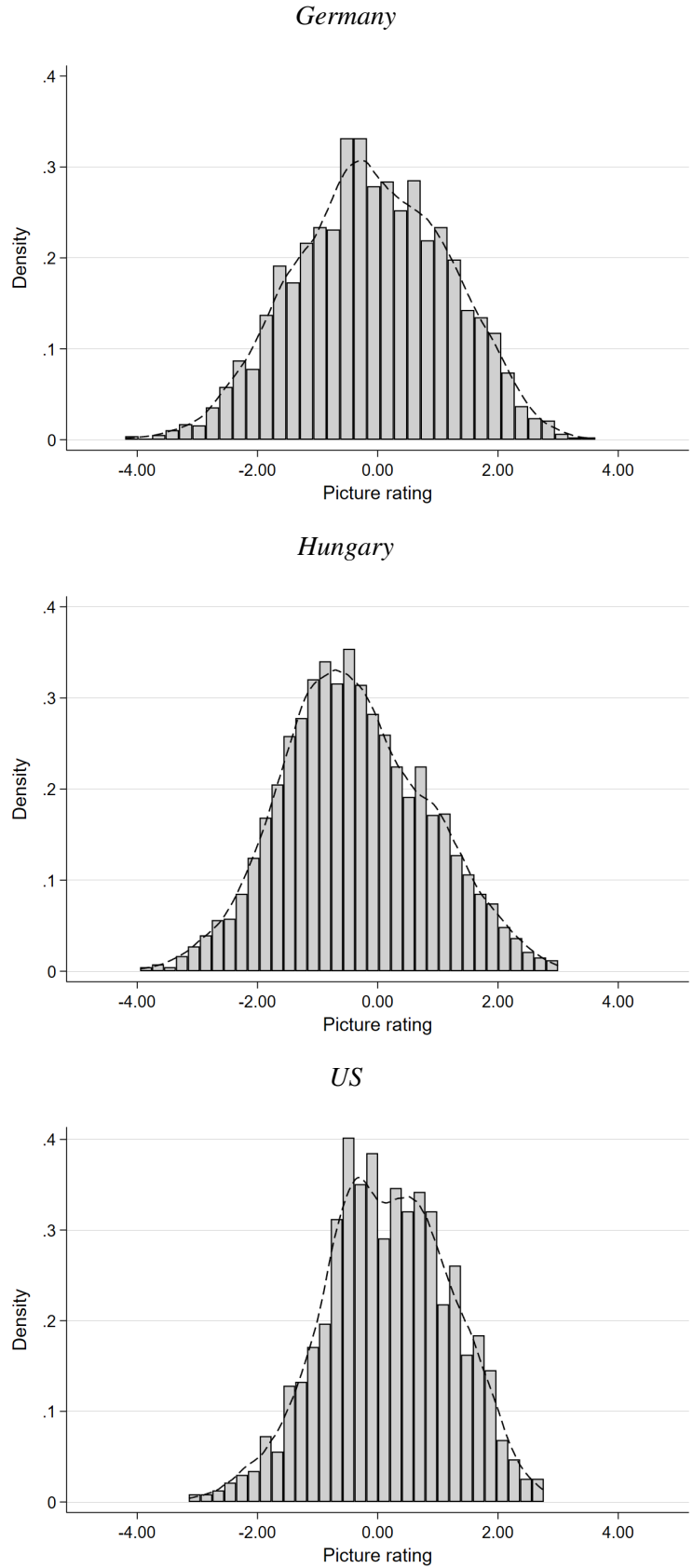
Germany

Hungary

US

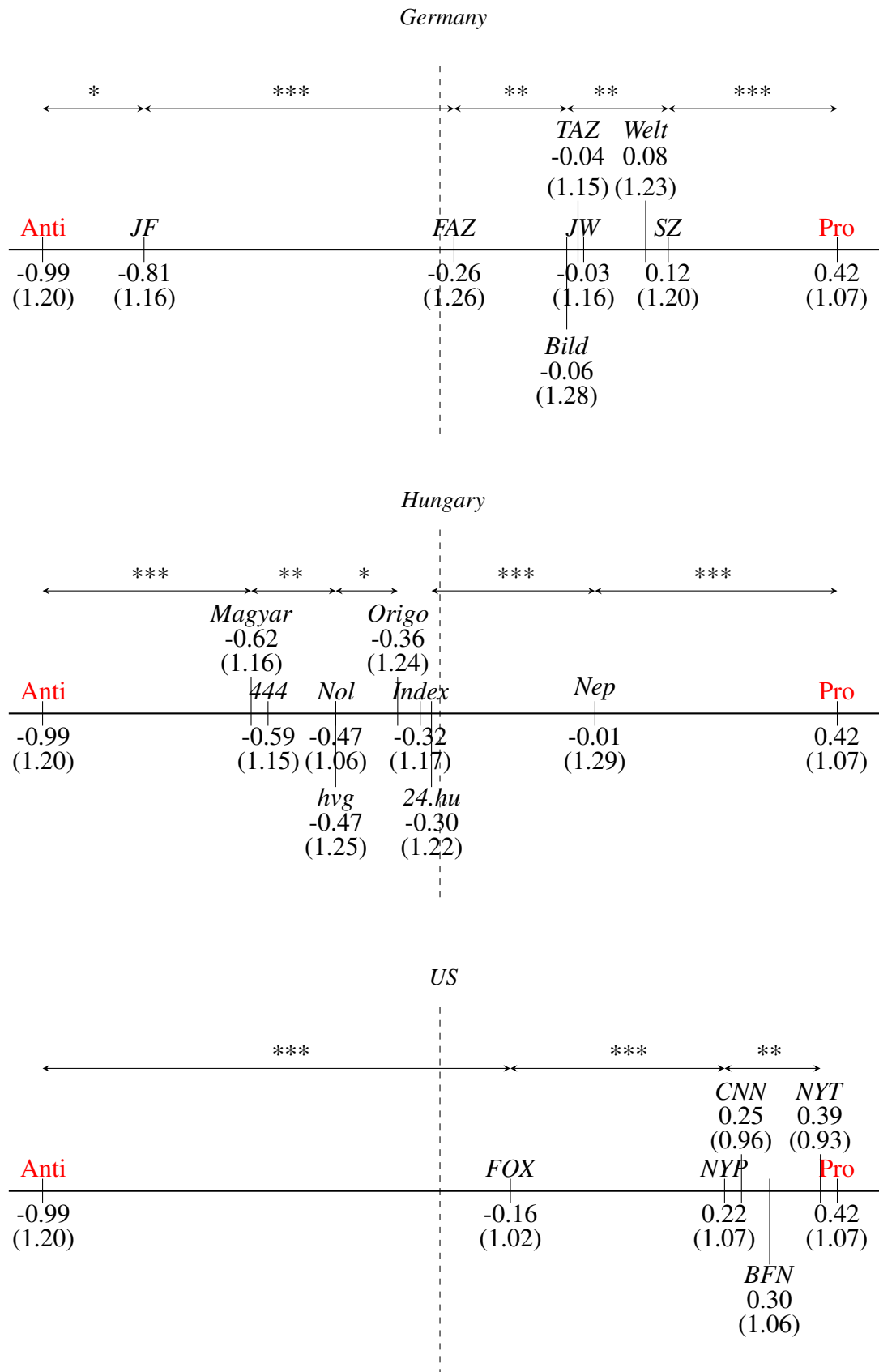Figure 6: Distribution over News Pictures' Ratings for Germany, Hungary, and the US

Figure 7: Attitudes to migration in the German, Hungarian, and US market for news (upper, middle, and lower graph, respectively). Stars indicate significant differences according to one-sided t-tests; significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

For Hungary, we find that the distance between the news outlet with the most positive attitude to migration (*Népszava*) and the news outlet with the most negative attitude to migration (*Magyar*) is 0.61 units; for comparison, the distance between the most positive and the most negative news outlet is 0.93 units in Germany. Importantly, the media coverage of the 2015-16 migration crisis is significantly more negative in Hungary than in Germany. According to our picture ratings, all Hungarian news outlets except *Népszava* exhibit a more negative attitude to migration than all German news outlets except the right-leaning *JF*. Moreover, these news outlets' positions on migration are closer to anti- than to pro-migration campaigns.

For a clean comparison, we compare the average attitude to migration of the news outlets in both samples. This value is −0.38 in Hungary and −0.10 in Germany. The average difference in the attitude to migration between German and Hungarian news outlets is roughly 20 percent of the maximal differentiation as defined by the (German) pro- and anti-migration campaigns. Further, the association between political orientation and attitude to migration seems to be weaker in the Hungarian than in the German market for news: Even left-leaning news outlets like *444*, *hvg*, and *Nol* exhibit a similar attitude to migration than the right-leaning news outlets *Origo*, *Index*, and *Magyar*.
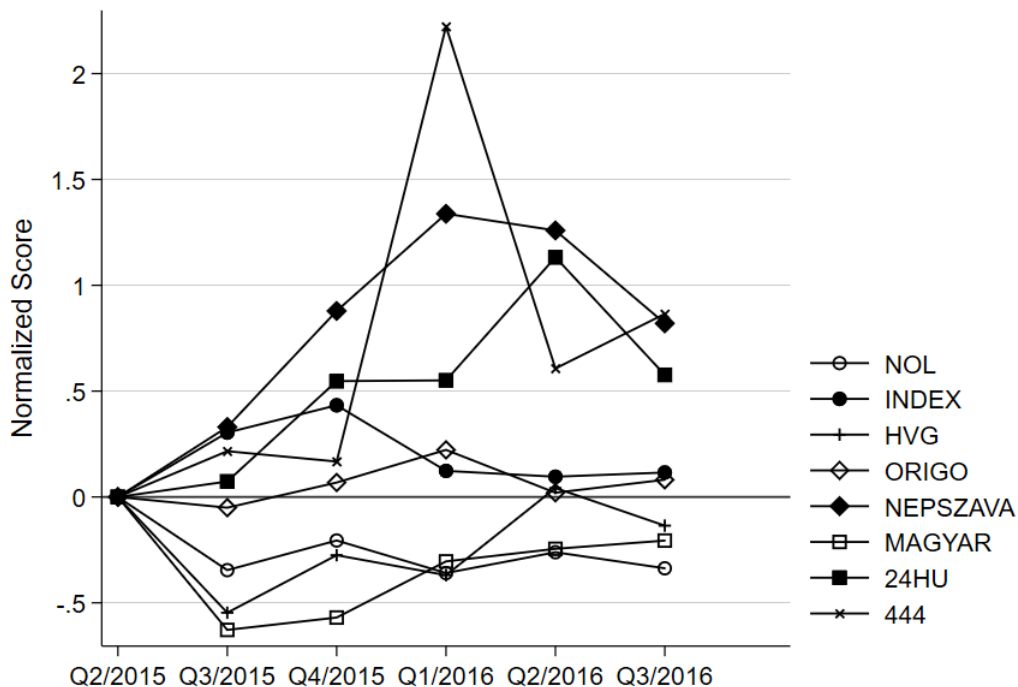

Figure 8: Changes in Attitudes to Migration in the Hungarian Market for News

Similar to the German case, we find that the attitude to migration of the Hungarian news outlets is fairly stable over time, see Figure 8. However, three news outlets – *444*, *Nep*, and *24.hu* – adopted a significantly more positive attitude towards migration over time. This result is confirmed in the OLS regression from equation (2); see Table A11 in the appendix. Interestingly, these news outlets are known for their anti-government position.[23]

For the US, we find that the distance between the most positive news outlet (*NYT*) and the most negative news outlet (*FOX*) is 0.55 units. According to the picture ratings, the media coverage of the 2020-21 US-Mexico border crisis is perceived as more positive compared to the German and Hungarian coverage of the 2015-16 migration crisis. The average attitude to migration in our US sample is 0.20, compared to −0.10 in Germany and −0.38 in Hungary.

To study this issue in more detail, we run a linear regression with a picture's rating as dependent variable and the picture's features (gender composition, group size, topics) as well as the country setting (Europe or US) as independent variables, see Table A12 in the appendix. It turns out that news pictures from the US setting receive on average 0.27 points higher ratings than pictures from the German setting. This difference can only partly be explained by differences in the content of the pictures. The US pictures feature a much larger share of females and children than the German pictures (61 percent for the US versus 37 percent for Germany), but they also show larger groups of migrants and cover topics that are perceived as more negative (e.g., crime and security issues). These opposing effects nearly cancel each other. Specifically, when we control for the share of females and children, group size, and topics, we find that the US coefficient is equal to 0.25, which we interpret as a country-effect. This country effect may be due to the fact that for the participants in our *Forsa* survey the US-Mexico border crisis took place in a distant location, while the 2015-16 migration crises directly affected Germany and Europe.

If we account for the country-effect, the *NYT*'s coverage of migration would be rated as close to that of the most positive (German) news outlets and pro-migration campaigns, while the coverage of *FOX* would be rated as significantly more negative than that of almost all German news outlets. Since both *NYT* and *FOX* are major news organizations, this result points towards a higher degree of polarization in the US than in the German market for news.[24] Overall, the attitude to migration in the US market for news does not appear to be very negative. Taking the country-effect into account, the average attitude to migration according to our sample is −0.05 in the US market for news and −0.10 in the German market for news.

We also study the within-outlet range of Hungarian and US news outlets; see Table A13

---

[23]See www.zeit.de/kultur/2017-03/ungarn-pressefreiheit-blogger-444-hu-migration, www.dw.com/de/ungarn-wie-sich-junge-menschen-informieren/a-55448033, www.eurotopics.net/de/148730/nepszava (May 2023).

[24]Since we only consider US pictures from a relatively short time span, studying time trends (as we do for Germany and Hungary) is not feasible for the US.

in the appendix. Similar to the German case, we find that all news outlets show pictures with very diverse ratings. However, the within-outlet range tends to be larger for Hungarian than for US news outlets. Notably, the average rating of the most negative half of pictures from Hungarian news outlets is even more negative than the average rating of German anti-migration campaigns (with an average rating of −0.99), while the average rating of the most positive half of pictures is similar to the average rating of German pro-migration campaigns (with an average rating of 0.42). Consistent with the results from above, US news outlets report more positively on migration on average, and this is also reflected in the average ratings of the most positive and most negative pictures.

6   Conclusion

We examined the coverage of the topic of migration in three different news markets: Germany, Hungary, and the US. To this end, we collected and coded the migration-related pictures that news outlets attach to their articles. News outlets use pictures frequently to create attention for their news reports. Pictures have a persuasive effect and they are chosen partly in order to support the political attitude of a news outlet, especially in the context of migration. In order to establish a benchmark, we also collected and coded the migration-related pictures that ideological campaigns use in their promotional materials to support their cause for or against migration. This allows us to examine whether the news outlets' positions in the context of migration are overly negative, positive, or balanced.

For Germany, we found that most national news outlets adopt an attitude to migration that is in between the two ideological extremes, but closer to pro- than to anti-migration campaigns. The polarization between the largest news outlets in our sample is only 27 percent of the maximal possible degree of polarization. Further, we found that most news outlets in Germany maintain their attitude towards migration over time, even as public opinion on the subject becomes significantly more negative. Only the largest newspaper in Europe – the tabloid newspaper *Bild* – changed its attitude to migration from very positive to fairly negative within a few months, most likely in order to cater to readers' political preferences.

For Hungary, we found that the attitude to migration is on average more negative than in Germany. The average difference in news outlets' attitude to migration between Hungary and Germany is roughly one fifth of the maximal polarization as defined by (German) pro- and anti-migration campaigns. In contrast, for the US, we found that, the average attitude to migration in the market for news is comparable to that in Germany. However, both the most positive and the most negative news outlet in the our US sample are fairly large, which suggests that the degree of polarization in this market is substantial.

References

ALESINA, ALBERTO, ARMANDO MIANO, AND STEFANIE STANTCHEVA (2020): "The polarization of reality," *AEA Papers and Proceedings*, 110, 324–328.

ALESINA, ALBERTO, ARMANDO MIANO, AND STEFANIE STANTCHEVA (2023): "Immigration and redistribution," *Review of Economic Studies*, 90(1), 1–39.

ANDREONI, JAMES (2007): "Giving gifts to groups: How altruism depends on the number of recipients," *Journal of Public Economics*, 91(9), 1731–1749.

ASH, ELLIOTT, RUBEN DURANTE, MARIA GREBENSHCHIKOVA, AND CARLO SCHWARZ (2022): "Visual representation and stereotypes in news media," CESifo Working Paper No. 9686.

BANSAK, KIRK, JENS HAINMUELLER, AND DOMINIK HANGARTNER (2016): "How economic, humanitarian, and religious concerns shape European attitudes toward asylum seekers," *Science*, 354(6309), 217–222.

BARON, DAVID (2006): "Persistent media bias," *Journal of Public Economics*, 90(1–2), 1–36.

BARRERA, OSCAR, SERGEI GURIEV, EMERIC HENRY, AND EKATERINA ZHURAVSKAYA (2020): "Facts, alternative facts, and fact checking in times of post-truth politics," *Journal of Public Economics*, 182, 104123.

BECKER, D. VAUGHN, DOUGLAS KENRICK, STEVEN NEUBERG, K. C. BLACKWELL, AND DYLAN SMITH (2007): "The confounded nature of angry men and happy women," *Journal of Personality and Social Psychology*, 92(2), 179–190.

BLOOM, PAZIT BEN-NUN, GIZEM ARIKAN, AND GALLYA LAHAV (2015): "The effect of perceived cultural and material threats on ethnic preferences in immigration attitudes," *Ethnic and Racial Studies*, 38(10), 1760–1778.

BRANDTS, JORDI, ISABEL BUSOM, CRISTINA LOPEZ-MAYAN, AND JUDITH PANADÉS (2023): "Images say more than just words: Effectiveness of visual and text communication in dispelling the rent-control misconception," CESifo Working Paper No. 10537.

CAPPELEN, ALEXANDER, RANVEIG FALCH, AND BERTIL TUNGODDEN (2023): "Experimental evidence on the acceptance of males falling behind," NHH Department of Economics Discussion Paper No. 13/2023.

CAPRINI, GIULIA (2023): "Visual bias," Working Paper, Oxford University.

CEU MICRODATA [DISTRIBUTOR] (2022): *Hungarian News Media Corpus* [Data set], Central European University, https://doi.org/10.5281/zenodo.7818324.

COTOFAN, MARIA, ROBERT DUR, AND STEPHAN MEIER (2022): "Does growing up in economic hard times increase compassion? The case of attitudes towards immigration," Tinbergen Institute Discussion Paper 2022-047/I.

COUTTENIER, MATHIEU, SOPHIE HATTE, MATHIAS THOENIG, AND STEPHANOS VLACHOS (2022): "Anti-Muslim voting and media coverage of immigrant crimes," *Review of Economics and Statistics*, forthcoming.

DEWENTER, RALF, UWE DULLECK, AND TOBIAS THOMAS (2020): "Does the 4th estate deliver? The Political Coverage Index and its application to media capture," *Constitutional Political Economy*, 31, 292–328.

DJOURELOVA, MILENA (2023): "Persuasion through slanted language: Evidence from the media coverage of immigration," *American Economic Review*, 113(3): 800–835.

DUSTMANN, CHRISTIAN, KRISTINE VASILJEVA, AND ANNA PIIL DAMM (2018): "Refugee migration and electoral outcomes," *Review of Economic Studies*, 86(5), 2035–2091.

ESSES, VICTORIA, STELIAN MEDIANU, AND ANDREA LAWSON (2013): "Uncertainty, threat, and the role of the media in promoting the dehumanization of immigrants and refugees," *Journal of Social Issues*, 69(3), 518–536.

FITZGERALD, JENNIFER, K. AMBER CURTIS, AND CATHERINE CORLISS (2012): "Anxious publics: Worries about crime and immigration," *Comparative Political Studies*, 45(4), 477-506.

FOGED, METTE, AND GIOVANNI PERI (2016): "Immigrants' effect on native workers: New analysis on longitudinal data," *American Economic Journal: Applied Economics*, 8(2), 1–34.

FREITAG, JULIAN, ANNA KERKHOF, AND JOHANNES MÜNSTER (2021): "Selective sharing of news items and the political position of news outlets," *Information Economics and Policy*, 56, 100926.

FREY, BRUNO, DAVID SAVAGE, AND BENNO TORGLER (2011): "Behavior under extreme conditions: The Titanic disaster," *Journal of Economic Perspectives*, 25(1), 209–222.

GALESIC, MIRTA, WÄNDI BRUINE DE BRUIN, MARION DUMAS, ARIE KAPTEYN, JILL DARLING, AND ERIK MEIJER (2018): "Nature Human Behaviour," *Nature Human Behavior*, 2(3), 187–193.

GARZ, MARCEL, JIL SÖRENSEN, AND DANIEL STONE (2020): "Partisan selective engagement: Evidence from Facebook," *Journal of Economic Behavior and Organization*, 177, 91–108.

GENTZKOW, MATTHEW, AND JESSE SHAPIRO (2010): "What drives media slant? Evidence from U.S. daily newspapers," *Econometrica*, 78(1), 35–71.

GENTZKOW, MATTHEW, JESSE SHAPIRO, AND DANIEL STONE (2015): "Media bias in the marketplace: Theory," *Handbook of Media Economics*, 1, 623–645.

GRABER, DORIS (1990): "Seeing is remembering: How visuals contribute to learning from television news," *Journal of Communication*, 40(3), 134–156.

GRAMLICH, JOHN, AND ALISSA SCHELLER (2021): "What's happening at the U.S.-Mexico border in 7 charts," Pew Research Center, https://www.pewresearch.org/fact-tank/2021/11/09/whats-happening-at-the-u-s-mexico-border-in-7-charts.

GROELING, TIM (2013): "Media bias by the numbers: Challenges and opportunities in the empirical study of partisan news" *Annual Review of Political Science*, 16, 129-151.

GROSECLOSE, TIM, AND JEFFREY MILYO (2005): "A measure of media bias," *Quarterly Journal of Economics*, 120(4), 1191–1237.

HALLA, MARTIN, ALEXANDER WAGNER, AND JOSEF ZWEIMÜLLER (2017): "Immigration and voting for the far right," *Journal of the European Economic Association*, 15(6), 1341–1385.

HALLER, MICHAEL (2017): "Die Flüchtlingskrise in den Medien – Tagesaktueller Journalismus zwischen Meinung und Information," Otto Brenner Stiftung Arbeitsheft 93.

HEHMAN, ERIC, ELANA GRABER, LINDSAY HOFFMAN, AND SAMUEL GAERTNER (2012): "Warmth and competence: A content analysis of photographs depicting American presidents," *Psychology of Popular Media Culture*, 1(1), 46–52.

HERMANN, SUSANNE (2018): "Paid Content läuft bei Bild und Welt," *WuV*, published on November 15, 2018, www.wuv.de/Archiv/Paid-Content-l%C3%A4uft-bei-Bild-und-Welt.

HO, DANIEL, AND KEVIN QUINN (2008): "Measuring explicit political positions of media," *Quarterly Journal of Political Science*, 3(4), 353–377.

HUDDY, LEONIE, AND ANNA GUNNTHORSDOTTIR (2000): "The persuasive effects of emotive visual imagery: Superficial manipulation or the product of passionate reason?," *Political Psychology*, 21(4), 745–778.

KOGUT, TEHILA, AND ILANA RITOV (2005): "The Singularity Effect of Identified Victims in Separate and Joint Evaluations," *Organizational Behavior and Human Decision Processes*, 97(2), 106–116.

MULLAINATHAN, SENDHIL, AND ANDREI SHLEIFER (2005): "The market for news," *American Economic Review*, 95(4), 1031–1053.

NAVARRETE, CARLOS, ANDREAS OLSSON, ARNOLD HO, WENDY MENDES, LOTTE THOMSEN, AND JAMES SIDANIUS (2005): "Fear extinction to an out-group face: The role of target gender," *Psychological Science*, 20(2), 155–158.

NEWMAN, NIC, RICHARD FLETCHER, CRAIG ROBERTSON, KIRSTEN EDDY, AND RASMUS KLEIS NIELSEN (2022): "Reuters Institute digital news report 2021," Reuters Institute for the study of Journalism.

PENG, YILANG (2018): "Same candidates, different faces: Uncovering media bias in visual portrayals of presidential candidates with computer vision," *Journal of Communication*, 68(5), 920–941.

PRAT, ANDREA (2018): "Media power," *Journal of Political Economy*, 126(4), 1747–1783.

PUGLISI, RICCARDO, AND JAMES SNYDER (2015a): "Empirical studies of media bias," in Simon Anderson, Joel Waldfogel, and David Strömberg (eds.): *Handbook of Media Economics*, 1, 647–667.

PUGLISI, RICCARDO, AND JAMES SNYDER (2015b): "The balanced US press," *Journal of the European Economic Association*, 13(2), 240–264.

SLOVIC, PAUL (2007): "If I look at the mass I will never act: Psychic numbing and genocide," *Judgment and Decision Making*, 2(2), 79–95.

SCHUMACHER, HEINER, IRIS KESTERNICH, MICHAEL KOSFELD, AND JOACHIM WINTER (2017): "One, two, many – Insensitivity to group size in games with concentrated benefits and dispersed costs," *Review of Economic Studies*, 84(3), 1346–1377.

STEINMAYR, ANDREAS (2021): "Contact versus exposure: Refugee presence and voting for the far right," *Review of Economics and Statistics*, 103(2), 310–327.

SZEIDL, ADAM, AND FERENC SZUCS (2021): "Media capture through favor exchange," *Econometrica*, 89(1), 281–310.

TABELLINI, MARCO (2020): "Gifts of the immigrants, woes of the natives: Lessons from the age of mass migration," *Review of Economic Studies*, 87(1), 454–486.

VENETI, ANASTASIA, DANIEL JACKSON, AND DARREN LILLEKER (2019): *Visual Political Communication*, Palgrave Macmillan, Cham, Switzerland.

ZHANG, XU, AND LEA HELLMUELLER (2017): "Visual framing of the European refugee crisis in Der Spiegel and CNN International: Global journalism in news photographs," *International Communication Gazette*, 79(5), 483–510.

A Appendix

A.1 News Coverage Survey – All Questions and Detailed Results

Part 1: Process

In the first part of the survey, we are concerned about the process of selecting pictures in your journalistic work. When answering the questions, please think about the last 50 news articles that you have written as part of your journalistic work and where at least one picture appeared with the article.

[1] *What do you think: For what proportion (in %) of news articles did you select the picture yourself?*

Mean	Median	SD	Min	Max	N
47.38	40	33.55	0	100	66

[2] *For the remaining articles, who selected the picture (e.g., an image editor)?*

Editorial office	Photographer	Colleagues	Boss	Clients	Other	N
81.82%	7.58%	9.09%	21.21%	4.55%	15.15%	66

Answers are not mutually exclusive. The table reports the percentage of participants who selected the respective response.

[3] *When exactly is the picture for a news article generally decided?*

- *during the writing of the news article*

- *after writing the news article*

- *a combination of these answers*

During	After	Combination	N
4.55%	56.06%	39.39%	66

The table reports the percentage of participants who selected the respective response.

[4] *Pictures can come from various sources, for example, from image databases or from photographers in the editorial team. Can you briefly describe from which sources you or other people (e.g., the image editors) have selected the pictures for your news articles? Please, also briefly state how often you use these sources (very often/often/not so often). If you used pictures from different sources, please indicate what percentage of images you obtained from which source.*

Image database	Internal source	News agency	Other	N
80.30%	72.73%	31.82%	28.79%	66

Answers are not mutually exclusive. Participants' open answers were manually assigned to the respective categories. The table reports the percentage of participants who gave the respective response.

[5] *What was the average number of pictures that you could choose from for a news article (i.e., the total number of different pictures that were available to you and the image editors and that were suitable for your article)?*

0 - 5	6 - 10	11 - 20	> 20	NA	N
36.36%	24.24%	9.09%	22.72%	7.58%	66

The table reports the percentage of participants who selected the respective response.

[6] *On average, how many pictures did you and/or the image editors take a close look at (per article) before you finally decided on a picture?*

0 - 5	6 - 10	11 - 20	> 20	NA	N
43.94%	22.73%	10.61%	16.67%	6.06%	66

The table reports the percentage of participants who selected the respective response.

[7] *Pictures accompanying news articles may show current motives that relate to the specific event described in the article or they are archive photos that symbolize a situation described in the article. For what percentage of your last 50 news articles with pictures would you describe the picture as a current picture, rather than an archive picture?*

Mean	Median	SD	Min	Max	N
47.92	50	26.35	2	90	66

Part 2: Discretion

In the next part of the survey, we are interested in how much discretion journalists have in the presentation of an article and especially in the selection of pictures. When answering the questions, please think back to the last 50 news articles that you have written as part of your journalistic work and in which a picture appeared.

[8] *In what percentage of news articles did it occur that members of the editorial board in some way...*

- *significantly influenced/changed the contents of your news article?*

- *significantly influenced/changed the writing style of your news article?*

- significantly influenced/changed the picture selection for your news article?

	Mean	Median	SD	Min	Max	*N*
content	27.15	20	24.75	0	100	66
writing style	21.64	20	17.80	0	70	66
picture selection	48.58	50	29.23	0	100	66

[9] *To what extent would you agree with the following statements? When reporting on current events in politics, business, and society, a news outlet is free to decide...*

- *whether it reports on an event or not.*

- *the extent to which it reports on an event.*

- *what aspects of this event it reports on.*

- *whether it publishes pictures of this event or not.*

- *what images it publishes for this event.*

	Mean	Median	SD	Min	Max	*N*
report	6.83	8	3.08	0	10	66
extent	8.00	8	2.03	0	10	66
aspects	8.26	9	1.91	0	10	66
picture yes/no	7.11	8	3.07	0	10	66
which picture	7.83	8	2.47	0	10	66

Responses could be given on a scale from 0 to 10, where 0 indicates the lowest and 10 the highest level of agreement.

[10] *To what extent would you agree with the following statements? When reporting on current events in politics, business, and society, a journalist is free to decide...*

- *whether he/she reports on an event or not.*

- *the extent to which he/she reports on an event.*

- *what aspects of this event he/she reports on.*

- *whether he/she publishes pictures of this event or not.*

- *what images he/she publishes for this event.*

	Mean	Median	SD	Min	Max	*N*
report	5.58	5	2.37	0	10	66
extent	5.40	6	2.25	0	10	66
aspects	6.75	7	2.15	0	10	66
picture yes/no	4.11	4	2.61	0	9	66
which picture	5.03	5	2.51	0	10	66

Responses could be given on a scale from 0 to 10, where 0 indicates the lowest and 10 the highest level of agreement.

[11] *To what extent would you agree with the following statements? When reporting on current events in the subject area of "migration", a news outlet is free to decide...*

- *whether it reports on an event or not.*

- *the extent to which it reports on an event.*

- *what aspects of this event it reports on.*

- *whether it publishes pictures of this event or not.*

- *what images it publishes for this event.*

	Mean	Median	SD	Min	Max	*N*
report	7.77	8	2.29	1	10	66
extent	8.33	9	1.80	0	10	66
aspects	8.23	9	1.80	2	10	66
picture yes/no	7.53	8	2.55	1	10	66
which picture	8.02	9	2.24	1	10	66

Responses could be given on a scale from 0 to 10, where 0 indicates the lowest and 10 the highest level of agreement.

[12] *To what extent would you agree with the following statements? When reporting on current events in the subject area of "migration", a journalist is free to decide...*

- *whether he/she reports on an event or not.*

- *the extent to which he/she reports on an event.*

- *what aspects of this event he/she reports on.*

- *whether he/she publishes pictures of this event or not.*

- *what images he/she publishes for this event.*

	Mean	Median	SD	Min	Max	N
report	6.30	7	2.36	0	10	66
extent	6.39	7	2.19	2	10	66
aspects	6.89	7	1.95	2	10	66
picture yes/no	4.64	5	2.68	0	10	66
which picture	5.17	5	2.78	1	10	66

Responses could be given on a scale from 0 to 10, where 0 indicates the lowest and 10 the highest level of agreement.

Part 3: Motivation

In the last part of the survey, we look at the criteria for selecting news pictures.

[13] *To what extent would you agree with the following statements on the selection of pictures for news reports on current events in politics, the economy and society? Pictures are selected in such a way that...*

- *they reflect the main theme of the report.*

- *they reflect the key messages of the report.*

- *they reflect the mood and emotions that a report should arouse in the reader.*

- *they support the political orientation of the news outlet.*

- *they objectively reflect the event.*

- *they draw the attention of readers to the report.*

- *The selection of pictures does not follow any of the above criteria.*

	Mean	Median	SD	Min	Max	N
main theme	8.65	9	1.43	4	10	66
key message	6.21	6	2.36	1	10	66
mood and emotions	6.97	7	1.89	2	10	66
political orientation	3.71	3	2.73	0	9	66
event	5.54	6	2.38	1	10	66
attention	8.50	9	1.66	0	10	66
none of the above	0.41	0	0.82	0	5	66

Responses could be given on a scale from 0 to 10, where 0 indicates the lowest and 10 the highest level of agreement.

[14] *To what extent would you agree with the following statements on the selection of pictures for news reports on current events in the subject area of "migration"? Pictures are selected in such a way that...*

- *they reflect the main theme of the report.*

- *they reflect the key messages of the report.*

- *they reflect the mood and emotions that a report should arouse in the reader.*

- *they support the political orientation of the news outlet.*

- *they objectively reflect the event.*

- *they draw the attention of readers to the report.*

- *The selection of pictures does not follow any of the above criteria.*

	Mean	Median	SD	Min	Max	*N*
main theme	7.65	8	2.17	1	10	66
key message	6.48	7	2.25	1	10	66
mood and emotions	7.02	7	2.37	1	10	66
political orientation	5.04	6	2.77	0	10	66
event	5.28	5	2.62	0	10	66
attention	8.01	8	1.99	1	10	66
none of the above	0.72	0	1.18	0	5	66

Responses could be given on a scale from 0 to 10, where 0 indicates the lowest and 10 the highest level of agreement.

A.2 Selection of Ideological Campaigns

We identified and classified ideological campaigns for our analysis in two steps.

Step 1: Identification of campaigns. We first collected a set of campaigns that are well-known and whose members are often cited as "experts" in the media; examples include *Pro-Asyl*, *Caritas*, *Medico*, *Unicef*, and the major political parties. There are also a number of publishing companies and organizations whose news outlets take on anti-migration positions, e.g., *Compact Magazin*, *Blaue Narzisse*, and *Zuerst*. Furthermore, we used information from the Federal Agency for Civic Education (*Bundeszentrale für politische Bildung*), which in 2016 published a list of on influential right-leaning news outlets and magazines.

Next, we conducted an extensive search on *Google*. For each search item, we considered the first 100 search results. The search items for pro-migration campaigns were items like "organization refugees relief", "campaigns refugees relief", "rescue refugees", "support refugees", "sea rescue refugees", "refugee crisis 2015", and "integration refugees" (all in German language). The search items for anti-migration campaigns were items like "illegal migration", "uncontrolled immigration", "criminal refugees 2015", "stop mass immigration Germany", "stop illegal immigration Germany", "against illegal immigration Germany", "foreign domination", and "increased criminality refugee" (again, all in German language). In total, we identified 44 ideological campaigns as candidates for our analysis.

Step 2: Final set of ideological campaigns and pictures. We applied three criteria to select the ideological campaigns for our analysis: The campaign's website is maintained on a regular basis and shows pictures of migrants, a campaign clearly expresses its views and attitudes towards migration, and the event of the 2015-16 migration crisis has been an important event in the context of the campaign's agenda. For each ideological campaign in our set, we examined whether it satisfies these criteria. Many candidates do not satisfy the first and/or third requirement. We also excluded the humanitarian organization *Unicef* as the welfare of women and children is central to the organization's program (it therefore mostly uses pictures of women and children). This left us with eight campaigns, four pro- and four anti-migration campaigns. We collected all pictures related to the topic of migration that these campaigns use in online materials. Specifically, we considered the full history of their websites (publications, special reports, short articles, etc.) and social media accounts. Table A1 provides an overview of these campaigns and the total number of pictures from each of them.

Table A1: Selected Ideological Campaigns and Number of Pictures

Pro-migration campaigns	*N*	Anti-migration campaigns	*N*
Caritas International e.V.	115	*Abakus.News*	124
Die Grünen	34	*Alternative für Deutschland*	45
Medico International e.V.	78	*Compact Magazin*	114
Pro Asyl e.V.	170	*Tichys Einlick*	103
Total	397	Total	386

A.3 Forsa Survey Waves

We conducted the *Forsa* survey in two waves. The first wave, *Forsa 1*, took place in May 2021 with 2,000 subjects. The second wave, *Forsa 2*, took place in December 2022 with 2,000 new subjects. In *Forsa 1*, subjects evaluated a random sample of roughly half of the German news pictures (from Dataset A) and half of the pictures from ideological campaigns (from Dataset B). In *Forsa 2*, subjects evaluated the remaining pictures from Dataset A and Dataset B as well as the news pictures from Hungary and the US (from Dataset E and Dataset F). Both surveys started with the evaluation of news pictures. The instructions to this task were almost identical in *Forsa 1* and *Forsa 2* (we describe the differences in Appendix A.4). In *Forsa 1*, each subject evaluated 20 news pictures and participated in the media use survey (Dataset D). In *Forsa 2*, each subject evaluated 40 pictures and there was no media use survey.

We examine whether there are systematic differences in the outcomes of the two surveys. First, we compare the mean ratings for each news outlet as well as for the pro- and anti-migration campaigns in each *Forsa* wave, see Table A2. We find that the differences in means are close to zero and not statistically significant for all sources except of a borderline significant effect for the *FAZ*.

Table A2: Mean Ratings per *Forsa* Wave

Ideological campaign/ News outlet	*Forsa 1* mean rating	*Forsa 2* mean rating	Difference	*p*-value
Pro-migration	0.47	0.39	-0.08	0.438
JW	0.02	-0.07	-0.09	0.549
TAZ	0.03	-0.09	-0.12	0.293
SZ	0.16	0.09	-0.07	0.456
Bild	-0.01	-0.10	-0.09	0.504
FAZ	-0.41	-0.16	0.27	0.060
Welt	0.04	0.11	0.07	0.565
JF	-0.71	-0.89	-0.18	0.369
Anti-migration	-0.99	-0.98	0.01	0.945

This result is further supported in a linear regression framework. We run the OLS regression

$$\text{Rating}_{ijt} = \alpha_0 + \alpha_1 \text{Forsa2}_i + \alpha_2 \text{ShareNonMales}_i + \alpha_3 \text{GroupSize}_i + \alpha_4 \text{Topic}_i + e_{ijt}, \quad (3)$$

where Forsa2_i indicates that image i was evaluated in *Forsa 2*. Table A3 shows that the coefficient for Forsa2_i is close to zero and statistically insignificant for all specifications. We conclude that there are no systematic differences in picture ratings across the two survey waves.

Table A3: Picture Ratings in the *Forsa* waves

	(1)	(2)	(3)	(4)
Forsa 2	-0.025	-0.034	-0.021	-0.019
	(0.044)	(0.040)	(0.039)	(0.035)
Share non-males		Yes	Yes	Yes
Group size			Yes	Yes
Topics				Yes
Constant	-0.088***	-0.584***	-0.265***	0.604***
	(0.033)	(0.037)	(0.051)	(0.076)
N	3,387	3,371	3,371	3,369

Notes: Results from estimating equation (3) by OLS. The dependent variable is Rating_{ijt}, the rating of picture i by news outlet j in month t. All specifications are based on the data from German news outlets. Robust standard errors in parentheses. Significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

A.4 Forsa Survey and Coding – Instructions and Screenshots

This appendix contains a translation of the instructions to the coding part of the *Forsa* survey. We first show the instructions of the *Forsa 1* wave (where all pictures are from the German setting) and then explain the adjustments that we made in the *Forsa 2* wave (where pictures are from all settings).

Forsa survey, instructions to coding part, Screen 1
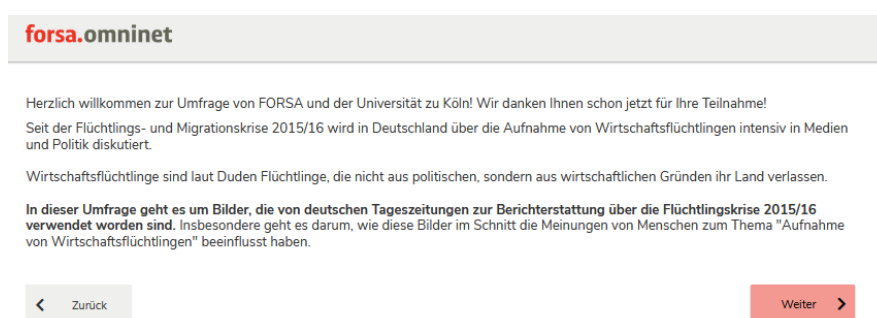
Welcome to the survey conducted by FORSA and the University of Cologne! We thank you in advance for your participation!

Since the refugee and migration crisis in 2015/16, the admission of economic refugees has been the subject of intense debate in the media and politics in Germany.

According to the Duden dictionary, economic refugees are refugees who leave their country not for political but for economic reasons.

This survey is about pictures that have been used by German media to cover the migration crisis in 2015/16. In particular, we are interested in how these pictures on average influenced people's opinions on the topic of admitting economic refugees.

Forsa survey, instructions to coding part, Screen 2

We will show you 20 pictures that appeared in the media during the migration crisis 2015/16.

For each picture, we ask you to rate how it probably affects a viewer's opinion of accepting economic refugees, on a scale from −5 to +5.

- A value of −5 means that a viewer's opinion is strongly negatively influenced (i.e., against admitting economic refugees).

- A value of +5 means that a viewer's opinion is strongly positively influenced (i.e., in favor of admitting economic refugees).

- A value of 0 means that the picture does not influence a viewer's opinion on economic migrants.

Here you can find some sample images: [FOUR EXAMPLE PICTURES]

As you can see, the images show different aspects of the refugee crisis. In particular, the people in the pictures are not necessarily economic refugees. On the next page we will show what the survey looks like, then we will start rating the 20 pictures.

Forsa survey, instructions to coding part, Screen 3

This is an example.

On the next page we will start with the rating of 20 pictures. Here you can simply press the "next" button.

What do you think? How does this picture influence a viewer's opinion regarding the admission of economic refugees?

[EXAMPLE PICTURE AND RATING SCALE WITH RADIO BUTTON]

Adjustments in the *Forsa 2* wave

In order to prepare subjects for the evaluation of pictures from all settings in the *Forsa 2* wave, we make the following changes in the instructions. On the first screen, the sentence "This survey is about pictures that have been used by German media to cover the migration crisis in 2015/16" is replaced by "This survey is about pictures that have been used by German and international media to cover migration crises." On the second screen, the sentence "We will show you 20 pictures that appeared in the media during the migration crisis 2015/16" is replaced by "We will show you 40 pictures that appeared in the media during different migration crises." Further, the sentence "As you can see, the images show different aspects of the refugee crisis" is replaced by "As you can see, the images show different aspects of refugee crises."

A.5 Example Pictures

Rating: -3.64, *Welt*

Rating: -3.42, *JF*

Rating: -3.21, anti-migration campaign

Rating: -0.04, *SZ*

Rating: 0.00, *JW*

Rating: 0.08, *TAZ*

Rating: 2.92, pro-migration campaign

Rating: 3.20, *SZ*

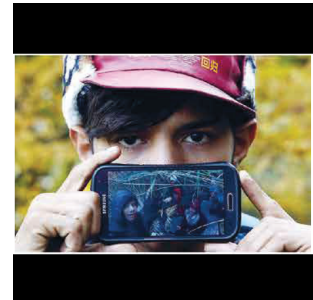Rating: 3.26, *SZ*

A.6   Prediction Results from the Media Use Survey

In the media use survey (Dataset D) of the *Forsa 1* wave, we examine to what extent subjects anticipate the average ratings of the pictures used by ideological campaigns and news outlets. We use these data to provide context for our findings on the *Bild*'s change in attitude to migration. In the survey, we asked for each news outlet the following question: *What do you think? How did the pictures printed in [news outlet] influence an observer's attitude towards economic migrants?* For ideological campaigns we asked the question: *Think of an organization that is [in favor of/opposed to] the acceptance of economic migrants. How do the pictures that such an organization uses influence an observer's attitude towards economic migrants?* Table A4 below shows the predicted and actual average ratings.

Table A4: Predicted Average Ratings from Media Use Survey

Ideological Campaign/ News Outlet	Predicted Average Rating (SD)	Average Rating	Re-Scaled Prediction	Difference
Pro-migration	2.29 (2.30)	0.42	0.42	0.00
JW	0.32 (2.76)	-0.03	-0.12	-0.09
TAZ	0.98 (2.53)	-0.04	0.06	0.10
SZ	0.83 (2.26)	0.12	0.02	-0.10
Bild	-1.80 (2.91)	-0.06	-0.70	-0.64
FAZ	0.62 (2.25)	-0.26	-0.04	0.22
Welt	0.24 (2.50)	0.08	-0.14	-0.22
JF	-0.65 (2.93)	-0.81	-0.03	0.78
Anti-migration	-2.86 (2.31)	-0.99	-0.99	0.00

Subjects overestimate the difference between the average ratings of pro- and anti-migration campaigns. To compare predicted with actual average ratings, we re-scale the predicted average ratings so that the "predicted" average ratings of pro- and anti-migration campaigns are correct. This allows us to examine to what extent subjects anticipate a news outlet's attitude to migration relative to that of other news outlets or ideological campaigns. The re-scaled predictions are in the fourth column of Table A4. The fifth column shows the difference between the true and the (re-scaled) predicted value. We obtain the following results: The *Bild* is predicted to be more negative towards migration than it is according to our data. Also, the difference between true and predicted value is second-largest for *Bild*. The *JF* exhibits the largest difference between true and predicted value. However, many subjects may not know this news outlet very well. The differences for the other news outlets are around 0.20 units or smaller.

The results from the media use survey suggest the following interpretation of our findings: Towards the end of our observational period, *Bild* adopted a fairly negative attitude towards migration. Most likely, this is what our subjects had in mind when predicting the news outlet's average rating. This is in contrast to *Bild*'s positive reporting on migration at the beginning of our observational period. The other news outlets largely maintain constant attitudes to migration, which is reflected by the relatively small differences between (re-scaled) predicted and average ratings.
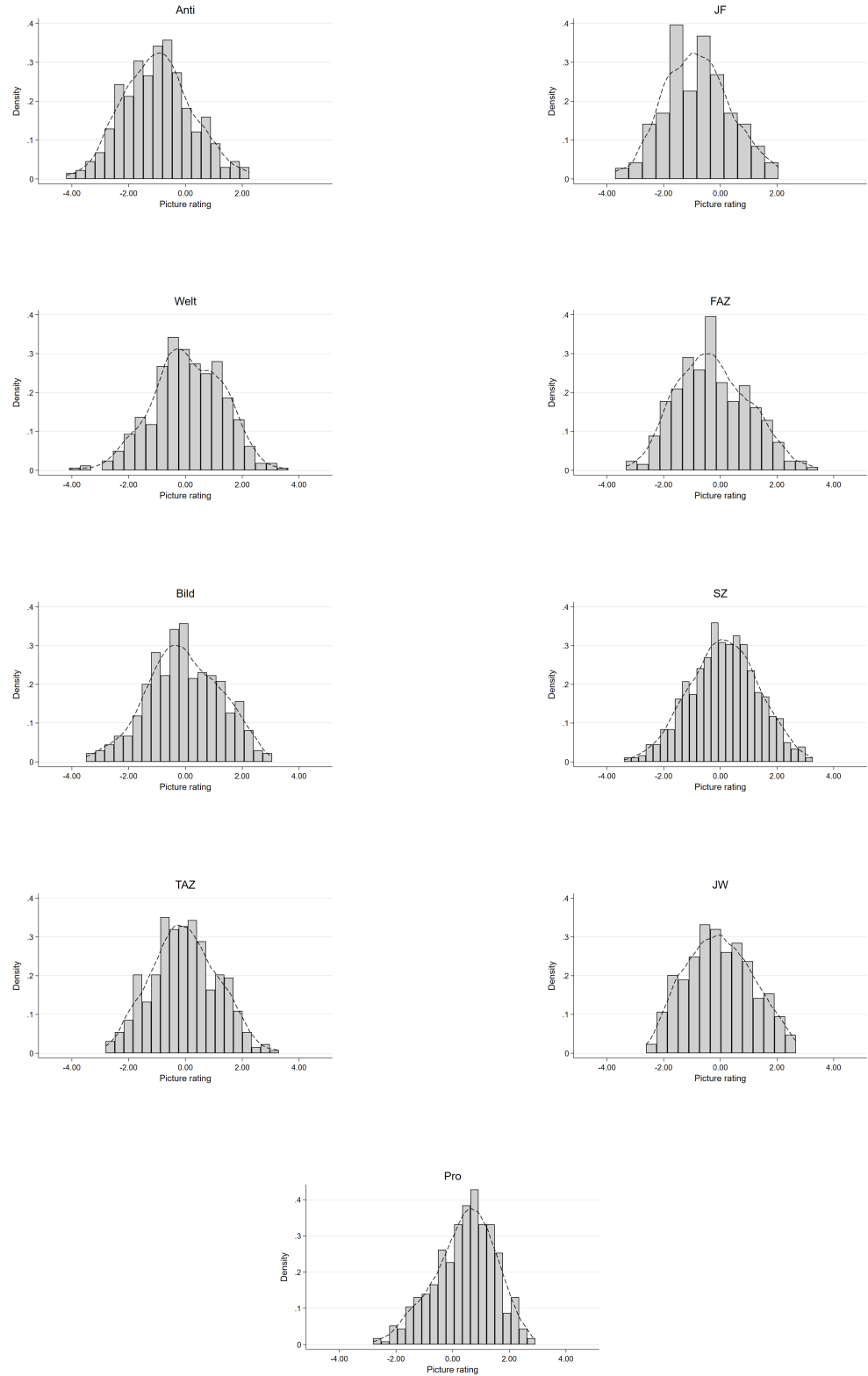
A.7 Additional Figures and Tables

Figure A1: Distribution over News Pictures' Ratings, by News Outlet/Ideological Campaign
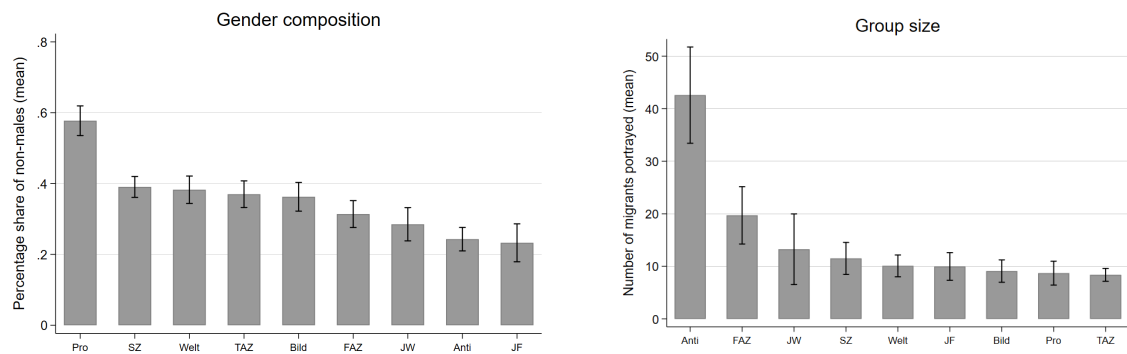
Figure A2: Average share of non-males per picture, by news outlet/campaign (left graph) and average group size per picture, by news outlet/campaign (right graph).

Table A5: Determinants of Picture Ratings

	(1)	(2)	(3)	(4)	(5)
Share non-males	1.358***			1.223***	1.143***
	(0.049)			(0.047)	(0.047)
Small Group (2-4)		0.0849		-0.145***	-0.135***
		(0.061)		(0.053)	(0.052)
Intermediate Group (5-14)		-0.388***		-0.441***	-0.377***
		(0.058)		(0.054)	(0.052)
Large Group (15-24)		-0.705***		-0.707***	-0.617***
		(0.081)		(0.076)	(0.075)
Very Large Group (>24)		-1.116***		-1.004***	-0.809***
		(0.072)		(0.067)	(0.067)
Route			-0.384***	-0.798***	-0.852***
			(0.071)	(0.065)	(0.067)
Asylum Homes			-0.350***	-0.860***	-0.939***
			(0.083)	(0.081)	(0.080)
Socio-economic Challenges			-0.994***	-1.293***	-1.297***
			(0.087)	(0.081)	(0.080)
Security Issues			-1.401***	-1.543***	-1.582***
			(0.095)	(0.087)	(0.085)
Integration			0.911***	0.309***	0.264***
			(0.083)	(0.091)	(0.091)
New Life			0.0464	-0.682***	-0.736***
			(0.080)	(0.081)	(0.080)
Portraits			-0.467***	-1.312***	-1.367***
			(0.097)	(0.097)	(0.096)
Other			-0.456***	-1.151***	-1.213***
			(0.097)	(0.092)	(0.092)
News outlet dummies	No	No	No	No	Yes
Constant	-0.603***	0.176***	0.261***	0.594***	0.863***
	(0.029)	(0.044)	(0.060)	(0.074)	(0.089)
Mean DV	-0.103	-0.103	-0.103	-0.103	-0.103
Std.Dev. DV	1.260	1.260	1.260	1.260	1.260
N	3,371	3,371	3,385	3,369	3,369

Notes: Results from estimating equation (1) by OLS. The dependent variable is Rating$_{ijt}$, which equals the rating of picture i published by newspaper j in quarter t. All specifications are based on the data from German news outlets. Heteroskedsticity-robust standard errors in parantheses. Significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A6: Public Opinion on Migration in Germany in 2015-16

Survey/Question	Measure	Q2/2015	Q3/2015	Q4/2015	Q1/2016	Q2/2016	Q3/2016
Infratest dimap							
Do you think it is appropriate that Germany takes in refugees who have fled because they have no work and no livelihood in their home country?	share reporting "appropriate"	40 (Jan/May 15)	28 (Aug/Sep 15)		25 (Feb 16)		
Politbarometer							
Number of refugee migrants: Can Germany cope?	share reporting "yes"		37.6 (Jul-Sep 15)	49.7 (Oct-Dec 15)	52.8 (Jan-Mar 16)	41.4 (Apr-Jun 16)	41.5 (Jul-Dec 16)
Opinion on upper limit on number of refugees	share endorsing "upper limit"				41 (Jan 16)		54 (Sep 16)
YouGov							
Do you think that Germany could welcome more asylum seekers or do you think that the number is already too high?	share reporting "too high"	45 (Feb 15)	43 (Jul-Sep 15)	55 (Oct/Nov 15)	62 (Jan 16)		

Table A7: Party Preferences (*Forsa*) in Germany in 2015-16

Party	Measure	Q2/2015	Q3/2015	Q4/2015	Q1/2016	Q2/2016	Q3/2016
CDU/CSU ("Christian Democrats", center-right)	Vote share	41 (Jun 15)	40 (Sep 15)	38 (Dec 15)	36 (Mar 16)	34 (Jun 16) (Sep 16)	33
SPD ("Social Democrats", center-left)	Vote share	23 (Jun 15)	24 (Sep 15)	23 (Dec 15)	20 (Mar 16)	22 (Jun 16)	23 (Sep 16)
Die Gruenen ("Green Party", center-left)	Vote share	10 (Jun 15)	10 (Sep 15)	10 (Dec 15)	13 (Mar 16)	12 (Jun 16)	10 (Sep 16)
FDP ("Free Liberals", center-right)	Vote share	5 (Jun 15)	5 (Sep 15)	5 (Dec 15)	7 (Mar 16)	6 (Jun 16)	6 (Sep 16)
Die Linke ("Left Party", left-wing)	Vote share	10 (Jun 15)	10 (Sep 15)	10 (Dec 15)	8 (Mar 16)	9 (Jun 16)	9 (Sep 16)
AfD ("Alternative for Germany", right-wing)	Vote share	4 (Jun 15)	5 (Sep 15)	8 (Dec 15)	10 (Mar 16)	10 (Jun 16)	14 (Sep 16)

Table A8: Number of pictures per news outlet and quarter

Outlet	Q2/2015	Q3/2015	Q4/2015	Q1/2016	Q2/2016	Q3/2015	Total
JW	32	61	40	44	32	14	223
TAZ	21	115	86	100	34	43	399
SZ	48	220	159	114	71	83	695
Bild	20	161	47	62	32	88	410
FAZ	19	90	91	48	26	36	310
Welt	33	122	82	100	38	41	416
JF	15	42	28	32	15	15	147
Total	188	811	533	500	248	320	2,600

Table A9: Changes in Attitude to Migration

	JW	TAZ	SZ	Bild	FAZ	Welt	JF
	(1)	(2)	(3)	(4)	(5)	(6)	(7)

Panel A: Changes in Attitudes relative to Q2/2015

	JW	TAZ	SZ	Bild	FAZ	Welt	JF
Q3/2015	-0.028	-0.109	-0.123	-0.696**	-0.062	-0.090	-0.045
	(0.241)	(0.272)	(0.185)	(0.297)	(0.251)	(0.210)	(0.339)
Q4/2015	-0.177	0.074	-0.080	-0.775**	0.288	0.257	0.225
	(0.255)	(0.279)	(0.192)	(0.337)	(0.256)	(0.231)	(0.362)
Q1/2016	0.365	0.284	0.137	-0.552*	-0.129	0.287	0.425
	(0.269)	(0.279)	(0.199)	(0.324)	(0.285)	(0.229)	(0.376)
Q2/2016	0.325	-0.068	-0.213	-1.257***	-0.093	-0.052	0.212
	(0.277)	(0.328)	(0.211)	(0.356)	(0.296)	(0.234)	(0.474)
Q3/2016	-0.446	0.180	-0.035	-1.226***	0.237	0.159	-0.113
	(0.321)	(0.293)	(0.207)	(0.306)	(0.312)	(0.276)	(0.439)
Constant	-0.083	-0.109	0.176	0.744***	-0.324	-0.024	-0.945***
	(0.189)	(0.251)	(0.165)	(0.280)	(0.215)	(0.182)	(0.301)

Panel B: Changes in Attitudes after New Year's Eve 2015-16

	JW	TAZ	SZ	Bild	FAZ	Welt	JF
$Post_t$	0.291*	0.219*	0.084	-0.350***	-0.104	0.143	0.191
	(0.160)	(0.166)	(0.093)	(0.126)	(0.150)	(0.123)	(0.201)
Constant	-0.149	-0.137*	0.083	0.092	-0.221**	0.019	-0.893***
	(0.096)	(0.076)	(0.059)	(0.085)	(0.089)	(0.077)	(0.114)
Mean DV	-0.03	-0.04	0.12	-0.06	-0.26	0.08	-0.81
Std.Dev. DV	1.168	1.15	1.20	1.28	1.26	1.23	1.16
N	223	399	695	410	310	416	147

Notes: Results from estimating equation (2) by OLS. The dependent variable is Rating_{ijt}, which equals the rating of picture i published by newspaper j in quarter t. In Panel A, the baseline category is quarter $Q2/2015$. In Panel B, the baseline category are all observations before New Year's Eve 2015-16. Robust standard errors in parentheses. Significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A10: Polarization Dynamics and Policy Support

	JW	TAZ	SZ	Bild	FAZ	Welt	JF
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GovSupport$_{t-1}$	-1.732	0.054	3.671**	6.971*	1.086	0.879	9.233**
	(3.032)	(2.211)	(1.786)	(4.032)	(3.073)	(1.875)	(4.407)
GovSupport$_{t+1}$	-0.219	-0.140	-4.524**	-3.144	-0.705	-0.825	-9.118**
	(2.398)	(1.971)	(1.880)	(4.793)	(2.899)	(1.772)	(3.596)
Constant	1.312	0.058	0.628	-2.567	-0.555	0.020	-1.247
	(0.904)	(1.136)	(0.810)	(1.810)	(1.219)	(1.085)	(2.088)

Notes: Bootstrap standard errors with 500 replications in parentheses. The dependent variable is Rating$_i$, which equals the rating of picture i published by newspaper j in quarter t. Significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A11: Changes in Attitude to Migration for Hungarian News Outlets

	Index (1)	Nol (2)	HVG (3)	Origo (4)	Nep (5)	Magyar (6)	24.hu (7)	444 (8)
Q3/2015	0.304**	-0.346	-0.547***	-0.050	0.331*	-0.628***	0.073	0.216
	(0.154)	(0.212)	(0.172)	(0.196)	(0.190)	(0.144)	(0.177)	(0.181)
Q4/2015	0.433**	-0.205	-0.275	0.068	0.879***	-0.570***	0.547**	0.167
	(0.192)	(0.203)	(0.181)	(0.203)	(0.227)	(0.166)	(0.213)	(0.348)
Q1/2016	0.123	-0.359*	-0.369*	0.223	1.338***	-0.304	0.551**	2.222***
	(0.178)	(0.198)	(0.188)	(0.216)	(0.261)	(0.223)	(0.214)	(0.120)
Q2/2016	0.096	-0.261	0.042	0.020	1.259***	-0.245	1.132***	0.607**
	(0.167)	(0.189)	(0.184)	(0.209)	(0.253)	(0.226)	(0.223)	(0.247)
Q3/2016	0.116	-0.337*	-0.135	0.081	0.821***	-0.206	0.577**	0.865***
	(0.229)	(0.188)	(0.206)	(0.226)	(0.241)	(0.245)	(0.245)	(0.315)
Constant	-0.504***	-0.204	-0.224*	-0.417***	-0.693***	-0.255**	-0.725***	-0.984***
	(0.117)	(0.163)	(0.121)	(0.160)	(0.161)	(0.115)	(0.151)	(0.120)

Notes: Results from estimating equation (2) by OLS. The dependent variable is $Rating_{ijt}$, which equals the rating of picture i published by newspaper j in quarter t. The baseline category is quarter $Q2/2015$. Robust standard errors in parentheses. Significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A12: Cross-Country Difference between Germany and the US

	(1)	(2)	(3)	(4)
US	0.265***	-0.077**	0.095***	0.250***
	(0.037)	(0.034)	(0.036)	(0.036)
Share non-males		1.396***	1.263***	1.253***
		(0.0424)	(0.0436)	(0.0407)
Small Group (2-4)			-0.0500	-0.132***
			(0.0519)	(0.0496)
Intermediate Group (5-14)			-0.376***	-0.421***
			(0.0486)	(0.0492)
Large Group (15-24)			-0.538***	-0.633***
			(0.0614)	(0.0611)
Very Large Group (>24)			-0.805***	-0.883***
			(0.0595)	(0.0584)
Route				-0.818***
				(0.064)
Asylum Homes				-0.787***
				(0.070)
Socio-economic Challenges				-1.246***
				(0.077)
Security Issues				-1.420***
				(0.087)
Integration				0.341***
				(0.089)
New Life				-0.659***
				(0.078)
Portraits				-1.263***
				(0.095)
Other				-1.089***
				(0.087)
Constant	-0.103***	-0.617***	-0.306***	0.527***
	(0.0217)	(0.0265)	(0.0439)	(0.0713)
Mean DV	-0.034	-0.034	-0.034	-0.034
Std.Dev. DV	1.212	1.212	1.212	1.212
N	4575	4559	4559	4557

Notes: The dependent variable is Rating_{ijt}, which equals the rating of picture i published by news outlet j in month t. GroupSize_i and Topics_i are categorical variables. The omitted category in GroupSize_i is Portrait_i. The omitted category in Topics_i is Sea/Vessel_i. All specifications are based on German and US news outlets. Robust standard errors in parentheses. Significance at * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A13: Within-Outlet Range Hungary and the US

News Outlet	Average Rating	Av. Rating most neg. Half	Av. Rating most pos. Half	Within-Outlet Range
		Hungary		
Index	-0.32	-1.27	0.60	1.87
hvg	-0.47	-1.49	0.55	2.59
Origo	-0.36	-1.35	0.63	1.98
Nol	-0.47	-1.27	0.32	1.59
Nep	-0.01	-1.11	1.07	2.18
Magyar	-0.62	-1.56	0.33	1.89
24.hu	-0.30	-1.30	0.71	2.01
444	-0.59	-1.50	0.30	1.80
		US		
FOX	-0.16	-0.98	0.65	1.63
CNN	0.25	-0.52	1.03	1.55
NYP	0.22	-0.62	1.10	1.72
BFN	0.30	-0.53	1.14	1.67
NYT	0.39	-0.38	1.15	1.53

Notes: The within-outlet range corresponds to the difference between the average rating of the most positive half of pictures and the average rating of the most negative half of pictures.