Cogent Social Sciences

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/oass20

COVID-19 vaccine race – the shadow of political and multinational interests

Daniel Rajmil, Lucía Morales & Toni Aira

To cite this article: Daniel Rajmil, Lucía Morales & Toni Aira (2024) COVID-19 vaccine race – the shadow of political and multinational interests, Cogent Social Sciences, 10:1, 2384186, DOI: 10.1080/23311886.2024.2384186

To link to this article: https://doi.org/10.1080/23311886.2024.2384186

Published online: 05 Aug 2024.

COGENT SOCIAL SCIENCES
2024, VOL. 10, NO. 1, 2384186
https://doi.org/10.1080/23311886.2024.2384186

POLITICS & INTERNATIONAL RELATIONS | RESEARCH ARTICLE

OPEN ACCESS Check for updates

COVID-19 vaccine race – the shadow of political and multinational interests

Daniel Rajmil[a], Lucía Morales[b] and Toni Aira[c]

[a]Universitat Oberta de Catalunya, Barcelona, Spain; [b]Technological University Dublin, Ireland; [c]International Studies in Institutional Communication for Development and Sustainable Growth, UPF Barcelona School of Management, Barcelona, Spain

ABSTRACT

The COVID-19 pandemic caused global disruption in 2020, throwing the world into an unprecedented health crisis with unpredicted socio-economic consequences. Strikingly, politicians and supranational organizations failed to collaborate and coordinate a united global response. In light of this, this research study explores how the vaccine race may have been used as a weapon of political communication, constantly influenced by international relations and economic interests. This study analyses the US response to the COVID-19 pandemic and how the vaccine development was used to support Trump's political discourse to gain international political leadership amidst the electoral campaign to become reelected. The core research findings show that President Trump's administration started politicizing vaccine developments as the country became immersed in the 2020 presidential campaign. Furthermore, the reviewed literature and the empirical evidence suggest that advancements in the country's pharmaceutical sector and the development of the COVID-19 vaccine were used as a communication weapon to affect Trump's political campaign and the global COVID-19 vaccine race.

ARTICLE HISTORY
Received 14 March 2022
Revised 16 July 2024
Accepted 21 July 2024

KEYWORDS
COVID-19; nation branding; global vaccine race; health access; political communication; leadership

SUBJECTS
Public Diplomacy; International Politics; Politics & the Media

1. Introduction

The year 2020 will go down in history as the year in which COVID-19 challenged the world economy, national health systems, and international relations. COVID-19 revealed a significant lack of cohesion among the world's economic and political leaders. The pandemic exposed deep-rooted weaknesses in the world's supranational organizations and defined the race for human survival as overshadowed by political and multinational interests. In short, the Global Health Crisis unveiled a crude reality regarding the significance of economic and political agendas defined by countries' inability to cooperate and coordinate their efforts to develop a vaccine accessible to the global population (Hogan et al., 2021; Medecins Sans Frontiers, 2021; Pilkington et al., 2022). Despite decades of relative economic stability – disrupted by cyclical economic and financial crises of varying magnitudes –a fragile equilibrium between health and economics and between global and domestic interests has broadened the gap between the world's most advanced economies and those less developed (Pop & Morales, 2023).

In addition, the COVID-19 pandemic has uncovered numerous gaps in countries' healthcare systems. Severe deficiencies affecting the health sector were evident and the pandemic helped to unveil and underscore how fragile global governance systems are, painfully flagging the world economies' lack of structures for pooling and sharing their resources to offer an optimal and efficient response to pandemics and uncovering global unpreparedness to manage the logistics associated with the development and distribution of the vaccine (Chinai et al., 2022; The Lancet, 2020). Furthermore, the health crisis has contributed to widening the gap between developed and less developed economies and their ability and capabilities to engage in vaccine development, leaving the race to only a few frontrunners geographical concentrated in the world's most advanced economies.

CONTACT Daniel Rajmil drajmil@uoc.edu Universitat Oberta de Catalunya (UOC), Law & Political Sciences Department.

This study presents a paradigmatic example of these relations by exploring the US case to better understand how the COVID-19 vaccine was used to support Trump's political strategy to enhance its national and international political leadership during the 2020 US electoral campaign. From the communication and branding viewpoint, Cwalina and Falkowski (2015) argue that leveraging a political brand associated with a politician creates brand knowledge in the voters' minds. A candidate's image is defined by voters' perceptions of the candidate's leadership potential and messaging (Ibid). Moreover, if candidates function as brands, the extant literature has shown that democratic voters are swayed by their affinity for the brand. In contrast, republican voters seem to be impacted by brand loyalty (Van Steenburg & Guzmán, 2019). The outlined concepts are needed to understand Trump's expectation to gain new voters as the COVID-19 vaccine was under development while securing his previous electoral base to ensure his reelection.

Moreover, election periods have historically attracted researchers' interest for several reasons: i) stock markets exhibit a positive reaction correlated to the country's political, economic, and press degree of freedom. ii) In addition, stock markets react to the election timing and the success of the electoral campaign of the political leadership that is closely associated with the country's economic performance (Pantzalis et al., 2000). Therefore, the complexity of the relationships between the global health crisis, the US electoral campaign, the importance of country branding, and the connection to the country's stock exchanges that are identified as leading global financial indicators are relationships that need to be carefully explored. The strength and novelty of this research study lie in its multidisciplinary approach, which combines political science, political communication studies, economics, and political marketing to offer insights into the vaccine race, as well as its politicization and commercialization dimensions.

The structure of the paper is as follows: the first section introduces the analysis and its significance. The discussions continue with the contextual section on the particularities of the historical moment and its influence on public diplomacy[1] as a political agenda item. The third section outlines the analysis of Trump's political communication, providing a framework for the fourth section, focusing on the data analytics component to examine the performance of the top US vaccine developers. The paper finalizes with a discussion of the empirical findings and offers some concluding remarks for further reflection.

2. The US presidential election amid global uncertainty and vaccine diplomacy

The 2020 US presidential election will be remembered for two prominent features: first, Trump's political communication campaign on social media, and second, the effects of the global health crisis on the US 59th quadrennial presidential election held on Tuesday, November 2, 2020. Times of crises compel leaders to make high-stake decisions under conditions of significant uncertainty that lead to critical political repercussions (Lipscy, 2020, 99). President Trump sought to regain electoral popularity and strengthen his international image in a moment when the COVID-19 pandemic affected politicians' popularity and constrained their political action. The COVID-19 pandemic had all the elements of a major crisis affecting political activity, including threat, urgency, and uncertainty (Ibid), which somehow help to explain the entangled use of the vaccine developments shown by Trump during his electoral campaign.

In his electoral marketing campaign, Trump's launched a strong message at his voters, dwelling on the need to put the domestic economy first. This mindset was summed up in the slogan "*America First and Only America First*." He also continuously downplayed the effects of the pandemic on the social and health dimensions. The initial mistrust of Trump's administration towards COVID-19, together with the global lack of coordinated health policy response, accelerated the country's COVID-19 infections and deaths, as illustrated in Figure 1 below.

However, as the country became immersed in the 2020 presidential campaign, a clear shift in strategy occurred in the Trump administration. The world's economies witnessed how the US incumbent administration started to use vaccine developments to reinforce its political campaign. Trump's campaign strategy shifted from neglecting the COVID-19 pandemic towards aggressively promoting the advancements in the country's pharmaceutical sector and the development of COVID-19 vaccines to support his political gains. More importantly, he used positive developments and advancement as a communication weapon to support its political interests, to the extent that he claimed credit for developing the vaccines for himself. Simultaneously, news that a vaccine had been found was delayed until three days after the

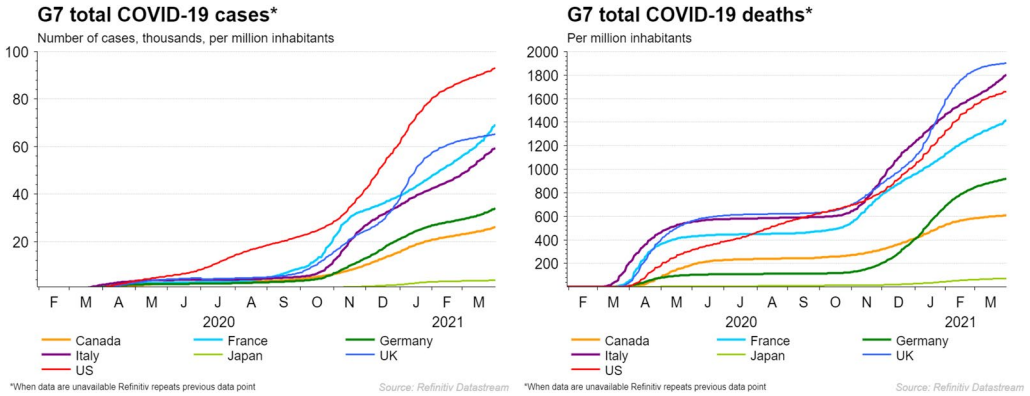

Figure 1. G7 COVID-19 cases and deaths.
*Source: Authors. Refinitiv Datastream (2021).

election results were announced. It was not until November 9, 2020, that Pfizer and BioNTech released a statement indicating that their vaccine candidate proved more than 90% effective in preventing COVID-19 infection in trial participants (Pfizer, 2020). The announcement led Trump to bitterly accuse the pharmaceutical companies of strategically delaying their reports to sabotage his chance at reelection. Against this backdrop of political game-playing, it is essential to look further into the global geopolitical consequences of the COVID-19 crisis and its economic and social ramifications to help us understand why political communication of the vaccine discoveries reached the presidential electoral campaign.

The significance of nation brands, their influence on global issues, and their impact on political agendas emerged as critical during the pandemic. Recent literature has suggested that countries that responded in what is supposed to be considered a much more effective way to the Global Health Crisis (e.g., South Korea and Taiwan) gained access to the global vaccine public diplomacy (Lee & Kim, 2021; Snyder & Sindyukov, 2020). The research findings indicate that nation branding is interrelated with public diplomacy techniques aimed at offering value to the products manufactured in a country, creating a perfect storm situation for the management of the pandemic (Hakala et al., 2013; Hao et al., 2019). In this sense, nation branding becomes a strategic tool for improving a nation's competitive advantage in the global markets (Kaneva, 2011). Another aspect to be considered relates to political marketing and nation branding and their strong association with political and electoral competition. As such, it is crucial to understand Trump's efforts to communicate the vaccine developments due to their impact on global public diplomacy and as a political communication tool in national electoral competition. The COVID-19 pandemic emerged as an unusual global challenge that forced worldwide nations to react at two levels: on national and regional levels, to impose public health measures through political decisions and globally, an unprecedented global policy response to manage an international health crisis. According to Lee & Kim (2021, 384), *"within the context of COVID-19, the notion that countries have their unique nation brands is not far-fetched at all; in the minds of international audiences, Country A may be a COVID-19 success story while Country B may be associated with poor containment measures, insufficient test kits, or high death rates."*

Globally, pharmaceutical companies of the United States, Europe, Great Britain, Russia, China and India pushed their COVID-19 vaccines (Fatton, 2021). Like the rest of the international politicians, Trump was forced to offer a response to COVID-19, which is one crucial factor of the 2020 US elections. While the incumbent vied for a second term in office, the country was in turmoil and immersed in a dramatic health crisis characterized by chaotic management. Domestic instability and confrontation prevailed, although they were overshadowed by the public authorities' inability to contain the spread of the virus and retain political control amid domestic chaos caused by the incitement to ignore public health advice and the Trump administration's efforts to fuel revolt. However, the so-called *"vaccine diplomacy"* appeared to be one public policy solution in the face of growing public discontent with restrictive public measures. Trump relied on the COVID-19 vaccine to boost the national economy and the stock markets' performance to bolster foreign investors' confidence in the country. The launching of *"Operation War Speed"* in May 2020 unveiled the Trump administration's national program to accelerate the development, manufacturing, and distribution of COVID-19 vaccines, therapeutics, and diagnostics (medical

countermeasures) (US Department of Defense, 2020). At this point, Trump's approach aligned with the basic international marketing assumption whereby all country branding intends to create a consistent image of a nation to grant specific attributes to its products and services in the eyes of the consumer (Kilduff and Tabales, 2017). In other words, nation branding is used to promote a nation's products and companies (Melnyk & Varibrusova, 2019). This mirrors how the Trump administration aimed to position its pharmaceutical sector as the world entered the race to develop the COVID-19 vaccine and underlines how the Global Health Crisis turned into a political game with implications for multinational companies securing the maximization of their profits through the development of the vaccine.

3. COVID-19 vaccine: a political weapon in the media circus

The aggressive political communication strategy employed by Trump during the pandemic defined the country's electoral period. Trump's changing approach to political communication on the vaccine developments is quite a controversial aspect when considering his efforts to downplay the effects of the virus and his erratic behavior when he was confirmed to have the disease himself. Trump continuously neglected the severe effects of the virus. The COVID-19 crisis added another layer of complexity to the convoluted, entangled, and erratic mandate that helped define Trump's administration and made the political communication of his mandate of interest. In this sense, Donald Trump has had a more substantial impact than any of his predecessors on how people regard his party and its leaders (Jacobson, 2020). As the US presidential incumbent seeking reelection, it was remarkable to witness how Trump used vaccine developments to influence voters and promote the country's pharmaceutical sector while gaining international soft power in the face of a public health pandemic. On the other hand, the COVID-19 outbreak and the incumbent administration's management of the health crisis reinforced Biden's case against Trump's handling of the pandemic (Ibid).

Trump framed his working agenda within the context of an era of personalization of politics, where the leadership obtained by politicians is constantly growing to the detriment of classical political parties. Moreover, and most relevant during electoral campaigns, political leaders emerge as the critical point of political decisions to be considered by electors (Watkins & Clevenger, 2021; Garzia, 2014; Rebolledo, 2017; Rico, 2009; Wattenberg, 1998). In here, the role of television in political communication has diminished in significance due to the influence of social media and its capability. The reviewed literature suggests that the US presidential election was dominated by Trump's efforts to spearhead vaccine development and thus find a solution to the COVID-19 struggle, as this would enable him to emerge as the nation's and the world's savior.

3.1. Brief insights onTrump's 2020 initial discourse

In the COVID-19 crisis, like in other vital situations, party leaders become the reference point for most parties and institutions, which place most of their hopes around them to build their storytelling. In this sense, the Global Health Crisis and the unleashed 2020 vaccine race projected the political communication of vaccines as a pure political marketing and global public diplomacy tool. Within this context, we can conceptualize the vaccine race as the latest *"horse race"* in the political communication field based on the traditional effects of the personalization of politics (Maarek, 2011). The media follows politics by going along with its main actors and projecting them either as winners or losers. In this case, the race hinged on a vaccine seeking to solve one of the world's most unforeseen crises as the world anxiously awaited a successful solution to COVID-19. Interesting dynamics emerged as the US electoral campaign was forced to embrace the impact of the Global Health Crisis and its severe domestic effects. This is how the vaccine race was shown at its peak, as a race between countries, especially between governments, with their leaders at the helm. International vaccine developments played a prominent role in the US amid a global geopolitical race and the national electoral campaign.

To better understand how the crisis evolved, examining Trump's core political communications and statements during the 2020 electoral campaign and previous months is relevant to see how it became a constant communication item. As early as February 2020, the US incumbent publicly expressed his impatience for a vaccine. As President, a private citizen and presidential candidate for reelection, he

advocated virus skepticism, although his stance underwent significant changes. On March 2, 2020, at a roundtable on coronavirus with his task force and the heads of several pharmaceutical companies, he peppered drug companies with questions that were a variant of *"How fast can you do it?"* By then, Trump was not accepting what the experts were saying – that developing a vaccine would take time –as he needed pharmaceutical companies to make fast progress to support his electoral interests. On April 29, 2020, the President made it clear that he wanted a widely available coronavirus vaccine by the end of the year, even though his public health experts said it would take months or even years. At a press conference at the White House, Trump communicated his desire for speedy FDA approval for drugs that work: *"There has been a lot of progress on the vaccine, but you never know,"* he said. At this time, it was clear that Trump needed positive developments to reinforce his image among voters.

3.2. Trump's strategic shift: from downplaying the virus to promoting a vaccine

On August 5, 2020, Trump said that it was possible that the US would have a coronavirus vaccine before the November 3 election, a more optimistic forecast than anything his own White House health experts suggested. Asked on the Geraldo Rivera radio program when a vaccine might be ready, Trump said: *"Sooner than the end of the year. Could be much sooner*[2]*."* He was asked: *"Sooner than November 3?"* And he answered: *"I think in some cases, yes, possible before, but right around that time."* Later at the White House, Trump said he was optimistic that a vaccine would be available around that date. Asked if it would help him in the election, he said: *"It wouldn't hurt. But I'm doing it, not for the election; I want to save a lot of lives."*

On August 23, 2020, Trump accused the US Food and Drug Administration (FDA) of purposefully delaying coronavirus vaccine trials until after the upcoming presidential election. Trump posted on his Twitter account that *"deep state"* or someone at the FDA was making vaccine trial approvals difficult on purpose, and the body should instead focus on speed and saving lives. Four days later (08/27/2020), Trump pledged that a COVID-19 vaccine would be ready by the end of 2020, without acknowledging the scientific uncertainty*: "We are delivering life-saving therapies and will produce a vaccine before the end of the year, or maybe even sooner."*

In a press conference on September 11, 2020, and at a rally in North Carolina the following day, President Trump again made several unsupported or inaccurate statements about the COVID-19 vaccine. He accused the Democratic presidential candidate at that time, Joe Biden and running mate Kamala Harris, of spreading *"anti-vaccine conspiracy theories."* The candidates appropriately supported approved vaccines but expressed concerns that Trump might not follow standard protocols. The President claimed, *"if this were the Obama administration, you wouldn't have that vaccine for three years, and you probably wouldn't have it all."* Furthermore, Trump inaccurately said that *"we have 30,000 people, in just one vaccine right now, under test in very, very highly infected areas and that the numbers are looking unbelievably strong."* No trial had met its enrolment target of 30,000, and no one had yet known how the vaccines were performing. Trump insisted that he had never said there would be a vaccine in October or November, but he repeated the idea that it was possible and had previously said such timing was likely.

Five days later (09/16/2020), Trump said the US government could distribute a coronavirus vaccine as early as October. *"We're very close to that vaccine, as you know, and I think much closer than I think most people want to say,"* he said during a White House press briefing. He added: *"We think we can start sometime in October. So as soon as it is announced we will be able to start. That will be from mid-October on. It may be a little bit later than that."*

On December 12, 2020, the US President signed an executive order to prioritize COVID-19 vaccines for use by Americans first before partnering globally to ship them to other countries around the world. Following the signing, he answered questions from the media on the coronavirus pandemic and the 2020 presidential election. The President's remarks were part of an *"Operation Warp Speed"* summit at the Eisenhower Executive Office Building (US department press release, 2020). In a video message posted on December 12, 2020, former Twitter – currently X rebranded identity - he said on the new FDA-approved vaccine Pfizer–BioNTech vaccine, "*Today our nation has achieved a medical miracle. We have delivered a safe and effective vaccine in just nine months*[3]*".* He added the vaccine *"will save millions of lives and soon end the pandemic once and for all."* On December 14, 2020, he tweeted that he had reversed a plan for White House officials to receive a coronavirus vaccine in the following days.

Officials said that senior members of the Trump administration would be among the first to get the Pfizer–BioNTech jab. Later, Trump reconsidered his comment and posted on his Twitter account that people working at the White House *"should receive the vaccine somewhat later… unless specifically necessary."*

To this point, we have examined the political communication campaign and how Trump and its administration used it for political gains. The next phase of this study provides insights into the performance of the pharmaceutical sector by examining their stock price behavior. The analysis examines to what extent the vaccine race has become an economic and political ground in order to gain a competitive advantage and position corporations strategically as the 2020 Global Health Crisis politicization and commercial interests became more apparent.

4. The stock market performance

This section examines whether there was a connection between the US pharmaceutical sector and two factors: first, the vaccine-related announcements made by Trump during his electoral campaign and, secondly, budding news surrounding the potential discovery of a vaccine and the impact on leading pharmaceutical companies' share prices. Table 1 below presents the US companies, stock market indexes and vaccines referred to in this paper.

COVID-19 does not seem to have had a massive impact on the US stock markets, which registered historical highs as they entered 2021. The US economy took a hit; nonetheless, it suffered GDP losses and high levels of unemployment. However, the vaccines were rolled out in parallel with the Biden administration's quick intervention, which bet was on a solid stimulus program to empower the US economy. The intervention seemed to help soften the economic blow delivered by COVID-19. Indeed, the country registered an economic boost that signalled the potential of the country's economic recovery and suggested that, at the time, the labor market might have turned the corner (Reuters, 2021). Volatility levels experienced in the stock markets have been very high but have not reached the same magnitude as those exhibited during the 2008 GEFC, as seen in Figure 2 below.

4.1. Stock market reactions

The morning the Pfizer vaccine's effectiveness was announced, stocks went up, which had a substantial impact on market indexes, reflected in their positive reaction to the vaccine news. Figure 3 below highlights some of the primary communications between September and December 2020 and relates them to the vaccine and its impact on US pharmaceutical companies, whose stock prices experienced a significant rise after the vaccine results were announced.

4.2. US pharmaceutical companies

As the US presidential candidates threw themselves into their election campaigns, the country's leading pharmaceutical companies experienced an upward price trend that faded towards the end of 2020 when the election results were announced (see Figure 4 below). The presidential election resulted in significant political turmoil, as Trump refused to acknowledge Joe Biden's win. The stock markets' bullish performance was interrupted by Trump's interference in the political process and his reluctance to acknowledge his defeat and leave it to the new administration. Consequently, the companies' sensitivity towards the systematic risk of the markets started to increase, as reflected in the rise of the companies' beta

Table 1. US pharmaceutical companies and stock markets.

US Pharmaceutical Companies	Vaccine Phase	Stock Markets
1. Pfizer 2. Moderna 3. Johnson & Johnson	1. Tozinameran: Phase III (April, 2020) – Commercialization (December, 2020) 2. mRNA-1273: Phase III (March, 2020) – Commercialization (December, 2020) 3. Ad26.COV2.S: Commercialization (January, 2021)	1. NASDAQ Composite 2. Dow Jones Industrials 3. S&P 500 Composite

Source: Authors' elaboration (2021).

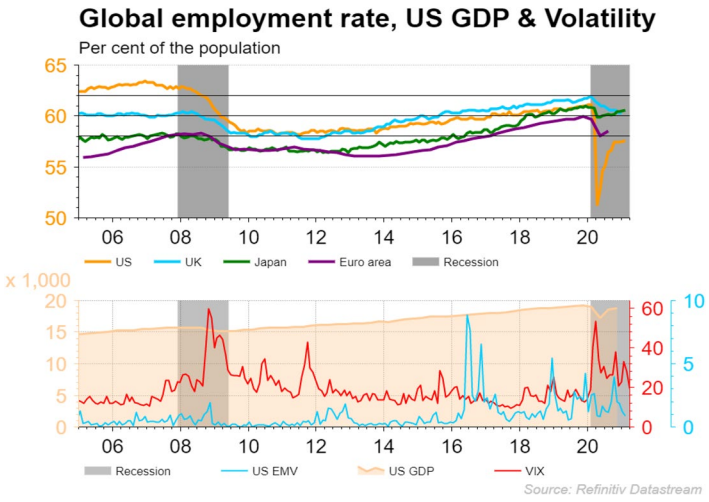

Figure 2. Economic and financial indicators.
*Source: Refinitiv Datastream (2021). EMV: US Business Survey, Economic Policy Uncertainty Index, Elections, and Political Governance EMV Tracker Index; US GDP (quarterly); Recessions (US): GEFC (2007/09) and COVID-19 (2020/21).

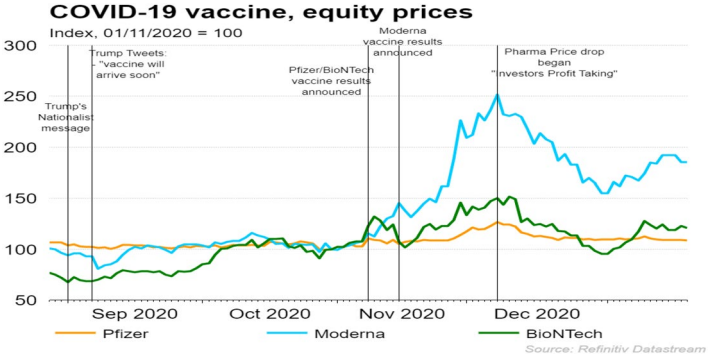

Figure 3. The stocks' reaction to news of the vaccine and Trump's tweets.
*Source: Authors. Refinitiv Datastream (2021).

coefficients followed by heightened volatility levels, which were more prominent in the case of Moderna (see Figure 5 below).

4.3. Causality and volatility analysis

US pharmaceutical companies' causality and volatility patterns help gauge US market performance (the analysis is supported by integrating the country's top indexes, Dow Jones Industrial, NASDAQ Composite, and S&P 500 in the econometric modelling framework). The pharmaceutical companies under consideration are Johnson & Johnson, Moderna, and Pfizer, as they were the primary players in developing COVID-19 vaccines. The research sample spans from December 7, 2018, to April 1, 2021. Moderna IPO (initial public offering) hit the market on December 6, 2018, marking the date that Moderna became a publicly listed company in the US and began trading on the NASDAQ stock exchange. Daily data was analyzed for a total of 605 observations.

The analysis is supported by the implementation of standard time series analysis that began with an examination of the variables' stationarity properties, which were performed by running an augmented Dickey-Fuller test, identifying the optimal number of lags to be used throughout the implementation of a VAR(p) model. The Johansen (1991, 1995) cointegration test was carried out through the estimation of a VAR as outlined below:

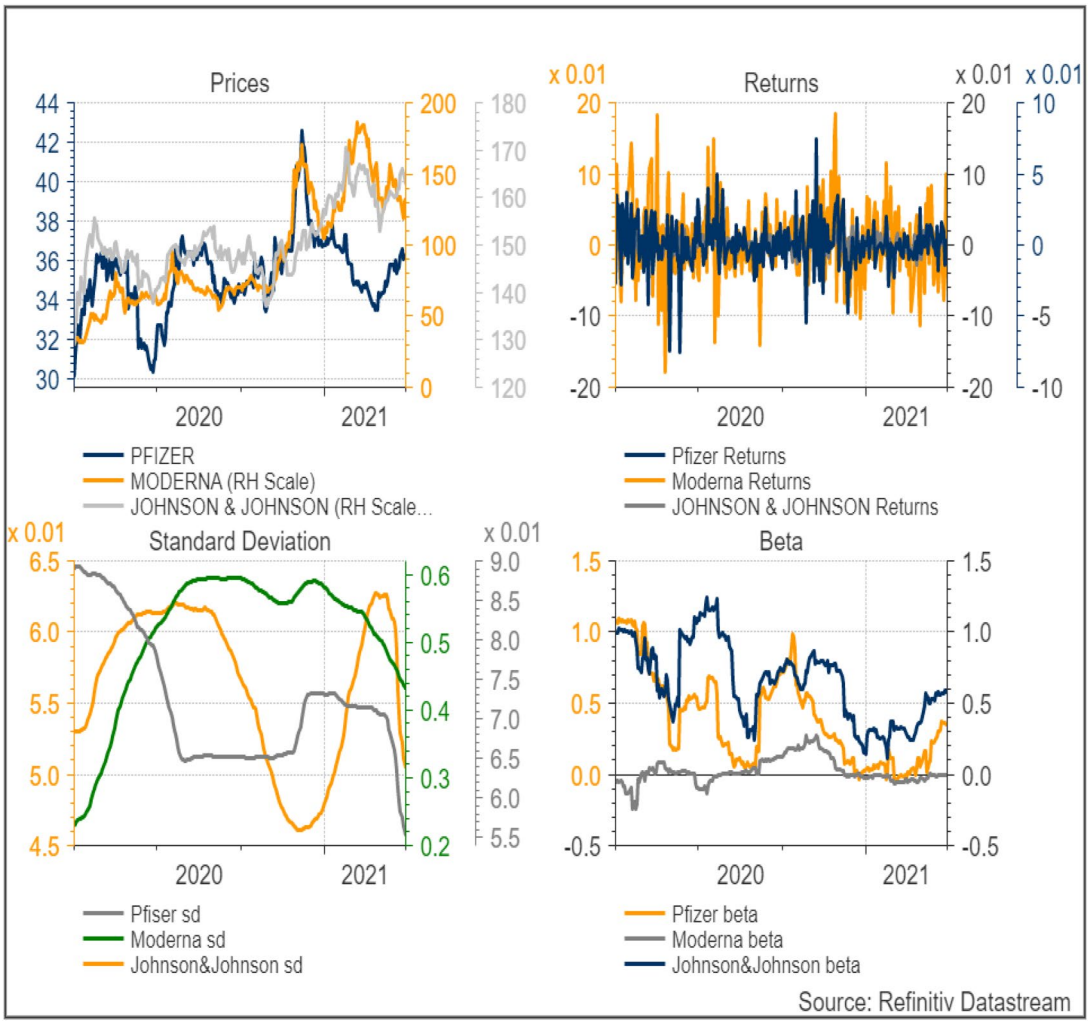

Figure 4. US pharmaceutical company metrics.
Source: Refinitiv Datastream (2021).

$$y_t = A_1 y_{t-1} + \ldots + A_p y_{t-p} + Bx_t + \varepsilon_t \tag{1}$$

Where y_t is a k-vector of non-stationary I (1) variables, x_t is a d-vector of deterministic variables and ε_t is a vector of innovations. The Granger causality test considered is based on bivariate regressions of the form below.

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \ldots + \alpha_l y_{t-l} + \beta_1 x_{t-1} + \ldots + \beta_l x_{t-l} + \varepsilon_t \tag{2}$$

$$x_t = \alpha_0 + \alpha_1 x_{t-1} + \ldots + \alpha_l x_{t-l} + \beta_1 y_{t-1} + \ldots + \beta_l y_{t-l} + \mu_t \tag{3}$$

for all possible pairs of (x,y) series in the group. The statistics are based on the Wald test for validating the joint hypothesis of beta coefficients being equal to zero (Tables 2 and 3).

The main research findings indicate a lack of long-run relationships between the studied pharmaceutical companies. Furthermore, there is no evidence of significant causal dynamics between the US pharmaceutical companies (except in the case of Moderna, and Pfizer, for which a weak unidirectional relationship was identified at a 10% significance level). The results uncovered causal dynamics between the top US market indexes (Dow Jones Industrial, NASDAQ Composite, and S&P 500) with interesting findings, as Moderna is the only company that does not exhibit causal dynamics with the major indexes.

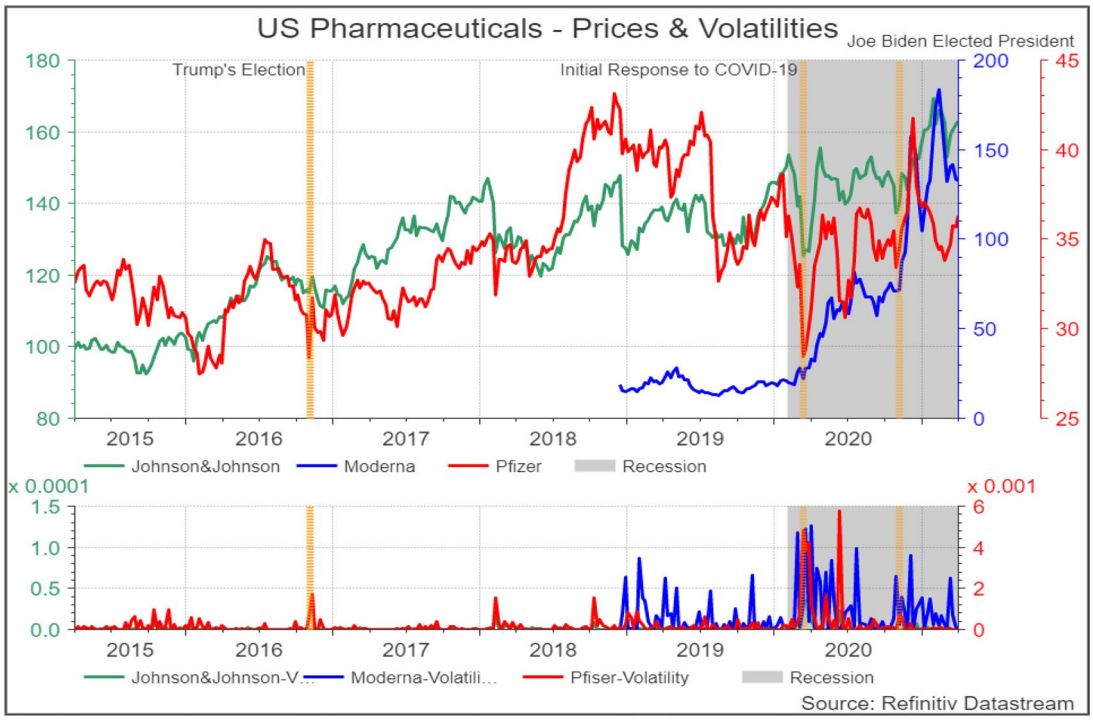

Figure 5. US pharmaceutical company prices and volatilities.
Source: Authors. Refinitiv Datastream (2021).

Table 2. Pharmaceuticals – granger causality.

	Pfizer	Moderna	Johnson & Johnson
Pfizer	n/a	n/a	n/a
Moderna	Moderna → Pfizer (***)	n/a	n/a
Johnson & Johnson	n/a	n/a	n/a

Source: Authors calculations (2021) *Granger causality was implemented on the returns, and a VAR(p) model was used to identify the optimal number of lags. Values in brackets indicate significance level: 1% significance level (*); 5% significance level (**); 10% significance level (***); and n/a indicates no evidence of causal relationship.

Table 3. Market indexes – pharmaceuticals – Granger causality.

	Dow Jones Industrial	NASDAQ Composite	S&P 500
Pfizer	Dow Jones Industrials → Pfizer (*)	NASDAQ → Pfizer (*)	S&P 500 → Pfizer (*)
Moderna	n/a	n/a	n/a
Johnson & Johnson	Dow Jones Industrials ↔ Johnson & Johnson (*)	NASDAQ → Johnson & Johnson (*)	S&P 500 ↔ Johnson & Johnson (**)

Source: Authors calculations (2021).
*Granger causality was implemented on the returns, and a VAR(p) model was used to identify the optimal number of lags.

The volatility model is based on the standard GARCH(1,1) random walk model, which considers that past movements of stock prices cannot be used to predict the future value of the pharmaceutical companies:

$$y_t = \mu + \varepsilon_t \tag{4}$$

$$\sigma_t^2 = \omega + \alpha e_{t-1}^2 + \beta \tilde{A}_{t-1}^2 \tag{5}$$

The conditional variance is a function of three terms: ω is the constant term; news about volatility from the previous period is captured by the ARCH term represented by e_{t-1}^2; and the GARCH term captures the last period's forecast variance σ_{t-1}^2. The GARCH model is stationary when $\alpha + \beta < 1$ (Table 4).

Table 4. Volatility persistence.

GARCH coefficients	Pfizer	Moderna	Johnson & Johnson
ω	0.2183 (0.0000)	0.0001 (0.0024)	0.0001 (0.0051)
α	1.0009 (0.0000)	0.0929 (0.0000)	0.1500 (0.0139)
β	−0.02405 (0.7143)	0.8622 (0.0000)	0.6000 (0.0000)
α+β	n/a	0.95515	0.75
Half-life volatility	n/a	16 days	3.5 days

Source: Authors (2021) *A random walk model was used to capture volatility patterns. The values in the table represent the coefficients, and the values in brackets are the p-values.

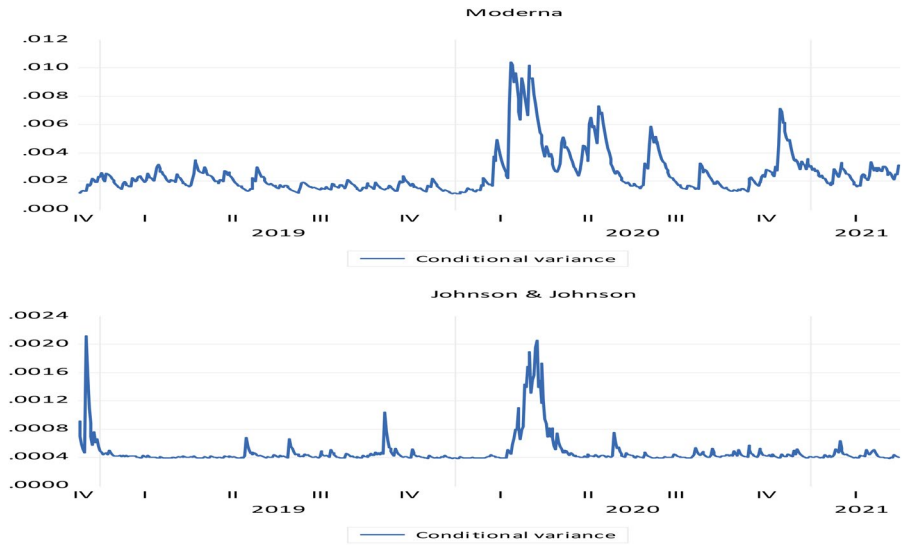

Figure 6. Moderna and Johnson & Johnson GARCH volatility.
Source: Authors calculations (2021).

The GARCH model is unstable for Pfizer, as stationarity properties are unmet. In the case of Moderna, the half-life volatility indicates that it takes more than two weeks to return to normal volatility levels. In contrast, in the case of Johnson & Johnson, volatility only lasts three and a half days, as reflected in Figure 6 below, which shows how Moderna is more unstable.

Previous research studies have shown that in the US, country branding has become a tool for promoting domestic companies and portraying them as the most trusted global brands (Rosenbloom and Hafner 2009; Sun et al., 2016). This paper core research findings offer interesting insights into how the US pharmaceutical industry was able to capitalize on the pandemic, mobilizing very quickly to benefit from remarkable outcomes thanks to the rapid development of effective vaccines. The US pharmaceutical sector and its stock market were defined by a strong performance amidst the global health crisis, and investors seemed to be detached from the socio-economic crisis that was impacting the global economy. From the political front, the US political campaign offered critical insights into how Trump's Administration aimed to capitalize on the development of the COVID-19 vaccines. At the same time, the global health crisis transitioned towards a national branding exercise with significant connections to commercialization purposes as world-dominant pharmaceutical companies emerged as winners. The research outcomes offer significant evidence on how the 2020 Global Health Crisis led towards significant profits for the US pharmaceutical sector and how it became a political and economic instrument defined and shadowed by economic and political gains and personal agendas to the detriment of a united front to develop a vaccine that addressed the health challenges faced at the time and where political and commercial gains dominated the international landscape.

5. Conclusions

This paper offers evidence of how Trump's political communication drew strongly on a nation branding strategy whereby the US was promoted as a vaccine-producing nation. The US President Donald

Trump was the top promoter of the slogan *"America First and Only America First",* thus building a coherent message by using the vaccine race to support his political interests despite his continuous attempts to discredit scientific evidence on the severity of the virus. As the US electoral campaign evolved, we witnessed a change in Trump's rhetoric as he shifted from neglecting the global health crisis towards embracing and promoting the US pharmaceutical sector advances in the discovery of a vaccine. The US political situation was quite complex as Trump refused to acknowledge his defeat and recognize Biden's Administration's legitimacy. During and before his presidential campaign, Trump's communication efforts aimed to project his political ability to respond to the crisis to help him recover the nation's trust while gaining international credibility and increasing his soft diplomatic power. The research findings suggest that Trump's political communication conveyed a coherent message of personalization of politics, whereby he attached himself to scientific advancements and highlighted his ability to prompt and lead scientific research. Accordingly, data from Trump's presidential Twitter account show that Trump perfectly followed this pattern during the electoral campaign, posting most tweets solo and making controversial statements on the virus and vaccine development. The political dimension of the electoral campaign was linked to the stock markets' reaction as the paper illustrates the link between nation branding, political agendas and the vaccine races. The results revealed a lack of long- and short-run dynamics between the pharmaceutical companies and highlighted the strength of the pharmaceutical industry during a convoluted period for the US. By integrating country branding as part of public diplomacy and political strategy, it was possible to show how politicians can benefit from projecting national companies as critical nation-branding assets during times of heightened uncertainty. Overall, the national branding and business opportunities of the COVID-19 vaccine in the US case show that despite being interrelated and essential, the usually binomial health economy relationship is too complex. The study highlighted the significance of the global soft power of vaccines, where the electoral revenue of vaccines is much more entangled than any politician could have expected, in addition to flagging the shadowed interests associated with multinational and political gains.

Notes

1. This study departs from understanding that traditional diplomacy and public diplomacy are interrelated concepts. "traditional diplomacy and public diplomacy is clear: the former is about relationships between the representatives of whereas the latter targets the general public in foreign societies and more specific non-official groups, organizations and individual"(Melissen, 2005:5). Moreover, new forms of public diplomacy, including nation branding strategies, are founded on corporate branding and network theory, in this article, we refer to public diplomacy understood in the latter sense.
2. All quotes are reproduced verbatim and thus may contain omissions, errors and other elements that are inconsistent with proper spoken or written English.
3. Retrived from @realdonaldtrump X profile archives (Before Twitter): https://x.com/realDonaldTrump/status/1337586206683574272.

Author contributions

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

About the authors

Daniel Rajmil is an International Relations Associate Professor at the Universitat Oberta de Catalunya (UOC) School of Law and Political Science. His lines of research are International Relations, Conflict studies, Geopolitics and Geoeconomics. He is the director of the UOC-UNITAR Master in Conflict, Peace & Security and the Lead Researcher (IP) of the Catalan Government recognized research group in Geopolitics, Conflict and Human Rights (GEOCONDAH). Daniel has published extensively in the fields of International Relations, International Political Economy, Middle East studies and Conflict studies. He is passionate about education, its importance for social development and conflict transformation.

Lucía Morales is an educator, academic innovator and active researcher in the School of Accounting, Economics and Finance at Technological University Dublin (TU Dublin) in Ireland and at the European University of Technology (EUt+). Before her academic career, Lucía worked in the private sector, holding different roles: Financial Manager, Assistant Financial Manager, and Foreign Department Risk Analyst (Bank). Lucía has worked at various Higher Education Institutions in Ireland, Spain, the UK, and Switzerland, among others, gaining an in-depth understanding of the main challenges faced by Third Level Institutions in the fields of Economics, Finance, Data Analytics, and Education at the undergraduate and postgraduate levels. Lucía is passionate about education, its importance for economic development, and the significance of quality research to inform teaching, training and learning practices that drive change and impact. She has published extensively in the fields of Economics, Finance, Data Analytics, and Education.

Toni Aira, journalist, Doctor of Communication from the Ramon Llull University (2007). His doctoral thesis was dedicated to the analysis of the influence of the media agenda on political and public agendas. Director and teaching professor of the Master's Degree in Political and Institutional Communication at the UPF Barcelona School of Management (UPF-BSM). He also serves as an associate professor in the Department of Communication of the Pompeu Fabra University. Founding President of the Catalan Society of Communication and Political Strategy (ACCIEP), promoter of the 2011 First Congress of Political Communication of Catalonia (CCPC).

ORCID

Daniel Rajmil http://orcid.org/0000-0001-8327-8822
Lucía Morales http://orcid.org/0000-0002-9111-813X
Toni Aira http://orcid.org/0000-0001-9199-9339

References

Chinai, B., Rajagopal, R., Lee, J. J., & Jagpal, S. (2022). The development and distribution of the COVID-19 vaccine. *American Journal of Respiratory and Critical Care Medicine*, *205*(9), 1112–1112. PMID: 35119971. https://doi.org/10.1164/rccm.202101-0018RR

Cwalina, W., & Falkowski, A. (2015). Political branding: Political candidates positioning based on inter-object associative affinity index. *Journal of Political Marketing*, *14*(1-2), 152–174. https://doi.org/10.1080/15377857.2014.990842

Fatton, R. (2021). The paradoxes of the pandemic and world inequalities. *Social Sciences*, *10*(9), 332. https://doi.org/10.3390/socsci10090332

Garzia, D. (2014). *Personalization of politics and electoral change*. Palgrave.

Hakala, U., Lemmetyinen, A., & Kantola, S. P. (2013). Country image as a nation-branding tool. *Marketing Intelligence & Planning*, *31*(5), 538–556. https://doi.org/10.1108/MIP-04-2013-0060

Hao, A. W., Paul, J., Trott, S., Guo, C., & Wu, H.-H. (2019). Two decades of research on nation branding: a review and future research agenda. *International Marketing Review*, *38*(1), 46–69. https://doi.org/10.1108/IMR-01-2019-0028

Hogan, A. B., Winskill, P., Watson, O. J., Walker, P. G. T., Whittaker, C., Baguelin, M., Brazeau, N. F., Charles, G. D., Gaythorpe, K. A. M., Hamlet, A., Knock, E., Laydon, D. J., Lees, J. A., Løchen, A., Verity, R., Whittles, L. K., Muhib, F., Hauck, K., Ferguson, N. M., & Ghani, A. C. (2021). Within-country age-based prioritization, global allocation, and public health impact of a vaccine against SARS-CoV-2: A mathematical modelling analysis. *Vaccine*, *39*(22), 2995–3006. https://doi.org/10.1016/j.vaccine.2021.04.002

Jacobson, G. C. (2020). Donald Trump and the parties: Impeachment, pandemic, protest, and electoral politics in 2020. *Presidential Studies Quarterly*, *50*(4), 762–795. https://doi.org/10.1111/psq.12682

Johansen, S. (1991). Estimation and hypothesis testing of cointegration vectors in Gaussian vector autoregressive models. *Econometrica*, *59*(6), 1551–1580. https://doi.org/10.2307/2938278

Johansen, S. (1995). *Likelihood-based inference in cointegrated vector autoregressive models*. Oxford University Press.

Kaneva, N. (2011). Nation branding: Toward an agenda for critical research. *International Journal of Communication*, *5*, 117–141.

Kilduff, K., & Núñez Tabales, J. M. (2017). Country branding and its effect on the consumer in the global market. *Cuadernos de Gestión*, *17*(1), 83–104. https://doi.org/10.5295/cdg.150543kk

Lee, S. T., & Kim, H. S. (2021). Nation branding in the COVID-19 era: South Korea's pandemic public diplomacy. *Place Branding and Public Diplomacy*, *17*(4), 382–396. https://doi.org/10.1057/s41254-020-00189-w

Lipscy, P. Y. (2020). COVID-19 and the politics of crisis. *International Organization*, *74*(S1), E98–E127. https://doi.org/10.1017/S0020818320000375

Maarek, P. J. (2011). *Political marketing and communication*. Wiley-Blackwell.

Medecins Sans Frontiers. (2021). *COVID-19 vaccine redistribution to save lives now - MSF technical breif*.

Melissen, J. (2005). *The new public diplomacy*. Palgrave ed.

Melnyk, T., & Varibrusova, A. (2019). Variable indicators affecting the country's brand strategy effectiveness and competitiveness in the world. *Management Science Letters*, *9*(10), 1685–1700. https://doi.org/10.5267/j.msl.2019.5.019

Pantzalis, D. A., (2000). Political elections and the resolution of uncertainty: The international evidence. *Journal of Banking and Finance*, *20*(10), 1575–1604.

Pfizer. (2020). Pfizer news. Pfiser and Biontech Announe Vaccine Candidate against COVID-19 Achieved Success in First Interim Analysis from Phase 3 Study. Retrieved from https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-announce-vaccine-candidate-against

Pilkington, V., Keestra, S., & Hill, A. (2022). Global COVID-19 vaccine inequity: Failures in the first year of distribution and potential solutions for the future. *Frontiers in Public Health*, *10*, 1–8. https://doi.org/10.3389/fpubh.2022.821117

Pop, L., & Morales, L. (2023). Education to navigate global power dynamics and conflict through the lens of caring. *Peace Review*, *35*(4), 724–735. https://doi.org/10.1080/10402659.2023.2263389

Rebolledo, M. (2017). La personalización de la política: una propuesta de definición para su estudio sistemático. *Revista de Comunicación, N°*, *16*(2), 147–176.

Reuters. (2021). Vaccines, fiscal stimulus power US employment; economy blooming. Retrieved from https://www.reuters.com/article/us-usa-economy/us-job-growth-accelerates-in-march-unemployment-rate-falls-to-60-idUSKBN2BP09L

Rico, G. (2009). *Líderes políticos, opinión pública y comportamiento electoral en España*. CIS.

Rosenbloom, A., & Haefner, J. E. (2009). Country-of-origin effects and global brand trust: A first look. *Journal of Global Marketing*, *22*(4), 267–278. https://doi.org/10.1080/08911760903022432

Snyder, A., & Sindyukov, M. (2020). How COVID-19 is changing the soft power game. The Diplomatic Courier. https://www.diplomaticourier.com/posts/how-covid-19-is-changing-the-soft-power-game

Sun, Q., Paswan, A. K., & Tieslau, M. (2016). Country resources, country image, and exports: lessCountry branding and international marketing implications. *Journal of Global Marketing*, *29*(4), 233–246. https://doi.org/10.1080/08911762.2016.1211782

The Lancet. (2020). Global governance for COVID-19 vaccines. *Lancet (London, England)*, *395*(10241), 1883. https://doi.org/10.1016/S0140-6736(20)31405-7

US Department of State Press Release. (May, 2020). Trump administration announces framework and leadership for 'operation warp speed'. Retrieved from https://www.defense.gov/News/Releases/Release/Article/2310750/trump-administration-announces-framework-and-leadership-for-operation-warp-speed/#:~:text=Operation%20Warp%20Speed%20is%20a,BARDA)%3B%20the%20Department%20of

Van Steenburg, E., & Guzmán, F. (2019). The influence of political candidate brands during the 2012 and 2016 US presidential elections. *European Journal of Marketing*, *53*(12), 2629–2656. https://doi.org/10.1108/EJM-06-2018-0399

Watkins, D. V., & Clevenger, A. D. (2021). US political leadership and crisis communication during COVID-19. *Cogent Social Sciences*, *7*(1), 2–33. Greg Simons (Reviewing editor). https://doi.org/10.1080/23311886.2021.1901365

Wattenberg, M. (1998). *The decline of American political parties, 1952-1996*. Harvard University Press.