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The fury of Donald Trump was unleashed earlier this month during his UN speech addressing the tensions in North Korea. He vowed to “totally destroy North Korea”, because “rocket man is on a suicide mission”; addressing North Korean dictator Kim Jong Un as the “rocket man”.

History

What triggered this furious speech? The tensions between the two Koreas started over half a century ago after the Second World War and the pre-Cold War era due to varying political ideologies; with North Korea favouring communism and South Korea favouring capitalism and democracy. The Korean War preceded the immense political and ideological tensions between the two Koreas and the two sides fought to a stalemate in 1953. The war ended with an armistice between the two nations which erected the 4-kilometer demilitarized buffer zone between their borders. Since the end of the Korean War, the two Koreas shared a tumultuous relationship as their differing ideologies and beliefs pushed them further away from each other.

Figure 1: “The small orange circle in each map represents the fireball radius, the large orange circle is the thermal radiation radius, where humans would suffer third-degree burns, the green circle is the radiation radius where humans would be subjected to 500 rem of radiation, killing them within hours or weeks” (“North Korea's nuclear arsenal”, 2017). Source: Globe and Mail
For the past year, the relationship between the two Koreas grew sour again. Earlier this year, North Korea began launching missile tests which demonstrated incredible advancements in their nuclear program. To make matters worse, North Korea launched a few missiles over Japan earlier this year for “testing” purposes. In fact, their most recent alleged hydrogen bomb test was estimated to be as powerful as 50 kilotons of TNT which is 100 times more powerful than the power of their last detonation in 2007. ("North Korea's nuclear arsenal”, 2017). Figure 1 illustrates the difference between the potential damage North Korea’s 2006 detonation and their most recent detonation.

The West are currently working with South Korea, Japan, Russia and China in an attempt to de-escalate these tensions. Economic sanctions have been imposed by the UN which includes a cap on crude oil inputs, banning textile imports, and inspecting ships. The US is currently pressuring China to stop trading non-banned goods such as food and daily necessities to North Korea and even threatened to stop trading with China entirely. South Korea and the US have been continuously training and marching their troops near the demilitarized zone to flex their military muscles. Here is a Bloomberg timeline of the North Korean tensions since 2017:

![A Year of Escalating Tensions Over North Korea](image)

**Figure 2:** Brief 2017 timeline of the tensions revolving around North Korea.  
*Source: Bloomberg*
Effects on the Market

With the mounting tensions on the Korean peninsula and no end in sight, it is becoming more and more important to understand the effects of war on financial markets. This can be examined by analyzing data on the financial markets during wars and crises in the past century. Prior to the beginning of a war or conflict, there is usually a period of mounting tensions. During this period, uncertainty tends to be extremely high which causes volatility in the equity markets. The equities tend to plummet during this period of time.

However, once the uncertainty gets resolved and/or war is declared, the stock market tends to rally to higher highs. According to Mark Hulbert, a well-known financial analyst, and journalist, within the past 4 decades, this trend seems to be true. According to his recent article, “War is Hell - but Not for the Stock Market”, he observed that based on the US invasion of Grenada, US invasion of Panama, the first Gulf War, US Bombing of Kosovo, Second Gulf War, and the US Bombing of Libya; the Dow fell 0.6 percentage points on average over the month prior to the war (or about 1.4 percentage points lower than the average of all months since 1983) but this reversed after the US entered the military conflict (Dow soared to an average 4% or 3.2 percentage points greater than the average of all months since 1983 and continued for months afterwards) (Hulbert, 2017). Figure 3 illustrates the growth of the Dow before and after the start of the 7 conflicts listed above.

![Figure 3](Image)

*Figure 3: The time based chart of the average percentage point change of the Dow during the seven conflicts versus the average of all months since 1983. Source: Barron’s*
Furthermore, the trend of equities prevailing during war and crises can also be extended back to the First World War with the exception of the Vietnam War (Figure 4) which experienced slower growth relative to other wars. Another interesting observation from Figure 4 is the decline in the performance of bonds. Often times, during an event of high uncertainty, many investors flock to the bond market since it tends to be more stable. However, during wartime and times of a major crisis, government expenditure rises and governments tend to borrow more money, which drives up inflation (observed in Figure 4). A higher inflation rate means that the bond’s yields are worth less since their respective currencies are inflated which forces interest rates to increase. However, the behavior of bonds prove to be an ineffective hedge against inflation since the value of all their future cash flows are worth less while the opportunity cost of holding bonds increase due to overperforming equities. A CFA Institute chart created by a prolific hedge fund manager Mark Armbruster illustrates the trends observed during the major wars.

![Capital Market Performance During Times of War](image)

**Figure 4**: Performance of the capital markets during wartime vs the average performance from 1926-2013. *Source: CFA Institute*

However, it is important to take historical trends with a grain of salt. Yes, history does tend to repeat itself, but there are numerous factors that must be considered such as GDP, earnings reports, valuation of companies, interest rates, inflation rates, and other macro and
microeconomic factors. For example, during the Gulf War, the drop in stock prices coincided with a recession which propelled the bullish behaviour of the equities market (S&P 500 dropped 19.9% in the months following the start of the war) which did not follow the general trend observed from Barrons and the CFA Institute (Carlson, 2017). The attack on the Twin Towers on September 11, 2001, observed a very different behaviour due to the macroeconomic conditions of the US markets (being in the midst of another recession after the technology bubble) (Carlson, 2017) which caused equities to continue to fall even after the war on terror was underway.

**Investment Opportunities**

Despite the tumultuous conditions on the Korean peninsula, there are numerous investment opportunities worth looking into for different types of investors. From a macroeconomic perspective, assuming that the trend observed from above holds, there are many opportunities in the equities market. Since war and conflicts tend to bolster equities in general while affecting the equity market of the losing side adversely (ex. German economy after the First and Second World Wars), diversifying in various market tracking ETFs in different global markets provides a safer way of taking advantage of the growth in equities. Holding ETFs that track the US markets would be a riskier method of diversification but it still has a high probability of quality performance during wartimes.

For a more savvy investor, looking into Aerospace and Defense Sector ETFs or portfolios such as the iShares US Aerospace and Defense ETF (BATS: ITA), the SPDR S&P Aerospace & Defense ETF (NYSEARCA: XAR) or the PowerShares Aerospace & Defense portfolio (NYSEARCA: PPA) would be an excellent idea. These ETFs have performed extremely well during times of war and uncertainty since the nature of this industry revolves around creating or contributing to the creation of tools, weapons, infrastructure, and vehicles for warfare. With the election of Trump and the escalation of the North Korea situation, these ETFs were in an uptrend for the past 11 months as illustrated in *Figure 5 - 7*. 

“A higher inflation rate means that the intrinsic value of the bonds decreases which explains the historical observation of bond returns being negatively correlated with inflation rates.”
Figure 5: The ITA skyrocketed by 26.22% since January 2, 2017. 

Source: Tradingview

Figure 6: The XAR experienced a tremendous growth of 25.5% since January 2, 2017. 

Source: Tradingview

Figure 7: The PPA surged over 22% since January 2, 2017. 

Source: Tradingview
Intuitively, the stocks of companies who produce products that are needed in war tend to do well due to heightened demand. By breaking down the Aerospace and Defense sector, many stocks such as Boeing (NYSE: BA), Lockheed Martin (NYSE: LMT), Rockwell Collins (NYSE: COL), Northrop Grumman (NYSE: NOC), General Dynamics (NYSE: GD) and United Technologies Corporation (NYSE: UTX) may prove to be some great buys.

For opportunistic Forex traders, the Japanese Yen is considered to be a safe haven currency despite the fact that North Korean missiles literally flew over the country a few weeks ago. Historically, the Yen always fared well during times of crises and uncertainty; including domestic uncertainty. This seems counterintuitive but Japan’s economic position puts them in a unique position of the world’s largest net creditor and also the world’s most indebted nation. Luckily for the Japanese, the public carries most of the debt, leaving the people with plenty of money to spare (Kerkhoff, 2017). In addition, Japan also has a negative interest rate of -0.1% which makes foreign investment really attractive to a Japanese investor. Therefore, during times of crises or war, an enormous amount of foreign Japanese cash usually gets converted back into the Yen which enables the Yen to surge every time a crisis or a period of uncertainty appears, creating a safe haven similar to the Swiss franc.

An extremely ambitious idea from a FOREX trading perspective would be to take on short positions in the currencies of nations that are negatively affected by the war (often times the losing side and their allies). Intuitively, since the loss of life, the destruction of infrastructure (which results in a lagging GDP and output potential), and political uncertainty is inevitable for any losing nation during a war, the inflation rate is expected to increase. These factors combined contributes to the overall devaluation of the nation’s currency. For example, after the Germans lost the First World War, they endured a period of hyperinflation which was forced by the Treaty of Versailles, war reparations, and their ruined domestic economy. Similarly, after the Second World War, the Reichsmark (German currency at the time) became so devalued that cigarettes and alcohol were seen as a better medium of exchange and store of value, leading to the end of the Reichsmark. This trend also occurred during times where the value of currency was based off of its silver, gold, or bronze content. For example, during the fall of Rome, the Romans were forced to continuously pay for constant warfare against barbarian tribes. As a result of slowly losing in all fronts, the Roman denarii (based in silver) declined drastically over the years. In figure 7, it is evident that the silver content in the denarii (it’s source of value) decreased drastically during the third century AD. Interestingly, during the span of time from 235 - 284 AD, war, political uncertainty (there
were 30 emperors during this time period) and the loss of territory coincided the rapidly diminishing value of the denarii (Desjardins, 2016).

Figure 7: The decline of the silver content in the denarii accelerated in the third century AD after years of warfare, political instability and the loss of territory.

Often times, commodities that exhibit a surge in demand or a decrease in supply during a crisis provides a decent short-term investment opportunity. For example, during the Iraq and Iran crisis, oil prices grew by 150% from $14/barrel to $25/barrel from 1978 to 1980 due to the disruptions to the oil supply (Sjuggerud, 2003). However, commodities are a wildcard for investment opportunities since the war or crisis must directly affect their supply and/or demand to an extent such that prices of the commodity adjust. Given the supply glut of many commodities like copper and iron, it is much harder to forecast which commodity would do well during a time of crisis.

With no end in sight for the North Korea situation, the financial markets are highly unpredictable at this point in time. However, with a large array of investment opportunities, there are plenty of ways to capitalize on this situation. Investors should pay special attention to the development of the situation as it will prove pivotal in deciding how one should allocate their resources for their financial goals.
Financial Whirlwind

By Kwadwo Obeng-Arhin

In light of hurricanes Irma and Harvey that have devastated the Southern regions of the United States this past month, we will take a look to see the effects of natural disasters on the stock market. We will provide historical context for these events and determine if attractive investment opportunities or forewarnings of caution are presented.

What Typically Happens

Currently, it seems like the market shrugged off the hurricane’s damages completely as the S&P 500 closed positively for four consecutive days during the week of Hurricane Harvey. This is not unusual at all. Following Hurricane Katrina, which was the costliest natural disaster in the history of the United States, the S&P went on an eight-day, 3% rally and ended up 6% higher by the end of the year (Maierhofer, 2011). Despite this, Goldman Sachs has predicted a large, negative short-term effect on GDP growth especially in the areas of consumption, inventories, housing, and energy. The reason for this as stated by Spencer Hill, an economist at Goldman Sachs, is “the huge property losses and relatively broad-based societal footprints of Hurricanes Harvey and Irma” reducing near-term economic output (Ciolli, 2017).

Oil

The most obvious effect of Hurricane Harvey from a financial markets standpoint has been the rise in oil prices in both the U.S and Canada due to a concern of limited supply. However, these fluctuations are temporary and will likely only have a nominal effect on any of the financial statements of any related oil companies based on precedent with previous natural disasters. With the help of reserves for situations such as this, companies are not expected to see a large or sustained increase in their oil expenses.

Insurance

Insurance companies are one the most affected sectors during times like these. After the wrath of Hurricane Katrina, insurance companies such as Allstate, Progressive, and Chubb rallied for the following three months. CNBC reported, “Allstate shares gained 10 percent in the three months after Katrina, Progressive's stock jumped 20 percent, and Chubb shares vaulted 27 percent” (Gurdus, 2017).

This is because the insurers were found mostly not liable for the damages from Katrina associated with the levees breaking and they were able to sharply increase the prices of their coverage. Conversely, with Harvey, the SPD S&P Insurance ETF (NYSEArca: KIE) dropped over 5% from September 1st to the 7th but recovered all of its losses by the 12th. The overstated repair costs during the hurricane have been shown to scare investors, which cause an initial dip in these companies but are soon
reversed as the hurricane settles down. Since more accurate, typically lower estimates of repair costs come in weeks after the fact, insurance stocks remain a predictable way to profit from these terrible situations (Figure 1) (Google).

In general, natural disasters often encourage fiscal/monetary policy that focuses on economic growth. For example, after Hurricane Katrina, the United States pondered the idea of ending of its trend of rising interest rates. Seeing as how interest rates are already on their way up, this does not seem like a significant factor in our already dovish economies (Winans, 2017). However, Forbes.com mentions that hurricanes do reduce short-term economic output but have the effect of increasing long-term economic growth because of reconstruction efforts. We have seen this after Hurricane Andrew where stocks gained 10.8% over

Figure 1: Allstate dropping but recovering from a 4% loss rather quickly after Harvey. Source: Bloomberg

Figure 2: Home Depot shows steady increases with no abnormal jumps after a natural disaster. Source: InvestorPlace
a year but were down 0.2% after a month, and also gained 5.8% in the year after Katrina.

**Home Improvement**

Savvy trend speculators might flock to home improvement stores such as Home Depot Inc. (NYSE: HD) and Lowe’s Companies, Inc. (NYSE: LOW) assuming they will achieve an increased demand to aid in the repair of homes. Historically, this is a misconception as there is no discernible increase in the top or bottom-line values of the company after natural disasters (Figure 2) (Brumley, 2017).

This is partly because of the large amount of aid these types of companies send to affected areas, the amount of damage they face themselves, and reduced revenue from closed storefronts. Buying Home Depot stocks every time a disaster occurs is similar to buying electronic stocks near holiday time; the efficient market hypothesis insinuates that the potential change in their income statements are built into the price and this will likely not result in a fruitful endeavor. Here at FARMSA, we propose that Home Depot may not actually experience a change in value, there is some opportunity in speculating the price of these type of stocks. Both Home Depot and Lowe’s stock price have increased around 6% in the last month in what seems to be a hurricane-inspired rally. What remains to be seen is how investors react to the next quarterly results if they only show modest growth.

**Lesser Known Opportunities**

There are smaller stocks whose value are significantly and directly affected by hurricanes. For example, Beacon Roofing Supply Inc. (NYSE: BECN) is North America’s largest publicly trading roof distributor. They are bound to see a significant increase in demand without having the expectations of sending a large amount of aid to affected areas, the risk of substantial damage to brick-and-mortar stores, and reduced revenue from closed storefronts. Beacon Roofing Supply Inc.’s stock price has increased by over 20% since August 23rd. Jim Cramer from CNBC also recommends Martin Marietta Materials Inc. (NYSE: MLM) and Owens Corning (NYSE: OC) for similar reasons.

In short, hurricanes do not have a large effect on the market. Hurricanes often occur when the season's change which implies that running to “storm-stocks” hurricane season is akin to investing in “summer-stocks” during the summer season; most of the value to be gained has been priced in. Furthermore, a lot of these companies donate money as part of their corporate social responsibility and face damage and opportunity costs themselves. However, there are a couple of opportunities in buying insurance and home improvement stocks as investors struggle to gauge the financial impact of disasters on these companies.
The End of the Interest Rate Hike?

By Cindy Luo

Canadians and investors were taken by surprise when the Bank of Canada unexpectedly raised its overnight rate for the second time in 2017. September’s increase from 0.5 to 0.75 percent came shortly after an initial hike in July - making this the first time in nearly seven years that the Central Bank raised borrowing costs for Canadians. This major shift in interest rates signals the tremendous growth that Canada has undergone to become increasingly self-sufficient and economically stable. Core economic indicators such as the GDP, inflation rate, and foreign investment also gave the Bank reasons to drive up the rate, not once, but twice. This raises a potential question Canadians should be thinking: Is this the end of the interest rate hike?

Economic Theory

Under what circumstances should the Bank of Canada (BoC) adjust the overnight interest rate? Like other central banks around the world, the BoC regulates interest rates based on the status of the economy. In general, if the economy is weak, the interest rate will be low. Conversely, if the economy is strong, the interest rate will be high. Lowering interest rates is a proven tactic to stimulate economic activity. By making it cheaper for firms and consumers to borrow money, low rates help bring in large amounts of foreign and domestic

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“Lowering interest rates is a proven tactic to stimulate economic activity”

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Graph 1: This graph shows the Historical Interest Rates in Canada over the last 10 years, from 2008-2017. This year marks the first time the Bank of Canada has raised interest rates since September 2010. Source: Trading Economics
investments into different facets of the economy such as the real-estate and stock market. However, keeping the base rate too low also proves to be risky, as this may lead to an economic bubble that is bound to collapse from speculation and uncertainty. Ultimately, the Bank of Canada must find the fine line between high and low to represent national interests while promoting economic growth.

**Historical Patterns**

Looking at the historical data in Graph 1, it is evident that interest rates 10 years ago were more than 4 times the rate today - even with the recent raises. Starting from 2007, the Bank of Canada vigorously slashed interest rates to reflect the grim economic situation which resulted from the 2008 economic recession. These extreme measures taken by the Bank were merely to offset the repercussions of a strained economy, and to spur consumer spending at a time of great financial instability. Fortunately, sectors such as retail spending bounced back immediately after low borrowing costs gave Canadian consumers the confidence to spend again. Ever since then, consumer expenditures have surged nearly 23.5 percent, from 860,000 million in 2008 to 1,061,000 million today (Trading Economics, 2017). In the next five years following the recession, the Bank of Canada was able to maintain a steady rate of about 1 percent. That is, until 2015 when the Bank dropped the rate again due to the collapse of oil prices and the weakening of the dollar.

![Graph 2: This graph shows the GDP year-over-year growth from 2011 to 2017. This year, Canada’s GDP growth is skyrocketing and exceeding all expectations. Source: Bloomberg News](image-url)
Reasons for the Hike

Today, it seems that Canada has finally shaken off the repercussions from the 2008 and 2015 financial crises. Recent statistical data shows that the Canadian economy is back on track with strong economic growth at an accelerated rate. In the second quarter of 2017, the GDP (Gross Domestic Product) was expanding at an annualized rate of 4.5 percent, far above the 3.7 percent that economists had originally forecasted. (Alini, 2017) This recent surge in economic progress makes it one of the strongest growth spurts Canada has experienced in more than a decade. Such figures seem to shatter even the BoC's expectations. This can explain its immediate decision to raise the rate again in September, just two months after the initial GDP figures were released. Such course of action contradicts the Bank's skeptical view of the economy earlier in the year when they insisted that an interest-rate cut was possible.

Perhaps another reason for the interest rates hikes is that the Bank of Canada is worried about inflation making a comeback in the economy. Historically speaking, hiking interest rates is a macroeconomic strategy for fighting inflation, which diminishes people’s savings and reduces their spending power (Tencer, 2017). Currently, Canada has a relatively low inflation rate, at just 1.4 percent in August compared to the BoC's 2 percent inflation target. That said, this rate is expected to rise in the coming months due to a stronger job growth and an increase in consumer expenditures. Figures show that the unemployment rate, at 6.5% in June, has fallen to well-below its 10-year pre-recession average level (RBC, 2017). The accelerated economic growth in conjunction with low interest rates and a high GDP allows for more consumers to borrow money at minimal costs with little risk. Altogether, these factors make room for inflation to increase and thrive, prompting the recent interest rate hikes.

Ever since the Bank of Canada introduced low interest rates starting from the later months of 2008, Canada’s real estate market has skyrocketed. In a matter of a decade, housing prices are up by an average of 56 percent. As a result, these over inflated prices have thus created a bubble of speculation in Canada. According to Statistics Canada, construction and real estate activities account for 15.5 percent of the nation’s GDP. This means that a burst of the housing bubble could spiral the Canadian economy deep into a recession. Stefane Marion, Chief Economist at the National Bank of Canada, compared the current housing trend in Canada to that of the U.S. before its recession. “This record proportion is very similar to that observed in the United States in 2005 at the peak of the market. When 55% of the market is on fire, the use of interest rates to cool them down is justifiable.” (Richter, 2017) Therefore, the BoC’s intended effect of raising rates might also be to curb speculation and release tension from the current housing bubble.

“This recent surge in economic progress makes it one of the strongest growth spurts Canada has experienced in more than a decade.”
Now that the motives behind the interest rate hike are clear, what does this mean for the average Canadian consumer? By raising the key rate, the Bank of Canada essentially sets the standard for all national banks to follow. This means that big Canadian banks will likely raise their prime rates too, driving up the cost of variable rate mortgages and other lines of credit already tied to the benchmark rate (Alini, 2017). At the end of the day, it is the borrowers - the average citizens - who take the biggest hit from these recent hikes. This move by the BoC left many Canadians fearful for what is to come. Will we be expecting another interest rate raise soon?


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North Korea's nuclear arsenal: What's happened so far, and what could happen next. (2017,


Our Chief Editors

Danny is a second-year student in the Math/Financial Analysis and Risk Management - CFA specialization program at the University of Waterloo. His love for writing, financial markets, social sciences, and his desire to learn more about the world of finance led him to this role. Danny is particularly interested in crypto currencies, financial derivatives, and statistics.

Outside of class and the library, Danny loves reading finance textbooks, financial news, and books on psychology, biology, anthropology, neuroscience, and history. He is also an extremely outdoorsy person and loves to bike, run, fish, hike, and free-dive when weather and work allows him to. Danny is currently training for his first Olympic distance triathlon and can be often found in the pool.

Kwadwo is a second-year student studying statistics and finance at University of Waterloo and Wilfrid Laurier University. He is hoping to combine his love for statistics, analytics, and capital markets in post-graduate studies. Kwadwo’s passion for efficiency and logistics has also currently led him to the role of Internal Analyst in the University of Waterloo’s Finance Association.

When he is not in class, Kwadwo loves to find new investing opportunities based on intrinsic value and read the financial reports of companies he understands. In the same way he likes to find undervalued stocks, he approaches fantasy football. He is an avid fantasy football player, football statistics aficionado, and public speaking enthusiast.
Our Editors

Cindy is a second-year student studying Financial Analysis & Risk Management. She has been a member of FARMSA for three terms now and spent her last semester as VP Finance. Cindy hopes to better understand the financial market so she can share this knowledge with her peers.

In her spare time, Cindy likes to watercolour, rock-climb, and watch Friends. She is passionate about entrepreneurship, the environment, and global development. Cindy nurtures these passions by being active on campus and always being open to new opportunities.

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Sofia is a second-year Mathematics and Business administration double degree student. She is new to the FARMSA market research team this term. Her interest in financial markets and her experience in designing promotional posters led her into the role of market research analyst & newsletter designer. She desires to share her passion for finance with other members.

Sofia develops the habit of constantly following the finance-related news through internet and newspaper after participating a few times in stock-trading competitions. Her other hobbies include running, playing piano, swimming, skiing, and hiking.