


# Christmas Trees, Presidents, and Mass Shootings: Explaining Gun Purchases in the South and Non-South

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*Objective.* This article explores the factors that influence gun purchases in the United States with particular attention to regional differences between the South and non-South. *Methods.* We use data collected by the Federal Bureau of Investigation's *National Instant Criminal Background Check System* to conduct a time-series cross-sectional analysis of monthly firearm background checks, a proxy for gun purchases, in each state from January 1999 to May 2020. *Results.* Throughout the data series, average gun purchases in the South dwarf those in the non-South. Spikes in gun sales are positively associated with Democratic presidencies, Christmas holidays, mass shootings, and news coverage of mass shootings. Gun purchases have also spiked nationwide in the wake of the coronavirus pandemic, though most notably in the South. *Conclusion.* Our findings speak to the powerful role fear plays in motivating gun purchases, the magnitude of political polarization in the United States, and the regional distinctiveness of the South.

Hospitality, religiosity, familial ties, and connections to community are popular attributes of southern culture, but there is also a powerful gun culture and undercurrent of violence that weaves throughout the region, which has fascinated historians, political scientists, and sociologists. The South has been defined as “that part of the United States lying below the Smith and Wesson line” (Hackney, 1969:906). In this study, we explore the key predictors of gun sales over the last two decades (1999 through the spring of 2020) by state, with particular attention given to the trends and dramatic spikes in gun sales for the South and non-South. Those spikes were especially pronounced and prevalent during the Obama Presidency. Much to his chagrin, Obama has been called the “greatest gun salesman in history” (Cook, 2015). The data in this longitudinal study allow us to examine the patterns in gun purchases across four presidencies: Bill Clinton, George W. Bush, Barack Obama, and Donald Trump.

Our literature review begins with a summary of the classic literature on the southern subculture of violence. We then consider the journalistic explanations for the recent spikes in gun sales: Christmas holiday effects, presidential regimes, mass shootings and the subsequent media coverage, natural disasters, and the coronavirus pandemic. Initially, we graph gun sales from January 1999 through May 2020 in southern states versus nonsouthern

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states. We discuss under what conditions spikes in guns sales are most likely to occur. We then conduct a time-series analysis to investigate the impact of the Christmas holiday season, party control of the White House, mass shootings, national media coverage of mass shootings, natural disasters, and the coronavirus pandemic on gun sales by state and across regions.

## Explaining Gun Purchases

### *The Southern Subculture of Violence*

Given our intense debates on gun policy in the United States, the scholarship on the southern subculture of violence can be illuminating. Throughout the 20th century, the South has produced homicide rates well above the national average. In their classic work *The Subculture of Violence*, Wolfgang and Ferracuti (1967) advance the thesis that variations in rates of violence among populations can be attributed to cultural or subcultural values that prescribe and reinforce violent behavior patterns. Although Wolfgang and Ferracuti do not specifically refer to the American South, the concept of a “subculture of violence” would soon be applied to the region. Based on an analysis of data from 1920 to 1964, Hackney (1969:908) finds that “southerners show a relatively greater preference than do nonsoutherners for murder rather than suicide.” After controlling for urbanization, education, wealth, and age, Hackney (1969:914) finds “a significant portion of the variation from state to state in the white homicide rate, and in the white suicide rate, that is not explained by variations in measures of development, but that is explained by southernness.”

Although Hackney calls attention to levels of gun ownership and corporal punishment of children to explain regional variations in the homicide rate, he emphasizes that the southern “world view” may account for the subculture of violence. Hackney (1969:920) invokes Cash’s 1941 work *The Mind of the South* to explain the southern propensity for violence. Southerners have historically resorted to the private settlement of disputes because of the absence of institutions of law enforcement (Hackney, 1969:921). Cash describes a South in which whites are united by “a wild, almost irrational hatred of government and a mania for individualism left behind from the days of the frontier” (Applebome, 1996:160). A “culture of honor” has become a popular explanation for the southern subculture of violence. Cohen et al. (1999:257) explain that “the U.S. South (and the West) historically have been characterized by what anthropologists call a culture of honor. That is, men in these cultures are held to a stance of toughness and physical prowess and often respond to insults, threats, and serious affronts with violence.” Nisbett and Cohen elaborate that the legacy in the American South of “herding societies are typically characterized by having ‘cultures of honor’ in which a threat to property or reputation is dealt with by violence” (1996:4).

One of the more interesting hints of a southern subculture of violence comes from an analysis of aggressive driving and road rage. A study of 50,000 traffic accident reports between 1988 and 1997 reveals that 16 southern states and the District of Columbia “have only a third of the nation’s population but account for almost half of all aggressive-driving crashes with injuries” (Bowles and Overberg, 1998:18A).

Journalistic accounts of southern violence continue to focus on the prevalence of guns in the region. Emerson (1998:A8) notes that surveys reveal southerners are “more likely to advocate gun ownership as the best defense against criminals than residents of any other

part of the country.” A Pew Center (Morin, 2014) survey found that gun ownership rates were highest in the South although just edging out the Midwest and West. Dixon and Lizotte (1987) challenge the link between gun ownership and a southern subculture of violence. Based on an analysis of data from the General Social Surveys for 1976, 1980, and 1985, Dixon and Lizotte find that “gun ownership is unrelated to the violent values indicative of subcultures of violence” (1987:383).

### ***Christmas Trees: The Role of Holiday Purchases***

It should come as no surprise that gun sales spike with the holidays. Guns are a popular gift during the holidays, particularly among children (Joseph, 2019). In fact, *Boys' Life* magazine has been marketing guns to children since the early 1900s. Witkowski (2020) found the 102 December issues of *Boys' Life*, the monthly magazine of the Boy Scouts of America, contain 281 gun ads. Each issue between 1911 and 1984, with the exception of 1914, contained at least one gun ad. The 28 December issues between 1984 and 2012 only contained seven ads total. As Witkowski notes, “giving guns as Christmas presents has been one of the ways in which boys and young men have traditionally been recruited into American gun culture” (2020:1). Though Witkowski notes that gun ads dropped off after 1984, the trend continues. Joseph (2019) reveals that giving guns as Christmas gifts in Louisiana is not uncommon. In fact, a novelty glassware company in Wisconsin gave employees guns for Christmas in 2018 in “an effort to promote personal safety and teambuilding” (Mueller, 2018).

According to the Federal Bureau of Investigation's *National Instant Criminal Background Check System* (NICS), the days between Thanksgiving and Christmas have historically marked periods of firearm background checks at their peak. From 1999 through 2019, 9 of the top 10 highest days the FBI has conducted the most firearm background checks took place between Thanksgiving and Christmas, 7 of which occurred on Black Friday (Melgar, 2019). Moreover, these nine record-holding days during the Christmas holidays have all taken place between 2012 and 2019, suggesting that Americans' penchant for gift-giving guns is hale and hearty. Retailer bundle deals, manufacturer rebates, and discounted pricing likely play a major role in driving record-setting firearms sales (Popken, 2014). For instance, in 2014 megaretailers such as Walmart and Cabela's targeted prospective firearms consumers on Black Friday by offering major discounts such as 20 percent off on all firearms and raffling off on rifles to the first 600 customers, respectively (Popken, 2014). Black Fridays are not just about camping in line and then charging into Walmart and Gander Mountain at the break of dawn, it is also about buying guns for family, friends, and loved ones.

### ***Presidents: The Role of Political Polarization***

Gun ownership is a strong predictor of political party identification among voters. In fact, Silver (2012) found that gun ownership matters more than gender, sexual orientation, race, or region among other demographic predictors. Gun owners, according to Matt Grossman in an interview with Brooks (2018), are more politically active than those without a gun. Given the ties to partisanship and gun ownership, it is reasonable to conclude that levels of political polarization have some effect on gun sales. According to a report

by Pew Research (2017), political polarization remained relatively constant from 1994 to 2004 but began to sour during the second term of George W. Bush's presidency.

The spike in polarization coincides with the election of President Barack Obama. In 2008, the National Rifle Association launched a \$15 million ad campaign against presidential nominee Obama, highlighting his support for semiautomatic weapon bans, regulation of concealed carry permits, and limits on handgun purchases (Todd, 2008). After President Obama's 2008 election, federal firearm background checks soared to an unprecedented height of over 1.5 million checks nationally in the month of November (United States Department of Justice, 2020).

According to the *Wall Street Journal*, during President Obama's first term in office no substantial changes to gun control were enacted (Banjo, 2012). However, during the 2012 presidential campaign, President Obama and his administration were perceived as a formidable threat to gun rights (Gun Sales May Soar, 2012). Perhaps this perception is best attributed to lobbying groups campaigning against President Obama when, in 2012, the NRA again spent some \$15 million against Obama during his bid for reelection (Knowles, 2013). After his reelection, federal firearm background checks set a new record with over 1.9 million checks total in November 2012, representing a 54 percent increase in checks since the mass shooting in Aurora, Colorado, just a few months prior (United States Department of Justice, 2020). Overall, President Obama's election and reelection posed not only a political threat to gun rights but these fears also appear to be amplified by racial prejudice and southern regionalism (Cook, 2015). Increased gun sales, during the tenure of Obama's presidency have been deemed by researchers as the "Obama Effect," leading some to consider President Obama the "greatest gun salesman in history" (Cook, 2015).

Gun sales under President Trump initially leveled out in the wake of his surprise election. Isidore (2018) reports gun sales fell by a combined 13 percent among major manufactures during President Trump's first year in office. The "Trump Slump" has come to represent plummeting gun sales during the first several years of the Trump Presidency (AP, 2019). Mohamed (2019) eloquently summarizes "some of America's biggest sellers of guns and ammo are suffering from a lack of 'fear-based buying', as consumers aren't worried about stricter gun control while Donald Trump is in office. Given the minimal risk of Democrats passing tighter gun laws while Republicans control the Senate and the White House, people haven't been panic-purchasing firearms out of paranoia they'll lose access to them."

### ***Mass Shootings, the Mass Media, and Increased Gun Purchases: A Vicious Cycle***

A phenomenon that has been referred to as both "tragic and ironic" is the observed relationship between mass shootings followed by increased gun sales (The White House, 2015). Mass shootings lead to more gun sales for two reasons: fear of gun control legislation in response to the shooting and people seeking a means of self-defense (Anuradha, 2017). Calcutt et al. (2019) analyzed gun sales in California from 1995 to 2015 and found that mass shootings led to increased gun control measures in the state, which in turn led to increased gun sales immediately before the policies were enacted. In their time-series analysis from November 1, 1998 through April 30, 2016, Liu and Wiebe (2019) discover an expected increase in background checks after 26 mass shootings (21 percent of major mass shootings in their data set) and an unexpected decrease in background checks after 22 shootings (18 percent of major mass shootings). They also found a significant increase in handgun purchasing after a shooting with extensive media coverage though shootings with a large number of fatalities resulted in relatively fewer background checks (Liu and Wiebe,

2019:7–8). Porfiri et al. (2019), in a time-series analysis from 1999 to 2017, identified a correlation between mass shootings and firearm sales. Similarly, they found that media coverage after the mass shooting was highly correlated with gun sales and a potential causal link. In the aftermath of the San Bernardino mass shooting, gun shops from every corner of the nation were reporting increased gun sales, and even sheriffs encouraged residents to stockpile arms (Santos, 2015). However, a shift in the response to mass shootings after 2016 is worth noting. Chang (2018) reported that gun sales did not spike after the school shooting in Parkland, Florida. Furthermore, he speculated that this was due to citizens not fearing for gun legislation under a Republican-controlled White House and Congress.

### ***Natural Disasters and the COVID-19 Pandemic***

Natural disasters also play a role in gun purchases. A primary factor in the trend stem from the events that unfolded in Louisiana after Hurricane Katrina when law enforcement confiscated guns (NRA-ILA, 2015). The NRA has leveraged the Katrina confiscations over the years to stoke fears that the government will take your guns. Similarly, a Texas law went into effect in 2019 in the wake of Hurricane Harvey which allows residents to open carry one week after a natural disaster to protect their property from looters and criminal activity (Wu, 2019).

With the wildfire-like spread of the coronavirus across the United States, gun sales are surging right alongside new case totals and daily death rates in 2020. Collins and Yaffe-Bellany (2020) document that Americans purchased almost 2 million guns in March 2020 as the nation shutdown in response to the pandemic. Furthermore, the novel coronavirus has changed the patterns of who is buying guns. Arnold (2020) explains that the dramatic spikes in gun sales during the pandemic are being driven not by gun enthusiasts, as witnessed in the past, but rather by first-time gun buyers. The rising rates of gun ownership among African Americans are also notable during the pandemic. King (2020) notes that “the rush to purchase weapons and ammunition is not unique to one race...however, new Black gun owners see firearms as a tool of both empowerment and self-defense.” Membership in the National African American Gun Owner’s Association has increased by a record 2,000 new members per day, which is typically the yearly growth for the association (King, 2020). King (2020) eloquently summarizes that “fears of a damaged economy, disrupted supply chain and slow-moving federal response inspired people to take up arms.”

### ***Fear: The Tie that Binds Gun Sales***

Across the major predictors of gun sales, fear is a unifying principle: fear of crime, fear of the turmoil after a natural disaster, fear of the government coming for our guns and ammo after a mass shooting, and fear of a Democrat in the White House. In their study of the relationship between gun sales and mass shootings, Liu and Wiebe, 2019:2) emphasize the increased “fear of victimization” with many Americans anxious about a mass shooting occurring in their own community. The coronavirus pandemic may well be the perfect storm bringing together deep-seated personal, economic, and political fears. In his exploration of the political brain, Westen (2007) reminds us of the powerful role of emotions and the salience of fear. The human brain has been conditioned for tens of thousands of years to respond to fear.

## Data and Methods

In this article, we examined the factors that influence gun purchases in the United States. We relied on data collected by the FBI's NICS to measure the number of monthly firearm background checks by state as a proxy for gun purchases as our dependent variable. Our data span from January 1999 to May 2020 for a total of 12,850 state-months. We recognize the limitations of our data given that sales at gun shows and sales conducted by unlicensed dealers do not undergo background check; however, we adopted the approach of other scholars who have utilized firearm background checks as proxies for gun sales (Butz, Fix, and Mitchell, 2015; Johnson and Zhang, 2020).

Our key explanatory variables are the Christmas holidays, region (South and non-South), presidential regime, natural disasters, the coronavirus pandemic, mass shooting events, and national televised news media coverage of mass shooting events (measured in minutes).

Each variable was measured at the state level by month. State population was derived from the U.S. Census and updated annually for each state. We controlled for the Christmas holidays with a dichotomous variable where the months of January–November equal 0 and December equals 1. Region is a dichotomous, time-invariant variable that codes the 11 Confederate states as 1 for the South and all other states as 0 for the non-South. Presidential regime captures the party of the president where 0 represents a Republican presidency and 1 represents a Democratic presidency.

We relied on data collected by the National Centers for Environmental Information (NCEI) to code natural disaster events (hurricanes, tornadoes, and severe storms) by state and month. Natural disasters were coded as 1 in the state and month the event occurred when the overall damages and/or costs of a natural disaster event meet or exceed \$1 billion. A separate dummy variable to measure the pandemic was created that assigned all states the value of 1 in March, April, and May 2020 to capture the presence of the coronavirus.

Mass shootings were coded as 1 in the state and month which the event occurred. While sources vary in their interpretation and criteria of what constitutes a mass shooting event, we relied on the *Mother Jones* Mass Shootings Database, which uses the FBI's classification of mass shootings as an incident involving *four or more* fatalities for years 1990 through 2012. In 2013, Congress passed the Investigative Assistance for Violent Crimes Act that codified mass shootings as incidents involving *three or more* fatalities. Our operationalization of mass shootings reflects this distinction from 2013 onward.

Finally, we used the Vanderbilt Television News Archive to measure ABC Evening News coverage of mass shooting events in our data set. For each mass shooting ( $n = 91$ ), we aggregated the total minutes of ABC national news coverage on the event throughout the month and assigned that value to each state in the data set to capture the nationwide impact of mass shooting media coverage on firearm purchases. Following the design of Jetter and Walker (2018), we used ABC News coverage as a measure for national media attention. *World News Tonight with David Muir*, the flagship nightly news program for ABC, spent 10 straight weeks as the number one television news source boasting 8.44 million viewers during the first week of August 2020 (Concha, 2020). This was just over 3 million more viewers than NBC's *NBC Nightly News with Lester Holt* and roughly 2 million more viewers than Fox News, MSNBC, and CNN's prime time coverage combined.

Our study investigates the following hypotheses:

**H1:** Gun sales will spike during the Christmas holiday season.

**H2:** Gun sales will be higher and the spikes more pronounced during Democratic presidencies.

**H3:** Gun sales will spike in the wake of mass shootings.

**H4:** Gun sales will spike in the wake of national media coverage of mass shootings.

**H5:** Gun sales will spike after national disasters.

**H6:** Gun sales will spike during the coronavirus pandemic.

**H7:** Gun sales will be higher and the spikes more pronounced in the South compared to the rest of the nation.

Our empirical analysis proceeds in two stages. First, we conduct an explorative analysis that examines how gun purchases have trended on average across time with particular attention to the three major culprits of gun sales spikes: presidential regime, the Christmas holidays, and mass shootings. In the second analysis, we conduct a multivariate time-series analysis to evaluate the level of association between these environmental shocks and gun purchases in the United States.

## Findings

### *Monthly and Annual Firearm Background Check Trends in the South and Non-South*

Since 1999, the FBI has initiated over 344 million firearm background checks. This figure alone represents enough for every man, woman, and child in the United States to own a firearm with 16 million left to spare. The number of firearm background checks initiated by the FBI has exploded over the last two decades. In January 1999, the FBI initiated approximately 585,000 firearm background checks nationally. In May 2020, the FBI conducted over 3 million background checks nationally, which marked over a 400 percent increase from 1999.

While there is a general upward trend in gun purchases over time, our research suggests that spikes in gun sales are attributed to three primary factors: the Christmas holidays, Democratic presidencies, and mass shooting events. Our research also illustrates dynamic regional differences in gun purchases between the South (classified as the 11 original Confederate states) and non-South. While the raw number of monthly firearm background checks is no doubt lower in the 11 southern states compared to the rest of the country, examining the regional (South versus non-South) average of monthly firearm background checks sheds significant light on the gun culture in the South.

The average number of monthly firearm background checks in the 11 southern states exceeds the average number of monthly firearm background checks in the remaining 39 states in every single month since January 1999 with the exception of April, May, and June 2019. In fact, on average, the difference in monthly average firearm background checks between the South and non-South is approximately 41 percent. However, note the diminishing gap between the South and non-South throughout the Trump Presidency in Figure 1.

Analyzing the annual average of firearm background checks by region also allows us to visualize how gun purchasing trends wax and wane with particular respect to changing presidential regimes. Table 1 reports the annual average of firearm background checks for the South and non-South regions as well as the year-to-year percentage fluctuations in parentheses. Across all years in the data set, the annual average difference of firearm background checks between the South and non-South was approximately 43 percent. From 1999 to 2019, the annual average of firearm background checks has grown by about 53

TABLE 1  
Annual Average of Firearm Background Checks by Region: 1999–2019

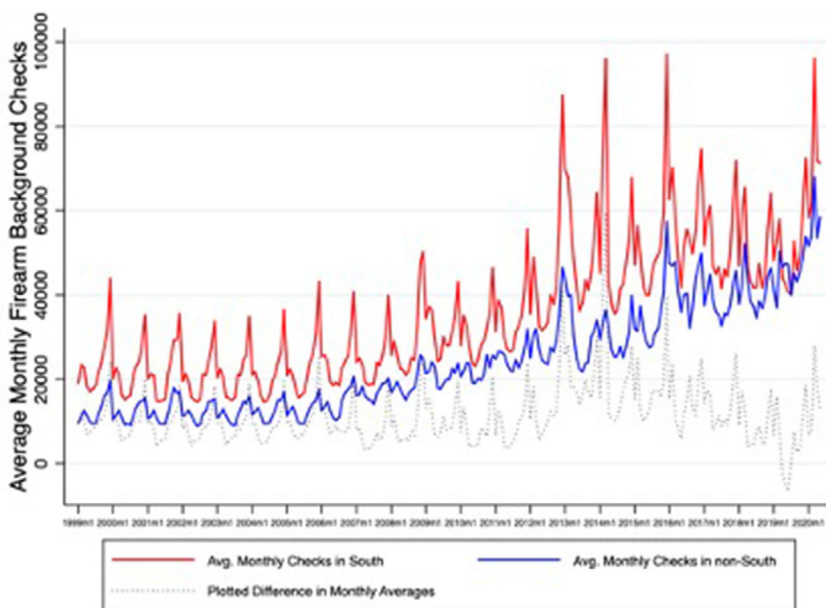
Year	President	Yearly Average Background Checks for Southern States (% Change/Year)	Yearly Average Background Checks for Nonsouthern States (% Change/Year)
1999	Clinton (D)	23,765.18	12,609.64
2000	Clinton (D)	21,623.26 ( <b>-9%</b> )	11,895.76 ( <b>-5%</b> )
2001	Bush (R)	21,851.64 ( <b>+1%</b> )	12,666.75 ( <b>+6%</b> )
2002	Bush (R)	20,746.08 ( <b>-5%</b> )	12,008.74 ( <b>-5%</b> )
2003	Bush (R)	21,036.86 ( <b>+1%</b> )	12,002.3 ( <b>0%</b> )
2004	Bush (R)	21,056.03 ( <b>0%</b> )	12,376.77 ( <b>+3%</b> )
2005	Bush (R)	22,964.45 ( <b>+9%</b> )	12,449.34 ( <b>+1%</b> )
2006	Bush (R)	24,503.21 ( <b>+7%</b> )	14,419.51 ( <b>+15%</b> )
2007	Bush (R)	24,254.16 ( <b>-1%</b> )	16,988.14 ( <b>+17%</b> )
2008	Bush (R)	29,018.75 ( <b>+20%</b> )	18,918.3 ( <b>+11%</b> )
2009	Obama (D)	31,816.28 ( <b>+10%</b> )	21,031.76 ( <b>+11%</b> )
2010	Obama (D)	30,567.19 ( <b>-4%</b> )	21,955.25 ( <b>+4%</b> )
2011	Obama (D)	34,436.79 ( <b>+13%</b> )	25,165.33 ( <b>+14%</b> )
2012	Obama (D)	43,429.83 ( <b>+26%</b> )	29,302.92 ( <b>+16%</b> )
2013	Obama (D)	50,552.93 ( <b>+16%</b> )	30,499.52 ( <b>+4%</b> )
2014	Obama (D)	51,486.07 ( <b>+2%</b> )	30,008.77 ( <b>-2%</b> )
2015	Obama (D)	52,153 ( <b>+1%</b> )	34,448.79 ( <b>+14%</b> )
2016	Obama (D)	57,337.94 ( <b>+10%</b> )	42,386.63 ( <b>+23%</b> )
2017	Trump (R)	52,175.59 ( <b>-9%</b> )	38,558.13 ( <b>-9%</b> )
2018	Trump (R)	49,871.5 ( <b>-4%</b> )	40,919.68 ( <b>+6%</b> )
2019	Trump (R)	50,459.16 ( <b>+1%</b> )	45,529.96 ( <b>+11%</b> )

Note: Bolded information represents percentage change from previous year.



FIGURE 1

Average Monthly Firearm Background Checks Between South and Non-South



percent in the South and a whopping 72 percent in the non-South. We argue that much of this growth is attributed to changes in presidential regime. For instance, when Barack Obama won the 2008 presidential election, the annual average of firearm background checks skyrocketed over 20 percent from the previous year in the South. Background checks surge again in the South by 26 percent following President Obama’s reelection in 2012, constituting the largest annual average increase in the entire data set.

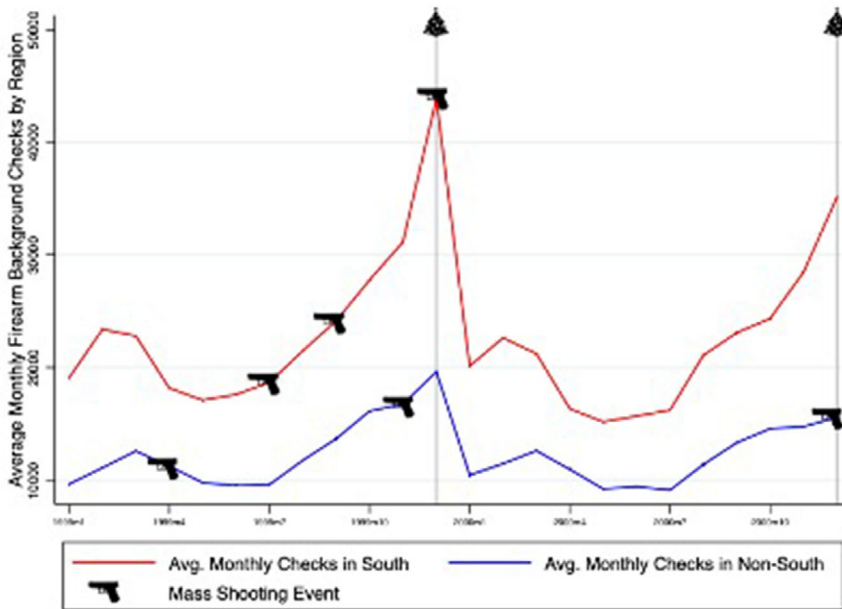
From a descriptive perspective, the presidential election of 2016 appears to have drastically altered the trajectory of gun sales in the United States, much like two ships passing in the night. The annual average of firearm background checks in the South decreased for the first time in six years when Donald Trump won the 2016 presidential election; meanwhile, the annual average of background checks increased by the largest recorded margin (23 percent) in the non-South that same year. While the annual average of firearm background checks has steadily decreased and plateaued in the South throughout the Trump Presidency, the non-South continues to feel the aftershock. The annual average number of firearm background checks in the non-South has been higher in the last four years than ever before in the region’s history.

***The Handgun Trinity: Christmas, Presidents, and Mass Shootings***

In this section, we explore how firearm background checks fluctuate over time by each presidential regime from 1999 to 2020 with careful consideration to the Christmas holidays and mass shooting events. Figure 2 plots the regional monthly average of firearm background checks during the Clinton Presidency for the two years data was available (January 1999 to December 2000). Note that mass shootings are plotted with respect to

FIGURE 2

Average Monthly Firearm Background Checks by Region in the Clinton Presidency



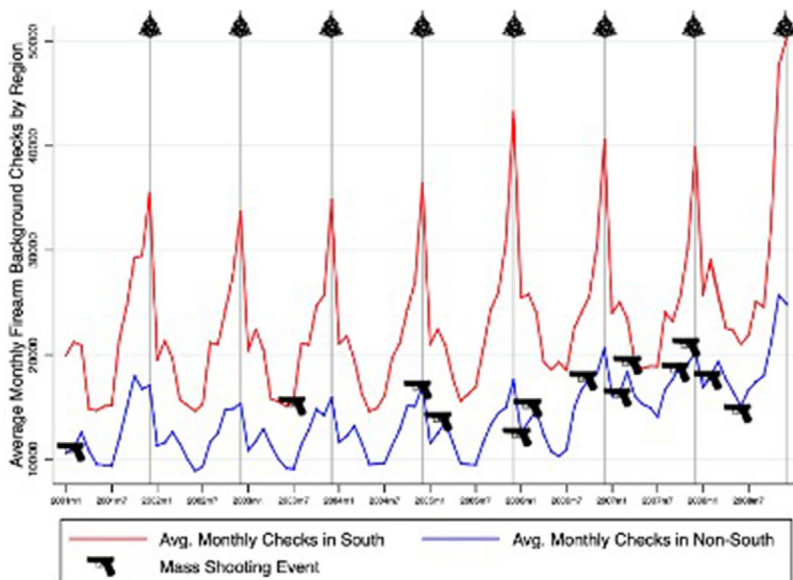
the region the event occurred, and each December is highlighted with vertical lines to denote the Christmas holiday spike. The two largest spikes in gun sales during this period (for both regions) occur during the Christmas holidays in 1999 and 2000. Note that each December spike also coincides with a mass shooting event: the 1999 hotel shooting in Tampa, Florida, which resulted in five fatalities and three injuries, and the 2000 Wakefield Massacre in Massachusetts with seven fatalities (Follman, Aronsen, and Pan, 2020).

With firearm background check data available for all years of the Bush Presidency, the Christmas holiday effect is unmistakable in Figure 3. Interestingly, the non-South appears far more prone to mass shooting events than the South with 13 of the 15 mass shootings during the Bush Presidency occurring outside the south. In fact, of the 91 mass shootings present within the entire data set, only 28 percent occurred in the South. The distribution is not unexpected with 39 states coded as non-South.

During the Bush Presidency, two mass shooting events occurred in the South: a 2003 workplace shooting in Meridian, Mississippi, with seven fatalities and eight injuries, and the third deadliest mass shooting in American history at Virginia Tech that resulted in 32 fatalities and 23 injuries (Follman, Aronsen, and Pan, 2020). Both events occur within the valleys of average monthly firearm background checks in the South. However, looking to the non-South, which experienced 13 mass shootings during the Bush Presidency (two events occurred in March 2005), we see more of these events associated with peaks in firearm background checks. Finally, Barack Obama's victory in the 2008 presidential election had a discernable impact on gun sales in both the South and non-South. Comparing the regional monthly averages between November 2007 and November 2008, background checks increased by 37 percent from the previous month in the South and by 25 percent in the non-South.

FIGURE 3

Average Monthly Firearm Background Checks by Region in the Bush Presidency



As shown in Figure 4, the Christmas effect intensifies over the duration of the Obama Presidency, particularly in the South. This effect is especially amplified in 2012 following President Obama’s reelection and the Sandy Hook Elementary School shooting in Newtown, Connecticut, on December 14 that led to 27 fatalities and two injuries (Follman, Aronsen, and Pan, 2020). Average firearm background checks reached their highest recorded levels in the South (97,062 average checks) and third highest levels in the non-South (57,403 average checks) in December 2015, which coincided with the mass shooting in San Bernardino, California, on December 2, which caused 14 fatalities and two injuries (Follman, Aronsen, and Pan, 2020).

During the Obama Presidency, there were 10 mass shootings in the South and 26 mass shootings in the non-South for a total of 36 events. Unlike the patterns observed in the Bush Presidency, mass shootings that occurred in the South during the Obama Presidency were more often associated with peaks in firearm background checks rather than the valleys. The third highest recorded level of average firearm background checks in the South also occurs during the Obama Presidency in March 2014. While it is unclear what factors precisely contributed to the large increase in firearm background checks in this particular month, it is plausibly related to the large number of southern states that passed laws aimed at easing firearm restrictions and expanding the rights of gun owners in the aftermath of the Sandy Hook shooting (Yourish et al., 2013).

Finally, Figure 5 reports gun purchasing trends over the first three and a half years of the Trump Presidency. One of the most intriguing findings is that average monthly firearm background checks in the non-South exceed that of the South during the Trump Presidency for the first time ever in the data series. For three consecutive months (April, May, and June 2019), the FBI conducted more firearm background checks on average in the non-South than in the South. While it may simply be the case that Republican

FIGURE 4

Average Monthly Firearm Background Checks by Region in the Obama Presidency

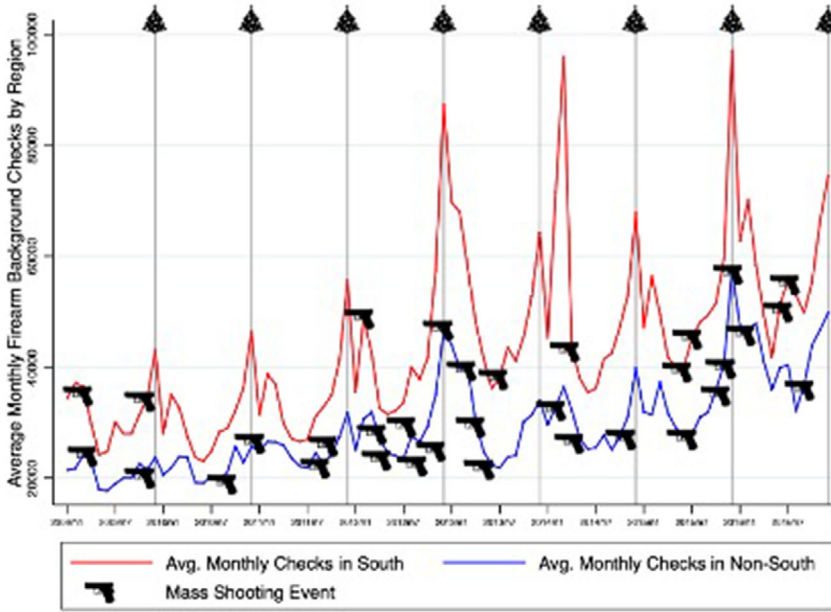
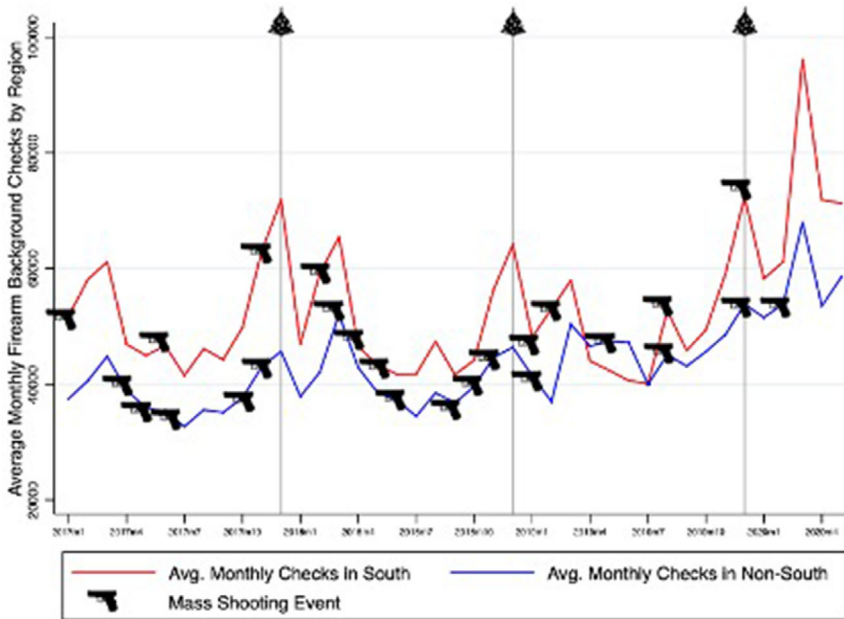


FIGURE 5

Average Monthly Firearm Background Checks by Region in the Trump Presidency



presidencies quell firearm fervor in the South, it may also be the case that we have entered a new era of political polarization in which the non-South outguns the South under Republican presidential regimes.

During the first three and a half years of the Trump Presidency, there have been 23 mass shootings in the non-South and 11 in the South for a total of 34 mass shootings. Despite the Trump Presidency being witness to the deadliest mass shooting in American history, the Las Vegas Strip massacre, which resulted in 58 fatalities and 546 injuries on October 1, 2017 (Follman, Aronsen, and Pan, 2020), the event itself appears to have marginally impacted gun purchases. In the aftermath of the Las Vegas shooting, average firearm background checks increased by 12 percent from the previous month in the South and 6 percent in the non-South. Compare that to the second most deadly shooting at Pulse nightclub in Orlando, Florida, which occurred during Obama's presidency. The Pulse nightclub shooting led to 49 fatalities and 53 injuries in June 2016 (Follman, Aronsen, and Pan, 2020) with background checks increasing by over 22 percent from the previous month in the South and 11 percent in the non-South.

Spikes in firearm background checks oscillate as predicted around the Christmas holidays in the South while patterns in the non-South have grown increasingly volatile. In fact, the gap between average firearm background checks between the South and non-South had dropped to record lows throughout the Trump Presidency. In 2017, the average difference between firearm background checks between the regions dropped to 29 percent, then to 18 percent in 2018, and plummeted to just 9 percent in 2019. However, things drastically change course following the first confirmed COVID-19 death in late February 2020. In March 2020, average firearm background checks reached their highest recorded value in the non-South (67,961 average checks), a 26 percent increase from the previous month, and their second highest recorded value in the South (71,294 average checks), a 16 percent increase from the previous month. Growing fear surrounding the ongoing coronavirus pandemic has produced the highest national monthly average of firearm background checks ever recorded. In March 2020 the FBI conducted 3.7 million firearm background checks, the largest figure ever recorded, followed by 3.3 million checks in December 2015 following the San Bernardino mass shooting, and 3 million checks in May 2020.

### *Time-Series Analysis*

In the second stage of our empirical analysis we use feasible generalized least squares (FGLS) regression to evaluate the factors associated with firearm background checks in the United States. FGLS is the preferred model specification for our long panel data considering the large number of time periods,  $T = 257$  months, relative to the number of entities,  $N = 50$  states (Cameron and Trivedi, 2010:271). Unlike generalized estimating equation models, the FGLS model allows us to account for heteroskedasticity with cross-sectional correlation and panel-specific AR(1) disturbances, which diagnostic tests revealed were present within the data. The dependent variable is monthly firearm background checks by state. The key independent variables are the Christmas holiday season, presidential regime, mass shootings, national media coverage of mass shootings, natural disasters, the coronavirus pandemic, and region. State population is included as a control variable. All continuous variables (monthly firearm background checks by state, state population, and ABC Evening News coverage of mass shootings in minutes) were transformed into natural logarithms to reduce the variability of the measures and correct for skewness. Table 2 reports the results of the FGLS model.

TABLE 2

Panel Corrected Linear Regression Predicting Firearm Background Checks in the United States, 1999–2020

Variable	Coefficient(Standard Error)
South	0.176(0.011)
State population (log)	0.806(0.005)
Christmas holidays	0.198(0.010)
Presidential regime	0.101(0.023)
Natural disaster event	−0.006(0.002)
Coronavirus	0.476(0.062)
Mass shooting event	0.012(0.005)
ABC coverage of mass shooting (log)	0.005(0.003)

NOTE:

·  $p \leq 0.10$ ; ··  $p \leq 0.05$ ; ···  $p \leq 0.01$ .

According to Table 2, all independent variables exhibited a statistically significant relationship with the dependent variable. As we expect, firearm background checks are approximately 18 percent higher in southern states compared to nonsouthern states. State population and firearm background checks also exhibit a strong positive relationship. Background checks are approximately 20 percent higher in December compared to all other months, providing strong statistical evidence of the Christmas effect. We also find strong support for the claim that gun purchases are more pronounced under Democratic presidential regimes. According to Table 2, background checks are approximately 10 percent higher during Democratic presidencies compared to Republican presidencies. Figure 6 illustrates the powerful effect of presidential regime and the Christmas effect by region. While gun sales are undoubtedly higher during the Christmas holidays, none compare to the South when a Democrat sits in the Oval Office.

Contrary to our expectations, natural disaster events decrease monthly background checks by about 0.6 percent. We do however find overwhelming evidence that gun purchases are positively associated with the coronavirus outbreak. Firearm background checks are nearly 50 percent higher during the coronavirus pandemic (March, April, and May 2020) compared to the rest of the months in the data series. Figure 7 illustrates how gun sales have increased amid the coronavirus pandemic. While the number of firearm background checks has obviously surged in March, April, and May 2020, the non-South pales in comparison to the South.

Table 2 also reports firearm background checks increase by about 1.2 percent in the wake of a mass shooting. Our analysis further suggests that increased media coverage of mass shooting events has a positive impact on gun sales. According to our findings, firearm background checks increase approximately 0.5 percent as news coverage of mass shooting events increases. Figure 8 illustrates the impact of media coverage on mass shooting by region while also considering presidential regime. While the linear trend is marginal, we continue to see the number of firearm background checks surge in southern states under Democrat presidencies.

FIGURE 6

The Effect of Presidential Regime and Christmas Holidays on Firearm Background Checks by Region

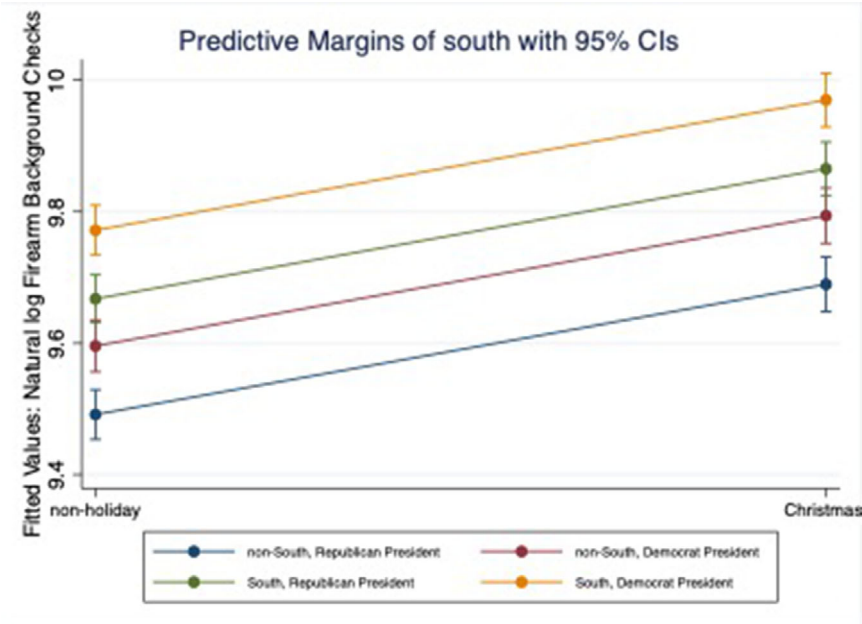


FIGURE 7

The Effect of Coronavirus on Firearm Background Checks by Region

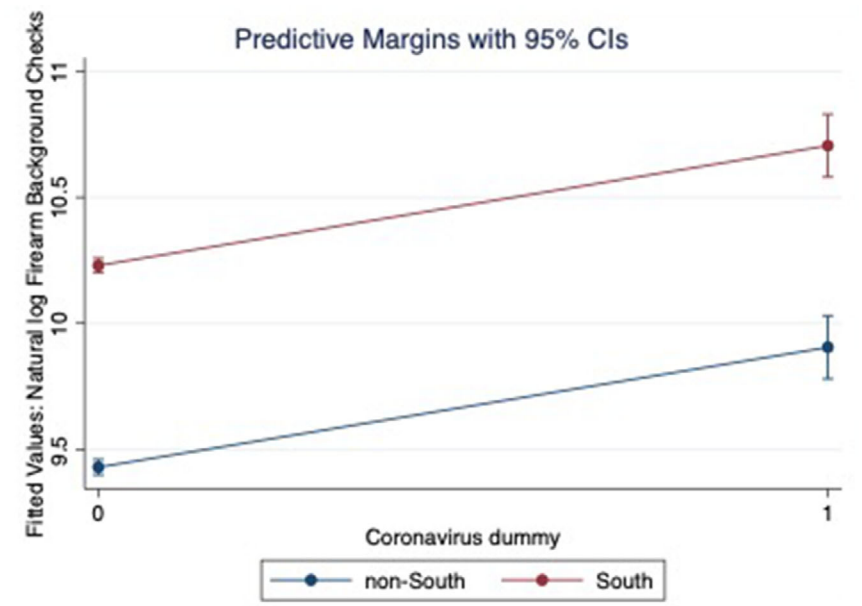
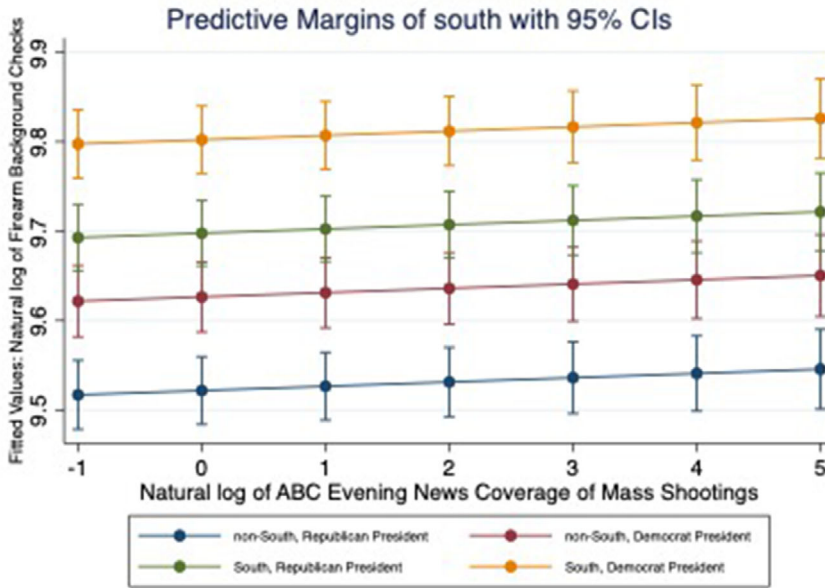




FIGURE 8

The Effect of ABC Evening News Coverage of Mass Shootings on Firearm Background Checks by Presidential Regime and Region



**Discussion**

The usual suspects are conspicuous in our analysis of gun sales over the last two decades: Christmas holiday season, Democratic presidencies, and mass shootings. The statistically significant findings in the time-series analysis provide strong support for the first three hypotheses in this study. While these findings parallel the explanations in the popular press for gun sales, the spikes associated with the Christmas holidays, Democratic presidencies, and mass shootings have become more accentuated in the second decade of the 21st century. Gun sales during the Christmas holidays are most amplified in the South when a Democrat sits in the White House.

In their time-series analysis, Liu and Wiebe (2019) find mixed evidence for the impact of mass shootings on gun sales. Our study finds a statistically significant and positive impact of mass shootings on gun sales. Furthermore, with increased national media coverage of mass shootings, there is an increase in gun sales in support of the fourth hypothesis of this study. The impact of national media coverage on gun purchases is once again most pronounced in the South during Democratic presidencies.

In contrast to the fifth hypothesis, the time-series analysis reveals that natural disasters have a negative impact on gun sales. Given that \$1 billion of damage was our threshold for coding a natural disaster, the economic impact and dislocation of residents in the wake of such disasters may well leave little time, resources, or capacity for individuals to be able to purchase and stockpile guns.

While natural disasters demonstrate a statistically significant and negative impact on gun sales, the coronavirus pandemic is a key driver of gun purchases, especially in the



South. Although our study investigates only the first three months of the outbreak of the pandemic in the United States, the impact of the pandemic on gun sales is clear. Further research is certainly warranted as the pandemic continues to unfold, and it is complicated by the disproportionate impact of the pandemic on minority communities.

Our final hypothesis considers the impact of region, and the findings highlight that region still matters. Across our time-series analysis, average monthly sales in the South outpace the non-South for all months in this study except for April, May, and June 2019. The explosion of gun sales during the Obama Presidency (the “Obama Effect”) occurred nationwide but was most evident in the South. The “Trump Slump” has been most noticeable in the South while sales have been growing in the non-South. It is intriguing to note that average monthly background checks in the non-South have been highest during the Trump Presidency than at any other time in the last twenty years. If many southerners were driven to stockpile guns during the Obama Presidency from a mix of fear, racial threat, and our conspiracy culture, might we be witnessing a further southernization of America if these factors are now at play among some nonsoutherners during the Trump Presidency? Outside the South, it is worth investigating if the Trump Presidency is fueling gun sales among conservative rural residents, progressive voters, or a mix of both. While the gap was diminishing between the South and non-South during the Trump Presidency, the gap has reemerged and dramatically opened between the South and non-South with average monthly background checks in the South far outpacing the non-South in 2020 as the pandemic rages across the country.

Finally, the findings of this study speak to the state of political polarization in the United States. Gun sales began moving on an upward trajectory after 2004, which is consistent with the escalation of political polarization (Pew Research, 2017), and sales skyrocketed during the Obama Presidency, especially in his second term, when polarization was particularly pronounced. Despite the journalistic focus on the “Trump Slump,” the non-South continues to march onward and upward (except for 2017) in terms of average monthly background checks throughout the Trump Presidency with the South roaring back in 2020. The spikes in gun sales have become more accentuated after 2004, most dramatically in Obama’s second term, and acutely pronounced in 2020. The growth in gun purchases among first-time buyers (Arnold, 2020) as well as African Americans (King, 2020) during the pandemic bears keeping in mind. As we enter the third decade of the 21st century, guns sales continue to serve as a bellwether of our fear and anxiety in a deeply divided nation grappling with a pandemic, social unrest, and an economic downturn.

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