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The War on Terror - Terror on the Stock Market?

An event study of major events' effect on S&P 500 returns in the U.S. War on Terror

by

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Abstract

This paper aims to investigate the effect of the major events of the U.S. War on Terror on the stock market. This is done by replicating an event study by Hudson and Urquhart (2015), which analyzes the effects of World War II events on the stock market returns. We develop a method to determine which major events that were most important in this war and investigate the relationship between the events and the S&P 500 returns by applying a parametric CAAR test and a nonparametric sign test. A careful categorization of events allows us to study the effects not only of war events in general, but also if events with certain characteristics affect stock market returns. The results indicate that intensifying events had a significant positive effect on the S&P 500 returns and thereby confirms previous findings by Schneider and Troeger (2006) that intensifying events has a positive effect on stock returns.

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1. Introduction

The purpose of this study is to investigate how the U.S. War on Terror affected the stock market returns. We focus on major events associated with the war and how they affected the S&P 500 index. By analyzing this conflict, we intend to see how the stock market is affected by war in more recent times compared to previous conflicts such as World War II. We investigate the stock market's returns in response to a conflict from an American perspective. This is done through an event study where major pre-determined events of the war are selected based on the attention they received in the newspaper. These events are investigated to see whether they have any significant effect on the S&P 500 stock market index or not. Thus, the aim and hope of this study is to mix qualitative approach with a quantitative approach and investigate if events related to the War on Terror had an impact on the returns of the S&P 500 stock market index.

Hudson and Urquhart (2015) mention that there have been many event studies conducted on how the stock market is affected by rather unimportant events in terms of their extent and effects on the larger economy. With this in mind, the relevance of conducting a study on larger armed conflicts that have had a substantial cost both globally and on specific countries' economies may be of necessity and relevance. Previous findings by Fernandez (2008) on the War on Terror shows that the conflict has affected the volatility on financial markets. Thus, this can be seen as an indication that the conflict affects the stock market in general. As stated by Coleman (2012), war-related events tend to have a larger effect on the financial markets than other events such as terrorist attacks. Despite this, not much has been written on the relationship between financial markets and wars in general. As mentioned by Willard, Guinnane and Rosen (1996) investors are the ones determining the market price of stocks and assets. Hence, according to Willard, Guinnane and Rosen (1996) investors' financial decisions regarding various events happening can be seen as a measurement of what they think of the situation going on around them. Based on this, the returns and volatility of stock market indices reflect investors behavior and can thus be considered sample measures of how investors feel and act in the situation around them. Choudhry (2009) adds to this argument by stating that conflicts can affect the stock market by having an impact on the stock market prices and agents' attitude towards risk.

There are several arguments for analyzing the effect of the U.S. War on Terror in particular. It is a war that stands out in many ways. To begin with, it is a rather recent war compared to previously studied wars and conflicts in the literature on event studies. The War on Terror is also the longest (Ali, Landay & Holland, 2021) and of the most expensive wars that the U.S. has ever experienced (Harrington & Sunesson, n.d.). Finally, the shape of the War on Terror is different from previous wars as it involves multiple wars and conflicts and is declared on terrorism in general and thus has no clear two sides as other wars. With this in mind, we consider it relevant to analyze The War on Terror as a different kind of war. Thus, when conducting this study, we are aware of the fact that this is indeed a different war and thereby we might also expect different results.

We determine which of the pre-selected major events that are considered important to the public, or more specifically to U.S. investors, based on the attention received in the *New York Times* newspaper. We then conduct a study of these pre-selected major events and run two statistical tests: a parametric test of the cumulative average abnormal returns (CAARs) and a nonparametric sign test to see whether the events affected the stock returns. To deepen the analysis, we also divide the sample of events into smaller subsamples with certain characteristics. We use data of closing prices of the S&P 500 to calculate the returns.

Our findings indicate that the stock returns for S&P 500 were weakly negatively affected by events related to the War on Terror, although insignificant. We compare the results with those of Hudson and Urquhart (2015) and find that they are similar for negative events but differ for positive events. Our results indicate that intensifying events had a significant positive effect on the S&P 500 returns. We also find evidence that battlefield events cause negative stock returns immediately after occurring, but the effect quickly fades out and the stock market has fully recovered from the events after a few days. We are not able to confirm that previous findings that events starting with violence have a larger impact on the stock market index.

This paper contributes to the literature in several ways. Firstly, we conduct a study on a conflict which to our knowledge has not been examined through an event study analysis before. Secondly, we present a way of determining if pre-selected events were considered as major and important

happenings at the time of the event taking place. Thirdly, we include and analyze the events in a broader definition to better capture the war itself. Fourthly, we use data on the S&P 500 index, previous studies have focused mainly on other indices. Finally, we contribute to the literature by also including an analysis of subsamples of events with different characteristics.

The paper is structured in the following way. In section 2 we include a literature review and our contribution to the literature. Section 3 presents some background information to The War on Terror. Section 4 includes description of the data used and section 5 describes the methodology of which the analysis is conducted upon. Section 6 and 7 present the results and conclusions of this paper.

2.   Literature Review

2.1 Previous literature

One part of the literature focuses on event studies on World War II and how major events affected the stock market. Choudhry (2009) investigates which major events during World War II that US investors considered important based on the daily stock index movement and volatility. He uses data from the Dow Jones Industrial Average (DJIA) index covering the period of interest (1939-1945). From the data, the author calculates the returns on stocks and takes the natural logarithm of the returns. The volatility of the DJIA index is calculated using the EWMA method which makes it possible for newer observations to affect the forecasting of the volatility to a larger extent than older observations. Choudhry (2009) conducts an event study in which the major events of World War II are compared with the largest stock market moves in prices and volatility. This is done by identifying structural breaks in the data and differencing these from so called blips[1]. To identify such structural breaks and blips, the author uses a method known as the Zivot and Andrews structural break test. The method used by Choudhry (2009) also makes it possible to find the dates in which structural breaks or blips possibly occurred which can then be compared with the dates of major events that are considered as most important by historians. Choudhry (2009) concludes that major events of the investigated conflict had an effect on the DJIA stock market price index and volatility. He finds that most of the events that are considered important[2] correspond with structural shifts (breaks) both in terms of stock market price movements and corresponding volatility for the time period. He also finds that major events that by investors might be interpreted as a risk of intensifying the war cause stock market prices to decrease and volatility to increase both in a one-day period and over a five-day period after the event. He claims that there is no evidence that intensification of the war should cause stock market prices to increase and volatility to decrease other than if the events were a direct explanation to the Allies winning a battle. Finally, the author contributes to existing literature by presenting straightforward results of how investors tend to behave in terms of financial economical behavior in extreme situations involving a conflict. Such contribution is building on to that of Willard, Guinnane and Rosen (1996) who in a similar way investigated turning points of the American Civil War.

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[1] Breaks with shorter persistence of a day or so.
[2] Considered important by historians.

Another paper, similar to that of Choudhry (2009), that also analyzes the relationship between stock markets and major events of World War II is the one conducted by Hudson and Urquhart (2015). Here they investigate how major events of World War II affected the British stock market. The data used consist of daily stock market prices of the FT30 index. From the data collected, the authors calculate the stock returns. They also include data on basic statistics from before and after the war as well as for the entire period. In terms of methodology, Hudson and Urquhart (2015) use a similar event study as that of Choudhry (2009) in which they investigate events that historians consider as major and important. They apply a method where they categorize events as positive and negative and then calculate the cumulative average abnormal returns (CAARs) respectively for event windows of different length[3] to see if they affected the abnormal returns. In addition to this, the authors also perform two nonparametric tests: a sign test and a Corrado test. The authors also include a regression analysis in which dummy variables control for various seasonal effects of the stock market to analyze how the predetermined events affect the returns and volatility of the FT30 index. Hudson and Urquhart (2015) also apply the same structural break analysis as imposed and presented by Choudhry (2009). Finally, they also apply a study of dates during the same time period corresponding to the largest stock market returns (positive and negative) as well as stating the possible events that could have caused the significant returns of those dates. Including this latter methodology allows the authors to analyze which events investors considered as most important. The authors find further evidence of previously conducted studies of the "negativity effect" presented by Akhtar, Faff, Oliver and Subrahmanyam (2011). Contrary to the results found by Choudhry (2009), they find that the war events considered as important by historians do very rarely correspond to those considered most important by the investors. This is found by comparing the pre-decided events of the war and their returns and comparing them with the largest and smallest returns for the associated dates obtained during the same period of time.

Several other papers conduct similar event studies and/or studies of war-related conflicts and their effect on similar financial markets in terms of stock prices. In an event study by Niederhoffer (1971), he studies the effect of historical events considered and defined as "world events" from 1960 to 1966. He finds evidence that such events do affect stock market prices. In another event study, Brounen and Derwall (2010) investigate how various terrorist attacks from 1991 to 2005

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[3] 0-, 1-, 2-, 5-, and 10-days following the day of the event.

affected the stock market prices. They use a dataset of terrorist attacks and restrict the sample by focusing on attacks that involved major economies during the same time period. Their results show that terrorist attacks did affect stock market returns in a negative way. Furthermore, the authors find that markets tend to find their way back to usual price levels within a rather short period following the event of an attack. They do however find evidence of that the terrorist attacks following 9/11 to be an exception to this as it took longer for the markets to recover to initial price levels. Schneider and Troeger (2006) study the effects of the Israel-Palestine conflict, the U.S.-war in Iraq and the war in Yugoslavia on some of the worlds' major stock market indices and find that the conflicts have a negative impact on these markets. They find evidence that markets react differently depending on the international event taking place, and that not all of them cause a negative impact on the markets. Furthermore, they say that events related to war are expected to have a negative impact on the stock market in accordance with their results. However, unlike Choudhry (2009) they claim that events seen as intensifying to the conflict might still give rise to positive stock returns in terms of a rally. Such a potential rally is explained by the fact that investors might consider an event that intensifies the conflict as a direct sign of the conflict heading towards an end as a result of the escalation. Fernandez (2008) investigates how the U.S. War on Terror has affected stock markets in terms of volatility. She concludes that the war on terror has had a significant impact on the volatility of stock markets in developed countries when the conflict took place in the Middle East. More specifically she finds that the war in Iraq was the one conflict affecting these markets the most. Leigh, Wolfers Zitzewitz (2003) write about the consequences of the War on Terror on financial markets in which they specifically look at the war in Iraq. They analyze how various countries and regions are affected economically differently as well as how the equity markets of these countries are predicted to react to the war in Iraq. Kaun (1990) looks into various theories behind how stock market prices react and thus how agents tend to behave during times of war. From this, he confirms previous theories that have been statistically limited both in terms of data and methodological analysis. He investigates how stocks of firms reacted to the Korean war and does this on both war-related stock within the defense market as well as others. The author finds evidence in accordance with previous theories suggesting that the general stock market is negatively affected by conflicts and especially so by intensification of a conflict. Berkman and Jacobsen (2006) use daily data from the U.S. stock market to investigate how stock market returns and volatility are affected by hundreds of international politically related crises

between 1918 and 2002. They show that such events tend to lower the returns and increase volatility during the first month following the event but that this effect is dampened after the first month. Furthermore, they find that events triggered by violence tend to have a larger effect on stock returns and volatility. The authors also find evidence of financial markets being more affected by crises that involve countries considered as major powers and that investors in countries that are active in a crisis are affected more than others. Finally, the authors conclude that the only stock market price movements that are noticed can be observed when the U.S. is involved as an actor in the crisis.

2.2 Our contribution to the literature

Our study contributes to the literature in several ways. First of all, we conduct an event study on a modern-day conflict. Most other papers within the literature of event studies and investors and financial markets' response during war times focus on older conflicts such as World War II. The War on Terror is a conflict that has not previously - to our knowledge - been studied in terms of an event study. Thus, no previous studies have focused on many specifically major events linked to this conflict and how these events have had an effect on the stock market. Neither has such results from an event study on a modern-day conflict been compared with previous studies on older conflicts. Secondly, we develop a method of determining whether events considered as major and important[4] were of similar importance to the public at the time of the event taking place. That is done through investigation of how much attention each event received in the printed *New York Times* newspaper following the day of the event. We then investigate if the U.S. stock market reacts to the events. The latter analysis is done using the same statistical significance tests as Hudson and Urquhart (2015) did on major events during World War II. Various statistical tests are performed and from this we are able to determine if the events show significant effect on the S&P 500 index. Thirdly, in our event study, we include and analyze various kinds of events in a broader definition compared to previous research. That is, we do not focus only on for instance terrorist attacks and whether the location of the event take place on U.S. land or further away. Previous event studies on more recent conflicts focus on more specifically niched events that can be placed into categories easier. As an example, Brounen and Derwall (2010) focus specifically on terrorist attacks. Another example includes Coleman (2012) who investigates events in terms of bombings

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[4] By the Council on Foreign Relations

with connection to al-Qaida and how these attacks affected the market. Hence, to our knowledge the literature lacks studies on how broader defined events of a conflict affect the stock market returns. By including a large variety of different events, we believe the War on Terror can be better captured and represented. Fourthly, we investigate the S&P 500 stock market index data. Previous event studies that we have discussed and included in this literature review have focused on other stock market data such as the FT30 and the DJIA index. By focusing on the S&P 500 stock market data we use data that is not previously analyzed in terms of similar event studies but that can be thought of as representing the general investor better. Finally, we also contribute to the literature by including additional categories of events which deepen the analysis. By doing so, we find evidence that events seen as intensifying the conflict can affect stock returns positively which confirms previous findings by Schneider and Troeger (2006).

3.   Background

In this section, we will give some background information about the War on Terror itself.

3.1 The War on Terror

Jackson (2020) describes the War on Terror or the Global War on Terror. He writes that it refers to the conflict following the U.S. declaration of war on terrorism worldwide as consequence of the terror group al-Qaeda's attacks on September 11, 2001. It is an ongoing war that involves both The War in Iraq and the War in Afghanistan as well as other conflicts (Ali, Landay & Holland, 2021). Furthermore, Jackson (2020) states that other than the two major and defining wars in Afghanistan and Iraq, the War on Terror also covers other military warfare operations in other parts and countries of the Middle East, such as in Yemen. Furthermore, he writes that the first part of the war is generally considered as successful in terms of de-escalation and elimination of potential terrorist attacks on the U.S., as well as capturing and killing of many targeted terrorists and strikes towards many terrorist networks. He also mentioned the general failures associated with this war, with one being the U.S. reputation both in Afghanistan and Iraq has become worse among the populations there following the wars. Thus, according to the author this has given rise to a breeding ground for more terrorist groups and contributed to the recruiting to these. Although the Global War on Terror was directed to target all terrorist and terrorist groups over the world, the main focus of the war has been that of Iraq and Afghanistan (National Archives: George W. Bush presidential Library and Museum, n.d.).

3.1.1 The War in Afghanistan

Witte (2021) writes about the War in Afghanistan and states that the conflict between the U.S. and the Taliban regime started as a direct response to the terror attacks on September 11, 2001. He writes that the war is divided into three different parts where the first part involves the attempt to overturn the Taliban regime in charge of Afghanistan and had been responsible of protecting and refuging al-Qaeda before, during and after the terrorist attacks executed by them on September 11, 2011. The next part of the war is between 2002-2008 in which the U.S. militarily tried to defeat the Taliban and at the same time give power to a new regime and state in Afghanistan. The third part of the war aims at the period taking off with Obama´s order to intensify the military presence

and help securing civilians from Taliban attacks. Witte (2021) continues by saying that all combat missions of this war ended in 2014 although the war officially ended in 2021 (The Council on Foreign Relations, n.d.b).

3.1.2 The War in Iraq

The War in Iraq is a war between the U.S. with allies invading Iraq and fighting the country's military and started in 2003 and ended in 2011 (Britannica, 2021). According to Britannica (2021), the start of the war is motivated by the belief that Iraq under leader Saddam Hussein were believed to possess and build weapons of mass destruction. This suspicion, in combination with the increased threat to the U.S. following the terrorist attacks on September 11 were motivated by former U.S. president Bush as the reason for the U.S. with allies to enter Iraq (Britannica, 2021). Another argument motivating the war was that that Iraq provided help and support for al-Qaeda, the terrorist group responsible for the attacks on 9/11 (Britannica, 2021). Furthermore, the conflict can be divided into two main parts where the first part includes the early stage between March and April in 2003 during which the Iraqi military and other paramilitary troops were defeated (Britannica, 2021). The second part is defined by the time period after the defeat of the Iraqi military during which the U.S. experienced some remarkable opposition and revolt in Iraq. As this opposition and uprising against the U.S. presence in Iraq started to decrease, the U.S. also started to withdraw troops from Iraq and officially ended the war in 2011 (Britannica, 2021).

3.2 A different kind of war

There are several aspects of this war that we consider necessary to mention and take into account before conducting this study and commenting on the results. These are aspects that we believe might define this war - and the time of which it is present - differently from other wars and conflicts that have previously been fought by the U.S. First of all, the War on Terror, is a rather recent war event compared to previously studied conflicts in the literature on event studies. It is a conflict that has been going on for over 20 years, contrary to conflicts which are shorter and with clear endings. Since the war takes place in the 21st century, news spreads much faster during this conflict compared to previous ones such as World War II and it is therefore reasonable to assume that investors have better and quicker access to all information. Secondly, the shape of the War on Terror is different from how one would probably think of a war. The War on Terror involves and

covers multiple wars and conflicts. Since the war is declared on terrorism in general it is not a war involving two sides or countries such as other wars, including World War II. We therefore assume that the results may not be as straightforward and clear as with wars when there are two clear sides of the war and a more obvious objective from each side of the war. Thirdly, the War on Terror is one of the most expensive wars in U.S. history. Cost estimates differ on this matter, but it ranges from approximately 2 trillion USD (Harrington & Sunesson, n.d.) to 8 trillion USD according to Brown University (2021). This can be compared with the costs of World War II that is approximately 4.69 trillion USD when adjusted for inflation (Harrington & Sunesson, n.d.). Hence, the large cost of this war might be worth keeping in mind when it comes to the analysis of the results of this study. Fourthly, the length of the war itself stands out compared to other wars fought. The War in Afghanistan was the start of The War on Terror and although the War on Terror has not officially ended, the War in Afghanistan ended in 2021 making it the longest war in the history of the U.S. with a timeline of almost 20 years (Ali, Landay & Holland, 2021). The long-term presence of a conflict might have different effects to financial markets compared to a war that has been much shorter. We think it is reasonable to assume that the longer a war persists, the more numb the investors' reaction to events of the same magnitude.

4.   Data

The data used in this study is data on stock market prices of the Standard and Poor's 500 (S&P 500). The index is made up of the 500 largest[5] companies publicly traded on the stock markets in the U.S. and is one of the most followed indices in the world according to S&P Dow Jones Indices (2022). The index covers 80 percent of the total market value of U.S. equities (S&P Dow Jones Indices, 2022).

As we conduct an event study, we want to be able to link the various events to a certain date. Thus, we use daily data in order to match with the date of the event. The data on stock market prices of the S&P 500 index were collected from Yahoo Finance (2022)[6]. Data was collected from a period starting 30 stock days before the first event of interest and ending with the last trading day of the 20th year of the conflict[7]. Stock days refer to days during which Nasdaq and the New York Stock Exchange, where S&P 500 companies are traded, are open.

The daily returns of the S&P 500 index obtained from the data were calculated and graphs and tables of calculated data and descriptive statistics were obtained [8].

Calculating stock returns:
Similarly with Hudson and Urquhart (2010) stock returns are calculated using the following formula:

$$r_t = [\ln(P_t) - \ln(P_{t-1})] \times 100 \tag{1}$$

Where r_t is the stock return. $\ln(P_t)$ is the logarithm of the stock market price index a time t.

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[5] By market value
[6] https://finance.yahoo.com/quote/%5EGSPC/history/
[7] July 30 2001 - December 30 2021
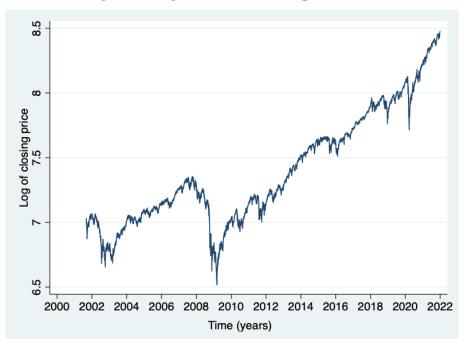[8] Using Microsoft Excel

Figure 1. Log of S&P 500 stock price index

Log of closing prices of the S&P 500 index from 30 July 2001 to 30 Dec 2021[9].

In Figure 1 it can be seen that this stock market index a clear upward trend during the time period of which the War on Terror is studied. Some clear drops in prices can be observed following the early 2000s, after the financial crash of 2008-2009 and during the stock market crash following the pandemic. No obvious conclusion of the War on Terror and its effect on the S&P 500 index can be stated by the visual inspection of this graph.
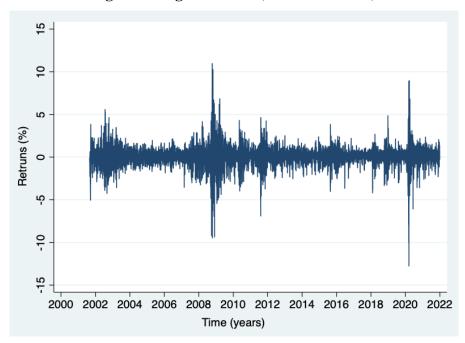
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[9] Obtained using STATA

Figure 2. Log of returns (first differences)

Log of daily returns of the S&P 500 index from 30 July 2001 to 30 Dec 2021[10].

Figure 2 shows the daily returns for the same index. It can be seen that the periods of more extreme returns correspond to the same time periods as noticed in Figure 1. However, it is not possible to draw any conclusion of the War on Terror and the effect on stock returns based on the visual inspection of this graph either.

We do not experience any measurement problems with the data itself as it is quite consequently and comprehensively reported. However, there is no data for weekends and other holidays since the stock market is not open during these days. Events occurring on days when the stock market is closed are therefore accounted for on the next stock day.

Looking at data from other indices than S&P 500 can be of interest, but we decided to focus on that index due to its comprehensiveness and the fact that it accounts for a large majority of all U.S. market capitalization. Hence, we consider it a fairly selected index in terms of representing investors as well as the U.S. economy in general. One way to potentially deepen the analysis of

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[10] Obtained using STATA

this paper would be to use more narrow data, for example hourly. By doing so it would be possible to link the announcement of news to a more precise time and thereby have a better possibility of seeing the effect of the market for at this time. However, we find it difficult and uncertain to find and link the exact time of publicity of an event and therefore do not consider this a better selected option.

A potential explanation for not seeing any clear and obvious effect of the War on Terror in the visual inspection in Figure 1 and 2 is that the time period is relatively long (20 years). Another explanation is that some large and defining economic and financial shocks such as the financial crash of 2008-2009 and the stock market crash following the spread of COVID-19 had a large impact on the stock returns and thus stood out compared to other potential events and happenings.

5. Methodology

5.1 Event study

In this paper, we perform a partly similar analysis to that done by Hudson and Urquhart (2015). We use the same methodology as they do in terms of performing a parametric statistical t-test on the Cumulative Average Abnormal Returns (CAARs) and a sign test. The parametric CAAR test tests if the average abnormal returns are different following an event while the sign test tests if the ratio of positive cumulative abnormal returns changes from the estimation period to the event period. In addition, we use a method in order to select major and relevant events by defining their level of presence on the *New York Times* front page. We also categorize the predetermined events into different groups to see if the results differ.

5.1.1 Determining the major events of The War on Terror

This study aims at investigating the effect of major events associated with the U.S. declaration of war on terrorism following the terrorist attacks on September 11. The time period studied covers approximately 20 years of conflict starting on September 11, 2001, and ending with the U.S. final withdrawal of troops in Afghanistan on September 30, 2021 (The Council on Foreign Relations, n.d.b). Although the Global War on Terror was directed to target all terrorist and terrorist groups over the world, the main focus of the war has been that of the Iraqi military and government in Iraq and the Taliban and al-Qaeda in Afghanistan (National Archives: George W. Bush presidential Library and Museum, n.d.). Reasonably, we therefore focus on events related to these two conflicts. The major events used in this study are predetermined for the analysis to come. To select events consequently and relevant, we focus on a timeline of major events associated with the war in Afghanistan and Iraq presented by the U.S. Council on Foreign Relations[11]. It is a source[12] that provides a comprehensive and detailed timeline of these war events. The predetermination of the events used in this study is thus mainly based on these timelines. All events are also chosen based on the assumption that they can be specifically connected with a certain date

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[11] https://www.cfr.org/timeline/iraq-war
https://www.cfr.org/timeline/us-war-afghanistan

[12] *"The Council on Foreign Relations (CFR) is an independent, nonpartisan membership organization, think tank, and publisher dedicated to being a resource for its members, government officials, business executives, journalists, educators and students"* (Council on Foreign Relations, 2022, n.p.).

over the timeline since we use daily data on stock market prices and that we are interested in instant reactions to the event.

To select which events are major events we define and use a method of investigating how much attention each event received in the newspaper. For this we look at the *New York Times* newspaper and see whether the event received attention by appearing on the front page of the first published newspaper after it took place. To sort out major events even further, we require that an event needs to appear as the main article with an obvious and clear main headline and have a picture on the front page of the published newspaper[13]. This is done in order to avoid including events that are considered major from a post-war perspective but were not considered as important at the time. We use the *New York Times* (n.d.) website[14] to obtain the published front pages of each event date during the conflict period. We assume that the *New York Times* reflects what the public consider important regarding news and events going around in the world at a given time. The motivation for this is that the very business of selling newspapers is based on people being interested in what information they provide about different events and purchasing their newspaper based on this. According to Byström (2014), if markets are efficient then all public information of various kinds such as news and reports are already priced in the asset. Hence, we assume that as soon as news becomes public then the market reacts more or less immediately, and the news event is priced into the stock market.

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[13] The events that fulfilled these requirements can be seen in Table 1.
[14] https://store.nytimes.com/products/new-york-times-front-page-reprint?variant=35826434120

Table 1. Major events of the War on Terror.

Date:	Event:	Classification
Sep 11 2001	9/11 Terrorist Attacks on U.S.	Intensification, Battlefield
Oct 7 2001	The War in Afghanistan begins in combat.	Intensification, Battlefield
Apr 17 2002	President Bush announces the "Reconstruction of Afghanistan".	De-escalation, Non-battlefield
Mar 20 2003	The War in Iraq is announced.	Intensification, Non-battlefield
Apr 9 2003	The Iraqi regime falls and the statue of Saddam Hussein is taken down.	De-escalation, Battlefield
May 1 2003	President Bush delivers "Mission Accomplished" speech regarding the War in Iraq.	De-escalation, Non-battlefield
July 22 2003	Saddam Hussein's two sons Uday and Qusay are killed by the U.S.	Unclear, Battlefield
Aug 19 2003	Suicide bomber attacks U.N. headquarter in Iraq.	Intensification, Battlefield
Dec 14 2003	Saddam Hussein is captured.	De-escalation, Battlefield
Mar 31 2004	Al-Qaeda in Iraq targets Shiite holy sites with suicide bombings the Fallujah ambush takes place.	Intensification, Battlefield
Oct 15 2005	Signs of democracy in Iraq.	De-escalation, Non-battlefield
Feb 22 2006	Terrorist attacks and destroy the Shiite shrine in Samara in Iraq.	Intensification, Battlefield
June 8 2006	Zarqawi (leader of Al-Qaeda) is killed by U.S. forces.	De-escalation, Battlefield
Nov 5 2006	Saddam Hussein appears in court and is sentenced to death.	De-escalation, Unclear
Nov 8 2006	U.S. secretary of defense Donald Rumsfeld is resigns.	Unclear, Non-Battlefield
Dec 30 2006	Saddam Hussein is executed.	De-escalation, Battlefield
Jan 10 2007	President Bush presents a new plan regarding the war in Iraq and says U.S. is to send more troops.	Intensification, Non-battlefield
Nov 4 2008	Barack Obama is elected President of the U.S.	De-escalation, Non-battlefield
June 30 2009	U.S. starts withdrawing soldiers from Iraq.	De-escalation, Unclear
Dec 1 2009	President Obama announces that the War in Afghanistan is intensified and more U.S. troops are to join.	Intensification, Non-battlefield
Mar 7 2010	Elections in Iraq's parliament take place.	De-escalation, Non-battlefield
June 23 2010	General David Petraeus is announced as the replacer of former General McChrystal.	Unclear, Non-Battlefield
Aug 31 2010	The U.S. announces the end to all combat missions in Iraq.	De-escalation, Non-battlefield
May 1 2011	Osama Bin Laden is killed by U.S. troops.	De-escalation, Battlefield
June 22 2011	President Obama announces that more than thirty thousand are to return home from Afghanistan.	De-escalation, Non-battlefield
May 27 2014	President Obama announces that the majority of U.S. troops are to return from Afghanistan by 2016.	De-escalation, Non-battlefield
Apr 13 2017	U.S. attacks ISIS with "the mother of all bombs"	Intensification, Battlefield
Feb 29 2020	The U.S. and the Taliban sign peace agreement.	De-escalation, Non-battlefield
April 14 2021	President Biden announces that U.S. will withdraw all troops by Sep 11 2021.	De-escalation, Non-battlefield
Aug 15 2021	The Taliban take control of Afghanistan.	Intensification, Battlefield
Aug 16 2021	President Biden defends the the U.S. decision to withdraw from Afghanistan.	Unclear, Non-Battlefield
Aug 26 2021	More than a dozen U.S. troops are killed in an attack during the evacuation of Afghanistan.	Intensification, Battlefield
Aug 30 2021	The U.S. war in Afghanistan ends.	De-escalation, Non-battlefield

List of major events of the War on Terror used in this study.

The first tests we do are based on the assumption by Choudhry (2009) and Hudson and Urquhart (2015) that news is publicly known only after being published in the written newspaper as done. With this approach we assume that the potential market reaction to the event also occurs on that day. However, it is generally believed that news travels faster in the 21st century compared to conflicts further back in time such as World War II. Thus, in the next tests we update the dates that the news reached the public by investigating the exact date the news of an event was published. This was done by online searching to find the time of when news of the events was published on news websites and official statements. Based on the time of the announcement and publishing of the news events we determined if an event occurred when the stock market was open. Roughly

one third of the selected events were publicly announced the day before they were first published in the morning's *New York Times* newspaper and during a time when the stock market was open.

Based on the literature review, we also have reasons to think that events with certain characteristics have different effects on the stock market. We therefore deepen the analysis by doing a careful categorization of the events. This categorization was done from the U.S. perspective and therefore based on an American outlook. Events that we were uncertain about which category they should be divided into were left out for this analysis. We continue with the assumption that news travels faster and therefore we use the same dates.

Schneider and Troeger (2006) found that intensifying events can give rise to positive stock returns while Choudhry (2009) instead found that such events can cause a negative reaction to the market. Therefore, we decided to categorize our sample of events into the two smaller subsamples "Intensification" or "De-escalation" of the conflict. We assume that the stock market might react differently to events that are pointing towards a more intense warfare going forward compared to news of a calmer future. With "Intensification" we mean that the event can be seen as causing prolonged and/or heavier warfare. Two examples are terrorist attacks and a U.S. decision to send more troops. With "De-escalation" we mean events that can be seen as a sign of peaceful solution to the conflict or as an indication of the magnitude of the war being reduced. One example is U.S. soldiers withdrawing from Iraq. Another example could be a successful military operation from the U.S. forces such as the killing of Osama Bin Laden. In other words, it must not necessarily be a peaceful solution but could also be an indication that the war is progressing towards the end goal of fighting and eliminating terrorism, from an American view. We decided on this categorization since we look at the returns of the American S&P 500 index and therefore, we assume that American investors view successful attacks as a progress for the war.

Another categorization was done with influence from the study by Berkman and Jacobsen (2006) which found that conflicts initiated with violence tend to have a larger impact on the stock market reaction. We chose to arrange the sample of events into "Battlefield" and "Non-battlefield". With "Battlefield" we refer to events involving direct war such as military operations, bombings, or other violent attacks. One characteristic of such events is that they often occurred in the

geographical territory of the war. With "Non-battlefield" events we refer to events that are of more political or strategic-decision character. Examples are the election in Iraq or announcements of a decision from the U.S. government to send or withdraw troops from the war country. Non-battlefield events could take place anywhere geographically but do not directly involve killing of troops, casualties caused by military action or for example the capturing of Saddam Hussein.

The corresponding date of the event and the classifications are also included. The original lists of events were obtained from The Council on Foreign Relations and from these we selected the events considered as important and major based on the requirements mentioned above. These lists can be found in Appendices A and B. In appendix C we include a list of references for the events including at what time they first became publicly known.

5.2 Study of the effect of major events on the stock market

To test whether the pre-selected major events of the U.S. War on Terror affected the return on the stock market index S&P 500 we conduct two statistical significance tests. We use a similar approach as that conducted by Hudson and Urquhart (2015) as we also obtain data from a stock market index and analyze how the abnormal returns from this data are affected by war related events. In order to answer our research question, we perform similar significance tests as Hudson and Urquhart (2015), namely the parametric test on the cumulative average abnormal returns (CAARs) and the nonparametric sign test. Parametric tests have a higher statistical significance compared to nonparametric tests and are preferred if the sample follows a normal distribution, while nonparametric tests can be used when data is non-normally distributed (DATAtab, 2022). According to DATAtab (2022), nonparametric tests are more robust than parametric tests and are also most often used. Based on these arguments, we use a similar approach as Hudson and Urquhart (2015) and conduct both a parametric test and a nonparametric test. However, before doing so an analysis of the descriptive and distribution of our data becomes necessary. This analysis is presented in section 5.2.2.

5.2.1 Cumulative Average Abnormal Returns (CAARs)

Like Hudson and Urquhart (2015), we analyze a stock market index and therefore start off by applying the same parametric CAAR test to investigate if the events had an effect on the returns.

We calculate the cumulative average abnormal returns (CAAR) and perform a t-test[15] to see if the returns in the event period differ significantly from those in the estimation period. To do so we begin by calculating the abnormal returns for each day in the data set:

$$AR_t = R_t - \overline{R_t} \tag{2}$$

$$\overline{R_t} = \frac{1}{20} \sum_{t=-30}^{-11} R_t \tag{3}$$

Where AR_t is the abnormal returns during time (day) t. R_t is the actual stock return of the index during time (day) t. $\overline{R_t}$ is the estimation period return for stock day t, which is the average stock returns during the time period stretching from t = -30 to t = -11.

In line with Hudson and Urquhart (2015) we use an estimation period of 20 stock days, with a gap of ten days before the event period. The reason for using a ten-day gap is that we want to reduce the risk that the estimation period return has been directly affected by the event, since some news could be expected ex-ante. Examples are military operations or announcements by the White House to withdraw troops. Since such news are not as unexpected, the effect could partly be incorporated in the stock market index even before the date of the official release of the news, the event day. Thereby, the estimation period means are the average daily returns from 30 to 11 stock days before the event day. The reason for choosing an estimation period to calculate the abnormal returns is that we can test if the events shift the returns compared to a time period close in time, which should better reflect the change compared to using an estimation period far away in time. We use the same estimation period as Hudson and Urquhart (2015).

Next, the cumulative abnormal returns (CARs) are calculated from:

$$CAR_{[0:T_2]} = \sum_{t=T_1}^{T_2} AR_t \tag{4}$$

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[15] Using Microsoft Excel

The CARs are calculated for $T_2 = 0, 1, 2, 5$ and 10 days following the event day[16], also this in accordance with Hudson and Urquhart (2015). The date of the event is denoted with T_1 and the specified number of days following the event is specified with T_2. Including event periods with several days after the event day rather than only the event day allows us to analyze not only the magnitude of the event on the day of which it occurred, but also how persistent its effects were. The CARs are calculated for each event individually.

Finally, in order to calculate the CAARs we take the average of the CARs using the following formula:

$$CAAR_{[0:T_2]} = \frac{1}{N}\sum_{i=1}^{N} CAR_{[0:T_2]} \qquad\qquad (5)$$

Where T_2 again refers to the different lengths of the event periods after the event. N is the number of observations (events). Since the CAAR is an average of the event period cumulative abnormal returns it gives an indication of how much an event has affected the S&P 500 index for the given time period $[0:T_2]$.

After calculating the CAARs, we use formula 6 below to obtain a t-statistic. The t-statistic is used to perform a significance test for each event period length and is calculated by the formula:

$$\text{t-statistic } [0:T_2] = \frac{CAAR\ [0:T_2]}{\sigma_{CAR\ [0:T_2]}} \qquad\qquad (6)$$

Where $\sigma_{CAR\ [0:T_2]}$ is the standard deviation[17] for CARs.

We test for both sides of the distribution and therefore use the two-tailed t-test[18]. Based on the p-value for each event period length we can then either reject or fail to reject the null hypothesis.

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[16] We denote this as [0:0], [0:1], [0:2], [0:5] and [0:10] in the results section.
[17] Calculated using Microsoft Excel
[18] In Microsoft Excel we calculate the p-value by taking the absolute value of the t-statistic.

To test if the effect is significant, we test the null hypothesis that the index is not affected by the events:

H_0: no positive or negative effect **(7)**

H_1: there is a positive or negative effect **(8)**

Rejecting the null hypothesis means that there is a significant difference between the cumulative abnormal returns in the event period compared to the estimation period. In accordance with Hudson and Urquhart (2015), we test for three significance levels[19].

5.2.2 Descriptive statistics of S&P 500 data returns

Some statistics[20] of the daily returns of the S&P 500 index are calculated to get an overview of what some basic statistics for the stock returns calculated from the downloaded S&P 500 data generally looks like. As before, the data stretches from July 30 2001 - December 30 2021. These statistics are presented in Table 2 below.

Table 2. Statistics of the daily returns of the S&P 500 index.

Mean	0.02684
Std. dev	1.22527018
Skewness	-0.452027538
Excess kurtosis	12.27998292
Jarque-Bera	32458
Observations	5138
p-value J-B	0.00000

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[19] 1%, 5% and 10% significance level

[20] Obtained using Microsoft Excel

The mean is positive which is in line with expectation. Historically, the stock market value has increased over time, and this should also translate into a large measuring index such as S&P 500 over a time span of 20 years (Macrotrends, 2022). The p-value of the Jarque-Bera is low and we can reject the null hypothesis of a normal distribution. Instead, the distribution is leptokurtic which can be noted by the fact that the excess kurtosis exceeds 0. It indicates fatter tails and a thin spike at the mean, extreme events away from the mean are more likely to happen compared to a normal distribution. A negative skewness means that the tail to the left of the mean is longer than that to the right, the mean is lower than the median. This is normal for stock returns, they often exhibit negative skewness since negative shocks are often more impactful than positive (Hudson and Urquhart, 2015). According to Byström (2014), most people are considered risk-averse from an economic perspective. In terms of investment-decision, since most investors are considered to be risk-averse and a negatively skewed distribution produces lower log-wealth, a negative skewness is not preferred to a positive or a neutral.

From these statistics we see that the distribution of calculated returns from the data used is non-normal. Thus, we include a nonparametric sign test in addition to the parametric CAAR test, to make our analysis more robust, like Hudson and Urquhart (2015). We describe this test further in the section below.

5.2.3 The sign test

In accordance with Hudson and Urquhart (2015) we perform a sign test[21] to make our testing more robust. The sign test tests if an event period exhibits a positive or negative abnormal return versus the null hypothesis that the event period does not exhibit any significant effect. One application of the sign test is to control for that parametric test results are not to a large extent caused by a few outliers (Cowan, 1992). We have used a version of the test called the generalized sign test, which instead compares the event period to another period unaffected by the event itself. The generalized sign test can take a skewed return distribution into account (Cowan, 1992).

 The t-statistic for the generalized sign test is calculated using the following formula:

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[21] Using Microsoft Excel

$$t_s = \frac{\rho_{pos}^{event} - \rho_{pos}^{estimation}}{\sqrt{\frac{\rho_{pos}^{estimation} \ (1 - \rho_{pos}^{estimation})}{N}}} \qquad \textbf{(9)}$$

Where ρ_{pos}^{event} is the estimated probability of an event period exhibiting a positive cumulative abnormal returns (CAR). It is estimated by counting the number of times the events included returns a positive CAR and the number of times they return a negative CAR. Thus we get a ratio, shown as "Pos:Neg Event" in Tables 3-8 in the results section.

$\rho_{pos}^{estimation}$ is the estimated probability of an estimation period showing a positive CAR. It is also estimated by counting how many times the estimation period linked to each event had a positive and a negative CAR. The estimation period abnormal returns are calculated by subtracting the return of each estimation period day with the mean of daily returns for the entire 20-year period. The abnormal returns are then averaged to get a CAR for each estimation period. We again get a ratio, shown as "Pos:Neg Est" in Tables 3-8 in the results section.

After calculating the ratios, we use formula 9 above to obtain the t-statistic for the generalized sign test. As in the CAAR test, we use the two-tailed t-test and the same significance levels[22] to either reject or fail to reject the same null hypothesis:

H_0: no positive or negative effect $\qquad$ **(10)**

H_1: there is a positive or negative effect $\qquad$ **(11)**

Rejecting the null hypothesis means that there was a significant difference between the cumulative abnormal returns in the event period compared to the estimation period.

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[22] 1%, 5% and 10%

6.   Results

6.1 Results from event study analysis

Below are the results from the CAAR test and generalized sign test for each category of dates and events that we chose to include. These results are based on the events from Table 1.

In Tables 3-8 below we specify the length of the event period using $[T_1:T_2]$, where T_1 is the day of the occurred event and T_2 is the number of days after the occurred event in T_1. "Pos:Neg event" and "Pos:Neg est" is the ratio of positive and negative cumulative abnormal returns in the event period and in the estimation period, respectively.

Table 3. Results from major events based on dates of first appearance in *New York Times*

Dates of New York Times' posts								
	CAAR test				Sign test			
Event period	CAAR	St dev	t-stat	Prob	Pos:Neg event	Pos:Neg est	t-stat	Prob
[0:0]	**-0,087**	1,60	-0,31	0,76	16:17	19:14	-1,06	0,30
[0:1]	**-0,363**	2,09	-1,00	0,33	15:18	19:14	-1,41	0,17
[0:2]	**-0,078**	2,30	-0,19	0,85	17:16	19:14	-0,70	0,49
[0:5]	**-0,425**	3,24	-0,75	0,46	18:15	19:14	-0,35	0,73
[0:10]	**-0,098**	5,06	-0,11	0,91	17:16	19:14	-0,70	0,49

∗∗∗ Indicates significance at 1%
∗∗   Indicates significance at 5%
∗   Indicates significance at 10%

Table 3 shows the results for the events based on dates of first appearance in the *New York Times* the day after the event occurred. Here, we see that the CAAR is negative for all event periods but no t-statistic p-values are significant at the 1%, 5% or 10% significance level. For the event day [0:0], the abnormal returns of the S&P 500 dropped on average 0,087 percent with a standard deviation of 1,60. That gives a t-statistic value of -0,31 which translates to a p-value of 0,76. That is not significant at the 1%, 5% or 10% significance level which means that we cannot reject the null hypothesis. In other words, we cannot conclude that the events had an effect in any direction on the abnormal returns. As mentioned, this is also true for all other event period lengths[23]. The sign test shows a negative t-statistic for all event periods, which means that the event periods had

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[23] [0:1], [0:2], [0:5] and [0:10]

a lower ratio of positive cumulative abnormal returns than the estimation periods. This indicates that the abnormal returns of the S&P 500 were negatively affected by the major events. However, the results from the sign test are also insignificant at all significance levels for all event period lengths.

Table 4. Results from major events based on dates of first announcement to the public

Dates with news incorporated directly when the stock market is open							
	CAAR test				Sign test		
Event period	CAAR	St dev	t-stat	Prob	Pos:Neg event	Pos:Neg est	t-stat	Prob
[0:0]	**-0,032**	1,59	-0,12	0,91	20:13	20:13	0,00	1,00
[0:1]	**-0,295**	1,99	-0,85	0,40	15:18	20:13	-1,78*	0,08
[0:2]	**-0,049**	2,29	-0,12	0,90	18:15	20:13	-0,71	0,48
[0:5]	**-0,387**	3,31	-0,67	0,51	18:15	20:13	-0,71	0,48
[0:10]	**-0,112**	5,05	-0,13	0,90	20:13	20:13	0,00	1,00

*** Indicates significance at 1%
** Indicates significance at 5%
* Indicates significance at 10%

Table 4 shows the results with dates changed for dates when news reached the public when the stock market was open, that is the day before it appeared in the *New York Times*. When analyzing the results, we can see that they do not differ much from Table 3. The CAARs are slightly lower for the [0:0] event period indicating that the CAAR was affected less negatively by the events, but the results are not significant for any event period at any significance level tested for. The sign test exhibits a t-statistic value of 0 for the [0:0] and the [0:10] event period which is a result of an equal ratio of positive cumulative abnormal return in the estimation period and in the event period. The [0:1] event period is negative and significant for the 10% significance level.

Table 5. Results from major events categorized as "Intensifying"

	CAAR test				Sign test			
Intensifying events								
Event period	CAAR	St dev	t-stat	Prob	Pos:Neg event	Pos:Neg est	t-stat	Prob
[0:0]	**-0,248**	1,60	-0,89	0,38	08:03	04:07	2,51**	0,03
[0:1]	**-0,110**	2,00	-0,32	0,75	07:04	04:07	1,88*	0,09
[0:2]	**-0,283**	2,57	-0,63	0,53	06:05	04:07	1,25	0,24
[0:5]	**0,395**	3,19	0,71	0,48	08:03	04:07	2,51**	0,03
[0:10]	**1,140**	2,88	2,27**	0,03	08:03	04:07	2,51**	0,03

*** Indicates significance at 1%
** Indicates significance at 5%
* Indicates significance at 10%

Table 5 shows the results of events categorized as intensifying to the conflict. The CAARs are negative for shorter event period lengths and positive for longer event period lengths, significant at the 5% level for the [0:10] event period. The sign test shows a positive t-statistic for all event periods indicating that intensifying events had a positive effect on the S&P 500 abnormal returns in the non-parametric test. The p-value is 0,03 for three event periods which means that we can reject the null hypothesis of no change in any direction on a 5% significance level for the [0:0], [0:5] and [0:10] event period.

Table 6. Results from major events categorized as "De-escalating"

	CAAR test				Sign test			
De-escalating events								
Event period	CAAR	St dev	t-stat	Prob	Pos:Neg	Pos:Neg est	t-stat	Prob
[0:0]	**0,120**	1,78	0,39	0,70	10:08	13:05	-1,58	0,13
[0:1]	**-0,292**	2,24	-0,75	0,46	08:10	13:05	-2,63**	0,02
[0:2]	**0,190**	2,38	0,46	0,65	11:07	13:05	-1,05	0,31
[0:5]	**-0,695**	3,65	-1,09	0,28	09:09	13:05	-2,10*	0,05
[0:10]	**-0,746**	6,43	-0,67	0,51	11:07	13:05	-1,05	0,31

*** Indicates significance at 1%
** Indicates significance at 5%
* Indicates significance at 10%

In Table 6 we present the analysis of events categorized as de-escalating. The results show that the CAARs differ depending on the event period, it is negative for [0:1] and slightly positive for [0:0] and [0:2] but all with insignificant p-values. For the longer event periods [0:5] and [0:10] it is

negative and with a larger magnitude, but also has a higher standard deviation which again results in insignificant p-values. The sign test exhibits a negative t-statistic for all event periods, with [0:1] and [0:5] showing significant results at the 10% and 5% level respectively. Thus, we can reject the null hypothesis of no change in any direction at those levels of significance.

Table 7. Results from major events categorized as "Battlefield"

Battlefield-related events								
	CAAR test				*Sign test*			
Event period	CAAR	St dev	t-stat	Prob	Pos:Neg event	Pos:Neg est	t-stat	Prob
[0:0]	**-0,411**	1,44	-1,06	0,31	07:07	07:07	0,00	1,00
[0:1]	**-0,490**	1,55	-1,19	0,26	06:08	07:07	-0,53	0,60
[0:2]	**-0,512**	2,30	-0,83	0,42	07:07	07:07	0,00	1,00
[0:5]	**0,278**	2,87	0,36	0,72	08:06	07:07	0,53	0,60
[0:10]	**0,838**	2,93	1,07	0,30	09:05	07:07	1,07	0,30

*** Indicates significance at 1%
** Indicates significance at 5%
* Indicates significance at 10%

In Table 7 we show the results following events categorized as battlefield events. The CAARs are negative for the shorter event periods [0:0], [0:1] and [0:2] and positive for the longer event periods [0:5] and [0:10] but insignificant for all of them at all significance levels. The sign test shows ambiguous results regarding t-statistic direction, and none of them are within any significance level.

Table 8. Results from major events categorized as "Non-battlefield"

Non-battlefield-related events								
	CAAR test				*Sign test*			
Event period	CAAR	St dev	t-stat	Prob	Pos:Neg event	Pos:Neg est	t-stat	Prob
[0:0]	**0,284**	1,73	0,68	0,51	12:05	11:06	0,51	0,62
[0:1]	**-0,187**	2,42	-0,32	0,75	08:09	11:06	-1,52	0,15
[0:2]	**0,480**	2,20	0,90	0,38	10:07	11:06	-0,51	0,62
[0:5]	**-0,663**	3,59	-0,76	0,46	09:08	11:06	-1,02	0,33
[0:10]	**-0,975**	6,51	-0,62	0,54	09:08	11:06	-1,02	0,33

*** Indicates significance at 1%
** Indicates significance at 5%
* Indicates significance at 10%

In Table 8 we show the results for events categorized as non-battlefield. The CAARs are negative for event periods [0:1], [0:5] and [0:10] and positive for [0:0] and [0:2]. However, none of the CAARs are significant for the significance levels 1%, 5% or 10%. The sign test exhibits positive t-statistic at event period [0:0] but negative for longer event periods suggesting that non-battlefield events had a negative effect on the S&P 500 abnormal returns in the nonparametric test. However, the sign test is also insignificant for all significance levels.

6.2 Comparison with previous research

We compare our results to those of Hudson and Urquhart (2015), who conducted similar statistical significance tests on the same event period lengths[24] but on major events in World War II. The authors investigated events categorized as either positive or negative for the outcome of the war with respect to the Allies. They found that for positive events, CAARs differ in direction and magnitude across event periods and the sign test has a positive t-statistic for all event periods, all results were insignificant. For negative events, the CAARs are negative for all event periods except [0:0] but none of them are significant. The authors explain this by arguing that news of war events was most likely not received by the British investors until the day after the event took place. If that is the case, correcting the dates to the exact date of public announcement instead of using dates based on first appearance in the *New York Times* would make us expect to see a higher impact on the day of the event[25]. Comparing Table 3 to Table 4 we do not observe that the CAAR for [0:0] is of larger magnitude in the latter. However, neither are significant and we still consider using updated dates a better approach for this war. Hudson and Urquhart (2015) add robustness to their negative event results, by confirming a negative direction in the sign test, all significant at the 10% level. Similar to these results, the CAARs in Table 4 are negative for all event periods. A robustness check also shows a negative direction for three event periods, with [0:1] significant at the 10% level.

6.3 Discussion of results

The results from Table 4 indicate that the stock returns were weakly negatively affected by the war events, although insignificant. Comparing the results in Table 4 with those of Hudson and Urquhart

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[24] [0:0], [0:1], [0:2], [0:5] and [0:10]

[25] [0:0]

(2015), we see that they are similar to their results from categorization of negative events but differ for positive events. One possible explanation for these results could be that a war is generally considered negative, and that news of war events could therefore impact investors' expectations about the financial markets negatively. That would go in line with the argument by Willard, Guinnane and Rosen (1996) stating that investors' financial decisions in response to events in general is a measurement of how they see the situation around them.

We also discuss the results from the categorization of events. From Table 5, our results indicate that intensifying events had a positive effect on the S&P 500 returns. Results for intensifying events were significant and go in line with the findings by Schneider and Troeger (2006) that intensifying events had a positive effect on stock returns. On the other hand, our results are in contrast to those of Choudhry (2009) and Kaun (1990) who found that war events can cause a negative reaction to the market. An explanation for these results could be that a positive effect following an intensification of the conflict is the results of investors interpreting the intensification as a sign of the conflict heading to an end, as argued by Schneider and Troeger (2006). Results from Table 6 indicate that de-escalating events had a negative effect on the stock market returns. In this case we find it more difficult to find a plausible explanation to causality. Although previous research argues that intensifying events can give rise to hopes of future peace, we do not find the opposite likely to be true for de-escalating events. For instance, a decision to withdraw troops from Afghanistan is not likely to be interpretable as a prolonging of the war.

The results in Table 7 showed signs that battlefield events had a negative effect on the stock market for shorter event period lengths and a positive effect for longer event period lengths. That would mean that battlefield events give rise to negative stock market returns on the event day and cumulated on near days following the event but are reversed and instead give a positive cumulative return for a longer period after the event. This would suggest that battlefield events cause negative stock returns immediately after occurring, but that the effect quickly fades out and the stock market has fully recovered from the events after approximately five days. We find no plausible explanation for longer event periods to cause positive cumulative returns. Comparing these results to non-battlefield events in Table 8, we do not see any clear difference neither in direction nor magnitude in the effects of these events. Thus, we are not able to confirm the findings by Berkman

and Jacobsen (2006) that events starting with violence, which is likely true for battlefield events, have a larger impact on the stock market index.

To finish this discussion, we look into potential explanations for why our results sometimes differ or do not show clear coherence based on expectations and what previous literature suggests regarding how wars affect stock market returns. As previously mentioned, this war is different from other wars and conflicts, and one might therefore expect different results. For example, the fact that news spread faster during the War on Terror than in World War II is an argument that markets should react faster and stronger because people receive information instantly. However, a counterargument to that is that a constant stream of new information reaching people might obsolete the value and impact of news quickly. That should then downgrade the market's reaction especially during a long war like the War on Terror, taking the assumption that a longer war eventually numbs investors reaction into account. As mentioned, this war also involves multiple wars and conflicts and does not consist of two clear sides. This could mean that it is not as straightforward that an intensification of the war would indicate that the war is going towards an end, as argued by Schneider and Troeger (2006). In that case, there is no link between intensifying events and positive returns on the stock market. However, we observe that the results show that intensifying events did have a positive effect on returns for the nonparametric test which suggests that the difference in shape of this war is not necessarily the explanation in that case. Another potential explanation for lacking coherence in the results is that news of the war events is simply not the most important for investors in their financial decision-making. Instead, they might consider other news and information to be of higher importance, which would explain why news of a war event is not the biggest cause of stock market return movements on that day.

7.   Conclusion

The purpose of this study was to investigate how the War on Terror affected the stock market and how the effect of major events of this war differ from older conflicts such as World War II. To answer these questions, we replicate an event study by Hudson and Urquhart (2015). We also develop a method of determining major events in this war and investigate the relationship between the S&P 500 returns and the events. A careful categorization of events allows us to study the effects not only of war events in general, but also if events with certain characteristics exhibit connection with stock market returns.

Our findings indicate that the stock returns for S&P 500 were weakly negatively affected by events related to the War on Terror, although insignificant. When comparing our results with those of Hudson and Urquhart (2015), we see that they are similar to their results from categorization of negative events but differ for positive events. Our results indicate that intensifying events had a significant positive effect on the S&P 500 returns and thereby confirm previous findings by Schneider and Troeger (2006) that intensifying events has a positive effect on stock returns. De-escalating events showed to have a significant negative t-statistic in the sign test, however plausible explanations to causality are of absence. We find that battlefield events cause negative stock returns immediately after occurring, but the effect quickly fades out and the stock market has fully recovered from the events after approximately five days. Since we do not see any clear difference neither in direction nor magnitude in the effects of battlefield events compared to non-battlefield events, we are not able to confirm the findings by Berkman and Jacobsen (2006) that events starting with violence have a larger impact on the stock market index.

We have investigated the effect of major war events in the War on Terror on stock market returns. A way of building onto our analysis would be to analyze how other markets than the stock market, such as the commodity market, were affected by the events. Since both wars and commodities are often linked to geographical areas it should be relevant to investigate the relationship between the two of those. One example is the oil market. Since Iraq is one of the largest oil producers in the world (Al-Oraibi, 2022), war events related to that area might have an effect on oil prices. Future

research on the War on Terror could therefore analyze potential effects that events had on oil prices.

References

Akhtar, S., Faff, R., Oliver, B., & Subrahmanyam, A. (2011). The power of bad: The negativity bias in Australian consumer sentiment announcements on stock returns, *Journal of Banking & Finance*, Available online: https://ideas.repec.org/a/eee/jbfina/v35y2011i5p1239-1249.html [Accessed 10 April 2022]

Ali, I., Landay, J., & Holland, S. (2021). America's longest war: 20 years of missteps in Afghanistan, Reuters, 16 August, Available online:
https://www.reuters.com/world/asia-pacific/americas-longest-war-20-years-missteps-afghanistan-2021-08-16/ [Accessed 10 May 2022]

Berkman, H., & Jacobsen, B. (2006). War, Peace and Stock Markets, *EFA 2006 Zurich Meetings,* Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=885980# [Accessed 10 May 2022]

Britannica. (2021). Iraq War, Available online: https://www.britannica.com/event/Iraq-War [Accessed 16 May 2022]

Brounen, D., & Derwall, J. (2010). The Impact of Terrorist Attacks on International Stock Markets, *European Financial Management,* Available online:
https://econpapers.repec.org/article/blaeufman/v_3a16_3ay_3a2010_3ai_3a4_3ap_3a585-598.htm [Accessed 5 April 2022]

Brown University. (2021). Cost of the 20-year war on terror: $8 trillion and 900 000 deaths, Available online: https://www.brown.edu/news/2021-09-01/costsofwar [Accessed 10 May 2022]

Byström, H. (2014). Finance, Sweden: Studentlitteratur

Choudhry, T. (2009). World War II events and the Dow Jones industrial index, *Journal of Banking & Finance,* Available online:

https://www.sciencedirect.com/science/article/pii/S037842660900301X

[Accessed 28 March 2022]

Coleman, L. (2012). Testing equity market efficiency around terrorist attacks, *Taylor & Francis Journal,* Available online: https://ideas.repec.org/a/taf/applec/44y2012i31p4087-4099.html [Accessed 10 May 2022]

Cowan, A.R. (1992). Nonparametric Event Study Tests, *Review of Quantitative Finance and Accounting,* Available online: https://link.springer.com/article/10.1007/BF00939016 [Accessed online 12 May 2022]

DATAtab. (2022). Parametric and non-parametric tests, Available online: https://datatab.net/tutorial/parametric-and-non-parametric-tests [Accessed 16 May 2022]

Fernandez, V. (2008). The War on Terror and its impact on the long-term volatility of financial markets, *International Review of Financial Analysis,* Available online: https://www.researchgate.net/publication/223768770_The_war_on_terror_and_its_impact_on_the_long-term_volatility_of_financial_markets [Accessed 1 April 2022]

Al-Oraibi, M. (2022). Iraq's Oil Dysfunction, Available online: https://foreignpolicy.com/2022/04/21/iraq-oil-fuel-shortage-energy-crisis-electricity/ [Accessed 25 May 2022]

Witte, G. (2021). Afghanistan War, Available online: https://www.britannica.com/event/Afghanistan-War [Accessed 16 May 2022]

Harrington, J., Sunesson, G. (n.d.). What were the 13 most expensive wars in U.S. history?, USA Today, n.d., Available online: https://eu.usatoday.com/story/money/2019/06/13/cost-of-war-13-most-expensive-wars-in-us-history/39556983/ [Accessed 10 May 2022]

Hudson, R., & Urquhart, A. (2015). War and stock markets: The effect of World War Two on the British stock market, *International Review of Financial Analysis,* Available online: https://www.sciencedirect.com/science/article/pii/S1057521915000976 [Accessed 28 March 2022]

Jackson, R. (2020). war on terrorism, Available online: https://www.britannica.com/topic/war-on-terrorism [Accessed 13 May 2022]

Kaun, D.E. (1990). War and Wall Street: the impact of military conflict on investor attitudes, *Cambridge Journal of Economics,* Available online: https://www.jstor.org/stable/23598380?seq=1 [Accessed 5 April 2022]

Leigh, A., Wolfers, J., & Zitzewitz, E. (2003). What do Financial Markets Think of the War in Iraq?, *National Bureau of Economic Research,* Available online: https://www.nber.org/system/files/working_papers/w9587/w9587.pdf [Accessed 2 April 2022]

Macrotrends. (2022). S&P 500 Index - 90 Year Historical chart, Available online: https://www.macrotrends.net/2324/sp-500-historical-chart-data [Accessed 20 May 2022]

National Archives: George W. Bush presidential Library and Museum. (n.d.). Global War on Terror, Available online: https://www.georgewbushlibrary.gov/research/topic-guides/global-war-terror#resources-anchor [Accessed 14 April 2022]

New York Times. (n.d.). Front Page Reprint, Available online: https://store.nytimes.com/products/new-york-times-front-page-reprint?variant=35826434120 [Accessed 12 April 2022]

Niederhoffer, V. (1971). The Analysis of World Events and Stock Prices, *The Journal of Business,* Available online:

https://econpapers.repec.org/article/ucpjnlbus/v_3a44_3ay_3a1971_3ai_3a2_3ap_3a193-219.htm [Accessed 10 May 2022]

Schneider, G., Troeger, V. (2006). War and the World Economy: Stock Market Reactions to International Conflicts, *Journal of Conflict Resolution,* Available online: https://journals.sagepub.com/doi/10.1177/0022002706290430 [Accessed 10 May 2022]

S&P Dow Jones Indices. (2022). S&P 500, Available online: https://www.spglobal.com/spdji/en/indices/equity/sp-500/#overview [Accessed 11 April 2022]

The Council on Foreign Relations. (n.d.a). The Iraq War, Available online: https://www.cfr.org/timeline/us-war-afghanistan [Accessed 13 April 2022]

The Council on Foreign Relations. (n.d.b). The U.S. War in Afghanistan, Available online: https://www.cfr.org/timeline/us-war-afghanistan [Accessed 13 April 2022]

The Council on Foreign Relations. (2022). About CFR, Available online: https://www.cfr.org/about [Accessed 14 April 2022]

Willard, K.L., Guinnane, T.W., & Rosen, H.S. (1996). Turning Points in the Civil War: Views from the Greenback Market, *The American Economic Review,* Available online: https://www.jstor.org/stable/2118316?seq=1 [Accessed 10 May 2022]

Yahoo Finance. (2022). S&P 500, Available online: https://finance.yahoo.com/quote/%5EGSPC/history/ [Accessed 3 April 2022]

Appendices

Appendix A: Major events of The War in Afghanistan before selection by appearance in *New York Times*

Date:	Event:	Front page/Picture/Main headline:
Sep 11 2001	9/11 Terrorist Attacks on U.S.	Yes/Yes/Yes
Sep 18 2001	President Bush signs a "Joint Resolution" which permits U.S. forces to be used against the attackers of 9/11.	No/No/No
Oct 7 2001	The War in Afghanistan begins in combat.	Yes/Yes/Yes
Dec 5 2001	Hamid Karzai becomes the leader of the interim established government in Afghanistan.	No/No/No
Dec 9 2001	The Taliban regime in Afghanistan falls.	Yes/No/No
Apr 17 2002	President Bush announces the "Reconstruction of Afghanistan".	Yes/Yes/Yes
Aug 8 2003	NATO advances in Afghanistan and become in charge of forces that are internationally deployed in the country.	No/No/No
Oct 9 2004	Karzai is elected president of Afghanistan in the first democratic election in the country's history.	No/No/No
Oct 29 2004	Bin Laden appears in a video message where he strikes against the U.S. and claims responsibility for 9/11 attacks.	Yes/Yes/No
May 23 2005	U.S. President Bush and Afghan President Karzai sign a declaration that states their alliance and plan for Afghanistan.	No/No/No
Sep 18 2005	Afghans go out to vote for various councils in the country - showing evidence of the democracy progress in Afghanistan.	Yes/No/No
Aug 22 2008	An investigation by Afghanistan and the UN shows evidence of U.S. forces causing death of many civilians.	No/No/No
Feb 17 2009	President Obama announces that the U.S. will advance in Afghanistan by sending more troops to battle terrorists.	Yes/Yes/No
Mar 27 2009	The U.S. announces a new tactic in regarding the war in Afghanistan.	Yes/No/No
May 11 2009	General McKiernan is replaced by Secretary of Defense Robert Gates.	Yes/No/No
Dec 1 2009	President Obama announces that the War in Afghanistan is intensified and more U.S. troops are to join.	Yes/Yes/Yes
June 23 2010	General David Petraeus is announced as the replacer of former General McChrystal.	Yes/Yes/Yes
May 1 2011	Osama Bin Laden is killed by U.S. troops.	Yes/Yes/Yes
June 22 2011	President Obama announces that more than thirty thousand are to return home from Afghanistan.	Yes/Yes/Yes
Dec 5 2011	Conference in Bonn regarding Afghanistan's future.	No/No/No
May 27 2014	President Obama announces that the majority of U.S. troops are to return from Afghanistan by 2016.	Yes/Yes/Yes
Sep 21 2014	Afghan president Ghani and major opponent Abdullah sign unity agreement.	No/No/No
Apr 13 2017	U.S. attacks ISIS with "the mother of all bombs".	Yes/Yes/Yes
Aug 21 2017	President Trump states he will continue military commitment in Afghanistan to prevent terrorist uprising.	Yes/No/No
Sep 7 2019	President Trump cancels peace talks with Taliban.	Yes/No/No
Feb 29 2020	The U.S. and the Taliban sign peace agreement.	Yes/Yes/Yes
Sep 12 2020	Afghan government and Taliban government start peace talks.	No/No/No
Nov 17 2020	U.S announces a further withdrawal of troops in Afghanistan.	Yes/Yes/No
April 14 2021	President Biden announces that U.S. will withdraw all troops by Sep 11 2021.	Yes/Yes/Yes
Aug 15 2021	The Taliban take control of Afghanistan.	Yes/Yes/Yes
Aug 16 2021	President Biden defends the the U.S. decision to withdraw from Afghanistan.	Yes/Yes/Yes
Aug 26 2021	More than a dozen U.S. troops are killed in an attack during the evacuation of Afghanistan.	Yes/Yes/Yes
Aug 30 2021	The U.S. war in Afghanistan ends.	Yes/Yes/Yes

Appendix B: Major events of The War in Iraq before selection by appearance in *New York Times*

Date:	Event:	Front page/Picture/Main headline:
Mar 20 2003	The War in Iraq is announced.	Yes/Yes/Yes
Apr 9 2003	The Iraqi regime falls and the statue of Saddam Hussein is taken down.	Yes/Yes/Yes
May 1 2003	President Bush delivers "Mission Accomplished" speech regarding the War in Iraq.	Yes/Yes/Yes
May 23 2003	The U.S. breaks up Iraq's army and intelligence units.	No/No/No
July 22 2003	Saddam Hussein's two sons Uday and Qusay are killed by the U.S.	Yes/Yes/Yes
Aug 19 2003	Suicide bomber attacks U.N. headquarter in Iraq.	Yes/Yes/Yes
Dec 14 2003	Saddam Hussein is captured.	Yes/Yes/Yes
Jan 24 2004	The U.S. rejects and ends the search for Iraq's weapon of mass destruction.	No/No/No
Mar 31 2004	Al-Qaeda in Iraq targets Shiite holy sites with suicide bombings the Fallujah ambush takes place.	Yes/Yes/Yes
Apr 28 2004	U.S. abuse of prisoners in Abu Ghraib prison becomes news.	No/No/No
May 11 2004	U.S. businessman Nicholas Berg is beheaded and video spreads.	Yes/Yes/No
Sep 8 2004	The battle of Fallujah starts.	No/No/No
Oct 15 2005	Signs of democracy in Iraq.	Yes/Yes/Yes
Feb 22 2006	Terrorist attacks and destroy the Shiite shrine in Samara in Iraq.	Yes/Yes/Yes
Apr 22 2006	Maliki becomes prime minister of Iraq.	No/No/No
June 8 2006	Zarqawi (leader of Al-Qaeda) is killed by U.S. forces.	Yes/Yes/Yes
July 9 2006	"The human toll" - statistics of killed civilians in Iraq are presented.	No/No/No
Nov 5 2006	Saddam Hussein appears in court and is sentenced to death.	Yes/Yes/Yes
Nov 8 2006	U.S. secretary of defense Donald Rumsfeld is resigns.	Yes/Yes/Yes
Dec 30 2006	Saddam Hussein is executed.	Yes/Yes/Yes
Jan 10 2007	President Bush presents a new plan regarding the war in Iraq and says U.S. is to send more troops.	Yes/Yes/Yes
Feb 10 2007	General David H. Petraeus takes command of U.S. forces in Iraq.	No/No/No
June 1 2007	"The Awakening" begins and U.S. troops start attacking militants working with al-Qaeda in Iraq.	No/No/No
Aug 19 2007	Deadliest suicide bombings since the war started takes place in Iraq.	No/No/No
Sep 14 2007	The front figure of U.S. allies in Iraq - Sheikh Abdul Abu Risha - is assassinated.	Yes/Yes/No
Dec 16 2007	Britain hands over the city of Basra to Iraq's army.	No/No/No
Dec 30 2007	The death of 900 U.S. troops during 2007 is announced - indicating the deadliest year in Iraq for the U.S.	No/No/No
Jan 13 2008	Indications of political development in Iraq.	No/No/No
Mar 3 2008	Iran's President Ahmadinejad visits the Iraqi government.	No/No/No
Mar 24 2008	Iraq's prime minister announces crackdown on militants as a result of attacks on U.S. and Iraqi forces.	Yes/No/No
Apr 23 2008	General David Petraeus becomes in charge of both the war in Iraq and in Afghanistan.	Yes/No/No
Sep 1 2008	The U.S. gives Iraq control over the Anbar province - indicating a potential U.S. withdrawal.	Yes/Yes/No
Nov 4 2008	Barack Obama is elected President of the U.S.	Yes/Yes/Yes
Dec 1 2008	President Obama states his wish for current secretary of defense (Robert Gates) to continue.	No/No/No
Feb 1 2009	A plan to withdraw U.S. combat forces in Iraq is presented by President Obama.	No/No/No
June 30 2009	U.S. starts withdrawing soldiers from Iraq.	Yes/Yes/Yes
Mar 7 2010	Elections in Iraq's parliament take place.	Yes/Yes/Yes
Aug 31 2010	The U.S. announces the end to all combat missions in Iraq.	Yes/Yes/Yes
Dec 21 2010	Iraq's parliament accept a new government coalition.	No/No/No
Oct 21 2011	President Obama announces the withdrawal of all remaining troops and the end of the War in Iraq.	Yes/No/Yes
Dec 18 2011	The final U.S. soldiers withdraw from Iraq.	No/No/No

Appendix C: References to exact times of announcements following an event

Event:	Reference:
9/11 Terrorist Attacks on U.S.	http://edition.cnn.com/2001/US/09/11/worldtrade.crash/index.html
The War in Afghanistan begins in combat.	https://edition.cnn.com/2001/US/10/07/ret.attack.bush/
President Bush announces the "Reconstruction of Afghanistan".	http://edition.cnn.com/TRANSCRIPTS/0204/17/se.02.html
The War in Iraq is announced.	http://edition.cnn.com/2003/WORLD/meast/03/20/sprj.irq.int.main/
The Iraqi regime falls and the statue of Saddam Hussein is taken down.	https://edition.cnn.com/2003/WORLD/meast/04/09/sprj.irq.baghdad/index.html
President Bush delivers "Mission Accomplished" speech regarding the War in Iraq.	https://edition.cnn.com/2003/US/05/01/bush.transcript/
Saddam Hussein's two sons Uday and Qusay are killed by the U.S.	https://edition.cnn.com/2003/WORLD/meast/07/22/sprj.irq.sons/
Suicide bomber attacks U.N. headquarter in Iraq.	http://edition.cnn.com/2003/WORLD/meast/08/19/sprj.irq.int.reaction/
Saddam Hussein is captured.	http://edition.cnn.com/2003/US/12/14/sprj.irq.bush.transcript/index.html
Al-Qaeda in Iraq targets Shiite holy sites with suicide bombings the Fallujah ambush takes place.	http://edition.cnn.com/2004/WORLD/meast/04/01/iraq.main/
Signs of democracy in Iraq.	http://edition.cnn.com/TRANSCRIPTS/0510/15/smn.04.html
Terrorist attacks and destroy the Shiite shrine in Samara in Iraq.	https://www.theguardian.com/world/2006/feb/23/iraq.iraqtimeline1
Zarqawi (leader of Al-Qaeda) is killed by U.S. forces.	http://edition.cnn.com/TRANSCRIPTS/0606/08/bn.01.html
Saddam Hussein appears in court and is sentenced to death.	http://edition.cnn.com/TRANSCRIPTS/0611/05/bn.01.html
U.S. secretary of defense Donald Rumsfeld is resigns.	http://edition.cnn.com/2006/POLITICS/11/08/rumsfeld/
Saddam Hussein is executed.	https://edition.cnn.com/2006/WORLD/meast/12/30/hussein/
President Bush presents a new plan regarding the war in Iraq and says U.S. is to send more troops.	https://edition.cnn.com/2007/POLITICS/01/09/iraq.bush/
Barack Obama is elected President of the U.S.	https://edition.cnn.com/2008/POLITICS/11/04/election.president/index.html
U.S. starts withdrawing soldiers from Iraq.	https://www.theguardian.com/world/2009/jun/30/iraq-cities-us-forces-handover
President Obama announces that the War in Afghanistan is intensified and more U.S. troops are to join.	https://edition.cnn.com/2009/POLITICS/12/01/obama.afghanistan.speech.transcript/index.html
Elections in Iraq's parliament take place.	http://edition.cnn.com/blogarchive/insidethemiddleeast.blogs.cnn.com/2010/03/07/violence-mars-iraq-national-election/
General David Petraeus is announced as the replacer of former General McChrystal.	https://politicalticker.blogs.cnn.com/2010/06/23/breaking-mcchrystal-relieved-of-command/
The U.S. announces the end to all combat missions in Iraq.	http://edition.cnn.com/TRANSCRIPTS/1008/31/lkl.01.html
Osama Bin Laden is killed by U.S. troops.	https://www.obamalibrary.gov/timeline/item/death-osama-bin-laden
President Obama announces that more than thirty thousand are to return home from Afghanistan.	https://obamawhitehouse.archives.gov/the-press-office/2011/06/22/remarks-president-way-forward-Afghanistan
President Obama announces that the majority of U.S. troops are to return from Afghanistan by 2016.	https://obamawhitehouse.archives.gov/the-press-office/2014/05/27/statement-president-afghanistan
U.S. attacks ISIS with "the mother of all bombs"	https://www.cbsnews.com/news/us-drops-mother-of-all-bombs-in-afghanistan-marking-weapons-first-use/
The U.S. and the Taliban sign peace agreement.	https://www.npr.org/2020/02/29/810537586/u-s-signs-peace-deal-with-taliban-after-nearly-2-decades-of-war-in-afghanistan?t=1651561472699
President Biden announces that U.S. will withdraw all troops by Sep 11 2021.	https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/04/14/remarks-by-president-biden-on-the-way-forward-in-afghanistan/
The Taliban take control of Afghanistan.	https://edition.cnn.com/world/live-news/afghanistan-taliban-us-troops-intl-08-15-21/index.html
President Biden defends the the U.S. decision to withdraw from Afghanistan.	https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/08/16/remarks-by-president-biden-on-afghanistan/
More than a dozen U.S. troops are killed in an attack during the evacuation of Afghanistan.	https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/08/26/remarks-by-president-biden-on-the-terror-attack-at-hamid-karzai-international-airport/
The U.S. war in Afghanistan ends.	https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/08/31/remarks-by-president-biden-on-the-end-of-the-war-in-afghanistan/