

US security threats and the DJIA

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Abstract

Security threats have precipitated financial distress on many occasions during the 20th century. This paper looks at these events in relation to US stock market trends as measured by the Dow Jones Industrial Average (DJIA). A key factor was the timing of the top at the beginning of a bear market. Those peaks forming around the same time of year tended to have similar peak-panic intervals and similar market outcomes. US security issues occurring up to four months after a major peak often have parallels with other US stock market trends. This was not observed for threats taking place well after the peak or near bear market lows. The dichotomy between the two groups was notable. Unfortunately, 19th century security threats could not be appraised, as US daily stock market indices were only available for the post-1885 era.

1.0 Introduction

Over the past 120 years, numerous security scares have induced tremors in US financial markets. Many examples may be given, the outbreak of WWI, the sinking of the Lusitania, the Pearl Harbour attack, September 11 attack and so forth. This paper appraises such events in relation to US stock market patterns as measured by the Dow Jones Industrial Average (DJIA). A key factor was the seasonal timing of the major top prior to the market decline. Peaks forming around the same time of year usually have similar peak-panic intervals and similar market outcomes (McMinn, 2010b). When peak-panic parallels do arise, they can be quite precise and often involve US security threats.

Dow Jones Indexes (2004) (DJ Indexes) gave a listing of various US security threats and the ensuing DJIA response as presented in Appendix 1. This source was selected as the primary reference because it was the most comprehensive option. However, several important security threats were overlooked and have been inserted by the author. The security threats causing significant one-day DJIA declines over -3.00% have been divided into two groups:

- those happening within four months of a major high

- those forming well after the peak or near a bear market low.

For the former category, security episodes often have parallels with other DJIA patterns, while those in the latter do not.

Security rallies were quite common in US history and occurred after the initial scare had abated or on positive news regarding security issues. A summary of these rallies has been given in Appendix 2.

There is limited information on 19th century US security threats and their impact on financial activity. Events such as the surprise British attack on Washington (August 24, 1814), the start of the Civil War (April 12, 1861) or the suspension of US specie payments (December 30, 1861) may have caused market distress that was not well documented by history. The shooting of President Lincoln (April 14, 1865) resulted in the closure of the US stock market the following day, while the shooting of President Garfield (July 2, 1881) caused panic selling in Saturday morning trading. Daily data for the New York stock market were unavailable pre-1885 and the financial impact of early security scares was difficult to assess.

The daily closing value of the DJIA was

used throughout the assessment. The annual one-day (AOD) rise or fall is taken as the biggest percentage one-day DJIA movement in the year commencing March 1. These represent the most extreme one-day shifts in investor sentiment during a given year. For some panics, the AOD fall recorded the actual low (eg: 1901 and 1998). However, the low after the panic is referred to as the post-crash low in this paper.

This paper is structured as follows. Section 2 discusses those security threats which take place within four months after a major peak. Such events usually follow DJIA patterns that have been repeated throughout in DJIA history. For example, the May-June DJIA peaks in 1901, 1946 and 2001 were each followed by panics in early September, two of which (1901 and 2001) were triggered by security concerns. The highs on May 1, 1901 and Apr 30, 1915 gave way to financial distress one week later. The 1915 episode was sparked when a German submarine sank the Lusitania. Several other examples have been presented. Section 3 covers those security threats happening well after the peak or near a bear market low. Overall, these did not conform to recurring DJIA historic patterns. The only exceptions were the December/January highs in 1961, 1973 and 2000, all of which were followed by a security scare in mid-October. In Section 4.0, financial markets are hypothesised to be mathematically structured in time and to fluctuate in tune with lunisolar cycles. It is also noted that the impact of security threats is often temporary and they usually only cause a blip in longer term DJIA trends. Section 5.0 concludes that security threats taking place shortly after a major DJIA high often follow a similar trajectory to patterns that repeat in financial history.

2.0 Threats within four months after a DJIA peak

All security fears inducing a one-day DJIA fall $\geq -3.00\%$ listed in Appendix 1 have been assessed in relation to historical DJIA patterns. In this section those security hazards occurring shortly after a major DJIA high are analysed. When the peaks take place around the

same time of year, they will often have similar peak-panic intervals and similar market outcomes.

2.1 The 1895 and 1899 December panics.

The US market was spooked on December 20, 1895 after President Cleveland invoked the Monroe Doctrine during a border dispute between Venezuela and the British colony of Guyana. The market assumed that there could be a war with Britain. The panic had close timing similarities with events in 1899, when the Boer War disrupted gold supplies (see Table 1). The associated bear markets persisted into the following year with final lows being recorded on August 8, 1896 and September 24, 1900 respectively.

2.2 1901 and 2001 September panics.

In 1901, 1946 and 2001, the DJIA highs showed up between May 21 and June 17 (see Table 2) followed by an initial panic in early September and another major one-day fall 6 days later. The associated major one-day rises took place in the month to October 15. The parallels were particularly remarkable for the 1901 and 2001 episodes, even though the security trigger was completely different. In 1901, President McKinley was shot on Friday September 6, causing a panic on the following day. He survived the shooting but lingered for several days. His impending death caused another panic on Friday September 13 and he died on the Sunday. In 2001, the New York stock market failed to open on the day of the September 11 terrorist attack and remained closed for four trading days. It reopened on September 17 with the DJIA plunging -7.13%. These two scares aligned closely with the 1946 panic, which experienced a high on May 29 and two large one-day falls 6 days apart in early September. The 1946 event was one of the four most severe US stock market panics during the 35 years to 1985.

For 2008 and 2011, the tops occurred on May 2 and April 30 respectively, a little earlier in the year than in 1901, 1946 and 2001. All five episodes were followed by major one-day falls 6 days apart. Importantly, the AOD rise in 2008 occurred four days after the first one-day fall, whereas the AOD fall showed the same timing in 2011 (see Table 3).

DJIA High	Interval	AOD Fall ≥ -4.50%	Interval	AOD Rise ≥ -4.50%
Sep 04, 1895	107 Days	Dec 20, 1895	3 Days	Dec 23, 1895
Sep 05, 1899	104 Days	Dec 18, 1899	1 Day	Dec 19, 1899

NB: 1895 data based on the 12 Stock Average index.

DJIA Peak	1st OD Fall	%	2nd OD Fall	%	OD Rise	%
Panics of 1901, 1946 & 2001						
Jun 17, 1901	Sep 07, 1901	-4.43	Sep 13, 1901	-4.27	Sep 16, 1901	+4.10
May 29, 1946	Sep 03, 1946	-5.56	Sep 09, 1946	-4.41	Oct 15, 1946	+3.58
May 21, 2001 (a)	Sep 11, 2001	na	Sep 17, 2001	-7.13	Sep 21, 2001	+4.47
Panics of 2008 & 2011						
May 02, 2008 (a)	Oct 09, 2008	-7.33	Oct 15, 2008	-7.87	Oct 13, 2008	+11.08
Apr 29, 2011	Aug 04, 2011	-4.31	Aug 10, 2011	-4.65	Nov 30, 2011	+4.24

(a) Intra bear market high. Abbreviation: OD – One-day.

Panic of 2008				
OD Fall		AOD Rise		AOD Fall
Oct 09, 2008 -7.33%	+4 days	Oct 13, 2008 +11.54%	+2 days	Oct 15, 2008 -7.87%
Panic of 2011				
OD Fall		AOD Fall		OD Fall
Aug 04, 2011 -4.31%	+4 days	Aug 08, 2011 -5.55%	+2 days	Aug 10, 2011 -4.62%

Abbreviations: OD – One-day. AOD – Annual One-day.

DJIA High	Interval	AOD Fall	Interval	AOD Rise	Interval	Post-Crash Low
May 01 1901	8 Days	May 09 1901	1 Day	May 10 1901	4 Days	May 14 1901
Apr 30 1915	7 Days	May 07 1915	4 Days	May 11 1915	3 Days	May 14 1915

2.3 1915 Sinking of the Lusitania. In early May 1915, a German submarine torpedoed the Lusitania resulting in the deaths of 1200 people. It caused a temporary panic with similarities to Black Thursday in 1901. The peak-panic low intervals were comparable for both examples (see Table 4).

2.4 1916-1917 War panics. The peak of November 21, 1916 was followed by four security panics arising from WWI. Three weeks after the top, peace fears gripped

the market, with panic selling of shares in companies profiting from the war. In response, the DJIA fell by -4.17% and -4.27% on December 12 and December 14 respectively. The mood quickly shifted to anxiety that the US would soon be entering the war. The Secretary of State commented that the US was on the "verge of war", which spread fear though the stock market on December 21. Several weeks later, Germany announced that it would attack neutral shipping, initiating another panic on February 1, 1917. The

Table 5: 1909 and 1916 DJIA highs

DJIA High	Interval	AOD Fall
Nov 19, 1909	80 Days	Feb 07, 1910
Nov 21, 1916	72 days	Feb 01, 1917

Table 6: Autumn panics after DJIA peaks September 4 - October 10

DJIA Record High	Interval Days	AOD Fall	Interval Days	Post-Crash Low
Oct 03, 1927	05	Oct 08, 1927	14	Oct 22, 1927
Sep 23, 1955	03	Sep 26, 1955	15	Oct 11, 1955
Sep 04, 1986	07	Sep 11, 1986	18	Sep 29, 1986
Oct 09, 1989	04	Oct 13, 1989	24	Nov 06, 1989

Table 7: The 1990 and 1998 August panics

Record High	AOD Fall	Post-Crash Low
Jul 16, 1990	Aug 06, 1990	Oct 11, 1990
Jul 17, 1998	Aug 31, 1998	Sep 10, 1998

Table 8: 1913 and 2008 January panics

DJIA High	Interval	AOD Fall
Sep 30, 1912	112 Days	Jan 20, 1913
Oct 09, 2007	104 days	Jan 21, 2008 (a)

(a) Societe Generale troubles caused worldwide stock market panics on January 21, 2008. This date was regarded as the DJIA AOD fall for 2007, even though the US market was closed on the day due to the Martin Luther King Jnr holiday.

bear market extended well after the peaks, with the lows being reached on September 25, 1911 and November 19, 1917. The latter was associated with another panic in early November, caused by alarm over the Bolshevik revolution in Russia. On November 8, 1917, Lenin announced moves to seek an immediate armistice with Germany and the DJIA slumped -4.14%.

The DJIA tops on November 19, 1909 and November 21, 1916 experienced AOD falls a few months later in early February (see Table 5). No other parallels could be established between the bear markets commencing in 1909 and 1916.

2.5 1950 Korean war panic. The outbreak of the Korean war witnessed a major fall on June 26, 1950 (-5.65%), two weeks after the high. This event was anomalous as these were no comparisons

with other DJIA summer panics.

2.6 1955 Eisenhower's illness. A stock market scare occurred on September 26 after President Eisenhower suffered a heart attack. Although the decline was severe on the day (-6.51%), there was no lasting impact and the markets quickly recovered. This episode showed similarities with three other September - October AOD falls in 1927, 1986 and 1989 (see Table 6). They were all preceded by a record high in the 6 weeks to October 10, with the AOD fall happening within 7 days after the high. All market slumps were brief corrections. The patterns in 1927 and 1955 were noteworthy as the peak-panic low intervals aligned very closely.

2.7 1990 Kuwait crisis. In early August 1990, Iraq invaded Kuwait causing US stock market distress. The

1990 and 1998 DJIA peaks happened in mid-July and were followed by AOD falls in August 6 and August 31 respectively (see Table 7). In both eras, the DJIA declined by around -20% and the financial troubles were brief with post-crash lows on October 11, 1990 and September 10, 1998.

3.0 Threats five or more months after a DJIA high

Security threats occurring well after the peak or near a bear market low usually did not have close similarities with other DJIA events. This was in contrast to the numerous parallels that arise for security threats happening within a few months after a major DJIA high.

3.1 1914 War panic. The DJIA high occurred on September 30, 1912, around the same time of year as the October 9, 2007 high. These were followed by stock market panics on January 20, 1913 and January 21, 2008 respectively (see Table 8). Both bear markets were protracted and severe with major crashes near the bear market lows. In 1914, the New York stock market was closed on July 30 due to the outbreak of WWI and did not fully reopen until mid-December. In 2008, the world financial system was in danger of almost complete collapse during Black October.

3.2 1940 Germany invaded France. Two DJIA panics happened on May 14 (-6.76%) and May 21 (-6.78%) following the German invasion of France. This panic occurred after a September 12, 1939 high and showed no close comparisons with other DJIA panics.

3.3 1941 Pearl Harbour attack. The Japanese launched a surprise attack on the US fleet at Pearl Harbour on Sunday December 7. A moderate AOD fall was recorded on the following Monday (-3.50%). This disaster happened well after the November 9, 1940 peak and there were no counterparts among other DJIA winter panics.

3.4 1973-1974 crises. A DJIA record high happened on January 11, 1973, which was followed by a protracted and severe bear market. On October 17, 1973, Arab nations imposed an oil embargo on those countries supporting

Israel in the Arab-Israeli war. Fears of a global recession spread throughout world financial markets. However, there were no significant one-day falls ($\geq -3.00\%$) until November. The impeachment and resignation of President Nixon in the summer of 1974 was accompanied by DJIA declines, but no notable one-day falls.

The 1973 high aligned with the 1961 and 2000 tops occurring in the five weeks to January 15. They marked the beginning of a serious bear market and were each followed by a security threat in mid-October and another in August to November of the ensuing year (see Table 9).

3.5 2000 USS Cole bombed. On October 12, 2000, a suicide bomber attacked the USS Cole in Aden harbour (Yemen), resulting in 17 deaths and dozens of injuries. The shock caused investor panic, with the DJIA declining by -3.64% . This took place well after the DJIA peak on January 14, 2000, but it had parallels with security threats in 1962 and 1973 (see Table 9).

4.0 Discussion

When major DJIA peaks formed around the same time of year, they were often followed by similar market outcomes (McMinn, 2010b) and security threats tended to fall within these patterns. Rather than being a simple vagary associated with the human calendar, McMinn (1994, 2004, 2013) hypothesised that financial markets were mathematically structured in time and fluctuated in tune with lunisolar cycles. The solar year would be part of this process and thus may account for the commonalities observed for seasonal DJIA peaks. The Moon Sun hypothesis may explain how financial patterns repeat over time, something that would not occur in a random market.

At certain times the market is more susceptible to security hazards than at others. For example, the shooting of President McKinley caused panic in September 1901, whereas the shooting of President Regan in March 1981 had little impact on the DJIA. Although both events involved the shooting of a president, the market outcomes were

Table 9: US security threats and DJIA peaks December 10 – January 15

DJIA Record High	Date	Threat	Date	Threat
Dec 13, 1961	Oct 22, 1962	Cuban missile crisis	Nov 22, 1963	JFK assassinated
Jan 11, 1973	Oct 17, 1973	Arab oil embargo imposed	Aug 08, 1974	Nixon resigned
Jan 14, 2000	Oct 12, 2000	USS Cole bombed	Sep 11, 2001	Sep 11 attack

completely different. Furthermore, President Eisenhower's heart attack (September 26, 1955) resulted in panic, while Woodrow Wilson's stroke (September 25, 1919) and Churchill's bout of pneumonia (February 24, 1943) did not. Those security events aligning within market cycles may be speculated to have the greatest financial impact.

Security threats will always have the potential to cause market distress. Such events may seem catastrophic at the time, but most do not have a lasting impact. According to Ritholtz (2014), *"When we look back at historically important geopolitical events, we tend to see similar patterns. Markets will wobble on the news, especially more surprising events like Pearl Harbor, Sept. 11 or the Kennedy assassination. Post-wobble, markets tend to resume their prior trend."* It is also important to remember that there are often security rallies once the initial fears have abated (see Appendix 2). The next security trigger could easily arise from upheavals in the Middle East, a serious terrorist attack or Russian expansionism. As always, only time will tell.

It would be very interesting to see if the DJIA findings are mirrored by the European experience. A suitable listing of security threats inducing European financial panics could not be sourced, thus preventing a valid appraisal. The following constituted a preliminary and incomplete list of interesting events worthy of further study:

1797 Britain came off the gold standard (February 26). Fears of French invasion.

1815 British panic (June 19). Waterloo war fears.

1830 French panic (July 27-29). July Revolution.

1848 French stock market closed (March 23). Year of Revolutions.

1866 British Black Friday (May 11).

Austro Prussian War.

1870 British panic (July 10). Outbreak of the Franco Prussian war.

1887 Austrian panic (December 17-18). Russian war fears.

1914 British stock market closed. (July 31). Outbreak of WWI.

1940 British stock market panics (June 17 and 24). French capitulation.

1991 German DAX falls by over 9% (August 19). Russian coup attempt.

2014 Russian stock market slumps by 11.2% (March 3). Russia invaded Crimea.

5.0 Conclusions

Close parallels can arise between US security fears and other historic DJIA trends, as shown in 1895-1899, 1901-1915, 1901-1946-2001, 1927-1955-1986-1989, 1961-1973-2000 and 1990-1998. The key indicator was the timing of the prior market top. Those peaks taking place at the same time of year often had similar market outcomes. The effect worked well for security scares taking place within four months after market tops. DJIA parallelism did not arise for threats happening well after the peak or near market lows. This finding applied to such key panics as:

July 30, 1914 – US stock market closed. Outbreak of WWI.

November 1 and 8 1917 – Russian October Revolution.

May 14 and 21, 1940 – Germany invaded France.

December 7, 1941 – Japanese attack on Pearl Harbour.

August 8, 1974 – Resignation of President Nixon.

The December – January peaks in 1961, 1973 and 2000 were the exceptions, as they were each followed by security distress in mid-October.

The impact of security scares upon financial activity tended to parallel other historic DJIA trends. Various examples

have been presented in the text. There are two options that may account for this observation:

- Only security threats falling within market cycles actually induced major DJIA falls, while comparable threats outside these cycles did not
- Security threats occurred non-randomly and happened preferentially within market cycles.

Further research is necessary to determine which of the two alternatives is valid. If the latter is supported, it would contradict the prevailing paradigm that security threats occur randomly. This is a new area of study and what remains to be discovered can only be speculated upon.

Footnote: It would be appreciated if you could inform the author of any additional US security threats that may have been overlooked in Appendix 1. mcminn56@yahoo.com

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Appendix 1: US Security threats and the DJIA

Date	US security threat	DJIA %
Listing by DJ Indexes		
Feb 15, 1898	USS Maine exploded in Havana harbour.	-2.14
May 07, 1915	Sinking of the Lusitania.	-4.54
Dec 08, 1941	Pearl Harbour attack (a).	-3.50
Jun 26, 1950	Outbreak of the Korean War.	-5.65
Oct 04, 1957	Sputnik launched.	-2.01
Oct 22, 1962	Cuban missile crisis.	-1.85
Nov 22, 1963	JFK assassination (b).	-2.89
Aug 04, 1964	Tonkin Gulf attack.	-0.90
Feb 26, 1965	Vietnam War;	-0.41
Aug 01, 1972	First Watergate story.	+0.62
Feb 07, 1973	Watergate investigations.	-1.15
Mar 01, 1974	Senior White House aides indicted.	-1.00
Jul 27, 1974	President Nixon impeached.	-1.74
Aug 08, 1974	President Nixon resigned.	-1.59
Nov 04, 1979	Iran hostage crisis.	-0.77
Mar 30, 1981	President Reagan shot.	-0.26
Oct 25, 1983	Hostage in Grenada.	-0.69
Dec 15, 1989	Panama and Noriega.	-1.53
Aug 06, 1990	Iraq invaded Kuwait (c).	-3.32
Jan 16, 1991	Operation Desert Storm.	+4.57
Dec 04, 1992	Somali crisis.	+0.57
Feb 26, 1993	First WTC bombing.	+0.17
Apr 19, 1995	Oklahoma bombing.	+0.68
Sep 11, 2001	WTC terrorist attack (d).	na
Oct 07, 2001	America strikes back.	-0.57
Mar 19, 2003	Operation Iraqi Freedom.	+0.26
Additional security threats inserted by the author		
Dec 20, 1895 (e)	Monroe Doctrine concerns.	-6.61
Dec 18, 1899	Boer War disrupts gold supply.	-8.72

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