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ARTICLE

Benchmarking pandemic response: How the UK's COVID-19 vaccine rollout impacted diffuse and specific support for the EU

Irene Rodríguez[1], Toni Rodon[1], Asli Unan[2], Lisa Herbig[2], Heike Klüver[3] and Theresa Kuhn[2]

[1]Department of Political and Social Sciences, Universitat Pompeu Fabra, Barcelona, Catalonia, Spain, [2]European Studies Department, University of Amsterdam, Amsterdam, The Netherlands and [3]Institut für Sozialwissenschaften, Humboldt University, Berlin, Germany
Corresponding author: Irene Rodríguez; Email: irene.rodriguez@upf.edu

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Abstract
Does the EU's performance compared to neighboring countries influence public support? Using a benchmarking approach, we argue that people compare their country's performance within the EU to that of a non-EU country, shaping their attitudes. The COVID-19 vaccine rollout in 2020 provides an ideal test case, as governments launched vaccination programs at different speeds. The UK began weeks before EU countries, allowing us to examine its impact on EU support. Using an Unexpected Event during Surveys Design (UESD) with Eurobarometer data, we find that the UK's early rollout significantly reduced specific policy support for the EU but did not consistently affect diffuse support. Our findings offer key insights into attitudes toward European integration and performance evaluations.

Keywords: European Union; UK; benchmarking theory; COVID-19 vaccine rollout; diffuse and specific support

Introduction

Do citizens benchmark the performance of the EU against other countries when forming their opinion toward European integration? Following De Vries' (2018) benchmarking theory on EU attitudes, a growing body of literature suggests that people base their attitudes towards the EU on a comparison between the current status quo of membership and the alternative state of being outside the Union (see also Hobolt and De Vries 2016; De Vries 2017; 2018).

The COVID-19 vaccine rollout in 2020 represents an ideal scenario to test this benchmarking expectation. We argue that the UK serves as a counterfactual for the situation of being outside the EU since the UK had officially left the EU only weeks before the start of the pandemic. Therefore, we contend that the population of EU countries assessed the vaccine rollout of the UK vis-à-vis the situation in their own country, and as a result of this comparison, their attitudes towards the EU likely changed.

Brexit offered a clear example of what leaving the EU might look like for member states, making it a valuable case for studying attitudes not only in the UK but also across other EU countries (Jurado, León and Walter 2022). We complement these studies by looking at the potential reverberation of the UK vaccine rollout on attitudes among citizens living in EU countries.

The UK was the first country in the world to start its COVID-19 vaccination programme, on 8 December 2020. Most crucially, the UK launched its vaccine weeks before any EU country did so.[1] Long negotiations and a bureaucratic approval process delayed the vaccine rollout in the EU (Deutsch and Wheaton 2021), which was criticised by the World Health Organization for being 'unacceptably slow'.

Using the context of the COVID-19 pandemic, this article examines whether (and to what extent) events that happen outside EU borders have the potential to alter member states' citizens' attitudes towards the EU. Drawing on Easton's (1975) distinction between specific and diffuse support, we argue and empirically show that the UK vaccine rollout negatively affected specific EU support (that is, support for EU authority in health policies), while diffuse support (that is, general support for European integration) remained unaltered.

We exploit the start of vaccinations against COVID-19 in the UK (and, consequently, the world) and examine whether the rollout changed diffuse, as well as specific, support for the European Union in EU countries. To test our expectations, we use Eurobarometer wave 94.2, which was fielded right around the time of the first-ever world COVID-19 vaccination in the UK, and provides an ideal data source to perform an Unexpected Event during Surveys Design (UESD; Muñoz, Falcó-Gimeno and Hernández 2020). Analysing a set of dependent variables tapping specific and diffuse EU support, results show a decrease in support for the idea that the EU should have more decision-making power in health-related issues and how individuals are less likely to believe EU coordination helped their country during the pandemic. However, we find no consistent evidence of a significant change in diffuse support.

Our results contribute to several strands of literature. Firstly, we build on the existing literature on EU support and contribute to it by showing how external events can trigger a significant reaction among European citizens, and consequently change their attitudes towards the Union (Ringlerova 2015; Papageorgiou and Immonen 2023; De Vries et al. 2021; Kayser and Peress 2012). We expand the literature on benchmarking theory by exploiting the new context that Brexit has brought about, and by showing how it can be considered a new benchmark against which EU citizens assess their situation and the EU's performance (De Vries 2017; Delis, Matakos and Xefteris 2020; Hobolt et al. 2022; Jurado, León and Walter 2022). Additionally, we build on the already existing literature on the political effects of (health) crises by using the COVID-19 case and show how such a health crisis can affect political attitudes across countries (see, for example, Gingerich and Vogler 2021; Aassve et al. 2021).

This article has important implications for our understanding of the repercussions of domestic political events in an interconnected system such as the EU. Our results provide evidence of the different types of attitudes related to the European Union, and how an external information shock, such as the UK vaccination in December 2020, can affect diffuse and specific support for the EU. It is of utmost importance to understand how current crises, as well as the EU's crisis response, can potentially affect how citizens regard the European Union.

Theory

The nature of support for the EU

Following Easton (1975), we distinguish between diffuse and specific EU support. The former relates to the fundamentals of the political system and remains relatively stable over time, while the latter is more related to the policy output and performance of political authorities, such as incumbents or offices, more than the regime itself.

Diffuse support tends to be more durable and contributes to the stability of the regime, as it hardly fluctuates over time (Easton 1975; Norris 2011; Ringlerova 2015). It has also been called

[1]Vaccinations against COVID-19 would not begin until more than two weeks later, on 27 December 2020 (DW, 17 December 2020).

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'affective support', while specific support has been referred to as 'performance-based political support'. As the name gives away, *specific policy support* is related to the policies and actions implemented by authorities and political actors: that is, what they do and how it is done. The evaluation of governmental – or institutional – performance can make the political support of incumbents and political institutions fluctuate (Dalton 2004, 77).

To evaluate the performance of governments and adjust their attitudes in accordance, citizens have to correctly assess which political institution or level of the political system is responsible for the policy in question. These responsibility assessments are how citizens can hold their representatives accountable for their actions and performance, through their evaluations of policy outcomes (Wilson and Hobolt 2015).

In multi-level systems such as the EU, attribution of responsibility is arguably more complex than in national systems, since the different levels of government may share policy responsibilities, leading to uncertainty regarding the distribution of such responsibilities. In addition, the EU enjoys less legitimacy than the countries comprising it and is often questioned by politicians and the public.

Benchmarking theory

A large body of literature has analysed the factors driving public support for the EU (for an excellent recent review of the literature, see Hobolt and De Vries (2016). The three most prominent approaches to explaining EU support relate to: (1) collective identity (Hooghe and Marks 2004, 2009), (2) utilitarian cost-benefit considerations (Gabel and Palmer 1995; Carreras, Irepoglu Carreras and Bowler 2019), (3) elite cues (Kuhn and Stoeckel 2014), and benchmarking (De Vries 2017).

First, the identity approach assumes that questions of collective identity are key in explaining EU support. Some Europeans see integration as a threat to their national identity (Hooghe and Marks 2004, 2009) which is a strong predictor of Eurosceptic attitudes (Risse 2014) and of Eurosceptic vote choice (Spanje and Vreese 2011), although this relationship can also be bidirectional (Sczepanski 2022).

Second, the utilitarian approach argues that, in addition to identity considerations, citizens base their evaluations of European integration on an individual cost-benefit analysis so that citizens who benefit from European trade liberalisation are more supportive of the EU (Gabel 1998).

But how are ordinary people able to make sense of the costs and benefits of European integration? This is where the cue-taking and benchmarking theories come in. The cue-taking approach argues that European integration is too complex and remote from the daily lives of most citizens for them to have sufficient interest or awareness to base their attitudes on an evaluation of the implications of the integration process (Anderson 1998; Wessels 2005). Instead, citizens rely on 'heuristics', 'information shortcuts', or 'cues' to be able to overcome their shortfalls in terms of factual knowledge.

De Vries' (2017) benchmarking theory is related to the cue-taking approach. It argues that 'people's attitudes towards Europe are based on a comparison between the benefits of the status quo of membership and those associated with an alternative state, namely one's country being outside the European Union' (De Vries 2018, 23). Thus, citizens' attitudes towards the European Union are largely shaped by a comparison between the current situation within the EU and a counterfactual scenario in which their country is not part of the EU club – and the costs and benefits associated with it.

Traditionally, it has been argued that citizens use their own country's performance as a proxy to imagine what their situation would be if they were to leave the EU. More recently, Hobolt and Tilley (2014) argued that the possibility of Brexit, and consequently the new situation of the UK outside the European Union, could become a potential benchmark against which EU citizens compare their status quo inside the Union. Hypothetically, the fact that the UK left the EU can provide citizens with informational cues about what they have been missing on the potential economic and political consequences of being in an alternative state; that is, out of the European Union (De Vries 2017, 39).

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COVID-19 turned the UK into a real-life counterfactual: in the face of a slow and bureaucratic approval process and harsh intergovernmental negotiations about the distribution of vaccines, citizens in the EU have been able to imagine what could have been their potential situation if, as the UK, their country was no longer an EU member state. As Hobolt et al. (2022) put it: 'Such comparisons may involve not only an assessment of the quality of national institutions but also across nations as they assess the potential costs and potential benefits of exiting the Union' (p. 101).

We contend that, as a consequence of the UK vaccination rollout, citizens' thoughts and opinions could have spilt over to the EU terrain, leading to a shift in attitudes towards the EU after 8 December 2020. Our expectation is not only grounded on the benchmark theory but also on multiple works showing evidence of spillover effects across countries on attitudes. For instance, previous works have shown that the political consequences of terrorist attacks, political scandals, or economic uncertainty, among others, affected what people think beyond a country's national border (see Delis, Matakos and Xefteris 2020; Boomgaarden and Vreese 2007; Ares, Ceka and Kriesi 2017; Lee 2018; Balli et al., 2017; Semetko, Brug and Valkenburg 2003).

An increasing amount of scholarly work is gradually providing evidence on cross-national benchmarking. Kayser and Peress (2012, 662) show how cross-national comparisons can help voters assess their national governments regarding their economic policy: either by themselves or using information from the media, they compare their country with others to form their judgements and cast their vote on the next election. These cross-border dynamics can also enter the realm of attitudes. On Trump's election as president, Minkus, Deutschmann and Delhey (2019) found that it had a significant effect on positive attitudes towards the EU, mainly, as they argue, due to a rally effect of the population around the European project, as it could potentially threaten the stability of Europe and, by consequence, the EU. Although the case in their paper does not specifically involve a benchmarking effect, it does serve us to argue how foreign events can have domestic consequences, even if they have little to do with domestic politics.

When speaking about terrorism, Noelle-Neumann (2002) shows that the New York terrorist attacks of 9/11 increased the fear among German citizens in Germany, who viewed the next twelve months much more negatively than the days before the attack. Also on terrorism, Finseraas and Listhaug (2013) find that the Mumbai terrorist attacks of 2008 provoked a sudden increase in fear of terrorism in Western Europe. Specifically related to the UK's exit from the European Union, Delis, Matakos and Xefteris (2020) find that Brexit affected vote choice in the 2016 Spanish election, lowering the support for the Spanish leftist party Unidas Podemos, which at the time took an ambiguous (or contrarian) approach towards the EU.

Last but not least, some studies have already explored a benchmarking process related to COVID-19. De Vries et al. (2021) studied how the first lockdown in Europe, which was implemented by the Italian government at the beginning of the pandemic, had the power to influence incumbent support in other countries in Europe. Through an experiment, Becher, Brouard and Stegmueller (2024) find that benchmarking across borders weakens democratic accountability at the national level. Specifically on the vaccine rollout, and most interesting for our research, is a recent paper published by Reinl, Katsanidou and Pötzschke (2023). Using German panel data, they test whether the UK vaccine rollout affected citizens' assessment of their country's EU membership. They find that '[w]hen vaccination progress in the EU and the UK was compared, respondents rated EU membership significantly worse than when no such additional priming took place' (Reinl, Katsanidou and Pötzschke 2023, 2).

We theorise that the start of the vaccination campaign had an immediate effect on specific policy support while diffuse support for European integration has largely been unaffected.[2]

[2]Although lacking the characteristics of other shocks that can abruptly affect citizens by surprise, such as terrorist attacks, the implementation of a policy or, in this case, another country's implementation of it can also somewhat act as a shock to people's political attitudes.

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Specific policy support relates to 'support for the content of collective decisions and actions taken by EU actors' (Hobolt and Vries 2016, 416). Specific policies adopted by the EU often have tangible outcomes for European citizens. If a particular policy has adverse effects on citizens, it can lead to dissatisfaction and a negative perception of the EU.

The vaccination campaign is a case in point here. The start of the vaccination campaign in the UK was in the news all over Europe where citizens were still waiting for the EU to approve vaccines and finally distribute them in the EU member states. Since the UK had just officially left the EU only months before the pandemic and was able to distribute the vaccine faster, we expect that citizens negatively evaluate the performance of the EU on this policy issue.

Hypothesis 1: *After the UK vaccine rollout, specific support for the European Union will decrease.*

Diffuse support for the European Union, by contrast, relates to support for the constitutional architecture of the EU as laid down in the various treaties, including support for membership in the EU (Hobolt and Vries 2016, 415–416). Diffuse support for the EU is often based on broad and abstract concepts such as a sense of European identity, shared values, and the overall idea of European integration. These concepts are less susceptible to change or fluctuations in response to specific policies. Individuals may feel a general attachment to a united Europe, which can endure despite disagreements on specific policies. Diffuse support for the EU could also be related to the idea that European citizens might realise that they can more effectively deal with a common threat if they are united. Relatedly, the economic benefits of the single market and the peace dividend resulting from increased cooperation and integration have contributed to a widespread positive sentiment toward the EU. This diffuse support is less likely to be swayed by specific policy decisions because it is grounded in the broader benefits derived from European integration. We, therefore, expect that the short-term disappointment with the EU vaccination campaign did not affect diffuse support for the EU.

Hypothesis 2: *After the UK vaccine rollout, diffuse support for the EU will remain stable.*

Research Design

UK's deployment of the world's first COVID-19 vaccine

This article exploits the start of vaccinations against COVID-19 in December 2020, a crucial contemporary event that made headlines in times of one of the major crises of the 21st Century. This rollout took place in one country before any other: the UK. Most crucially, the rollout occurred after the UK had recently officially left the EU months before the pandemic and the vaccination process started. Both in the UK and elsewhere, many attributed the speed and efficiency in developing the vaccine to the fact that the UK was now free of the hurdles of the EU.

The race to discover, manufacture, and distribute the vaccine began in the first months of the pandemic and culminated on 8 December 2020, with Margaret Keenan receiving the first-ever Pfizer-BioNTech shot against COVID-19, weeks before any other country, and certainly weeks before the EU.

The European Medicines Agency (EMA) was in charge of authorising the vaccine against COVID-19, and the European Commission (EC) secured, distributed, and delivered it among the member states (EC 2023). Therefore, we assume that citizens of EU countries correctly attributed the functional responsibility – as opposed to causal responsibility (see Hart 1968) – to the EU (and not any other actor) in providing the vaccines against COVID-19.

The rollout unleashed several reactions from the public: the news of people starting the vaccination process was well received as a step forward to combat the coronavirus, but it also highlighted the fact that other countries had not been able to start as early as the UK. The

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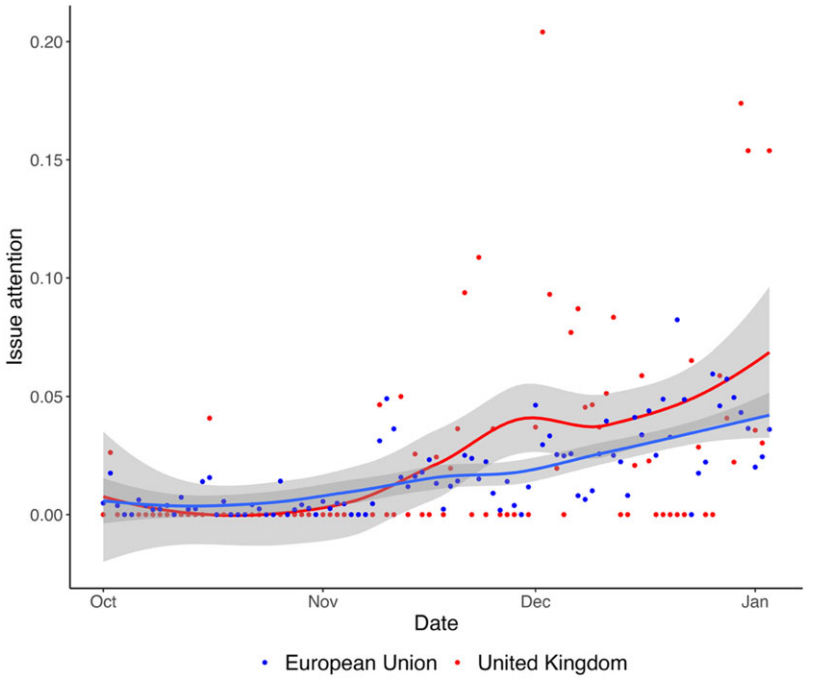

Figure 1. Weekly proportion of newspaper articles' titles about the UK and the EU that mention vaccination.
Note: Attention is measured as the rate of newspaper articles' titles that mention vaccination as well as either the UK or the EU. Source: Newspapers' websites.

collective effort made by the EU to secure and distribute the vaccine as soon as possible was overshadowed by the former member of the EU. Maggie Keenan appeared on almost all front pages of newspapers (see, for example, Bild, 8 December 2020).

Further, this happened in the context of the British withdrawal from the European Union: the UK had just left the EU after a very long and arduous Brexit process. By December 2020, the idea of the UK as part of the EU had perhaps begun to dramatically fade but the notion would not be entirely gone from the population, and many might have considered whether the fact that the UK had just left the EU had something to do with them getting the vaccine so fast.[3] It was certainly the case in several newspapers, as reflected in the headlines (see, for example, DW 2020; Deutsch and Wheaton 2021; Gehrke 2021; Apuzzo, Gebrekidan and Pronczuk 2021). Evenimentul Zilei, a popular Romanian newspaper, wrote: 'BREXIT advantages: the UK approves Pfizer-BioNTech vaccine. The EU is still waiting for almost a month' (Hendrik, 2 December 2020).[4]

This issue dragged on as vaccinations continued through the new year, and the EU was heavily criticised for being slow. Olaf Scholz, then German finance minister and now current Chancellor of Germany, qualified the process as a 'disgrace' (Henley 2021). Similarly, other politicians from other EU member states noted and condemned the delay in the progress of the vaccination roll-out in the EU in comparison to that of the UK (Henley 2021; Fleming, Peel and Chazan 2021; Boffey 2021), further highlighting to the public the differences in dealing with the COVID-19 crisis.

Over time, newspapers dedicated more articles to discussing the vaccination process related to the EU and the UK. Figure 1 shows the proportion of newspapers (in Spain, Germany, the

[3]Figures 2 and 3 in the online appendix show Brexit mentions in the news and Google searches during 2020.

[4]Original quote in Romanian: 'Avantajele BREXIT: Marea Britanie a aprobat vaccinul Pfizer-BioNTech. UE mai așteaptă aproape o lună' (Hendrik, 2 December 2020).

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Netherlands, and Poland) that mentioned either the UK or the EU, and the vaccination process during the two weeks before and after the start of the vaccine rollout (8 December 2020). As the plot shows, during the week of the vaccination rollout in the UK, the number of newspaper articles that mentioned the UK and the vaccination issue together increased. That is true also for articles mentioning the EU, but in a more moderate manner.

Hence, we can see how the UK's success in administering the vaccine triggered a reaction in other European countries, not only about the UK but also towards their national government and the EU. In this context, we set out to discover the effect of this shock on the population's attitudes toward the EU.

Method

To test our expectations we use survey data from Eurobarometer wave 94.2 (EC 2021). This collection of surveys comprises representative samples from twenty-seven European Union countries, which allows us to test the effect of the vaccine rollout in different contexts.

To analyse whether the vaccine rollout affected public support for the EU, we use different questions on specific and diffuse EU support. Diffuse support is captured using five items: EU support, respondent (R) favours or opposes the idea of the EU; EU benefits, R's opinion on whether his/her country has benefited from EU membership; EU positive image, R has a positive or negative image of the EU; Right direction, R thinks the EU is going in the right or wrong direction; and EU Democracy, R's satisfaction with EU democracy. All variables are categorical. 'EU benefits' is a binary indicator, 'EU right direction' ranges from 1 to 3, 'EU support' and 'EU democracy' range from 1 to 4, and 'EU positive image' ranges from 1 to 5. Lower numbers indicate a lower level of support, and higher numbers signify a higher level of support.

We capture the dimension of specific support using an R's position on whether the EU should have more (or less) decision-making power on health-related issues (also on a 1 to 3 scale), as well as whether the R thinks that coordinated EU action helped their country respond more effectively to the pandemic or whether it should be increased to do so for future crises (on a 1 to 4 scale).[5]

To check whether the potential UK vaccine rollout effect spilt over other (non-health-related) specific attitudes towards the EU, additional models are run in which we employ as outcomes an R's opinion on whether the EU should have more decision-making power on social security, education, equality policies, climate change, job promotion policies, digitalisation, and working conditions.

Our research design follows an Unexpected Event during Surveys Design (UESD) approach (Muñoz, Falcó-Gimeno and Hernández 2020). While the survey was fielded in different EU countries, the news that the UK would be the first country to vaccinate the population reverberated around the world. The idea that the UK would be the first country to roll out an anti-COVID-19 vaccine programme was certainly on the news before that date, but when the first vaccine was administered on 8 December 2020, in a local hospital in Coventry, the news sent shock waves throughout the EU and brought about a bit of hope amidst the lockdown measures implemented in the majority of EU countries.[6] In other words, our departing assumption is that even if people knew that the first vaccine was about to be administered, realizing that this was a reality still represented a crucial moment in people's experience with the coronavirus crisis. Crucially, the fact that a non-EU country was able to do it before any EU country could have signalled that the EU was not effective in facilitating the distribution and subsequent rollout of the vaccine.

All in all, we take advantage of the UK vaccine rollout and examine whether the event changed people's support for the EU. As Figure 2 illustrates, we have enough data before and after the event

[5]Descriptives of all variables and additional information on data sources can be found in the online appendix.

[6]Bridgman et al. (2021) take a similar approach when analysing how a court ruling in the middle of an election campaign can affect vote intentions.

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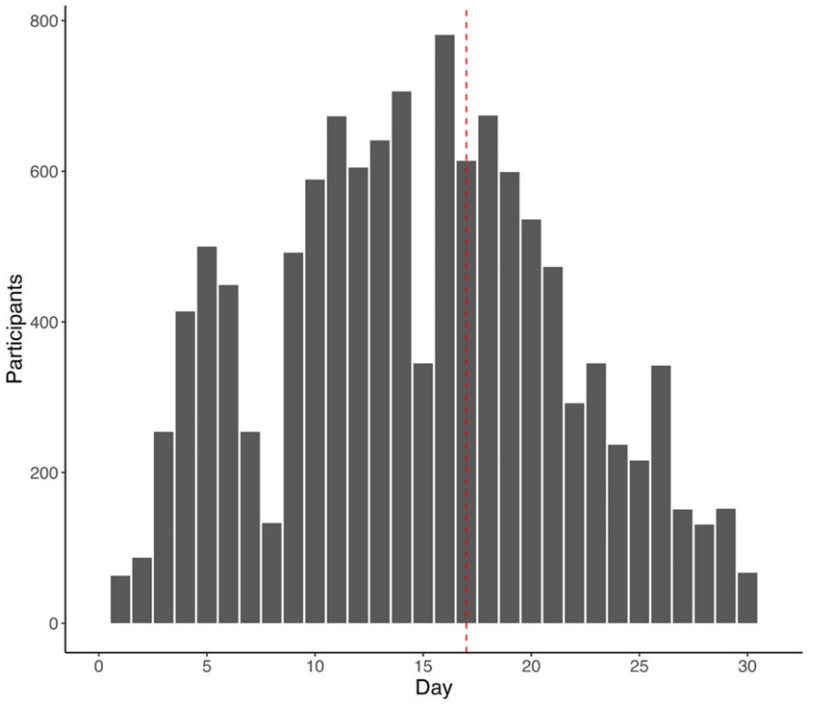

Figure 2. Interviews per day before and after the start date of the UK vaccine rollout.
Note: The dashed red line indicates the first day of the UK vaccine rollout.

to compare whether the arguably good news about the UK vaccine rollout affected people's attitudes towards the EU.[7]

We take this event as our treatment and assess its effect through several OLS models with robust standard errors and country-fixed effects. However, we also argue that such an event must have been communicated through the media of each country for it to have reached the population. In other words, the main (even only) way citizens knew about the UK's vaccine rollout was through the media. That is why we use the first time (day) the media of each country reports (publishes an article) on the UK vaccination rollout to determine the moment from which treatment is considered to be administered. Consequently, each country has its own treatment time.

To determine the date of treatment for each country, we conducted a search of all newspapers of the EU countries included in Eurobarometer through the LexisNexis platform, and took the day after the date of the first article that mentioned the start of the UK vaccine rollout. Therefore, in addition to reducing our sample to eleven countries (for which we have the necessary data), the dates of treatment range from the 7th to the 9th of December 2020.[8]

One of the assumptions of the UESD is *ignorability*. That is, the outcome for every respondent must be independent of the moment of the interview (Muñoz, Falcó-Gimeno and Hernández 2020). One way in which this assumption could be violated is if there are unobservable confounders. That is, if respondents in the treatment group are significantly different than those in the control group, our results would not be reliable. For instance, there can be differences between

[7]Figure 4 in the online appendix shows observation distribution by countries. Observations in some countries are a bit unbalanced before and after the treatment. Therefore, we perform additional analyses varying the countries included in our sample. As can be seen in Appendix 7, the results remain robust.

[8]A list of countries and treatment times can be found in Table 4 in the online appendix.

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Table 1. Balance measures for covariate distributions

	Means treated	Means control	SD Mean difference	Means threshold*
Age	45.8124	46.0544	−0.0197	Balanced
Gender	0.4756	0.4649	−0.0197	Balanced
Education	20.4702	19.4879	0.0215	Balanced
Left-right scale	5.2113	5.1400	0.0381	Balanced
Unemployment	0.0646	0.0921	−0.1119	Balanced
Subjective class	2.4451	2.4977	−0.0512	Balanced
Rural/Urban	1.9559	1.9577	−0.0023	Balanced
Interest in local politics	2.0613	2.0452	0.0253	Balanced
Interest in national politics	2.1241	2.1179	0.0100	Balanced
Interest in European politics	1.8612	1.8856	−0.0393	Balanced

(a) *Balance threshold is computed according to the standardised mean differences of the variables; (b) following Zhu, Coffman, and Ghosh (2015) and Stuart, Lee, and Leacy (2013), we apply a threshold of 0.1 to determine balance.

the subjects regarding the interest in responding to the survey, which would mean that those respondents who are indeed more interested in responding will do it quicker, and those on the last days of the fieldwork will have a smaller amount of subjects with that trait. Also, people who are most at home are likely to be interviewed earlier, such as the unemployed or older people (Muñoz, Falcó-Gimeno and Hernández 2020, 11).

To make sure that there are no significant differences between the respondents in either level of treatment (in this case, 0 or 1), we performed a balance test, the results of which can be seen in Table 1.

This table assesses whether the covariates used in our study are similarly distributed between the treated and the control groups. As the last column of the table indicates, all variables are properly balanced. Therefore, we can assume that there are no significant differences between the respondents across treatment statuses.[9] For that reason, potential differences in attitudes reported by our models are unlikely to arise as a result of having individuals with different observed characteristics before and after the rollout of the vaccine in the UK.

Despite the lack of covariate imbalances by treatment assignment, our models include different control variables to adjust our coefficients for potential confounders. First, we include education and gender. The first one is measured as the number of years a person has been in the education circuit. The latter is coded as a dummy variable, where 'male' is coded as 1, and 'female' as 0. The literature tells us that people with higher education, as well as men, will tend to be more supportive of the European Union (Vreese and Boomgaarden 2006; Gabel and Palmer 1995). Second, we include employment and subjective class, as Eurobarometer does not include any measure of income. In this way, employment is coded as a categorical variable: being 'unemployed' is coded as 0, a 'blue-collar' worker as 1, and a 'white-collar' worker as 2. As the literature indicates, executive and managerial occupations tend to be more supportive of the EU (Vreese and Boomgaarden 2006). Finally, subjective class is a categorical variable of five levels ranging from 'lower class' (coded as 1) to 'higher class' (coded as 5).

Then, we also control for a respondent's position on the left-right scale, which ranges from 1 (extreme left) to 10 (extreme right) –since the most extreme ideologies are related to lower levels of EU support–, the rural/urban cleavage, coded as a categorical variable with three levels: 'rural area' coded as 0, 'small or middle town' as 1 and 'large town' as 2. Finally, we also control for political interest through three separate variables: interest in local, national, and European politics, which range from 1 to 3.

[9]Figure 5 in the online appendix shows individual plots for the distribution of the covariates used.

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Results

We first start by examining the overall effect of the UK vaccine rollout on the different EU attitudes. To ease interpretation, we plot the coefficients in Figure 3.

As can be seen, respondents interviewed after the vaccine rollout are less likely to support the idea that the EU should have more decision-making powers in health decisions. By contrast, we do not find the same pattern across the set of diffuse variables, and the effects are not consistent.

Thus, this first set of results indicates that the vaccine rollout modified specific attitudes on a policy directly related to the coronavirus crisis (health decisions) but was not able to consistently change more ingrained attitudes on the EU regime (related to diffuse support). Furthermore, the coefficient is negative, indicating that once exposed to the UK, a former EU member state, being the first country to deploy the vaccine, individuals in EU countries were, on average, less willing to give decision-making powers on health issues to the EU.

The estimates for each model plotted can be seen in Table 5 (in the online appendix). When looking through the results, one coefficient stands out: the treatment effect on health decisions. The health-related issues model shows that when individuals were exposed to the UK vaccination news, the idea that the EU should have more decision-making power on health issues experienced a reduction of 0.062 points (on a scale from 1 to 3) compared to the control group.

The other specific attitudes (whether individuals think their country has benefited from EU coordination of the response to the COVID-19 crisis and whether they think there should be future EU coordination), although not at a conventional level of significance, also point to a negative effect. The idea that the EU was moving in the right direction also marginally deteriorated after the vaccine rollout.

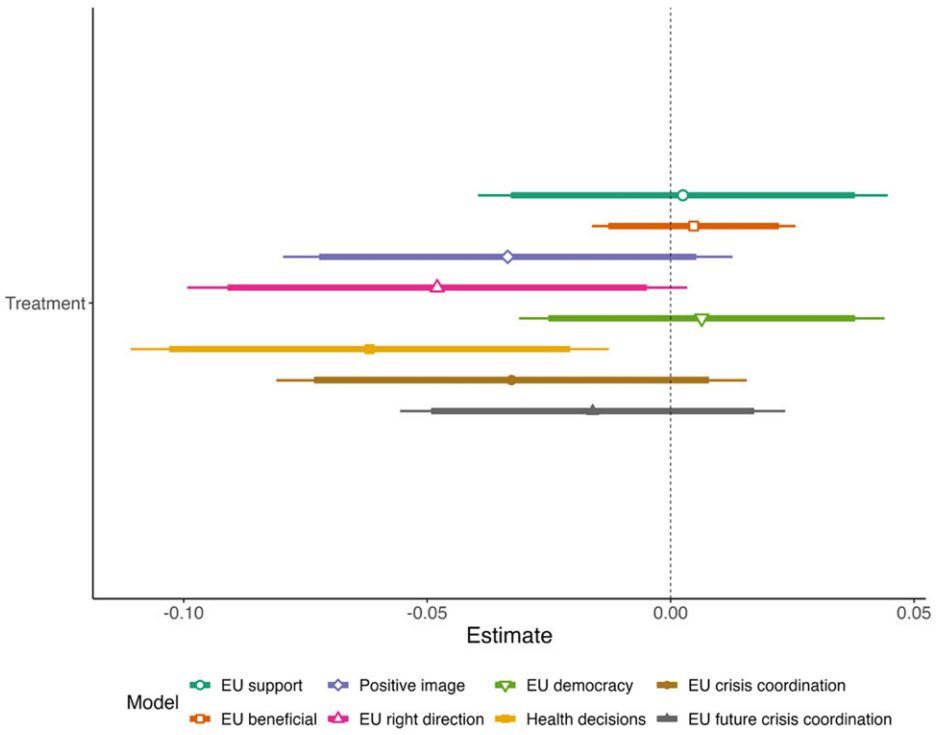

Figure 3. Effects of UK Vaccination on EU attitudes.
Note: Estimates are represented with 90 and 95 per cent confidence intervals.

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The results included above indicate that specific support (H1), measured by how much decision-making power the respondents believed the EU should have on health-related issues, decreased after the UK started the vaccination rollout. By contrast, the effect on variables capturing diffuse support for the EU is not consistent across the different measures (H2).

A series of additional analyses and robustness tests were performed to test the stability of the findings and account for possible alternative explanations. Results show that individuals from countries in the south exhibited much more positive attitudes towards the EU across almost all our outcome variables, while those from the other regions showed more negative attitudes towards the EU in general, but not regarding whether the EU should have more power when it comes to decisions about health (Appendix 6, Table 7, and Figure 6).

Additionally, one potential concern is that political polarisation is driving the results. In other words, it could be that the effect does not come from the vaccine rollout itself but, rather, from countries that exhibit higher levels of polarisation. In such countries, the opposition might have been more likely to blame the government for the slow deployment of the vaccine. Results show that this is not the case and citizens were equally likely to support less EU decision-making power on health decisions in both polarised and non-polarised contexts (Table 8 in the online appendix).

One could also expect that pandemic-related variables might moderate the effect of the vaccine rollout on EU attitudes. To test this, we interacted our treatment with the COVID-19 hospitalisation index from the European Centre for Disease Control (ECDC 2023). The index shows weekly hospitalisations related to the virus per country per 100,000 inhabitants. However, models with hospitalisations do not render any results, which indicates that the contextual severity of the pandemic, even after the vaccine was being deployed, did not moderate the effect of the vaccine rollout on EU attitudes.

Then, we performed some robustness tests to make sure our results were not a function of the model specification. Some of the countries in our sample are not completely balanced in terms of observations before and after the cut-off date. Looking at Figure 4 in the online appendix, this could be the case in countries such as Spain, Cyprus, the Netherlands, or Austria. It could be that these four countries have differing attitudes compared to the rest, which would imply that these compositional differences could potentially be driving our findings. We performed a series of additional analyses gradually excluding these countries one by one and in groups and the results remain robust (Table 10 in the online appendix).

Finally, we conducted a Propensity Score Matching Analysis, to make sure possible imbalances between treatment groups were not driving our results. We first match the sociodemographic indicators of age, gender, education, and living area. The analysis shows that the results (available in Table 11 of the online appendix) remain robust with a p-value lower than 0.01. The results remain stable when adding other variables to our matching strategy, such as employment status and left-right self-placement, and only start to weaken when we also match by country of the respondent. However, even with the latter, the coefficient of our main outcome variable of interest, that is, attitudes towards health-related decisions, remains negative and statistically significant at the 95 per cent confidence level.

Effects on other specific support variables

Besides testing the effect on health decision-making powers, we additionally examined whether the vaccine rollout could also have changed preferences towards other policy areas. Did the vaccine rollout affect specific attitudes on these other issues? Figure 4 shows that all other variables vary in the same direction as the opinion on health decision making, although the effects are generally not statistically significant.

The perception of the EU being less effective and slower in distributing a COVID-19 vaccine compared to other countries could have influenced public opinion regarding the overall performance of the EU in policy decision making. If the EU was unable to competently handle this

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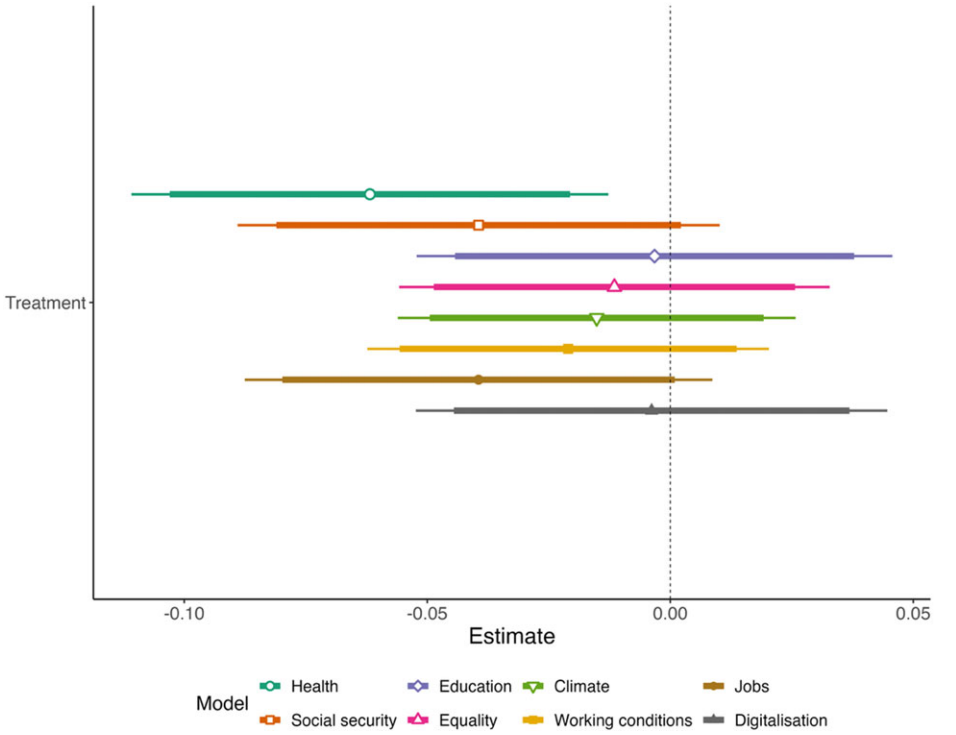

Figure 4. Treatment effects on attitudes towards European decision-making.
Note: Estimates are represented with 90% and 95% confidence intervals.

health crisis, it could have resulted in negative spillover effects, impacting the belief of some EU citizens in the EU's ability to manage other political and social aspects of life.

We also checked whether the effect on health spilt over other social issues. It could be that health was part of an underlying social dimension and the other social issues were also affected by the UK vaccine rollout. We performed a principal axis factor analysis, which identified one factor related to the welfare state.[10] Yet, using this factor on a regression model does not lend a significant pattern, which indicates that the vaccine rollout altered the perception of health-related issues, but it did not change citizens' perceptions of other social issues.

Conclusions and Discussion

In an intertwined world, big events happening outside national borders have an impact on how we think about internal politics. This is likely to be happening in the EU, where citizens are likely to assess the performance of their own country as an EU member state relative to others outside the EU (the benchmarking process). During the COVID-19 pandemic, and especially during the negotiations over the coronavirus vaccine, this process was heightened. The UK, a country that had decided to leave the EU in 2016, became the first country to administer a vaccine and to bring hope to many citizens, who had not seen the end of the tunnel for a long time. Crucially, in early December 2020, citizens in the EU and elsewhere came to realise that the UK started the vaccine rollout programme. The picture of Margaret Keenan, the first person in the world to receive the Pfizer COVID-19 jab, was on the cover of many European outlets.

[10]Figure 7 in the online appendix shows items included in each factor.

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We have contended in this article that the performance of the EU compared to the UK affected EU attitudes. Using the vaccine rollout programme in the UK, we argue that this probably brought hope, but it also signalled that the EU was not able to start the vaccination process before anyone else and that a former EU country did it. It was furthermore unclear when and how the vaccine was going to be distributed to EU countries, as the European Commission took a collective action approach, which meant that EU countries would not be able to distribute the vaccine before a collective agreement was reached. The approach attracted much criticism and was deemed inefficient and slow.

We expected that the UK's vaccine rollout affected specific EU attitudes, particularly on who people think should deal with health-related aspects, and not on general EU attitudes, which tend to be ingrained and largely stable. Our findings confirm our expectations and show that, after the UK's vaccine rollout, people were less likely to agree with the idea that the EU should have decision-making power on health-related issues. Yet, there was no consistent evidence of a significant change in general support for the EU. We also showed how this effect could have spilt over other policy areas: the analysis shows consistent negative coefficients for all policy areas, although the effect is generally not statistically significant. Overall, the UK's vaccine rollout undermined EU citizens' faith and confidence in the European Union's capability and competence in health-related matters, crucial during that period. In addition, it seems it also deteriorated people's perceptions that the EU was capable of handling several policy areas in which it operates, specifically those closely related to the pandemic. These results are largely robust across several additional tests and specifications.

This study is not without its limitations. On the one hand, Eurobarometer's set of variables leaves out some of which could be very useful for our analysis, such as income, vote recall, or vote intention, as well as identification with a party. On the other hand, the news of the start of the vaccine rollout in the UK could have been framed differently by the media across countries, which could in turn have affected EU attitudes. Certainly, media sentiment effects will be an interesting avenue for future research, as well as whether the effect found in this article lasts over time or becomes an isolated event. In addition, and although the UK vaccine rollout damaged people's perceptions that the EU was capable of handling health-related issues, one could also argue that the effect is relatively small and that other dimensions with the potential to change remained unaltered.

Despite its limitations, this article's findings have important implications for our understanding of how citizens form their attitudes towards the EU, particularly on how events happening outside the EU club, with potential spill-over effects on EU members, can shape people's understanding of the role of the European Union.

Supplementary Material. Supplementary material for this article can be found at https://doi.org/10.1017/S0007123424000802.

Data availability Statement. Data, replication instructions, and files for this article can be found in Harvard Dataverse at https://doi.org/10.7910/DVN/D6JI4M.

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