

# Patriotic name bias and stock returns

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## Abstract

Companies whose names contain the words “America(n)” or “USA” earn positive abnormal returns of about 6% per annum during World War II, the Korean War, and the War on Terrorism. These abnormal returns are not realized immediately upon the outbreak of each of the wars but are accumulated gradually during wartime. Given that no such effect is observed for the Vietnam War, we hypothesize that major, victorious wars arouse investors’ patriotic feelings and cause them to gradually and perhaps subconsciously gravitate toward stocks whose name has a patriotic flavor.

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*Keywords:* patriotism; name bias; stock returns

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# 1 Introduction

Consumers' and investors' patriotic feelings have been shown to affect their economic behavior. The academic literature in business and marketing, for instance, has documented a positive relationship between patriotism and consumer propensity to purchase domestic goods (Shankarmahesh, 2006). There is also evidence, in the financial markets, suggesting that patriotism is an important determinant of investor behavior. In an attempt to tap investors' patriotic sentiment and at the same time finance the war effort, the United States government issued "Liberty Bonds" during WWI, "War Bonds" during WWII while more recently, the "Freedom Bonds Act" of 2001 enabled the Treasury to issue "Patriot Bonds" to help finance the War on Terrorism. These attempts to raise money were very successful: the WWII Series E War Bond issue raised about \$185.7 billion, contributed to by around 85 million Americans,<sup>1</sup> while following the September 11 terrorist attacks, the sales of Series I and EE Treasury Bonds that were renamed "Patriot Bonds", rose by 43% (Sulon, 2001).

Recent research has also shown that patriotism can influence investor behavior in a more systematic way and not only during war periods. In a sample of 53 countries, Morse and Shive (2011) find that measures of patriotism are positively related to the level of home equity bias, controlling for transaction costs, information acquisition costs, diversification benefits, and investor familiarity with their home country.

On a different, but related to our paper, research front, finance scholars have also examined the effect of a company's name on investor behavior and firm value. Most of the focus in the related literature has been on the stock price effect of a corporate name change. Despite anecdotal evidence that company name changes add value to firms, earlier studies have found that in general such effects are economically insignificant, that they are not associated with increased earnings, and that they are either sample-specific or they are influenced by

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<sup>1</sup>See the "Brief History of World War Two Advertising Campaigns, War Loans and Bonds" for more details, accessible at <http://library.duke.edu/digitalcollections/adaccess/warbons.html>. A more detailed reference is Kimble (2006).

outliers (Bosch and Hirschey, 1989; and Karpoff and Rankine, 1994). It seems however, that specific name changes at specific times do matter. In a more recent event study, Dimitrov and Rau (2001) show that companies that changed their name to include “.com” between June 1998 and July 1999 (i.e., during the “tech bubble”) earned cumulative abnormal returns of about 74% in a ten-day window around the name-change announcement. Furthermore, this effect did not seem to be transitory as the authors failed to detect a post-name-change announcement negative drift.

Both patriotism-induced investor behavior and corporate name changes are linked to the concept of market efficiency. One of the empirical implications of market efficiency is that prices should not react to the absence of information about the traded securities.<sup>2</sup> Thus, in an efficient market, investors’ level of patriotism should be orthogonal to stock prices either because investors act rationally and are not influenced by sentiment, or in case they do, any resulting mispricing is arbitrated away. Similarly, if a corporate name change does not add information about a company, it should not be priced. Also, viewed as a firm characteristic, corporate names should have no effect on the cross-section of stock returns because they are not a source of risk.

Our paper tests the joint hypothesis that patriotism and corporate names have an impact on the cross-section of stock returns. To do that, we look at the returns of stocks with patriotic sounding names,<sup>3</sup> at times when peoples’ patriotic sentiment is likely to be high. In our case such periods are assumed to be those of the four largest (and costliest) wars that the U.S. participated in, over the past seventy-five years, namely World War II (WWII), the Korean War, the Vietnam War, and the War on Terrorism. Our goal then is to examine if at times when patriotic sentiment is likely to be high, investors view stocks with patriotic names differently than stocks without them but with otherwise similar characteristics.

We start our analysis by performing tests that utilize a four-factor asset pricing model. Every month and over multi-year periods around the beginning of each of the wars, we form

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<sup>2</sup>Shiller (1981) and Roll (1984, 1988) are the first studies that directly test this hypothesis.

<sup>3</sup>Specifically, we look at companies whose names contain the words: “America(n)” or “US(A)”.

value-weighted portfolios of stocks with patriotic names. We then regress the returns of these portfolios on the standard Fama-French-Carhart risk factors, with the variable of interest being alpha (the intercept). We find that stocks with patriotic names generally earn positive abnormal returns during WWII, the Korean War and the War on Terrorism but not during the Vietnam War. Additionally, we detect no abnormal returns immediately before the beginning of each of the wars and also during the first six months of WWII. The abnormal returns that we do detect for the duration of the War on Terrorism, the Korean War and the bulk of WWII, are as high as 6% per annum and are thus economically significant. Given that both the Vietnam War and the first six months of WWII are arguably times when investors might not have been positively exuberant about the ongoing war effort,<sup>4</sup> we interpret our results as evidence that investors tend to gravitate toward stocks with patriotic sounding names and that the market fails to correct the mispricing.

A potential weakness of the factor-model benchmarking approach is that the abnormal returns could be driven by industry effects: Since there are industries (e.g., defence, telecommunications) that tend to perform better during wartime, it could be that these industries also have a higher concentration of firms with patriotic names, thus giving rise to a selection bias. To account for this, we construct control portfolios consisting of stocks that match the stocks of the original portfolios by industry, size, and book-to-market but have no patriotic sounding names. We then repeat the tests using these control portfolios but fail to detect any abnormal returns. We also control for a number of other potential explanations, such as product market exuberance, IPO underpricing, and unique risk. Our robustness checks show that our results cannot be attributed to any of these factors.

We next calculate cumulative abnormal returns (CARs) of a portfolio of stocks with patriotic sounding names, around September 11, 2001. As benchmark we use the returns of a control portfolio that matches the patriotic name portfolio by industry, size, and book-to-market. Our goal is to get a better idea of when the mispricings we detect in the Fama-French

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<sup>4</sup>We provide evidence for this in the discussion of the results.

regressions start to appear and how they evolve over time. In particular, we want to see whether or not a cataclysmic event such as the 9/11 attacks gives immediate rise to abnormal returns.

The CARs around the 9/11 attacks reveal that the stock price reaction of the “patriotic name” portfolio is not immediate (i.e., it is not realized in the days immediately after the attacks). Rather, it is gradual and it takes as long as two years for the stocks with patriotic names to attain their maximum CAR. This finding implies that the market cannot quickly correct the mispricing and is also suggestive of an investor sentiment model whereby the bias in favor of stocks with patriotic sounding names manifests itself over a long time horizon. This is consistent with investors being gradually (and perhaps subconsciously) attracted to such stocks when faced with a number of stocks to choose from. In other words, our results suggest that investors do not actively seek to invest in companies with patriotic sounding names upon the outbreak of a war; instead, they tend to invest more heavily than otherwise in such stocks, during wartime, whenever they come across them.

Finally, not all patriotism-induced investor behavior need be the result of investor sentiment. If investors care about the well-being of their country, they may well choose to invest in a way that is not optimal in terms of the risk and return tradeoff, but is nevertheless good for their country (e.g., by over-weighting their portfolios with domestic stock instead of diversifying internationally). These investors are effectively donating a portion of their wealth to their country. Morse and Shive (2011), who document this effect, mention the example of a central bank head who “understood the benefits of diversification but conveyed to the pension manager that the country needed the capital at home.” However, the “patriotic name bias” that we document, cannot be explained by such examples of deliberate patriotic giving, because if investors bought stocks during wartime with the sole purpose of supporting their country’s businesses and economy, they would have no reason to concentrate on stocks with patriotic sounding names.

## 2 Methodology and results

### 2.1 Wartime periods as proxies for patriotic sentiment

Since we want to see if there is an effect of patriotic sentiment on stock prices, we need a measure of patriotism over time. Unfortunately, such measures are rare and they cover only recent and brief periods of time.<sup>5</sup> The reason then why we choose periods of war for our analysis, is because we think that wars have the potential to significantly arouse people's patriotic feelings. Additionally, the U.S. has participated in some major wars over the past seventy-five years, which means that these wars provide a good opportunity to examine the effect of patriotism on investor behavior.

We use data around the four largest and most dramatic for the U.S. wars; these are in chronological order: World War II (WWII), the Korean War, the Vietnam War, and the War on Terrorism that the U.S. undertook following the terrorist attacks of September 11, 2001. We select these wars because they are the largest in scale and costliest, in terms of casualties and resources consumed, over the time period for which stock price data are available. Large conflicts have profound effects on societies and are thus far more likely to stir peoples' emotions. It is for this reason that we exclude many other smaller-scale conflicts like the invasions in Grenada and Panama, the First Gulf War of 1990-1991, etc.

Since direct measures of patriotism over time in the U.S. are sporadic at best and non-existent at worst, it is difficult to provide concrete evidence of how patriotic sentiment was influenced by the aforementioned wars and especially the older ones (WWII, Korea, and Vietnam). We however provide evidence that patriotic sentiment increased significantly during the War on Terrorism. This evidence suggests that wars have the potential to increase patriotic sentiment. We should also mention that the Vietnam War stands out because, contrary to the other wars, it was not victorious and is widely perceived to have been the

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<sup>5</sup>For instance, in the World Values Survey, used by Morse and Shive (2011), the U.S. is only included in the years 1982, 1990, 1995, 2000, and 2006.

most unpopular conflict of the U.S. in the twentieth century.<sup>6</sup> For this reason, it is doubtful if and to what extent this war increased patriotic sentiment. We however include this war in our analysis to facilitate comparison with the other wars.

Regarding the War on Terrorism, the patriotism index in the World Value Survey used by Morse and Shive (2011) confirms the rise in patriotic sentiment after 2001. Also, in a poll of 425 Utah residents that was conducted in October 2001 by Dan Jones & Associates, 75% of the respondents said that they “definitely” have a deeper sense of patriotism since the September 11 events.<sup>7</sup> We also attempt to more accurately and systematically capture patriotic sentiment around September 2001 by looking at the popular press: if patriotic sentiment was indeed higher following 9/11, this must have been reflected in the articles published in the press. For this reason, we use the Nexis database to search for phrases in articles, published before and after 9/11, that are indicative of patriotic sentiment.<sup>8</sup> There is of course a multitude of candidate phrases, so we simply choose to search for the phrases “American patriotism” and “proud of America” (a direct and indirect reference to patriotism respectively), which we think are likely to show up when a patriotic sentiment is prevalent.

Table 1 shows the total number of English language news articles that contain these two phrases and were published over multiple time horizons before and after September 11, 2001. It is evident that the number of such articles is much larger after September 11 than before, especially over the two-month window around the event. Furthermore, the difference in frequencies persists for at least four years after the event. To eliminate the possibility that this difference in frequencies is because of the natural increase, over time, in the total number of articles covered by Nexis, we fit a second degree polynomial trendline for the 1975-2001 period and use this trend to predict article frequencies after 2001. These results appear in

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<sup>6</sup>See for instance the survey results on the popularity of the Vietnam War among Americans reported in Lunch and Sperlich (1979).

<sup>7</sup>Source: Deseret Morning News/KSL-TV, 2006.

<sup>8</sup>Nexis allows one to search for a phrase in the popular press, published anytime since the mid-late 1970's. For a given search phrase, date range, and media source, we obtain the number of articles that contain one or more instances of the search phrase. Unfortunately, the Nexis data range does not allow us to use the database for the same purpose for WWII, the Korean War or the Vietnam War.

Figure 1. Actual article frequencies are clearly much larger than predicted frequencies for both phrases.<sup>9</sup> We interpret this as evidence of patriotic exuberance following the September 11 attacks.

## 2.2 Data and summary statistics

Stock names, returns, and market sizes are from CRSP, the book-to-market ratios and industry codes are from the merged CRSP/Compustat database while the risk factors used in our regressions are from the website of Kenneth French.<sup>10</sup> From the universe of stocks in CRSP we keep only those which have a share code equal to 10 or 11 (i.e., we exclude ADRs, REITs, closed-end funds etc). We also exclude any stocks with missing values for returns, prices, company identification number or number of shares outstanding. For one of our robustness checks, we also use quarterly sales growth data from Compustat. Data on the number and size of trades around September 11, 2001 is from the Trades and Quotes (TAQ) database.

To construct our portfolios, we classify a company's name as patriotic if it contains the words "America(n)" or "US(A)." We only use these two words because they appear frequently enough to allow us to construct portfolios of stocks and thus decrease the possibility that our results are driven by idiosyncratic risk. We restrict ourselves to these two words so as to avoid having to arbitrarily decide whether a given name is patriotic or not. We also exclude any companies where the word "American" or "US" in their name is not exclusively related to the United States. Table 2 lists some examples of company names that are excluded, along with the reason for excluding them.

For the asset pricing regressions, we classify firms' names as patriotic, every month, for the duration of each of the wars and for a maximum period of 48 months immediately before

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<sup>9</sup>The large number of articles containing the phrase "proud of America" in late 2007 and 2008 is because of the frequent use of this phrase during the Obama-McCain presidential election campaign.

<sup>10</sup>[http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html).



each of the wars broke out. Table 3 shows size and book-to-market summary statistics of patriotic stocks averaged over 48 months, during and before WWII, the Korean War and the War on Terrorism.<sup>11</sup> One thing to notice is that the size distribution is clearly more skewed for the firms with patriotic names as the distances between mean and median size indicate; our patriotic portfolios evidently contain few large stocks that drive size statistics. For this reason, we also do robustness tests using equally-weighted portfolios.

## 2.3 Fama-French regressions

To examine whether patriotic stocks earn abnormal returns during wartime, we use the four-factor Fama-French model for the purpose of benchmarking. This involves regressing monthly returns of value-weighted patriotic stock portfolios on the monthly values of four risk factors that have been shown to have explanatory power on stock returns. These factors are the original three in Fama and French (1993, 1995, 1996) namely, market premium, HML and SMB, as well as the Carhart (1997) momentum factor constructed to take into account the momentum effect described in Jegadeesh and Titman (1993). Thus, the empirical specification is:

$$R_{pt} - r_{ft} = \alpha + \beta(R_{mt} - r_{ft}) + \gamma SMB_t + \delta HML_t + \zeta MOM_t + \epsilon_t. \quad (1)$$

For all regressions, we estimate the risk factor coefficients using the heteroscedasticity and autocorrelation consistent (HAC) estimator suggested by Newey and West (1987). Tests of serial correlation point to the use of one lag for this estimator.

The hypothesis we want to test is whether there is a patriotic name effect at times of heightened patriotic sentiment. For this reason, we estimate model (1) using monthly data over multi-year periods *after* each of the wars broke out. We also estimate model (1) over

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<sup>11</sup>Because there are multiple candidate dates for the beginning of the Vietnam War and to conserve space, we do not report size and book-to-market statistics of patriotic name stock portfolios around each of the candidate dates for this war. These statistics are available upon request.

multi-year periods *before* the beginning of each war, to facilitate comparison with the war periods.

Table 4 shows the estimated coefficients of model (1) over two-, three- and four-year periods before and after the beginning of each war and also coefficients estimated up until the end of the war for those wars that lasted less than four years. The war starting dates that we use are December 7, 1941 (attack on Pearl Harbor) for WWII, June 25, 1950 (start of full scale hostilities) for the Korean War, August 7, 1964 (congress authorization of use of force) for the Vietnam War, and September 11, 2001 (attack on World Trade Center and the Pentagon) for the War on Terrorism. In these regressions we only report results for value-weighted portfolios since these are economically more meaningful.

Table 4 also shows that there is no statistical significance for Carhart's alpha before the beginning of any of the war periods, regardless of whether model (1) is estimated over two-, three-, or four-year periods. Patriotic stock portfolios do exhibit abnormal returns over multiple periods after 9/2001 and over a four year period after the beginning of the Korean War. The alphas estimated during the War on Terrorism are very significant (at 5% and 1% levels) for all time periods while those from the Korean War are gradually increasing in significance and become significant at 5% when estimated over a four-year period after the beginning of that war. On the other hand, no abnormal returns are detected for the duration of WWII and the Vietnam War. We therefore next explore stock returns during these two wars in more detail.

One problem with the Vietnam War is that the date that marks its beginning is not as clear as is the case with the other wars. The U.S. involvement in Vietnam was gradual and spanned a long period of time; the August 1964 date we used for our regressions is one of many alternative candidate dates that marked various levels of U.S. involvement.<sup>12</sup> Therefore, the lack of any abnormal returns could be because we have selected a wrong reference date. For this reason we re-estimate model (1) for all overlapping four-year periods

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<sup>12</sup>Such alternative dates include the arrival of U.S. military advisors in the area, their first engagement in combat, the first conflicts after the official approval to use military force, etc.

between 1950 and 1978, a time frame that includes all the events related to the Vietnam War. For these regressions, the beginning month is the January of each year.

The estimated intercepts along with their *t-statistics* are shown in Table 5 where we also show, for the purpose of comparison, the dates and brief descriptions of some events that have been cited as potential candidates for marking the beginning of the Vietnam War. All of the alphas (with the exception of one) are insignificant, suggesting that there is no patriotic name bias.<sup>13</sup> We suspect that the lack of a patriotic name bias during the Vietnam War could be because this war was generally unpopular with the public and/or because it was not victorious.

If this intuition is correct, then perhaps there might be a “patriotic name bias” during subperiods of WWII when the public was more optimistic about the outcome of the war. Such subperiods must exist during WWII since the war started for the U.S. with a devastating surprise attack against the country and ended with an overwhelming U.S. victory. In trying to identify such subperiods, we note that following the Pearl Harbor attack and until the Battle of Midway in June 1942, Japan seemed to have the upper hand in the Pacific conflict and the outcome of the war was at the time completely uncertain. The Pearl Harbor attack was followed by more setbacks for the U.S. in the worst case and no significant hostilities in the best.<sup>14</sup> The battle of Midway was the first American victory against Japan and the “turning point” of the war in the Pacific (Prange, 1982). We therefore estimate again model (1) over multiple periods after the Battle of Midway and until the end of the war. These results appear in Table 6. Most intercepts are now statistically significant at a 5% level.

In Table 7 we combine all pre-war and wartime periods so as to assess the economic significance of the patriotic name bias. Here, model (1) is estimated over the combined four-

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<sup>13</sup>It is interesting however that all the negative alphas are concentrated in the late 1960s and early 1970s, a period that roughly corresponds to the time of least popularity of the war, at least as evidenced by the poll results in Lurch and Sperlich (1979). The mean of these alphas is significantly different (at 1%) from the alphas calculated in the 1950s and mid to late 1970s.

<sup>14</sup>In the six month period following the attack on Pearl Harbor, the Japanese invaded Burma, the Dutch East Indies, the Solomon Islands, Manila, and Singapore. The allies were subsequently also defeated at the Battle of the Java Sea in early March 1942.

year wartime and pre-war periods, excluding Vietnam and the first six months of the U.S. involvement in WWII. For the combined wartime periods, alpha is economically significant at 0.005. This means that a patriotic-name stock portfolio earns a risk-adjusted 0.5% excess return on a monthly basis, or about 6% per annum.

### **2.3.1 Discussion of the Fama-French regression results**

The results so far point to a patriotic name bias in stocks. The underlying hypothesis is that wars can cause investors' patriotic sentiment to rise and as a result investors gravitate toward stocks whose name has a patriotic sounding name. The significant wartime alphas and the absence of any significance before the wars suggests that, during wartime, investors view stocks with patriotic sounding names differently. The fact that the Vietnam War and the first six months of the U.S. involvement in WWII produce no alphas, further suggests that it must be patriotic exuberance and enthusiasm that actually cause investors to gravitate toward these stocks. As mentioned, the Vietnam War was the most unpopular military engagement of the U.S. in the twentieth century while the first six months of the U.S. involvement in WWII were marked by enemy successes in the war theater and thus offered little excuse for exuberance. The absence of significant alphas during these periods confirms then the intuition that for a patriotic name bias in stocks to materialize, investors must be significantly and positively enthused about the prospects of their country's war effort.

The estimated alphas during the War on Terrorism (see Table 4) are also consistent with this intuition. The War on Terrorism was initially marked by military victories in Afghanistan and Iraq and it was not until three to four years after the beginning of the war (i.e., in 2004-2005) that both the insurgency in Iraq and U.S. casualties reached a peak and the mood of the U.S. public changed accordingly. Opinion polls at the time suggested

that the war's outcome had been deemed more uncertain.<sup>15</sup> The estimated wartime alphas decline in economic and statistical significance as the war gradually becomes less popular and its outcome becomes less certain. Overall, the fact that a name bias coincides with times when patriotic exuberance was likely to be elevated, is consistent with a behavioral explanation of this market effect.

### **2.3.2 Evidence from trade data**

Evidence from trade data<sup>16</sup> around September 11, 2001 reinforces the argument that the observed abnormal returns are the result of a behavioral bias. In a 48-month period before 9/11, the percentage of trades, worth less than \$5,000 in the sample of all stocks with patriotic sounding names, was 56.5%. This percentage climbed to 73.1% during the 48 months after 9/11. This suggests that the patriotic name effect is primarily driven by retail investors whose behavior is more likely to be driven by patriotic enthusiasm.

## **2.4 Robustness checks**

We perform robustness checks to eliminate other potential explanations or systematic biases from which the regression results may suffer. Because book-to-market data are not available on Compustat before 1962, we exclusively use data around the War on Terrorism for these robustness checks.

### **Industry effects**

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<sup>15</sup>The public was thought to be supportive of the invasions in Iraq and Afghanistan and of the military conduct for at least the first three years after 9/11. According to a *Newsweek* poll of about 1,000 adults in February 2004, 65% of the respondents approved of the government's handling of the war. A poll in July 2007 found that the approval rate had dropped to 43% (source: [www.pollingreport.com/terror](http://www.pollingreport.com/terror)). This suggests that people may have become more pessimistic about the war's outcome.

<sup>16</sup>The trade data is from the Trades and Quotes (TAQ) database.

As mentioned before, a concern about the Fama-French regression results is that they may be driven by an industry effect. If firms with patriotic sounding names are concentrated in industries that tend to do well during wartime, then the abnormal returns that we see may be due to increased profitability rather than investor bias. Summary statistics of the industry distribution suggest that this is unlikely. For example, only 1.2% of our firms belong to the two-digit SIC category 37, which includes most defense companies, while the population percentage of the firms in this category is 1.7%.

To more formally test if there is an industry effect however, we match patriotic name stocks with stocks whose name does *not* contain the words “US(A)” or “America(n)” and compare the performance of the two groups of stocks during the War on Terrorism. The exact matching procedure is as follows: Every June in an eight-year window around September 2001, and for every stock with a “patriotic” name in our sample, we find another stock which is in the same industry (i.e., has the same four-digit SIC) and has similar book-to-market and size. We then use these matches to construct every month value-weighted portfolios and we estimate specification (1) over two, three and four-year periods before and after 9/2001.

If the initial regression results were driven by an industry effect, then the match portfolios should exhibit the same positive and significant abnormal returns after 9/2001. However, the results in the first column of Table 8 show that they do not. In fact, the alphas of the control portfolio become negative (albeit insignificantly) after 9/2001. As an additional check, we re-estimate model (1) using this time as a dependent variable the difference between the returns of the patriotic stocks and their matches. That is, every month we construct a zero-net-investment portfolio by buying the patriotic stock portfolios and shorting their matches. We then regress the monthly returns of this portfolio on the Fama-French-Carhart risk factors. As before, we do this for two, three and four-year periods before and after 9/2001. These results are reported in the second column of Table 8. Although only the two-year post-9/11 alpha is statistically significant at 5%, there is a clear pattern: Before 9/2001 the “patriotic” stock portfolios performed equally well or worse than the “non-patriotic” stock

portfolios, whereas they performed better after 9/2001.

### **Product market exuberance**

Another possibility as to why patriotic stock portfolios earn positive abnormal returns, is product market exuberance. That is, if during wartime, consumers prefer products of firms that have patriotic names, then our results may simply be driven by product market performance. To see if this is the case, we compare the average growth rates in sales, of patriotic and control portfolios, over the same multiple periods before and after September 2001. Sales is a less noisy and therefore better metric of product market exuberance than (say) earnings, because earnings are a function of operating expenses, which are unrelated to sentiment in the product market. Table 9 shows the differences in sales growth rates. It is clear that there is no significant difference between sales growth rates of firms with “patriotic” names and otherwise similar firms with no “patriotic” names. Thus, the former do not benefit from consumer exuberance and neither should their stock prices.

### **Few large firms**

Our results could also be driven by a small number of large firms. If, for instance, a single large firm with a patriotic sounding name performs well during wartime for some idiosyncratic reason, then this could drive the returns of the entire patriotic stock portfolio. To see whether this is true, we form equally-weighted portfolios of patriotic name stocks before and after September 2001 and estimate model (1). The results are shown in the first column of Table 10. The patriotic name effect persists during wartime while it is absent before September 2001. This means that the driving force is a systematic factor (the patriotic name) and not an idiosyncratic one.

## IPOs

Finally, we eliminate the possibility that the abnormal returns during the War on Terrorism are caused by initial public offering (IPO) underpricing. If during the War on Terrorism a higher proportion of firms going public are firms with patriotic sounding names, then the abnormal returns that the “patriotic” stock portfolios exhibit are not necessarily the result of a name bias. A simple examination of the proportion of patriotic name IPOs over total IPOs however, does not reveal any pattern during wartime.<sup>17</sup> A more formal treatment is to drop from the sample the first-month returns of all IPOs<sup>18</sup> and re-estimate model (1) over multiple periods around September 2001. These results are shown in the second column of Table 10. The *t-statistics* of the intercept remain significant after September 2001 and insignificant before that date.

## Foreign investors

A remark about the effects of foreign holdings is in order. Stocks with patriotic sounding names are also held by foreign investors, especially during the War on Terrorism sample time. Nevertheless, we do not expect foreign investors to be patriotically sensitive to the outbreaks of wars that involve the U.S. In other words, although they may alter their positions in the U.S. market as a response to a war outbreak, they are unlikely to treat stocks with an American patriotic sounding name in a different manner. Thus, their behavior likely biases our results downward: had it not been for foreign investors, the “patriotic name effect” would probably have been stronger.

## 2.5 War on Terrorism cumulative abnormal returns

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<sup>17</sup>We do not report these results here.

<sup>18</sup>IPO abnormal returns are realized during the first few days after an IPO.



We next calculate cumulative abnormal returns (CARs) around September 11, 2001 to examine how the abnormal returns, documented in the Fama-French regressions, evolve over time. We calculate the CARs using control portfolios that match the patriotic sounding name portfolios by industry, size, and book-to-market. We unfortunately cannot follow the same approach for WWII and the Korean War because book-to-market statistics are not available for the time periods covered by these two wars.

For the CAR calculations we construct, every June, a portfolio of stocks with patriotic sounding names and we compare the cumulative returns of this portfolio to the cumulative returns of a control portfolio. The control portfolio is constructed by matching each stock that has a patriotic sounding name with a stock in the same industry (i.e. with a same four-digit SIC), with similar size and book-to-market ratio but no patriotic sounding name. We then calculate the portfolios' daily returns over a time window. We do this using both equally- and value-weighted daily portfolio returns. The CARs are the differences of the patriotic and control portfolios' cumulative returns. In the Appendix, we describe in more detail both the match portfolio calculations and the associated statistical tests.

Table 11 shows the CARs of the value- and equally-weighted patriotic portfolios over several time windows after September 11, 2001. The CARs are positive and economically significant for all time windows and statistically significant over some of these time windows. Those of the equally-weighted portfolios are generally more significant than those of the value-weighted portfolios. In Figure 2, we graph these CARs over time as well as the CARs over a 120-day period preceding 9/11/2001. The CAR of the value-weighted portfolio reaches a peak value of about 52% roughly one and a half years after 9/11/2001 and subsequently declines over the next two and a half years. That is, during years 3 and 4 there is a reversal and the value-weighted patriotic stock portfolio earns negative abnormal returns. The equally-weighted portfolio exhibits no reversal during these four years probably because a mispricing on a larger firm is more easily detectable and thus more likely to be corrected sooner.

These cumulative abnormal returns are consistent with the Fama-French regression results of the zero net investment portfolios. The monthly abnormal returns (alphas) of these portfolios over 24, 36, and 48 months are 1.7%, 1%, and 0.6% respectively (see second column of Table 8). These numbers compound to a 50%, 43%, and 40% cumulative return respectively and they are thus comparable to the value-weighted CARs for those months (52.4%, 45.4% and 32%).

What do the CARs tell us? The main observation is that there is no immediate price reaction of the patriotic-name stocks after the benchmark dates. Nevertheless, there is, over time, an economically significant effect. This is consistent with investors passively and gradually gravitating toward stocks with patriotic sounding names. The investor sentiment at play is likely not strong enough to motivate investors to actively seek and buy such stocks (in which case we would likely observe a more rapid price reaction), but it may well be causing them to buy a stock with a “patriotic” name, when, in the regular process of investing, such an opportunity arises.

### 3 Summary and Conclusion

In this paper we present evidence that investors’ patriotic sentiment can affect stock returns. In particular, using stock market data around and during WWII, the Korean War, and the War On Terrorism, we show that when investors are more likely to be excited about their country, firms with “patriotic” names earn positive abnormal returns. For multi-year periods during these wars, the Carhart alpha of “patriotic” name stock portfolios is positive and significant (statistically and economically). The magnitude of the effect varies with the war that we examine: for some specifications, the monthly abnormal return is as high as 0.8% and significant at a 1% level. Furthermore, these results do not seem to be driven by industry effects, by product market exuberance, by a few large stocks or IPOs. The

cumulative abnormal returns calculated around the September 11, 2001 attacks suggest that at least for the War on Terrorism, the abnormal returns of “patriotic” stocks materialize slowly over the course of a year. This is consistent with a model of investor sentiment whereby investors gradually gravitate toward stocks with patriotic sounding names, rather than actively seeking to buy such stocks.

Thus, to the extent that the particular war periods are associated with stronger patriotic feelings among investors, our results can be interpreted as evidence of a “patriotic name bias”. This also implies that patriotic investor reaction is partly irrational in the sense that if investors were purchasing domestic stocks to support their country’s businesses and economy, they would have no reason to concentrate on stocks with patriotic sounding names.

# Appendix

## 1. Cumulative abnormal returns (matching portfolios)

The day  $t$  abnormal return of “patriotic” stock  $i$  is given by:

$$AR_{it} = R_{it}^p - R_{it}^c,$$

where  $R_{it}^p$  is the daily return of “patriotic stock”  $i$  and  $R_{it}^c$  is the daily return of its match.

The day  $t$  abnormal return for the equally-weighted portfolio is:

$$AR_t^e = \frac{\sum_{i=1}^{N_t} AR_{it}}{N_t},$$

where  $N_t$  is the number of firms with patriotic sounding names in our sample as of day  $t$ .

The day  $t$  abnormal return for the value-weighted portfolio is given by:

$$AR_t^v = \sum_{i=1}^N w_{it} AR_{it},$$

where  $w_{it}$  is the weight that stock  $i$  receives on day  $t$ . For both the patriotic and control portfolios we use weights calculated from the patriotic stock portfolios. That is, the weights are given by:

$$w_{it} = \frac{P_{it}^p n_{it}}{\sum_{i=1}^{N_t} P_{it}^p n_{it}},$$

where  $P_{it}^p$  is the price of “patriotic” stock  $i$  on day  $t$  and  $n_{it}$  is the number of its shares outstanding. Since “patriotic” and control stocks have been matched by size, using the same weights for both portfolios should create only a small error. The CAR over a window of  $x$  days after the event is given by:

$$CAR_{1,x}^j = \sum_{t=1}^x AR_t^j,$$

where  $j = e, v$  depending whether the portfolio is equally- or value-weighted.

## 2. Hypothesis testing

The alternative hypotheses we want test are:

$$H_0 : CAR_{1,x}^j = 0$$

$$H_1 : CAR_{1,x}^j \neq 0$$

The relevant statistic for this test is the ratio of the CAR to its estimated standard deviation:

$$\tau = \frac{CAR_{1,x}^j}{\hat{S}(CAR_{1,x}^j)}.$$

Assuming no serial correlation of daily abnormal returns over a holdout period prior to the benchmark date and also stationarity of daily abnormal return variances after it, the test statistic can be written as:

$$\tau = \frac{CAR_{1,x}^j}{\sqrt{x \hat{\sigma}_{holdout,j}^2}}.$$

The sample variance of daily abnormal returns is calculated using data from a “holdout” period of  $T$  days prior to the benchmark date. Thus, the sample variance is given by:

$$\hat{\sigma}_{holdout,j}^2 = \frac{\sum_{t=-T}^{-1} (AR_t^j - \overline{AR^j})^2}{T - 1}.$$

where:

$$\overline{AR^j} = \frac{\sum_{t=-T}^{-1} AR_t^j}{T}.$$

In our case, the estimation period has a length of more than 30 days ( $T > 30$ ) and the test statistic follows asymptotically a unit normal distribution; that is,  $\tau \sim N(0, 1)$ .

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Table 1: Proxies for patriotism around September 11, 2001. This Table shows the number of articles in the “All English Language News” category of the Nexis database containing one or more instance of the phrases “*American patriotism*” (Panel A) and “*proud of America*” (Panel B) for different time windows around September 11, 2001.

<b>Time window</b>	<b>before 9/2001</b>	<b>after 9/2001</b>	<b>after/before ratio</b>
<b>Panel A</b>			
	<b>“<i>American patriotism</i>”</b>		
10 days	5	95	19.0
30 days	10	235	23.5
90 days	68	443	6.5
180 days	141	715	5.1
1 year	203	1083	5.3
2 years	318	1520	4.8
3 years	423	1949	4.6
4 years	516	2171	4.2
<b>Panel B</b>			
	<b>“<i>proud of America</i>”</b>		
10 days	0	24	–
30 days	0	49	–
90 days	9	102	11.3
180 days	14	143	10.2
1 year	53	232	4.4
2 years	172	377	2.2
3 years	229	710	3.1
4 years	303	816	2.7

Table 2: Company name selection. This Table shows examples of company names that contain the words “American” or “US” but are excluded from our sample and the reason of exclusion.

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<b>Company Name</b>	<b>Reason for exclusion</b>
Mid American Waste Systems Inc.	Name is related to a region within the U.S.
Latin American Casinos Inc.	Name is related to a foreign region
German American Bancorp	Name does not exclusively refer to the U.S.
Toys “R” Us Inc.	“Us” is used here as a pronoun

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Table 3: Summary statistics. This Table shows size and Book-to-Market summary statistics of stock portfolios with patriotic names and of the CRSP universe (numbers in parentheses). For WWII, the Korean War and the War on Terrorism, we report the average number of “patriotic” stocks in our portfolios and size and book-to-market statistics for the duration of the war (During) and a 48-month period immediately before the war (Before). Size statistics are in millions of dollars. Book-to-market statistics for the WWII and the Korean War are not available because Compustat started reporting book value of equity figures in 1962.

	$\bar{n}$	Mean Size	Median Size	Mean B/M	Median B/M
<b>World War II</b>					
Before	47 (719)	90 (42)	11.3 (8.4)	–	–
During	50 (749)	86 (47)	14.5 (11.2)	–	–
<b>Korean War</b>					
Before	51 (881)	109 (62)	19.5 (17.8)	–	–
During	53 (959)	160 (94)	24.3 (24.9)	–	–
<b>War on Terrorism</b>					
Before	140 (6,582)	2,626 (1,928)	82 (121)	0.83 (0.69)	0.60 (0.51)
During	94 (4,970)	2,917 (2,390)	129 (208)	0.80 (0.68)	0.66 (0.52)

Table 4: Results of Fama-French regressions around each of the wars we examine. Every month we form value-weighted portfolios of stocks with patriotic names over a period of two, three and four years before and after the outbreak of each of the wars and up until the end of those wars that last less than four years. We then estimate the four-factor model (1) for each of the time periods and report Carhart's alpha. As benchmark dates we use December 1941 for WWII, June 1950 for the Korean War, August 1964 for the Vietnam War and September 2001 for the War on Terrorism. *t*-statistics are in parentheses. \*, \*\*, and \*\*\* indicate significance at 10%, 5% and 1%, respectively.

<i>World War II</i>		<i>War in Korea</i>		<i>Vietnam War</i>		<i>War on Terrorism</i>	
<b>Periods</b>	$\hat{\alpha}$	<b>Periods</b>	$\hat{\alpha}$	<b>Periods</b>	$\hat{\alpha}$	<b>Periods</b>	$\hat{\alpha}$
Four years before 12/1941	<b>0.001</b> (0.26)	Four years before 6/1950	<b>-0.001</b> (-0.73)	Four years before 8/1964	<b>0.004</b> (1.03)	Four years before 9/2001	<b>0.001</b> (0.23)
Three years before 12/1941	<b>0.003</b> (1.13)	Three years before 6/1950	<b>0.001</b> (0.63)	Three years before 8/1964	<b>0.004</b> (0.94)	Three years before 9/2001	<b>0.005</b> (0.61)
Two years before 12/1941	<b>0.002</b> (0.53)	Two years before 6/1950	<b>-0.001</b> (-0.41)	Two years before 8/1964	<b>0.004</b> (0.58)	Two years before 9/2001	<b>0.007</b> (0.67)
Two years after 12/1941	<b>-0.001</b> (-0.18)	Two years after 6/1950	<b>0.001</b> (0.94)	Two years after 8/1964	<b>-0.008</b> (-2.22)	Two years after 9/2001	<b>0.010</b> (2.73)***
Three years after 12/1941	<b>-0.001</b> (-0.27)	Three years after 6/1950	<b>0.002</b> (1.51)	Three years after 8/1964	<b>-0.004</b> (-0.96)	Three years after 9/2001	<b>0.008</b> (2.61)**
End of War (August 1945)	<b>0.001</b> (0.16)	End of War (July 1953)	<b>0.002</b> (1.66)	N/A	N/A	N/A	N/A
Four years after 12/1941	<b>0.000</b> (0.10)	Four years after 6/1950	<b>0.002</b> (2.05)**	Four years after 8/1964	<b>-0.003</b> (-0.81)	Four years after 9/2001	<b>0.006</b> (2.13)**

Table 5: Vietnam War alphas. This Table shows estimated intercepts (alphas) and *t-statistics* from Fama-French regressions during multiple four-year periods during the Vietnam War. Every month we form value-weighted portfolios of stocks with “patriotic” names, we estimate the four-factor model (1) for each of the four-year time periods and report Carhart’s alpha. Because the exact date of the beginning of the Vietnam War is disputed or unclear, we provide for the purpose of comparison several key dates along with a short description of the events that occurred on these dates (source: Wikipedia).

<b>Time Period</b>	$\hat{\alpha}$	<b>t-statistic</b>	<b>Time Period</b>	$\hat{\alpha}$	<b>t-statistic</b>
1950-53	0.001	0.81	1963-66	-0.001	-0.44
1951-54	0.001	1.52	1964-67	-0.004	-1.09
1952-55	0.001	0.62	1965-68	-0.001	-0.24
1953-56	0.001	0.63	1966-69	0.001	0.31
1954-57	0.001	0.38	1967-70	-0.001	-0.44
1955-58	0.005	1.55	1968-71	-0.001	-0.27
1956-59	0.005	1.41	1969-72	-0.001	-0.23
1957-60	0.008	2.11	1970-73	-0.002	-0.82
1958-61	0.008	1.80	1971-74	0.002	0.69
1959-62	0.006	1.30	1972-75	0.002	0.71
1960-63	0.008	1.66	1973-76	0.003	1.00
1961-64	0.001	0.27	1974-77	0.004	1.43
1962-65	0.000	-0.05	1975-78	0.002	0.71

<b>Date</b>	<b>Event</b>
09/27/1950	The U.S. establishes the Military Assistance Advisory Group (MAAG) Indochina in Saigon, to aid the French military.
11/01/1955	The US redesignates MAAG Indochina, as MAAG Vietnam to specify its new direct combat advisory role with the South Vietnamese Army. The Department of Defense views this date as the earliest qualifying date for inclusion on the Vietnam Veterans Memorial.
03/1959	Ho Chi Minh declares a people’s war to unite all of Vietnam under his leadership. His Politburo orders a changeover to an all-out military struggle. From the communist perspective, the “Vietnam War” against the US has now officially started.
12/11/1961	The aircraft carrier USS Core arrives in Saigon with 33 helicopters and 400 air and ground crewmen assigned to operate them for the South Vietnamese Army. Also, US pilots start to train and fly support missions with the South Vietnamese Air Force. This marks the first larger scale participation of US advisors.
08/07/1964	In response to the incidents involving the US naval vessels USS Maddox and USS Turner Joy, the US Congress overwhelmingly passes the “Gulf of Tonkin Resolution” allowing the president “to take all necessary steps, including the use of armed force” to prevent further attacks against US forces.
03/08/1965	The first US combat troops arrive in Vietnam as 3,500 marines land at China Beach to defend the American air base at Da Nang. They join 23,000 military advisors already in Vietnam. The arrival of combat troops is considered by some the start of the war although American military advisors have been in Vietnam for over 10 years.

Table 6: Results of Fama-French regressions during World War II, excluding the first six months of the war. Starting in June 1942 (month of Midway battle), we form every month value-weighted portfolios of stocks with patriotic names over periods of two, three and four years and until the end of the war (August 1945). We then estimate the four-factor model (1) for each of the time periods and report Carhart's alpha. *t-statistics* are in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5% and 1% levels respectively.

<b>Periods</b>	$\hat{\alpha}$
Two years after 6/1942	<b>0.006</b> <b>(2.31)**</b>
Three years after 6/1942	<b>0.004</b> <b>(1.85)*</b>
End of War (August 1945)	<b>0.005</b> <b>(2.30)**</b>
Four years after 6/1942	<b>0.005</b> <b>(2.42)**</b>

Table 7: Results of Fama-French regressions during combined four-year periods before and during WWII, the Korean War and the War on Terrorism. Every month of these periods, we form value-weighted portfolios of stocks with patriotic names. We then estimate the four-factor model (1). For WWII we exclude the six-month period between the attack on Pearl Harbor and the Midway battle. *t-statistics* are in parentheses. \*, \*\* and \*\*\* indicate significance at 10%, 5% and 1%, respectively.

<b>Periods</b>	$\hat{\alpha}$
Four years before beginning of wars	<b>0.000</b> <b>(0.06)</b>
Four years after beginning of wars, 12/1941-6/1942 period <b>excluded</b>	<b>0.005</b> <b>(3.45)***</b>

Table 8: Robustness tests. This Table shows results of Fama-French regressions of a *control sample* (first column) and a *zero-net-investment (ZNI)* portfolio (second column) during and before the War on Terrorism. We construct a control sample every month by matching patriotic name stocks with stocks in the same industry and with similar size and book to market characteristics but with no patriotic name. We then use the value-weighted returns of this portfolio to estimate model (1). The ZNI portfolio is also constructed every month by buying the patriotic stock portfolio and selling the control portfolio. The returns of the ZNI portfolio are then used to estimate model (1). *t-statistics* are in parentheses. \*, \*\* and \*\*\* indicate significance at the 10%, 5%, and 1% levels respectively.

Periods	$\hat{\alpha}$ <i>(control sample)</i>	$\hat{\alpha}$ <i>(ZNI portfolio)</i>
Four years before 9/2001	<b>0.001</b> <b>(0.26)</b>	<b>-0.009</b> <b>(-1.12)</b>
Three years before 9/2001	<b>0.005</b> <b>(0.74)</b>	<b>-0.014</b> <b>(-1.35)</b>
Two years before 9/2001	<b>0.007</b> <b>(0.81)</b>	<b>-0.003</b> <b>(-0.21)</b>
Two years after 9/2001	<b>-0.006</b> <b>(-0.87)</b>	<b>0.017</b> <b>(2.35)**</b>
Three years after 9/2001	<b>-0.001</b> <b>(-0.25)</b>	<b>0.010</b> <b>(1.58)</b>
Four years after 9/2001	<b>-0.001</b> <b>(-0.22)</b>	<b>0.006</b> <b>(1.42)</b>



Table 9: Sales growth of “patriotic” and control stock portfolios. Every year we construct a portfolio of stocks with patriotic names over a two-, three- and four-year period before and after September 2001. We also construct a control portfolio containing stocks that don’t have “patriotic” names, but are in the same industry and have similar size and book to market as the “patriotic” name stocks. We then average the differences of sales growth rates between patriotic and control stocks every quarter of the multi-year periods. *t-statistics* of the pairwise mean comparison are in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5% and 1% levels respectively.

<b>Periods</b>	<b>Mean difference in sales growth</b>	<b>Periods</b>	<b>Mean difference in sales growth</b>
Two years before 9/2001	0.030 (0.710)	Two years after 9/2001	-0.001 (-0.055)
Three years before 9/2001	0.012 (0.408)	Three years after 9/2001	-0.001 (-0.082)
Four years before 9/2001	0.011 (0.486)	Four years after 9/2001	-0.003 (-0.222)

Table 10: Equally-weighted portfolios and IPO exclusion. This Table shows results of Fama-French regressions during and before the War on Terrorism. The first column shows Carhart's alphas of equally weighted portfolios of stocks with patriotic names. The second column, shows the alphas of value-weighted portfolios where the first months of all IPOs have been excluded. *t-statistics* are in parentheses. \*, \*\*, and \*\*\* indicate significance at the 10%, 5% and 1% levels respectively.

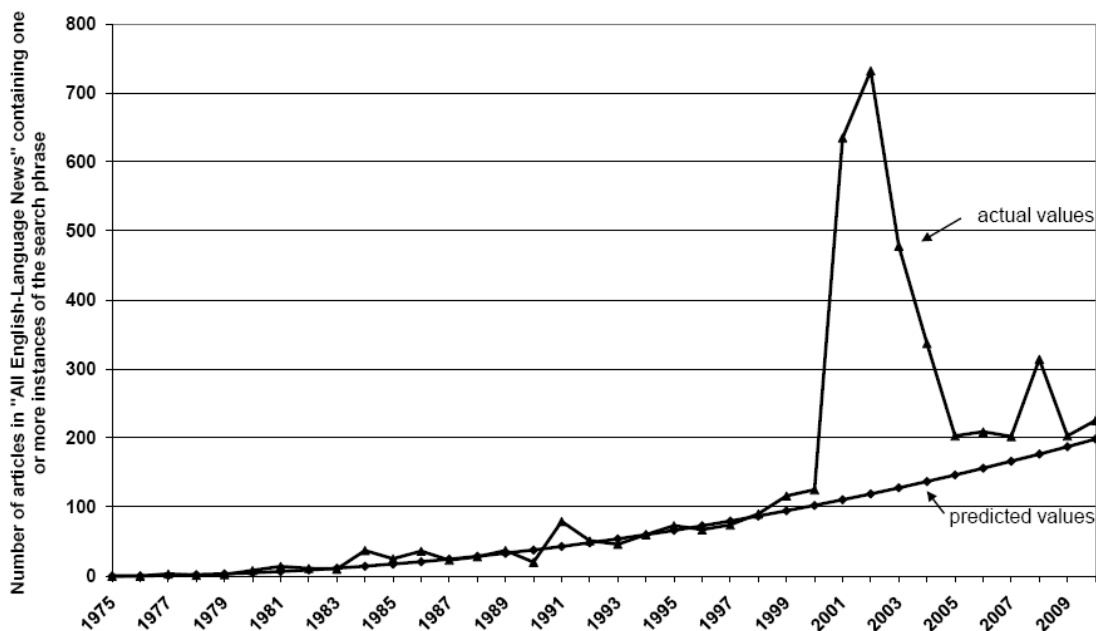
<b>Periods</b>	$\hat{\alpha}$ , <i>equally weighted</i>	$\hat{\alpha}$ , <i>value weighted</i> ( <i>no IPO months</i> )
Four years before 9/2001	<b>0.004</b> <b>(0.53)</b>	<b>0.001</b> <b>(0.22)</b>
Three years before 9/2001	<b>0.003</b> <b>(0.41)</b>	<b>0.005</b> <b>(0.59)</b>
Two years before 9/2001	<b>0.004</b> <b>(0.41)</b>	<b>0.007</b> <b>(0.66)</b>
Two years after 9/2001	<b>0.008</b> <b>(2.05)**</b>	<b>0.010</b> <b>(2.73)***</b>
Three years after 9/2001	<b>0.008</b> <b>(2.63)**</b>	<b>0.008</b> <b>(2.61)**</b>
Four years after 9/2001	<b>0.008</b> <b>(3.02)***</b>	<b>0.006</b> <b>(2.16)**</b>

Table 11: Cumulative abnormal returns (CARs) of value and equally weighted portfolios, consisting of stocks with patriotic names over different time windows after September 11, 2001 ( $t = 0$ ). The CARs are calculated over control portfolios that have been constructed by matching each patriotic stock with one that does not have a patriotic name but is in the same industry and has similar size and book to market. The patriotic and control portfolios are constructed every June, starting with June 2001. *t-statistics* are in parentheses; *t-statistics* that are significant at ten percent are bold. \*, \*\* and \*\*\* indicate significance at 10%, 5% and 1%, respectively.

Time windows (trading days)	Cumulative Abnormal Returns, War on Terrorism	
	Value-weighted portfolios	Equally weighted portfolios
+1 to +30	2.9% (0.41)	9.9% <b>(3.09)***</b>
+1 to +60	7.3% (0.72)	7.5% <b>(1.83)*</b>
+1 to +120	20.3% (1.42)	11.9% <b>(2.05)**</b>
+1 to +250	45.4% <b>(2.19)**</b>	27% <b>(3.22)***</b>
+ 1 to + 500	52.4% <b>(1.79)*</b>	26% <b>(2.20)**</b>
+1 to + 750	45.4% (1.27)	34.6% <b>(2.39)**</b>
+1 to +1,000	32% (0.77)	35.8% <b>(2.14)**</b>

Figure 1: Actual and predicted number of English language news articles in the Nexis database containing the phrases “American patriotism” and “proud of America”, 1975-2009. We fit a quadratic trendline for the 1975-2001 period and use this trendline to predict article frequencies in the 2001-2009 period. The number of articles containing the phrase “proud of America” in year 2008 is 870. Examination of the articles revealed that this outlier is due to reporting on the presidential election campaign.

(a) “American Patriotism”



(b) “Proud of America”

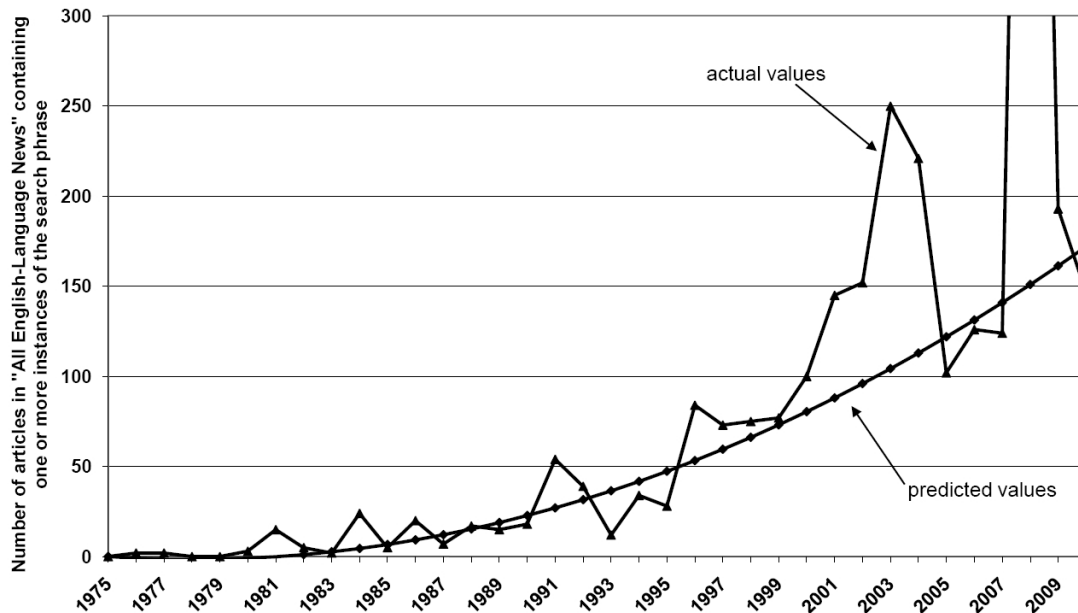


Figure 2: Cumulative abnormal returns of value and equally-weighted zero investment portfolios before and after 9/11/2001 (CARs are reset to zero on day zero).

