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and Mark Boukes² 

Abstract

This study examined agenda-setting relationships across the media, politics, and the public, while accounting for contextual boundaries from 1978 to 2018 in the United States. Our findings indicate that (1) for the overall model, the media and the public influence the prominence of economic concerns on the political agenda, but the political agenda has no agenda-setting power; (2) under a Republican president, the prominence of economic topics in the media and political agendas influence each other, the media and the public agendas influence each other, and the public influences the political agenda; and (3) under a Democrat president, attention paid toward economic topics in the media and political agendas influence each other, as do the political and public agendas. Of particular note for agenda-setting theorists is our finding that the media significantly sets the agenda for the public under a Republican presidential condition and not under other conditions. Additionally, these relationships differ longitudinally; for example, the media responds to economic changes quicker and for more prolonged periods under a Republican than a Democrat. This study advances the agenda-setting theory by presenting novel findings about agenda-setters in action and by demonstrating the unique complexities of modeling longitudinal nonlinear relationships.

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economic news, agenda setting, US congress, media, longitudinal analysis, VAR

Agenda-setting research has examined the transfer of salience between the media and other agendas (i.e., the public and politicians) for decades and has become one of the most influential approaches in media effects research (Moy et al., 2016). Many studies corroborate agenda setting as a robust media effect, and the growth of knowledge in this area has been substantial (e.g., McCombs, 2005; Walgrave & Van Aelst, 2016). Still, essential elements within the agenda-setting process require more scholarly attention.

First, the media agenda is still studied primarily alongside one other agenda (despite exceptions in third-level agenda-setting research; see, e.g., Guo et al., 2012), thereby neglecting to address that multiple actors simultaneously engage in the agenda-setting process. Without testing the effects of other agendas or controlling for real-world developments, one easily overestimates the strength of agenda-setting effects. Second, a substantial share of studies have investigated unidirectional effects, missing the possibility of mutual influences. Journalists do not work in a vacuum; they are also influenced by the world around them, and thus, it is important to assess the effects *of* and *on* the media agenda. Third, there is a relative lack of attention paid to situational context variables in the agenda-setting process. Agenda-setting may be contingent upon real-world developments (e.g., change in political power or economic prosperity; Geiß, 2022; Walgrave & Van Aelst, 2006), which could moderate the strength and longevity of agenda-setting effects.

The current study addresses these shortcomings by exploring the longitudinal causal effects of and on the economic news media agenda alongside several other agendas and context conditions. We demonstrate the nonlinearity of agenda-setting relationships over time using a novel dataset that combines numerous indicators of the media, political, and public agendas across 40 years. We include real-world economic data and differentiate between Republican-held or Democratic-held periods of presidential control. Our study thus fills key agenda-setting research gaps by analyzing multiple competing agendas across an extensive period, which allows examination of multidirectional relationships over time. Thereby, our study acts as an important innovation in the agenda-setting literature, as we demonstrate the dynamic nature of these relationships at a considerably large-scale.

Notably, agenda-setting literature is mixed in its findings across a wide-range of studies. Our study examines agenda-setting at its traditional first-level (i.e., issue-specific salience), despite scholarly development towards higher level conceptualizations of the theory. Agenda-building, for example, introduced an element of intentionality that is not appropriate for our study, as we bring in contextual variables that can influence other actors in our model without such acts being necessarily deliberate (e.g., Kiouisis & Wu, 2008; Kroon & Van der Meer, 2021). Furthermore, whereas second- and third-level agenda-setting studies examine attributes and networks of agendas,

with an emphasis on *how* media outlets report on an issue and in what ways issues are connected (e.g., Guo et al., 2012)—thus, potentially influencing how the audience thinks about the issue—our study highlights the volume of attention placed on a single issue. Narrowing the focus of the study to specifically attention paid to a single issue—in our case, economics—allows testing our theoretical propositions concerning mutually influential relationships and nonlinearity over time in the most straightforward and robust manner.

We select economic conditions as our issue of interest for two key reasons. First, periods of economic growth and downturn have substantial societal impact. The interplay between economic news, public opinion about the economy, and political attention towards the economy can have real consequences, such as increased consumer pessimism (Damstra & Boukes, 2021; Garz, 2013) and drops in the GDP (Hampson et al., 2018). Additionally, media outlets serve as an important touchstone for people to obtain information about the state and future of the economy (Van Dalen et al., 2018); covering the economy is thus an important facet of journalism and a fruitful site for examining agenda-setting dynamics over time. Second, as a critical element of this study is its focus on longitudinal dynamics, the economic issue is most appropriate methodologically. Economic effects manifest in varying degrees of longevity; economic indicators are well-documented, diverse, publicly-available, and reliable (e.g., Blood & Phillips, 1995; Hollanders & Vliegthart, 2011; Jonkman et al., 2020; Vliegthart & Damstra, 2019; Wu et al., 2002); and the economy is an evergreen issue that all agenda-setters in the model will engage with for the entire period of examination.

Recognizing the dynamic, conditional, and long-term agenda-setting process, this study developed a US-based dataset comprised of news stories published by the *New York Times* and the *Washington Post* (indicating the *media agenda*); Congressional hearings, presidential State of the Union addresses, and executive orders (indicating the *political agenda*); and consumer confidence reports (indicating the *public agenda*). We analyze their mutual influences while accounting for the consumer price index (CPI) and the unemployment rate (indicating *economic developments*) to assess whether the agenda-setting effects hold when controlling for real-world phenomena. Additionally, we investigate whether the sitting president's political party affiliation (indicating the *political actor in power*) conditions these relationships (Merkley, 2019). We use vector autoregression (VAR) to assess the causal associations between variables in both steps.

Theoretical Framework

Economic Ebb and Flow

The US and similarly positioned Western powers have faced several economic crises in the last 50 years, with global impacts. The Great Recession of 2008 to 2009 revealed the precarity of the global economy, leading to unprecedented losses in jobs (Grusky et al., 2011), exacerbated wealth inequality (Wolff, 2016), and staggering

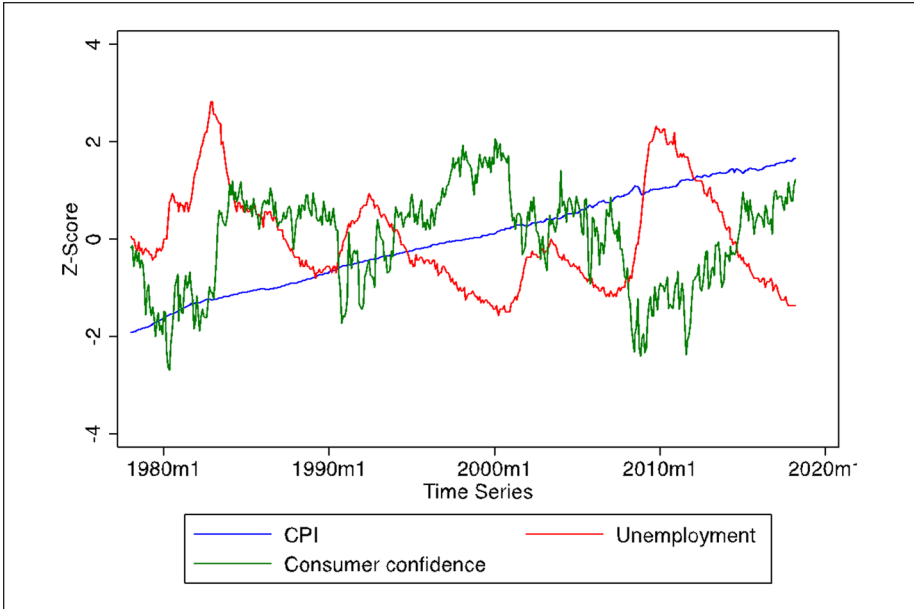


Figure 1. Time-series graph of the standardized Z-scores for consumer price index, the unemployment rate, and consumer confidence in the economy in the United States from 1978 to 2018.

home foreclosures (Faber, 2019). Presently, the global economy is again in danger amid the COVID-19 pandemic, the global climate crisis, and numerous international conflicts, which have led to rising inflation, supply chain shortages, and stagnated wages (The World Bank, 2022). However, the present research, which looks from 1978 to 2018, captures periods of both economic growth and downturn. For example, Figure 1 indicates a considerable spike in unemployment during the '08 to '09 Recession, but this is followed by a downward trend in unemployment (i.e., economic recovery; Wu et al., 2002). Journalists have the critical responsibility of translating the difficult terminology of economic crises into usable information for their audiences (McBeth et al., 2018; Van Dalen et al., 2018). As our study centers the agenda-setting function of the news media, we focus on indicators of economic performance and the attention news outlets pay towards them.

Existing evidence has demonstrated that journalists tend to more readily publish news about downturns, with economic news leaning negative (Damstra & De Swert, 2020; Hagen, 2005; Hester & Gibson, 2003; Soroka, 2006). Audiences also become more activated, with an increase in news audience size and higher levels of traffic on stories about financial crises during these periods (Schifferees & Coulter, 2012). It is evident that news audiences rely on journalists to report on the economy to them and, in doing so, guide their expectations and perceptions of the economy (Hester & Gibson, 2003). The established interest in and effects of specifically crisis-related

news makes highlighting indicators of possible economic crises in this research theoretically-motivated and precise.

Agenda-Setting Theory

Agenda-setting is the process whereby attention towards a topic in the media leads to an increased public perception of that issue's *salience* (i.e., prominence or importance; Moy et al., 2016). While agenda-setting research has expanded, outlining processes such as “agenda building” and “attribute agenda setting” within the original framework, our research repositions the *object* in agenda-setting theory, or first-level agenda setting, as the main interest.

Scholars have conceptualized mutually influential relationships between the media agenda and other agendas with the concept of agenda building (e.g., Kioussis & Wu, 2008; Kroon & Van der Meer, 2021), however these investigations tend to explicitly focus on the deliberate efforts of other social actors to influence the media agenda with strategic texts. Instead, we opt to follow the long research tradition on *media agenda setting* (Rogers et al., 1993), which encompasses inquiries on how the media agenda is *set* in the context of reciprocity between extra-media agendas (e.g., Tan & Weaver, 2007) and real-world indicators (e.g., Strauß et al., 2018). Our primary aim is thus disentangling how various agendas, particularly the media, and factors contribute simultaneously to create a dynamic economic agenda.

Media and public opinion. The media's role in making issues salient to the public is the foundational relationship of the agenda-setting theory. Research has repeatedly found evidence for the effects of economic media attention on the public agenda (e.g., De Boef & Kellstedt, 2004; Hester & Gibson, 2003; Soroka, 2014; Soroka et al., 2015). Consumer confidence has often acted as an indicator for the public agenda because it combines sociotropic and egotropic evaluations of the economy (Boukes et al., 2021; Hagen, 2008), thereby indicating how problematic the public may consider the economic situation (De Boef & Kellstedt, 2004; Kellstedt et al., 2015). Many studies assessing the impact of economic media coverage on consumer confidence have confirmed the original agenda-setting hypothesis that media salience leads to public salience (Hollanders & Vliegthart, 2011; Wu et al., 2002). Thus, our first hypothesis reflects this literature:

H₁: *The media agenda will have a causal effect on the public agenda, such that changes in the media agenda will predict changes in the public agenda.*

Some scholars have also addressed the inverse effect—consumer confidence affecting media salience of economic topics (Kleinnijenhuis & Rietberg, 1995; Soroka et al., 2015; Wu et al., 2002)—which scholars have suggested exists because journalists want to serve the public, and they use real-world indicators to get insights into public interests (Kleinnijenhuis & Rietberg, 1995). Similarly, how people gain knowledge about the economy through real-world experiences – for example, by fluctuations in

their bank account or witnessing layoffs—impacts the role of the media agenda on the public agenda (Geiß, 2022). Since economic development communication is often highly codified and challenging to follow, journalists may function as a translator during economic turmoil (Hester & Gibson, 2003). The public, however, may also maintain a direct awareness of economic developments and become less dependent on the media for direct insights into the economy (Jonkman et al., 2020). These findings, though, are more indicative of the dependence on media for understanding crises than an indication that the public sets the agenda for the media. Thus, we do not anticipate an inverted relationship (see H1) between the public and the media:

H₂: *The public agenda will not have a causal effect on the media agenda.*

Media and politics. The agenda-setting relationship between the media and political actors has been subject to scholarly scrutiny. Of interest has been the influence of media attention on specific issues and the consequences of this in various national parliaments (Soroka, 2002; Vliegenthart & Damstra, 2019; Walgrave et al., 2008). Findings point to the media as the predominant agenda-setter with the rationale that politicians use news media to predict which sociopolitical issues matter to the public (Vliegenthart et al., 2013). It makes sense to assume that—especially in times of increased political polarization and the mediatization of politics—news media become even more important for politicians. Consequently, one could expect the effects of the news media on the political agenda to become even stronger. Concerning the economy, positive agenda-setting effects of news media on the political agenda have been demonstrated in four European countries, although the effect strength was conditional upon the economic circumstances (Vliegenthart & Damstra, 2019). Our third hypothesis thus predicts that politicians respond to media coverage to set their agendas:

H₃: *The media agenda will have a causal effect on the political agenda, such that changes in the media agenda will predict changes in the political agenda.*

Social actors, such as politicians, may deliberately attempt to influence the media agenda through the release of controlled statements or other actions (e.g., Kioussis & Wu, 2008; Kroon & Van der Meer, 2021), which indicates an influence of politics on the media agenda (Kleinnijenhuis & Rietberg, 1995). Within the media agenda-setting tradition (Rogers et al., 1993), media is acknowledged as not existing within a vacuum; indeed, multiple extra-media agencies often operate in reciprocity with the media agenda. Recent studies, however, have failed to find an effect of political influence on the media agenda, despite earlier support in the Dutch economic context (Vliegenthart & Damstra, 2019). This again hints at an effect that may be present under specific conditions. In keeping with the notion of mutually influential agenda setting, though, our fourth hypothesis leans towards the possibility of a relationship:

H₄: *The political agenda will have a causal effect on the media agenda, such that changes in the political agenda will predict changes in the media agenda.*

Media and the real economy. From the literature on economic news coverage, we know that media agenda saliency is not necessarily aligned with the actual presence of an issue in the real world (Jacobs et al., 2018). Indeed, “irrational exuberance,” for example, is often used to describe the unfounded optimism stirred up about an element of the market (e.g., housing, bitcoin), which can create skewed perceptions of economic realities, leading to bubbles and crashes (Shiller, 2016). Additionally, media stories can influence marketplace decision-making (e.g., where to spend or invest) through compelling and viral narratives, regardless of whether these stories reflect real-world economic circumstances (Shiller, 2019). Relatedly, newsmakers have access to well-documented and robust real-world data, which is not the case for many other news topics. This is especially true with the emergence of online databases and easy-accessible digital platforms where such data are stored and made publicly available (Soroka, 2002). Journalists thus have a plethora of accessible, fact-based content readily available to supplement and potentially influence their work.

Many studies have demonstrated that the media can have agenda-setting effects aside the influences of developments in the real world; this has been well-documented in media effects literature on the public agenda regarding economic issues (Blood & Phillips, 1995; Boydston et al., 2018; Hollanders & Vliegenthart, 2011; Jonkman et al., 2020; Kleinnijenhuis et al., 2015; Vliegenthart & Damstra, 2019; Vliegenthart et al., 2021; Wu et al., 2002). Generally, the abundance of negative news coverage during an economic crisis can lead to skewed perspectives of the economy (Blood & Phillips, 1995; Hester & Gibson, 2003). However, scholarly focus tends to be limited to this “media drives consumer confidence relationship,” so there is limited research using the real economy as an independent variable in agenda-setting relationships (Vliegenthart et al., 2021).

Previous research has indicated that as economic conditions worsened, media agenda-setting effects on the political agenda strengthened but weakened on the public agenda (Vliegenthart & Damstra, 2019). These findings are contested by studies that found stronger effects on the public agenda during economic crises (Hester & Gibson, 2003; Wu et al., 2002). Building off these mixed findings, we hypothesize that the real economy will be a predictor of the media agenda, though this relationship may not be mutually influential as the media’s ability to change the economy is a questionable assumption at best:

H₅: *The real economy—specifically (a) CPI and (b) unemployment rate—will have a causal effect on the media agenda, such that changes in the real economy will predict changes in the media agenda.*

Auxiliary relationships. It is worth additionally exploring possible auxiliary relationships, which may contribute to understanding our principle focus (i.e., how the media, politics, and the public influence each other while accounting for real-world factors). For example, research on political agenda setting has found evidence of a direct impact of public opinion on policy agendas (Hakhverdian, 2010), but there is no clear evidence for the opposite effect (Vliegenthart & Damstra, 2019). Furthermore,

there is a scarcity of research that studies agenda setting without assuming linearity over time (e.g., Brosius & Kepplinger, 1992), which makes drawing conclusions about relationships with real-world economics particularly difficult. Thus, our analyses of these additional relationships are more exploratory than those already hypothesized, but they still provide potentially valuable insights that further flesh out our model of dynamic agenda-setting:

H₆: *The real economy—specifically (a) CPI and (b) unemployment rate—will have a causal effect on the public agenda, such that changes in the real economy will predict changes in the public agenda.*

H₇: *The real economy—specifically (a) CPI and (b) unemployment rate—will have a causal effect on the political agenda, such that changes in the real economy will predict changes in the political agenda.*

H₈: *The political agenda and the public agenda will have a mutually influential relationship, such that changes in one leads to changes in the other.*

Political Boundaries: The Presidential Party

The political actor in power may influence the strength of the investigated agenda-setting processes (Merkley, 2019). In the US, it is often alleged that journalists may identify more closely with Democrats, but a clear indicator of this proposition remains to be replicated. While journalists may give favorable coverage on issues to certain parties perceived to be more competent on the issue (i.e., “owners”; Hayes, 2008), other scholars have found that the media generally holds a liberal bias and highlights adverse events when a Republican president is in office (Merkley, 2019). Still, others found that news coverage over time balances out, with no clear media bias (Eisinger et al., 2007).

An interesting relationship arises between media reporting on economic events dependent on the governing political party. This literature primarily takes a framing approach, examining *how* economic news is reported within different political landscapes. Despite economic conditions being the same, it has been found that there is typically more positive coverage when Democrats are in the executive office than Republicans (Merkley, 2019). Similarly, television news indicates a favorable skew towards Democrats in times of crisis, although partisanship of the media outlet affects this relationship (McBeth et al., 2018). Furthermore, the press seems more reactive to economic changes under Republicans, exacerbated during times of crisis (Merkley, 2019).

There is a gap in the literature, then, connecting these points. Whereas existing studies approach many of these relationships discretely, our study analyzes these parts holistically. To do so, we introduce three variables that account for the Executive Branch in two distinct ways. First, we use the party of the president at a given moment as a boundary condition (e.g., Merkley, 2019) that separates our data by controlling party, making it a wholly exogenous variable in the model. Then, we introduce State of the Union addresses and executive orders as additional indicators of the political

agenda, possibly influencing and influenced by the other agendas in our model. Given the lack of consensus and dearth of literature treating agenda-setting relationships with such boundaries, we approach these boundaries with a research question:

RQ₁: *How are the causal relationships between economic media attention, political attention towards economics, and public consumer confidence moderated by the president's political party affiliation?*

Method

This study uses a 40 year longitudinal dataset comprised of several publicly available real-world data sources to develop a clear picture of the mutually influential relationships between the media, political actors, the public, and the real economy in the US. While the data collection is clearly targeted (e.g., news articles from two outlets containing specific economic crisis indicator terms), it is robust, and so we expect the content that is analyzed to be relevant without facing a selection bias. The scope and thoroughness of the data collection for this study ultimately lends itself to a reliable, replicable, and valid study, and this data is available in an OSF repository.¹

Sample and Operationalization

Media agenda. Articles were collected from the *New York Times* (*NYT*) and *Washington Post* (*WP*) via *LexisNexis* with a validated search string (Boukes & Vliegenthart, 2020) that identified economic terms (see Supplemental Material) in either the title or lead paragraph.² This method has proven sufficient for capturing the majority of relevant articles without risking unreasonable Type I or II errors. These two outlets were chosen based on their large readerships and repeatedly validated roles as intermedia agenda setters for the overall American news landscape (Golan, 2007; McCombs & Funk, 2011; Meraz, 2011).³ Additionally, with the decline of local news in the US, there has been an increasing reliance on large national newspapers, such as the *NYT* and *WP*, as primary sources of information, whether by readers or by journalists themselves through repurposed content (e.g., Hayes & Lawless, 2018; Lawrence et al., 2022; Usher, 2021).

Economic crisis specific articles for the *NYT* ($n=53,969$) and *WP* ($n=29,853$) were strongly correlated, $r(483)=.92$, $p<.001$. Therefore, *NYT* and *WP* were merged into one variable, indicating the prominence of economic crises on the media's agenda ($n=83,822$). The data were then aggregated to a monthly level ($M=173.54$, $SD=138.99$)—common in economic news research (e.g., Vliegenthart et al., 2021). The average monthly output of news stories under a Republican president ($M=159.82$, $SD=136.11$) is significantly less than that of a Democrat ($M=188.77$, $SD=140.86$), $t(481)=2.30$, $p=.022$.

The media attention variable measures *volume of coverage*, not the content itself. Numerous other studies have accounted for various forms of content, such as tone and bias, through framing and second-level agenda-setting research, but

our focus on volume is intentional, as our primary interest is in first-level agenda-setting. In a similar manner to a visibility analysis, we aim to develop further knowledge on how the quantity of coverage is influenced by and has an influence on other agendas.

Political agenda. Data about Congressional attention toward economics was derived from the Comparative Agendas Project (CAP; *Hearings*, 2019). The CAP is a global scholarly database that makes policy-related documents and data publicly available using a universalized coding scheme. The dataset used for this project is “Congressional Hearings” and includes the topic of every subcommittee hearing during the timespan, coded by two independent coders who reached a minimum agreement of 95% (see CAP). From this, the dataset was narrowed to include those coded as “macroeconomics” within the timespan ($n=2,459$; see Supplemental Material). These were then aggregated into a monthly count of the number of hearings about macroeconomic topics in Congress ($M=5.09$, $SD=4.81$). The average monthly output of Congressional hearings under a Republican president ($M=5.53$, $SD=4.94$) was significantly greater than that of a Democrat ($M=4.60$, $SD=4.62$), $t(481)=-2.13$, $p=.034$.

We further account for the political agenda by examining two Executive Branch measures: Presidential State of the Union addresses (SOTUs) and executive orders. These variables, like the Congressional agenda, were collected from the CAP (*Executive Orders*, 2021; *State of the Union Addresses*, 2023). SOTUs are addresses given annually by the president in either January or February.⁴ These are coded on the quasi-statement level (i.e., words between punctuation marks and semi-colons), and the macroeconomic concept counts for statements are included in the dataset. The average count of macroeconomics concepts in SOTUs under a Republican president ($M=3.62$, $SD=13.82$) did not significantly differ from that of a Democrat ($M=3.71$, $SD=14.78$), $t(481)=0.07$, $p=.943$. Executive orders are directives issued by the president. These are coded such that each executive order receives one topic code, and we include all executive orders coded as macroeconomic in our dataset. The average number of macroeconomic executive orders under a Republican president ($M=0.06$, $SD=0.25$) did not significantly differ from that of a Democrat ($M=0.08$, $SD=0.33$), $t(481)=1.05$, $p=.294$.⁵

We also tested several models that accounted for the following variables: Controlling party of the House of Representatives, controlling party of the Senate, and whether the Legislative and Executive branches were controlled by the same party. However, these models did not constitute an improvement from the less complex models presented here; so, to maintain parsimony, the variables were not included in the models presented in this paper (see Supplemental Materials).

Public agenda. Consumer confidence indicates the issue-specific salience of economics on the public agenda as it measures citizens’ economic evaluations (Damstra & Boukes, 2021; Hester & Gibson, 2003; Hollanders & Vliegienthart, 2011; Kellstedt et al., 2015). We used the *University of Michigan Survey of Consumers*, a monthly

consumer confidence index starting from 1978. This survey samples US households through a nationally representative phone survey and provides a monthly aggregated measurement of individual perceptions of personal finances, business conditions, and buying conditions. Higher scores indicated that people are more confident in the economy and, thus, rank it as a lower priority on the public agenda. The average monthly consumer confidence score ($M=85.85$, $SD=12.70$) under a Republican president ($M=86.17$, $SD=10.81$) did not significantly differ from that of a Democrat ($M=85.50$, $SD=14.52$), $t(481)=-0.58$, $p=.565$.

Real economy. The *US Bureau of Labor Statistics* (BLS; n.d.) provides monthly data for both the Consumer Price Index (CPI; $M=162.62$, $SD=52.21$) and unemployment rate ($M=6.29$, $SD=1.60$). These two measures were used to gauge the real economy. The BLS defines the CPI as a measure of the average change over time in the prices paid for consumer goods and services by urban consumers. Higher unemployment rates indicate a poorer-performing economy, which may immediately harm or threaten individuals' financial situation. CPI and the unemployment rate are preferable measures of the real-world economy as they are often used in economic news stories, affect individual consumers relatively acutely, and are easily accessible by anyone.

Importantly, real economy variables act as indicators of price and employment and cannot be agenda-builders with conscious agenda-setting influence in the same manner as media, politics, and the public. Rather, we are interested in how media, politics, and the public are influenced by real changes in the economy, as represented by these somewhat basic numeric indicators, and how that shapes their agendas. The CPI is particularly influenced by our temporal boundaries (1978–2018), as this 40 year period marks a moment where information and communication technologies (ICT) became better, more accessible, and cheaper to the general public, and thus an influx of reporting on the economic causes and consequences of increased ICT purchasing is inevitable in our dataset (e.g., Shiller, 2016).

The average monthly CPI score was significantly lower under a Republican president ($M=151.89$, $SD=46.38$) than under a Democrat ($M=174.53$, $SD=55.73$), $t(481)=4.87$, $p<.000$; though this may be explained in part by the constant upward trend of the CPI (see Figure 1), and that (with the exception of Trump's half term) the most recent data in our dataset belongs to a two-term Democratic president. The average monthly unemployment rate under a Republican president ($M=6.28$, $SD=1.52$) did not significantly differ from that of a Democrat ($M=6.31$, $SD=1.68$), $t(481)=0.20$, $p=.841$.

Political conditions. Between 1978 and 2018, seven presidents held office across 10.5 terms.⁶ We created a dummy variable representing whether a specific month was under a Democrat or Republican president. Out of 483 months, Republicans held office for 25 more months than Democrats (Democrat: $N=229$ months; Republican: $N=254$ months), that is, 5% of our timeframe. With such a close split in control between the parties, we should not expect this to substantially skew our findings nor to explain key differences in our findings.

Analytical Procedure

Vector autoregression (VAR) modeling is the most useful analytical strategy for this study because of the many possibilities of mutually influential relationships in our hypotheses and research question. Additionally, VAR modeling is commonly used for causal inference (Vliegthart, 2014), and thus we describe the findings with cause-and-effect terminology. This section describes the process of VAR modeling step-by-step. VAR requires longitudinal time-series data, for which we have 483 (n) observations organized by month and year (i.e., each observation is a month between January 1978 and March 2018). We discuss the growth and decay of relationships throughout the results using the dichotomous distinction of linear versus nonlinear effects. Linear effects are positive or negative relationships that move in one *straight* direction over time, whereas nonlinear effects feature some curvature in their slope (e.g., fluctuating, decaying, changing directions).⁷

Stationarity. Dickey-Fuller tests were conducted to check for non-stationarity (see Supplemental Material). The real economy variables demonstrate some structural deviation; as Johansen tests for cointegration and an Engle-Granger test indicated that CPI and the unemployment rate were not cointegrated, a Vector Error Correction Model is not an appropriate resolution. As such, all variables in the analysis are differenced (Vliegthart, 2014). Upon differencing the data, Dickey-Fuller tests were rerun, and all variables then passed the test for stationarity. Accordingly, the analyses predict how *changes* in one variable determine *changes* in the other, which aligns with previous research (Damstra & Boukes, 2021), and means the data tend towards more conservative estimates.

Model specification⁸. Three models were tested: (1) an overall model without political conditions (Model 1; $n=483$), (2) a model using data points during Republican presidencies (Model 2; $n=254$), and (3) a model using data points during Democratic presidencies (Model 3; $n=229$). For each model, tests were run with a projected lag length of 12 (i.e., 12 months back in time).⁹ A model with 12 lags was chosen because it theoretically accounts for seasonal influences (e.g., seasonal changes in the economy or Congress passing an annual budget) and delays in response to economic changes. It is the most conservative model, decreasing the likelihood of Type-II errors.

Results

Causal relationships are based on Granger causality tests, where a shock (i.e., change) in one variable causes a (statistically significant) change in another variable while controlling for the other variables and the lagged values of the dependent variable. The directionality and longevity of the influencing variable on the dependent variable are extracted from the Impulse Response Functions (IRF) graphs (i.e., the impact of a single shock on a variable), which includes the Cumulative IRF (i.e., the accumulated impact of the shock over an extended period).¹⁰ For each model, we present a table

with all relevant test statistics, a figure illustrating the basic significant causal relationships, and a discussion of how each pertinent relationship functions directionally and over time.¹¹

General Agenda-Setting Effects & Hypothesis Testing

Table 1 and Figure 2 show that the VAR model including all time points and no political boundaries produced 15 significant relationships: Media agenda ↔ real economy and public agenda ↔ real economy—and three unidirectional relationships—media → political; real economy → political; and public → political.¹²

Our first two hypotheses looked at the media and public agendas' relationships. According to this model, the media and public agendas are unrelated; H_1 is rejected. This marks a deviation from the traditional agenda-setting hypothesis. H_2 is supported because the public did not influence the media agenda, as we predicted.

The media agenda demonstrated a significant causal influence on both SOTUs and executive orders but not on Congressional attention; H_3 is mostly confirmed. In both cases, an increase in media attention has a nonlinear effect on the political agenda: For SOTUs, an increase in media attention leads to a slow growth in quasi-statements that peaks and then falls, and for executive orders, an increase in media attention leads to a sharp increase in executive orders that decreases before returning to normal. No political agenda measure significantly influenced media attention; H_4 is rejected. Interestingly, the media agenda influences indicators of the Executive Branch, but is not influenced itself by political or public agendas in this general model.

Concerning the real economy, both the CPI and unemployment rate significantly affect media attention, confirming H_{5a} and H_{5b} . The CPI has a positive effect on media attention, where an increase in the CPI leads to cumulative increases of about 10 additional macroeconomic related news articles each month. The unemployment rate has a nonlinear effect on media attention, where a shock in unemployment leads to about 100 new articles produced in the first 3 months, but this effect then decays. These findings indicate that journalists are sensitive to actual economic developments under our general model.

Unexpectedly, these relationships are mutually influencing, such that media attention also significantly predicts the real economy. Media attention has a negative effect on CPI (i.e., increases in media coverage lead to decreases in CPI) and a positive effect on unemployment (i.e., more media coverage leads to higher unemployment rates). Whereas previous research has demonstrated how economic media coverage can result in unfavorable public perceptions of the real economy and that the media serve as an alarm to changing economic conditions (e.g., Garz, 2013). Our findings, however, go further in showing that the media may hold some causal influence on the economy itself.

The public agenda was also influenced by changes in the real-world economy via the CPI; H_{6a} is confirmed but H_{6b} is not. Consumer confidence also has a mutually influencing relationship with CPI. CPI has a negative effect on consumer confidence (i.e., an increase in the CPI leads to a decline in confidence) and vice versa (i.e., an

Table 1. VAR Results for Model 1 (All Time Points, No Political Conditions; N = 483).

| ↓ Dependent var. ↓ | Independent variables | | | | | | |
|--------------------------|-----------------------|---------------------|---------------------|----------------------|--------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. Δ Media | – | 5.57 | 12.21 | 12.53 | 8.69 | 48.92** (.04) | 26.95* (.03) |
| 2. Δ Confidence (Public) | 15.74 | – | 9.52 | 10.31 | 10.36 | 26.38** (.06) | 20.28 |
| 3. Δ Congress | 11.35 | 12.04 | – | 93.94** (.12) | 19.02 | 6.41 | 17.58 |
| 4. Δ SOTU | 26.55* (.03) | 33.13* (.04) | 26.08* (.04) | – | 12.35 | 35.70** (.05) | 37.87** (.02) |
| 5. Δ Executive Order | 90.41** (.13) | 14.54 | 14.60 | 17.28 | – | 16.08 | 39.95** (.02) |
| 6. Δ CPI | 75.31** (.10) | 25.35* (.02) | 13.18 | 17.6 | 7.05 | – | 8.69 |
| 7. Δ Unemployment | 21.63* (.08) | 23.49* (.05) | 16.52 | 9.48 | 14.20 | 6.75 | – |
| Ljung-Box Q (20) | 11.51 | 5.25 | 30.29* | 22.60 | 10.47 | 8.75 | 11.85 |
| Lagrange M (20) | 11.54 | 25.02 | 31.58* | 95.77 | 16.83 | 111.73** | 44.05* |
| R-squared | .30** | .24** | .61** | .75** | .62** | .40** | .34** |

Note. Independent (impulse) variables in columns, dependent (response) variables in rows. Granger statistic (X^2) is presented outside parentheses. Forecast-Error Variance Decomposition after eight steps is included in parentheses for significant relationships. IRF/CIRF graphs for significant relationships are included in the Supplemental Material. Values in bold are statistically significant.

* $p < .05$. ** $p < .001$.

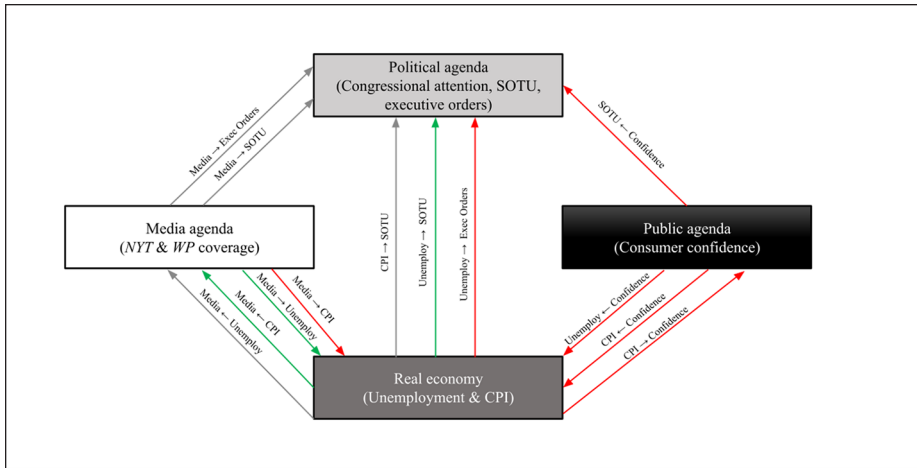


Figure 2. Visualization of significant granger causal relationships for model 1 (general conditions).

Note. Variables are grouped by agenda. An arrow between variables indicates at least one significant relationship between the variables, indicated by the text above the arrow. A red arrow indicates a negative effect, a green arrow indicates a positive effect, and a gray arrow indicates a mixed/nonlinear effect. Additional models can be found in the Supplemental Material.

increase in consumer confidence leads to a decline in the CPI). Furthermore, consumer confidence has a negative unidirectional effect on unemployment, where an increase in confidence leads to a swift drop in the unemployment rate. These are all common economic patterns, which underline the validity of the data used in our study.

Both CPI and unemployment rate significantly predicted SOTUs and unemployment rates effect executive orders; H_{7A} and H_{7B} are partially accepted. The CPI has a nonlinear relationship with SOTUs, such that a shock to the CPI leads to fluctuations in growth and decay over time, indicating a long-term dynamic effect. The unemployment rate has a positive effect on SOTUs, such that an increase in the unemployment rate leads to a delayed increase in SOTU quasi-statements. Additionally, the unemployment rate has a negative relationship with executive orders, such that an increase in unemployment leads to a decrease in executive orders. There is no relationship between the real economy and Congressional attention toward macroeconomics.

We also hypothesized a mutually influential relationship between the political and public agendas, but no such relationship was found; H_8 is rejected. It is worth noting, though, that consumer confidence does have a significant negative effect on SOTUs: Increases in consumer confidence lead to a brief decline in SOTU quasi-statements, perhaps indicating that the President does not feel a need to address the economy as prominently in times of prosperity.

In sum, the significant relationships found between the media, politics, and public were the influence of consumer confidence and media attention on SOTUs and of media on executive orders. Interestingly, the political agenda indicators were purely endogenous,

with no detectable effects on any other indicators. The real economy seems the strongest agenda setter of all, influencing the political, media, and public agendas.

Conditionality Upon Presidential Party

To assess whether findings differ by the president's political party, we reran the initial model but divided the timepoints by the political conditions. Our findings show substantial differences in agenda-setting relationships depending on the political context. Most prominently, we find that (1) the political agenda now becomes a significant agenda-setter, (2) some previously unidirectional relationships become bidirectional, and (3) the media and public agendas are significantly linked (under a Republican president).

Republican presidency. Table 2 and Figure 3 illustrate the 24 significant relationships (i.e., nine more than the first model) that emerge when examining months with a Republican president: Media agenda ↔ political agenda; media ↔ public agenda; media ↔ real economy; political ↔ real economy; and public ↔ real economy—and one unidirectional relationship—public → political.

Three relationships are shared with the model without political boundaries: Media agenda ↔ real economy; public ↔ real economy; and public → political agenda. Three are newly emergent: (1) A mutually influential relationship between media ↔ political, whereas for the general model a unidirectional influence of media on politics was detected; (2) Political agenda ↔ real economy are now mutually influential, where previously a unidirectional influence of the real economy on the political agenda was present; and (3) the media agenda and public agendas are now connected in a mutually influential relationship, whereas previously there was no detected relationship between the two.

The media and public agendas now demonstrate a mutually influential relationship, diverging from the overall model. This relationship is unique to this model, as neither the general model nor the Democrat presidency model (presented later) indicate any relationship between media attention and consumer confidence. Given the primary assumption of the agenda-setting theory is the media's influence on the public agenda (McCombs & Shaw, 1972), this is a particularly stand-out finding, as what we see in our data is that an influence on the public from the media (and the inverse) is present during times of a Republican presidency, but not in other conditions. Both relationships have negative effects: An increase in media attention leads to a decline in consumer confidence, and an increase in consumer confidence leads to a decline in media coverage.

Unlike the first model, the political agenda now also sets the media agenda, in addition to the media agenda influencing the political agenda. There is now a significant mutually influential relationship between media attention and SOTUs. Media attention has a nonlinear effect on SOTUs, such that an increase in media attention leads to a decline in SOTU quasi-statements, followed by a return to the average after a few months. SOTUs have a nonlinear effect on media attention, such that an increase in

Table 2. VAR Results for Model 2 (Republican President; N = 254).

| Dependent var. ↓ | Independent variables | | | | | | |
|--------------------------|-----------------------|----------------------|---------------------|----------------------|---------------------|----------------------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. Δ Media | – | 27.07* (.04) | 18.26 | 32.52* (.03) | 11.36 | 49.85** (.09) | 21.57* (.02) |
| 2. Δ Confidence (Public) | 29.87* (.07) | – | 14.62 | 19.24 | 15.65 | 42.92** (.15) | 21.13* (.05) |
| 3. Δ Congress | 13.28 | 14.24 | – | 57.26** (.05) | 12.21 | 21.38* (.04) | 19.12 |
| 4. Δ SOTU | 38.17** (.03) | 69.89** (.10) | 26.12* (.05) | – | 30.83* (.01) | 24.27* (.04) | 41.11** (.03) |
| 5. Δ Executive Order | 33.98* (.06) | 16.13 | 14.24 | 16.37 | – | 30.77* (.05) | 33.94* (.04) |
| 6. Δ CPI | 57.75** (.19) | 21.70* (.04) | 26.02* (.03) | 8.55 | 21.00* (.04) | – | 10.92 |
| 7. Δ Unemployment | 21.01* (.08) | 15.25 | 32.02* (.05) | 14.29 | 17.14 | 17.88 | – |
| Ljung-Box Q (20) | 84.98** | 45.01* | 47.58** | 37.45** | 57.00** | 60.78** | 34.30* |
| Lagrange M (20) | 432.53** | 86.14** | 72.25** | 93.08** | 24.68 | 144.93** | 88.06** |
| R-squared | .53** | .45** | .70** | .80** | .71** | .61** | .51** |

Note. Independent (impulse) variables in columns, dependent (response) variables in rows. Granger statistic (X^2) is presented outside parentheses. Forecast-Error Variance Decomposition after eight steps is included in parentheses for significant relationships. IRF/CIRF graphs for significant relationships are included in the Supplemental Material. Values in bold are statistically significant.

* $p < .05$. ** $p < .001$.

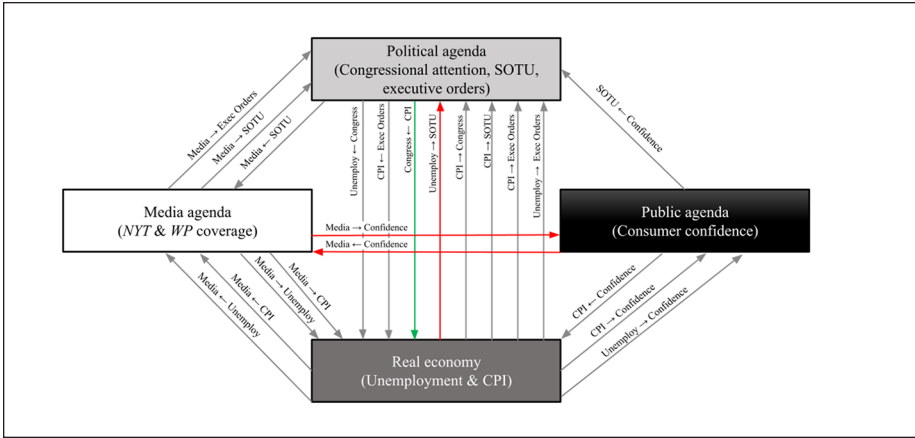


Figure 3. Visualization of significant granger causal relationships for model 2 (republican president).

Note. Variables are grouped by agenda. An arrow between variables indicates at least one significant relationship between the variables, indicated by the text above the arrow. A red arrow indicates a negative effect, a green arrow indicates a positive effect, and a gray arrow indicates a mixed/nonlinear effect. Additional models can be found in the Supplemental Material.

SOTU quasi-statements leads to a fluctuating response by media attention, growing and declining several times over just a few months. Finally, media attention has a non-linear relationship with executive orders, such that a shock in media attention leads first to a steady growth in executive orders, but this then declines at about the same rate it grew. Taking the media’s connection to both the political and public agendas in this model, the media are found to be both more influential as well as more susceptible to political agenda-setters under a Republican presidency than in the overall model.

The media agenda still demonstrates a mutually influential relationship with the real-world economy. Media attention and the CPI have mutually nonlinear relationships, such that an increase in CPI leads to a delayed and then plateaued growth in media coverage whereas an increase in media coverage leads to a dip and then steady rise in the CPI. Media attention and the unemployment rate have mutually nonlinear relationships where both are characterized first by growth (i.e., an increase in one leads to an increase in the other) followed by decay.

The public agenda and CPI again have a mutually influential relationship. Consumer confidence has a nonlinear relationship with CPI, where an increase in confidence leads to lower CPI scores, but this shifts to growth after several months. The CPI has a nonlinear relationship with the public agenda, where an increase in the CPI leads to an increase in consumer confidence followed by a decline after several months. Unlike the first model, the unemployment rate predicts consumer confidence under Republican presidents, but not the other way around. An increase in unemployment in this model leads first to a decline in consumer confidence, but this then grows and returns to average.

Like the first model, consumer confidence has a significant effect on SOTUs, though this effect is nonlinear rather than negative (as in the first model). An increase in consumer confidence scores leads to an initial sharp decline in SOTU quasi-statements, but this then recovers and flattens out back at the average.

The real economy still drives most relationships under Republican political conditions, as it did in the first model, but some interesting relationships between the political, media, and public agendas emerge. In this model, there is greater exchange among the actors, with numerous mutually influential (primarily nonlinear) relationships across all variables. Importantly, a mutually influential relationship between the media and public is unique to this model, as no influence of media on public (nor vice-versa) was present in either of the other models. Additionally, the media agenda now also responds to the political agenda, with journalists responding with more articles published following a Republican president's SOTU address.

Democratic presidency. The third model tested the same variables and relationships under a Democratic presidential condition. This resulted in 16 significant relationships (see Table 3 and Figure 4): Media agenda ↔ political agenda; media ↔ real economy; and political ↔ public agenda—and two unidirectional—real economy → political and public → real economy.

This model shares two relationships with the model with no political conditions (i.e., real economy → political and media ↔ real economy), but unlike the general model, the political and media agendas are now mutually influential (previously unidirectional), the public and political agendas are mutually influential (previously unidirectional), and the public agenda now shows a unidirectional influence on the real economy (previously mutually influential). Similarly, this model shares two with the Republican model (i.e., media ↔ political and media ↔ real economy), but differs in several ways. In this model, there is a unidirectional influence of the real economy on the political agenda (previously mutually influential), there is a unidirectional influence of the public agenda on the real economy (previously mutually influential), there is a mutually influential relationship between the public and political agendas (previously unidirectional), and there is no relationship between the media and public agendas (previously mutually influential).

Like the first model and unlike the second, there are no significant relationships between the media and public agendas under a Democratic president. The Republican presidential condition is thus unique, in that it demonstrates the foundational proposition of agenda-setting that we would expect to see in all models: That journalists and the public in step with one another on their agenda-setting functions (McCombs & Shaw, 1972).

Under a Democrat president, media attention and SOTUs influence one another. While an increase in SOTU quasi-statements leads to a slow growth in media coverage, an increase in media coverage leads to a fluctuating growths and declines in SOTU quasi-statements. Also like Republican presidents, media attention has a significant (nonlinear) effect on executive orders, such that an increase in media coverage has a delayed effect on executive orders, with a swift rise and then fall several

Table 3. VAR Results for Model 3 (Democratic President; N = 229).

| ↓Dependent var. ↓ | Independent variables | | | | | | |
|--------------------------|-----------------------|---------------------|---------------------|---------------------|----------------------|---------------------|---------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. Δ Media | — | 17.85 | 21.27* (.03) | 34.43* (.02) | 18.85 | 22.47* (.03) | 26.89* (.06) |
| 2. Δ Confidence (Public) | 7.85 | — | 29.08* (.04) | 16.18 | 7.56 | 13.65 | 14.07 |
| 3. Δ Congress | 17.47 | 8.52 | — | 30.74* (.07) | 20.41 | 12.78 | 22.15* (.04) |
| 4. Δ SOTU | 41.17** (.07) | 16.62 | 18.33 | — | 38.19** (.03) | 18.91 | 14.97 |
| 5. Δ Executive Order | 86.26** (.08) | 25.92* (.01) | 33.33* (.05) | 29.55* (.06) | — | 20.69 | 34.65* (.03) |
| 6. Δ CPI | 31.74* (.05) | 30.81* (.05) | 12.03 | 17.26 | 13.15 | — | 13.36 |
| 7. Δ Unemployment | 13.54 | 14.01 | 8.14 | 16.43 | 20.18 | 16.15 | — |
| Ljung-Box Q (20) | 20.87 | 37.97* | 76.81** | 23.65 | 75.18** | 81.91** | 32.78* |
| Lagrange M (20) | 7.42 | 49.17** | 121.78** | 53.05** | 44.22* | 102.89** | 60.06** |
| R-squared | .50** | .40** | .67** | .84** | .74** | .50** | .45** |

Note. Independent (impulse) variables in columns, dependent (response) variables in rows. Granger statistic (X^2) is presented outside parentheses. Forecast-Error Variance Decomposition after eight steps is included in parentheses for significant relationships. IRF/CIRF graphs for significant relationships are included in the Supplemental Material. Values in bold are statistically significant.

* $p < .05$. ** $p < .001$.

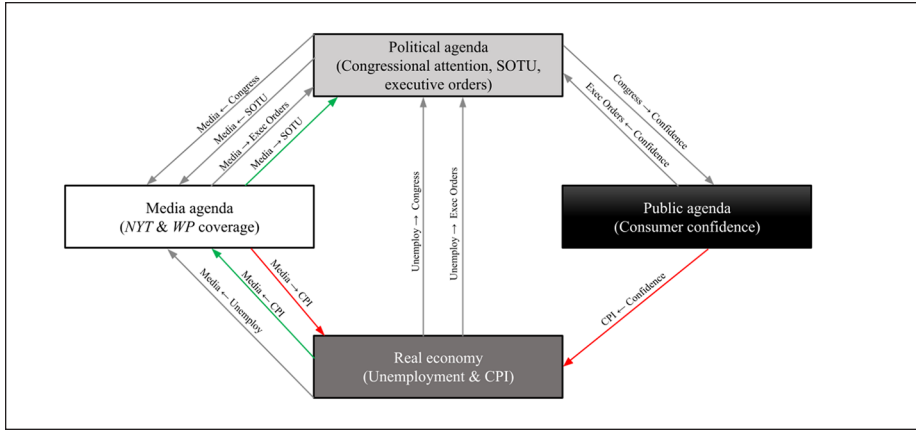


Figure 4. Visualization of significant granger causal relationships for model 3 (democratic president).

Note. Variables are grouped by agenda. An arrow between variables indicates at least one significant relationship between the variables, indicated by the text above the arrow. A red arrow indicates a negative effect, a green arrow indicates a positive effect, and a gray arrow indicates a mixed/nonlinear effect. Additional models can be found in the Supplemental Material.

months after the initial shock. Unique to this model, though, Congressional attention now exerts a nonlinear effect on the media agenda, where an increase in Congressional attention leads to recurring periods of slight, yet steady, growth and decline. Thus, the media’s responsiveness to Legislative Branch activity is unique to the Democratic model.

As with the previous models, media attention and CPI again have a mutually influential relationship. These relationships are inverse of one another: An increase in media coverage has a negative effect on CPI, whereas an increase in CPI has a positive effect on media coverage. Importantly, media attention returns to its average state after a shock in the CPI much faster under this model than under previous models, indicating a potential bias to cover more economic downturn news under Republican presidents than under Democrat presidents. Unlike previous models, though, the relationship between unemployment and media attention is now unidirectional. An increase in unemployment leads, at first, to growth in media coverage, but this reaches a peak and begins a downward trend after some time. This also potentially indicates a bias, in that media attention during times of a Democrat president is less attentive to negative developments in the real economy.

Unlike previous models, consumer confidence no longer has any significant relationship with unemployment. The public agenda, under Democratic presidential conditions, has a negative effect on CPI (i.e., an increase in confidence leads to a drop in CPI). Thus, the public agenda appears to be out of touch with (i.e., not influenced by) the real economy in this model.

Between the political and public agendas, there is a significant nonlinear effect of Congressional attention on consumer confidence and significant nonlinear effect of consumer confidence on executive orders. An increase in Congressional attention leads to a steady decline in consumer confidence which then shifts towards a brief upward trend, but then declines once again. An increase in consumer confidence leads to fluctuating growths and declines in executive orders. Thus, under a Democratic president, the political and public agendas are also somewhat disconnected.

In sum, between the media, political, and public agendas, it seems that the political agenda has the upper hand under a Democratic President because the political agenda exercises an effect on both consumer confidence and the media agenda. Moreover, the media agenda seems less responsive to CPI and unemployment development than under Republican presidencies, indicating the possibility of a liberal media bias as the media produces more stories responding to the real economy under Republicans, despite most downturns in our dataset occurring under Democratic presidents. Additionally, the media agenda is not connected to the public agenda in this model, indicating that some foundational agenda-setting assumptions may not hold under a Democratic presidential condition.

Conclusion

Using three VAR models, this study examined agenda-setting relationships across the media, politics, and the public, while accounting for the real economy and political boundaries from 1978-2018 in the United States. Figure 5 presents a simplified version of our most notable findings, comparing significant relationships across models using color-coded arrows. Three particularly noteworthy findings are made clear by this visualization. First, the only completely uniform relationship shared across all three models is the mutually influential relationship between the media agenda and the real economy. However, this relationship still differs across conditions, as journalists vary in their levels of responsiveness to changes in the economy, with more news coverage produced about economic downturns under a Republican president than a Democrat.¹³ Second, Figure 5 clearly illustrates that without the boundary conditions we imposed on our data (i.e., sitting president's party affiliation), the political agenda would not emerge as a significant agenda-setter. As an example, consumer confidence is significantly influenced by Congressional hearings under a Democratic president, but not under a Republican president or under a general model. Thus, modeling without accounting for presidential party would miss Congress as a significant agenda-setter, leaving questions about its role as an agenda setter unanswered. Finally, our findings demonstrate that *only* under a Republican president is there a significant traditional agenda-setting function of the media on the public. This finding has perhaps the greatest implications for agenda-setting research, as we show that the political context can render the media agenda less influential on the public than previously believed.

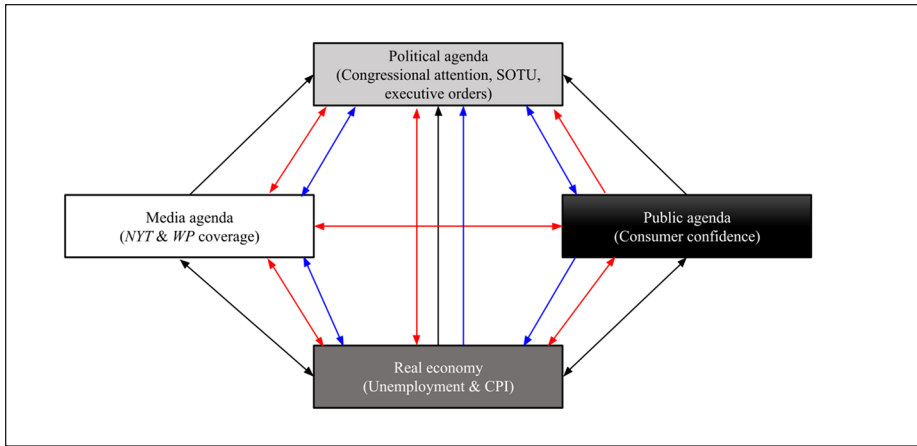


Figure 5. Agenda-setting relationships between the key variables (i.e., media agenda, political agenda, public agenda, and real economy).
 Note. Variables are grouped by agenda. An arrow between variables indicates at least one significant relationship between the variables (see Figures 2–4 for more details). Black arrows represent significant relationships for the model with no political conditions (i.e., all time points), red arrows represent significant relationships for the Republican model, and blue arrows represent significant relationships for the Democrat model.

Discussion

As demonstrated by this large-scale longitudinal research, agenda-setting is contingent upon many dynamic indicators. This partly explains the diversity of findings in the existing literature. At different times, every actor in our dataset acted as an agenda-setter and agenda-follower, but leaving it at that does not sufficiently illustrate the complex relationships between variables. At the start of this paper, we outlined three key gaps in agenda-setting literature that our research sought to fill, namely the focus on single actors, unidirectional relationships, and a lack of attention paid to context in prior research (Vliegenthart & Damstra, 2019). In this final section, we place our research within the broader body of agenda-setting literature, discuss the importance of boundaries and longitudinal approaches, and provide final thoughts about the future directions of agenda-setting research.

The present study expands on the broader scope of agenda-setting literature, even as it narrowly focuses on first-level economic agenda-setting. Issue-specific salience holds relevance for agenda-setting scholars as we demonstrate that media, politics, and the public inform and influence each other regarding a topic that has considerable societal impact. First-level agenda-setting in our dataset translates to time and resources committed by agenda-setting actors that are, in some cases, quite considerable; for example, a single Congressional hearing can include dozens of legislators, and a Presidential Executive Order can involve research and investigation leading up to the action. Furthermore, examining issue-specific salience operates as a functional

baseline for understanding the many complex relationships within our dataset that have, thus far, been studied with more simplistic designs.

Our findings demonstrate that the foundational proposition of agenda-setting—that the media sets the agenda for the public—is highly contextual, providing support for the usefulness of returning research foci to first-level agenda-setting relationships. Additionally, this research highlights how nondeliberate influence has considerable impact (counter to agenda-building propositions built on intentional actions). Some of the key findings of this research, which involve otherwise unintentional agenda-setters, include the mutually influential relationship between the media and the economy and the varying (non-)responses of politicians and the public to changes in the CPI and unemployment rate.

More specifically, and of interest to communication and political scientists, the current study unravels the conditions under which *news media* are (a) more susceptible to economic developments and (b) more influential themselves. Concerning journalists' sensitivity to the real economy, media attention was influenced by the real economy in *every* model. Journalists seem to always pick up on changes in these two measurements, which is a positive finding from the perspective that journalists ought to portray reality as it is (Jacobs et al., 2018). Importantly, though, the difference between how much media attention is paid to the real economy would indicate that the US news media perhaps do have a liberal bias, lingering longer on and producing more news coverage of negative economic development under Republican presidents than under Democrats (see also Merkley, 2019). It is also worth noting that the media agenda was differentially influenced by and influential on public and political agendas. This is worth further exploration: Why might journalists be more influential on Executive Branch indicators than on Congress, and why would consumer confidence influence the media agenda under a Republican president, specifically? Is this perhaps connected to the media's responsiveness to the real economy under a Republican president? These questions highlight the important role of addressing situational contexts and setting boundaries in agenda-setting research.

The Role of Boundaries

Our findings demonstrate that political boundaries can allow new insights to emerge. When we did not place political boundaries around our data (i.e., included all time points, regardless of the sitting president's political party affiliation), two significant unidirectional effects between the media, politics, and the public were detected (i.e., the media and public agendas influenced the political agenda). Contrastingly, when looking at Republican time points, mutually influential relationships between the media and political agenda and between the media and public agenda emerged. Under a Democratic president, our findings also indicated a mutually influential relationship between the media and political agendas as well as between the public and political agendas.

While the political agenda played a role in all three of our models, this was almost entirely due to the inclusion of State of the Union addresses and Executive Orders as indicators of the agenda; as such, it would appear that the Executive Branch, not

Congress, is most responsive to and driving agenda-setting for the political agenda. However, Congress was indeed an agenda-setter for the public's attention under Democratic presidential conditions, and this warrants further investigation as to why not in other cases. Thus, modeling without accounting for political partisanship would miss Congressional-driven agenda-setting. In fact, models not accounting for political partisanship would appear to show that Congress answers to no one, responding exclusively to the unemployment rate and, thus, falsely create an image of politics as an isolated agent in society. The conditions in which specific actors do become agenda-setters and others do not are pertinent to understanding the agenda-setting relationship. Especially considering the insignificance of Congressional party control as a political boundary (see brief discussion in Methods and more information in Supplemental Material), further theorizing and research needs to be developed to predict the exact circumstances under which this occurs.

Differences Over Time

Longitudinal research, like that used in this study, is critical for agenda-setting theory, as it acknowledges agenda-setting as something that changes dynamically over time and across political conditions. Our inclusion of real economy variables and the use of a 40 year timespan allowed us to explore how agendas respond to (and begin to ignore) the influence of other agendas over time. Many of the analyzed relationships demonstrated nonlinear patterns of behavior, meaning that media, politicians, and the public change their responses to a shock in the economic system and to each other's agendas variably as events unfold. While some of our results may appear superficial at first (e.g., journalists respond to changes in the economy), our thorough analysis of changes in linearity and scope over time adds an additional layer of complexity and insight. Indeed, it is the longitudinal design of this study that allows for the emergence of novel findings, such as journalists' differential response to the economy dependent on the party in executive power.

Though our study is not the first to examine nonlinear patterns of behavior in agenda-setting (e.g., Brosius & Kepplinger, 1992), we do contribute to this body of literature by demonstrating just how common it is for attention paid towards other agendas to fluctuate over time: Indeed, very few relationships in our dataset were linear. For example, when the media agenda did affect the public agenda (under a Republican president), this was characterized by its slow growth over time and slow to return to the average, a relationship which may not have been visible had we used a shorter time frame. Additionally, by their very nature economic crises can be more turbulent and dynamic than other periods; analyzing them without an eye to their longitudinal impacts potentially obfuscates critical insights. Future research on how agenda-setting develops over time should focus on this through innovative methods.

Limitations & Future Research

Despite the large scope of the dataset and the merits of its longitudinal design, there are limitations to this research. First, additional reasons for the divergence in

findings include our use of volume of coverage as the key variable, as opposed to studies which use complex variables to measure the *content* of media coverage (e.g., tone or frames), or *relative* attention paid to economic issues (e.g., the rank order of the most visible issues in the media). While incorporating second- and/or third-level agenda-setting mechanisms were outside the scope and complexity of this study, we recommend future scholars implement these theoretical frameworks in their research on this topic, as this would illuminate additional mechanisms in mutually influential multi-actor agenda-setting studies. Indeed, second-level agenda-setting studies could provide more detail on how agendas are shaped longitudinally, particularly concerning the impacts of valence over time. Third-level agenda-setting studies can dive deeper into the interplay between agendas as they form networks across issues (e.g., examining economics alongside social issues). Furthermore, this study represents just a surface-level exploration into our dataset, which is already substantially complex and comprehensive. While we have given a large-scale overview of the relationships in this data, there are numerous aspects of the data we have yet to tap into.

Future Directions for Agenda-Setting

Claims about influence based on our findings show that media agenda influence is conditional, not general nor universal. Scholars should continue to examine news media agenda-setting under varying external conditions, aiming to flesh out when the media are most influential versus most susceptible to influence. Finally, it is worth noting that the media, political, and public agendas significantly predicted the real economy at different moments in our dataset. Each of these is worth investigating deeper, particularly the less easily speculated media influence; whereas Congress develops policies targeted at the real economy and consumers are evaluating and adjusting to it, how does the media factor in?

Through multiple VAR models, our study has introduced boundary conditions to address issues of over-generalization, demonstrated growth over time, engaged with longitudinal data to push back on the abundance of cross-sectional agenda-setting work, and complicated the theoretical framework of agenda-setting through these mechanisms. It highlights that the power of the media to drive the agenda is conditioned by specific political context variables. We hope this study encourages future agenda-setting scholars to further this research through examinations of second- and third-level agenda-setting.

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Open Practices



Data for this study is accessible at the following link (also included in our manuscript): https://osf.io/bupq6/?view_only=02c6c1b6a8ab48a49121fb72c8a0a975.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Link to our data: https://osf.io/bupq6/?view_only=f2cb28db22884dc3852d40817bcf31e0
2. Our dataset uses a list of economic crisis-related terms. Similar results were yielded using a search string of broad economic terms, and the results for these two sets were strongly correlated. See Supplemental Material.
3. While *NYT* and *WP* have been described as holding alleged "liberal" biases, research has demonstrated that claims about this bias are largely unfounded (Eisinger et al., 2007).
4. As our data is aggregated on a monthly level, this means that most months receive a value of 0 in the dataset.
5. SOTUs and executive orders are not correlated ($r = .11$).
6. In chronological order, these were Jimmy Carter (Democrat, 1977–1981), Ronald Reagan (Republican, 1981–1985, 1985–1989), George H. W. Bush (Republican, 1989–1993), Bill Clinton (Democrat 1993–1997, 1997–2001), George W. Bush (Republican 2001–2005, 2005–2009), Barack Obama (Democrat, 2009–2013, 2013–2017), and Donald Trump (Republican, 2017–2018). Data collection ceased during Trump's presidency.
7. See Supplemental Materials for visualizations.
8. A time-series graph using the standardized z-scores for the real economy variables, the media variable, and the Congressional agenda variable is presented in the Supplemental Material.
9. Best fit indicators: Model 1 at lag 12 with three in agreement: $LR = 103.98$; $FPE = 199201$; $AIC = 31.53$. Model 2 at lag 12 with three in agreement; $LR = 117.39$; $FPE = 139526$; $AIC = 31.52$. Model 3 at lag 12 with two in agreement; $LR = 102.57$; $AIC = 31.99$.
10. IRF/CIRF graphs are presented in the Supplemental Material.

11. A table outlining all significant relationships across the three models is included in the Supplemental Material. Several significant relationships are excluded from the results section text as they are either not the focus of this study (e.g., political science findings e.g., Congressional attention ↔ CPI) or they connect indicators linked by a latent variable (e.g., relationships within an agenda, e.g., Congressional attention ↔ SOTUs).
12. Some relationships included in the table but excluded in the visualization if they are not relevant to our hypotheses (e.g., Congress ↔ SOTU).
13. Discussed in the Results section and depicted visually in the (C)IRF graphs provided in the Supplemental Material.

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