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The Impact of a Crisis or Disaster on Corporate Organisations in the Digital Era

A dissertation submitted in partial fulfilment of the requirements of the Royal Docks School of Business and Law, University of East London for the degree of **Master of Science (International Business Management)**

June 2020

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THE IMPACT OF A CRISIS OR DISASTER ON CORPORATE ORGANISATIONS IN THE DIGITAL ERA

A Better Management of Crises and Disasters

MK 7227

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MSc. International Business Management July, 2020

Abstract

Crises, disasters, accidents, catastrophes, and emergencies are part of experiences of life, and overcoming and managing the negative effects of such occurrences are important to overall human development. Businesses, irrespective of size, sector and the environment they operate in, are faced with potential risks of serious incidents or occurrences that may develop in the process of carrying out their day-to-day operations.

Continued success in today's business environment can only be assured when organisations develop strategies to prevent and mitigate against potential crisis or disaster and avoid or cope with the reputational damage that may result from its improper handling.

A 2013 study by the international law firm, Freshfields Bruckhaus Deringer on Crisis Management outlined four major areas where a crisis may develop, as operational, behavioural, corporate, and informational. Business organisations must therefore develop strategies to adequately prevent or tackle the different types of crisis to ensure business continuity and maintain their competitive advantage in the global market.

This paper examines and discusses the current approaches to crisis and disaster prevention and management by internationally listed business corporations. The negative impact of any disaster or crisis on the overall business performance of different organisations in the aftermath of a crisis is examined. Data for the study comprised actual incidents in some selected global business organisations and brands that have a worldwide market representation or appeal; and are listed on at least one major international stock exchange. A longitudinal study of a sample of disasters and crises using the framework of the indicators developed in the 2013 Freshfield survey together with a cross-sectional study to ascertain what new threats have emerged in view of continuous developments in IT, AI, cloud computing, cyberattacks and loss of data. The study discussed the level of disruption and trauma faced by those impacted by a crisis or disaster and the long and short-term impact of a crisis on stock prices of international businesses.

Keywords: Crisis, Disaster, Crisis Management Plan, Communication

Declaration

This dissertation, “The impact of a Crisis or Disaster on Corporate Organisations in the Digital Era” was submitted as part of the requirement for the award of the postgraduate degree Master of Science, MSc in International Business Management of the University of East London.

I hereby confirm that the dissertation is my original work and all the materials used in the completion of the work from other sources have been duly acknowledged and referenced.

Date

Signature of Student

Acknowledgement

A work of this nature cannot be completed without input from others. I wish to acknowledge the contribution and support of everyone who have made the realisation of this achievement possible.

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1.0 Introduction

The world is changing at a faster pace than at any time in history, traditional boundaries are being broken, news and information travel at more than ten times of what it used to be (Ross, 2017; Marr, 2018; Desjardins, 2019). It is now easier for people to have 24/7 access to and respond to the news, information, and data they receive wherever, and however they want, which makes it increasingly impossible for business organisations to evade scrutiny. Organisations and brands now face a more complicated, uncertain and challenging times especially with the prevalence of the 'fake news' phenomenon and the mass adoption of social media globally as the primary means of communicating and gathering information (Visentin, et al., 2019; Kara, 2019).

Crisis or disaster not properly managed has the capability to destroy business confidence and in most cases impact negatively on the sales, share prices, market capitalisation, public perception and may threaten the very existence of the business (Kara, 2019; instituteforpr.org, 2007). It may also damage the integrity of its management and lead to unexpected and unplanned leadership change. In addition, it may create severe and prolonged legal and financial consequences (bankofengland, 2020). It is important for businesses and organisations to do everything necessary to create strong confidence in all stakeholders especially customers, on their ability to protect their interests always.

A crisis of any kind creates trauma, exposes the vulnerabilities of the organisation and impact negatively on the image of the organisation. The disruptions engendered by any kind of crisis or disaster may create different magnitudes of damage and destructive consequences on different stakeholders. There have been countless number of crises and each bring different dimensions on the need for business organisations to prioritise crisis management. As reported in The Guardian, a business decision by KFC in the UK to change the delivery partner in its supply chain led to the disruptive shortage of chicken and at its peak, the closure of more than two-thirds of its outlets in February 2018 with the subsequent loss of revenue and unhappy customers (Weaver, 2018).

Morrison (2015) lists five stages of a crisis as: denial, where leaders delay instead of being realistic and setting the direction and pursuing a viable solution; containment is the buck-passing stage where attempt is made to keep quiet and hope that the problem goes away. Shame-mongering is the third stage where attempt is made to pass or distribute the blame, this leads to the fourth stage of 'blood on the floor' where persons are made to pay the price. The final stage is the actual resolution of the crisis (Morrison, 2015).

In this paper, a longitudinal study of a sample of disasters using the indicators in the Freshfield study along with a cross-sectional study to ascertain whether there are new threats and trends due to increasing globalisation, cloud computing, incidence of cyberattack and the movement towards the Internet of Things (IoT). The study seeks to determine if the cost of recovery from disaster is an enough deterrent to make business organisation improve on their due diligence. A sample that cut across the different categories of crises was critically examined and analysed to determine the major determinants of disasters and crises in the last thirty years.

1.1 High-stake situation

According to Carter (2019) a crisis or disaster is a high-stake situation that require proper management and organisations must prepare to get ahead of the situation by acknowledging and addressing it while at the same time assuring stakeholders on their resolve to do everything to quickly remedy the situation (Carter, 2019). It requires organisations to be proactive, and to deal with the situation with speed and agility and not to ignore the problem or hope it would go away (Ross, 2017; Elliot, 2018).

Feldman (2018) suggests a general guide useful in responding and managing a crisis or disaster following what can be referred to with the acronym ACTAS - Authenticity, Creativity, Transparency, Agility and Speed. Proper coordination that maintains a consistent message across all channels is important and essential in times of crisis or disaster so that conflicting information is not disseminated (Chow, 2012; Donnelly, 2019).

1.2 Disruptive Impact

A crisis or disaster is any unforeseen situation that leads to serious disruption of normal business activities or disruption or distortion of customer experience whether over a short or long period of time. In addition, it may have a high-damage impact and lead to human, material, economic or environmental loss such that extra efforts are required to bring the situation back to normal. A crisis or disaster may be the fallout from any incident that happened due to natural hazards, human error, or negligence (Crandall, et al., 2014). In the present dispensation where the social media have become primary carriers of news, every crisis will eventually create a digital footprint, making the digitalisation of crises the new normal (Martin, 2018). Incidence such as a technical outage, a negative service incident or a travel disruption, are most easily transmitted faster on social and online media than the major news outlets (Rajasekera, 2010).

1.3 Business Continuity

Business organisations must make adequate plans for business continuity after any disruption by effectively anticipating, mitigating, and preventing against data loss, accidents, and deliberate malevolent acts. Planning must involve all actions that lead to integrity management and not be limited to compliance issues and reactive disciplinary policies (Chandler, 2014). The attendant fallout in the aftermath of a crisis or disaster cost organisations financially in fines, litigation, recovery costs, loss of customer/client trust, lost sales, and reputational damage that may potentially destroy the business or send senior management to prison (Crandall, et al., 2014).

1.5 Coronavirus Pandemic

The outbreak of the coronavirus, covid-19 pandemic has confirmed that businesses need to seriously plan for all kinds of unexpected to be able to weather all kinds of storms. The pandemic, though a health challenge, created individual crisis for businesses in almost all sectors of the global economy, disrupting supply chains and requiring immediate innovation to ensure business survival. The BBC reports that sales at Primark stores which made an average of £650m monthly before the Covid-19 lockdown was down to zero principally due to the lack of an online sales platform (Mustoe, 2020). In the

present digital age, brands, in their overall business plans must create a new and better approach to effectively and efficiently manage all kinds of crisis or disaster so that it does not become a business nightmare (Feldman, 2018).

1.4 Classification of Crises

Different studies, authors and researchers have used different methods in classifying crises; however, the underlying issues remain the same. Freshfields Bruckhaus Deringer LLP, one of the world’s oldest and most prestigious multinational law firms with headquarters in London since 1743 commissioned a study in 2013 on crisis or disaster preparedness of businesses. The survey categorised crisis into operational, behavioural, corporate, and informational types and identified that the social media has magnified the speed of news delivery (Freshfields Bruckhaus Deringer, 2013).

Table 1.4.1 Classification of Crisis by Type

Crisis Type	Example
Operational	Product recall, environmental incidents
Behavioural	Illegal conduct by company or employees
Corporate	Liquidity problems, material litigation
Informational	IT systems failures and hacking or loss of data

Source: Freshfields 2013 Survey

1.4.5 Other Perspective on Crises Classification

On the other hand, PwC, the global professional firm in their CEO Survey: Crisis Preparedness Trends 2019 classified crises into seven major areas: operational, humanitarian, technological, financial, human capital, legal, and reputational (PwC, 2019). The survey observed that almost 69% of leaders experienced an average of 3 crises with a minimum of one type of crisis in the previous 5 years while 95% of respondents expected that one could happen in the future.

Another classification provided by Deloitte Insights in its 2018 crisis management survey recognises safety, cyber, and security incidents, performance, government, and environmental issues in crisis management (Deloitte, 2018). All crises type available was included in the study sample.

1.5 Research Gap

Many industry experts, authors, and literatures have considered the broad issue of crisis management, however in the constantly evolving digital era, perspectives continue to change. The constantly changing dynamics present the need to determine what new developments and trends there are regarding the level of trauma and the impact crises have on all stakeholders. The impact of a crisis on the share price of businesses and brands affects the shareholder value and the overall business outlook.

1.6 Research Objective

The objective of this study is to ascertain whether there are new trends and developments in crisis and disaster prevention and management and determine whether additional regulatory and compliance oversight measures are required. This research investigates observable new developments in crises management and provides empirical evidence in support.

The research investigates the resultant effect of disasters on organisations and all stakeholders, especially customers. The study also determines the average recovery period for stock prices and market capitalisation of impacted organisations to return to pre-crisis level and the most devastating crisis or disaster type. The study examines best practices in line with the corporate social responsibility for crisis and disaster prevention and management.

1.6.1 Research Questions

What impact does a disaster have on the stock price or market capitalisation of an organisation and how long does it take for an organisation to recover?

What are the direct and remote consequences of any kind of disaster on the society and stakeholders and what immediate steps are needed to mitigate the impact?

What additional measures need to be put in place to mitigate the trauma that customers and other stakeholders may suffer in the event of a disaster?

1.7 Purpose of the Research

The purpose of this research is to investigate and establish new trends or developments in the different crisis incidents recorded by different internationally listed brands and businesses in the digital age and what impact

it has on their stock prices and market capitalisation. In addition, the study determines how long it would take such businesses to return its stock price to pre-crisis level.

1.8 Summary of Theoretical Framework

The study recognises that crisis and disasters are inevitable and cannot be completely removed, or reduced to zero, however the management of crisis can be continuously improved to mitigate the impact on stakeholders. The critical review of literature is presented in chapter 2 while the methodological approach to the study which gives an insight into how the research was undertaken, the philosophical objective, data collection, sources of data and sampling method is presented in chapter 3. Data analysis and findings are presented in chapter 4 while chapter 5 gives the conclusion and chapter 6, the recommendations. References, appendices, and abbreviations and acronyms are given in chapters 7, 8 and 9, respectively.

1.9 Ethical considerations

Data used for the study comprised actual incidents of crisis or disaster and the impact on the organisation was analysed fairly and in a transparent manner. The researcher has no conflict of interests in any of the businesses or brands considered in the study.

2.0 Literature Review

According to Murphy's law, anything that can possibly go wrong, will go wrong. Crises and disasters happen unexpectedly and mostly without notice; or when the warning signs have been ignored; or due to insufficient knowledge and the consequences for everyone impacted by the attendant fallout may be enormous. It may damage organisational reputation, create loss of earnings, loss of shareholder value and customer confidence (Kara, 2019). For example, The Financial Times revealed in 2018 that Marriot hotel group acknowledged that hackers had access to about 339m guest records from 2014 and this has cost \$100m in direct expenses related to the incident and a £99m fine levied under EU GDPR rules. In the same vein, British Airways received a fine of £183m for a 2018 passenger record data breach (Ralph, 2019).

2.1 Challenging Business Environment

Increasing global competition, interconnectedness, and interdependence of business activities as well as the easy transmission of information on social media have created a more challenging business environment. The expectations of all stakeholders, which continues to go exponentially higher every day must be met (Kara, 2019).

2.2 Reputational Damage

Experts are of the opinion that businesses that manage the reputational damage a crisis creates appropriately, could bounce back within a relatively short period of time. Ashley Madison, the dating site whose 2015 hacking led to humiliation and panic as well as suicides and the collapse of marriages has reported more people signing up to the services rendered since the hack than before (Doffman, 2019). On the other hand, carmaker VW is still dealing with the prolonged fallout from its 2015 diesel emission scandal which has cost over \$30b in fines, settlement of lawsuits, penalties and restitution and continues to impact negatively on all aspects of its business (MacDuffie & Zaring, 2019).

2.3 Identifying Potential Crisis

Identifying a potential crisis before it develops require regular and careful observation of operational processes and taking proactive action to manage it and bring the situation back to normal (Kara, 2019). A crisis may develop from a simple incident created from a social media post by a disgruntled customer in any location. It may result from an explosive story or from an incident in which an individual or many customers were affected. A video recording of an April 09, 2017 incident in which a passenger, Dr David Dao was forcefully and violently taken off a United Airline flight went viral on social media creating public anger and resentment against the airline. Attempts by the CEO of the US airline, Oscar Munoz to cover up the incident by describing Dr Dao in uncomplimentary terms backfired. As a result of the incident, the CEO was denied a previously planned promotion to chairman (Czarnecki, 2017). Clearly, mismanaging or ignoring customer complaints or underestimating the damage it can create is a mistake that business organisations should never make.

2.3.1 Crisis Management Plan, CMP

The greatest predicament during a crisis or disaster is to be caught off-guard, unprepared and without a crisis management plan. It is a necessity for every organisation to develop a functional crisis prevention and management plan (Feldman, 2018). Principally, a CMP helps to prevent or reduce loss and assist in the effective and efficient management of the effects of a crisis and recovery. A CMP must include a process to adequately inform stakeholders or those directly impacted by the crisis of the efforts being made to remedy the situation (Feldman, 2018; Carter, 2019). A good quality CMP should determine among other things, roles and responsibilities, courses of action and crisis communication. Clearly defined strategy to manage a crisis helps in making the right decisions when the stress of a crisis sets in. It includes appropriate training and regular drills to help guarantee optimal team performance even in unimagined and difficult situations (Kleffner, 2015).

Crisis are systemic and they set off a chain of reactions or a response that may lead to another crisis or create a crisis within a crisis, and the probability of a crisis or disaster happening is always there for every organisation (Mitroff, 2018; Carter, 2019). The first step to overcoming a crisis is to avoid living in denial by having an adequate crisis prevention and management plan and a cross-functional crisis management team (Anderson, 2018; Dube, et al., 2010).

Fig. 3.3.1.1 Phases of a Disaster/Crisis Management Plan



Source: Alexander D E (2002); (Collins, et al., 2016)

2.4 Leadership at times of Crisis or Disaster

Leadership is a fundamentally important aspect in the successful management of a crisis or disaster, hence leaders, must demonstrate confidence and maintain a clear vision and purposeful leadership (Anderson, 2018; Bonchek & France, 2018). Leaders should take a moment to monitor and obtain relevant information and be able to understand the magnitude of the problem and set out an appropriate response based on the CMP and not attempt to push back anyway and anyhow when a crisis hit (Clearfield & Tilcsik, 2018; Donnelly, 2019). The leadership must be purposeful and thoughtful and in communicating with stakeholders must use the right techniques and language that will not be offensive, fuel or create more discontent (Anderson, 2018).

Additionally, the leadership must understand the volatility of the situation because there are those who will scrutinise and react immediately to every decision and action taken (Anderson, 2018). The significant uncertainty that come with a crisis creates both opportunity and challenges during which leaders must make decisions that have profound consequences at the right time. It is understood that the uncertainty and high-pressured situation that a crisis or disaster represent, may lead to substantial or prolonged period of stress, but best practice is that leaders must accept the challenge and act decisively (Anderson, 2018; Carter, 2019). Leaders must acknowledge and use their teams as active resources, ask questions, and obtain the correct answers so as not to put the wrong foot forward (Hagen, et al., 2019; Carter, 2019).

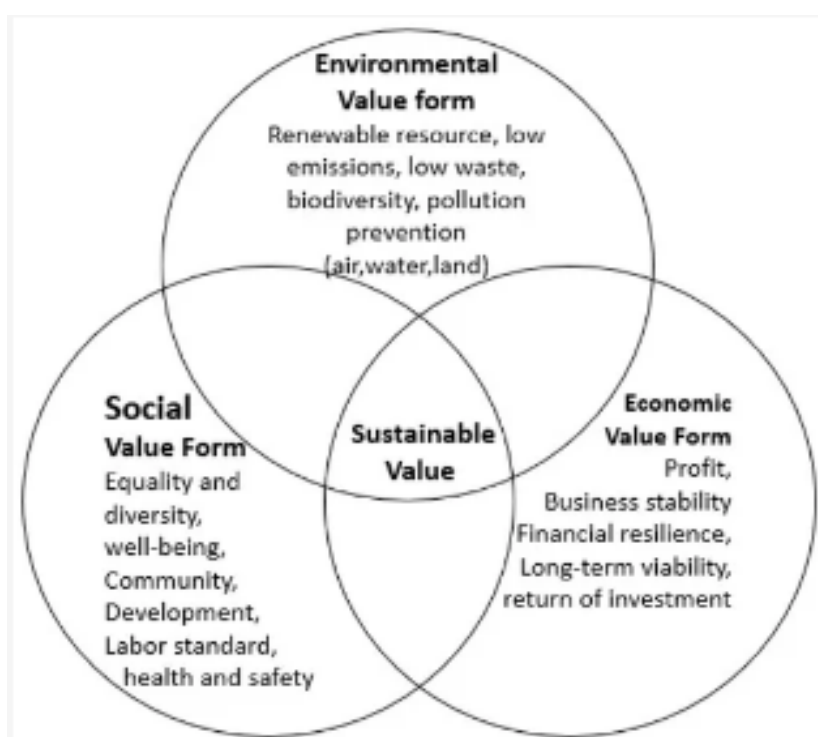
The understanding and interpretation of the leadership of the impact of a crisis would most likely determine the communication and the CMP implemented, hence, leaders should avoid blaming others or those far removed from the company and its responsibilities (Sucher, 2019). Leaders need to take the time to quickly do the hard thinking to know the type of problem that has been created by the crisis in order to frame the appropriate response such that people within and outside the organisation will understand how the organisation is thinking and taking action to remedy the situation (Sucher, 2019; Anderson, 2018). On the other hand, leaders should not be afraid or ashamed to take responsibility for their actions or mistakes publicly and privately when they get it wrong (Carter, 2019).

2.5 Corporate Social Responsibility, CSR

Business organisations now develop and incorporate the concept of CSR and sustainability in their business plans presumably to give back to the society. A robust CSR helps to create happier customers and stakeholders, establish better public relations, and leads to improved financial performance in the long run (Chen & Scott, 2020).

It is generally understood that the principal role of business is to make profit and create wealth while the central duty of government is to support the overall needs of the business, society and the environment (Sandland, 2016). However, wealth or profit must be created in line with the overall purpose of the triple bottom line by maximising the benefit to the people and the planet in a sustainable manner (unglobalcompact.org, 2020).

Fig. 2.5.1 The Triple Bottom Line



Source: (Braccini & Margherita, 2019)

The impact of a crisis or disaster on stakeholders must now be measured in terms of the new role and expectations that people have of business organisations and their operations. The CSR is a concept that continues to evolve and is being influenced by the changing understanding of human and customer rights, sustainable consumption, the protection of the environment

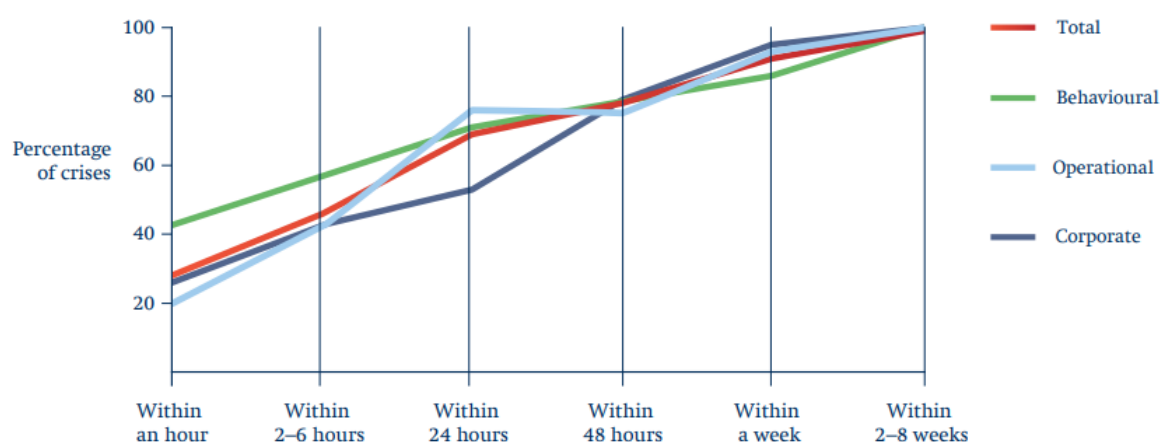
and climate change. Knowing potential risks and mapping out specific and appropriate CMP is an indication that the organisation's CSR is not empty rhetoric. Business and organizations as corporate citizens must consider and regularly review the impact of their activities and its overall effect on the environment and the larger society. A functional CSR must comply with the general concept of putting greater value on people and planet before profit. (Edmondson, 2019), so as to operate effectively and sustainably for maximum benefit to the society and the environment (Chen & Scott, 2020).

2.6 Managing Communication in times of Crisis or Disaster

Communications that lead to successful crisis management must be concise, devoid of unnecessary rhetoric and must focus on the situation at hand, employees at all levels must be equipped with relevant information that confirms that the organisation remains focussed on the cause of an incident and is putting the customer first in its effort to resolve it (Trehan, 2017; Richardson, 2016). Managing the media in a crisis emergency requires a more proactive approach due to the rapidly changing dynamics of news dissemination where almost anyone that has access to the internet can transmit some form of news or information (Kara, 2019).

The digital age is the major driver of the impact of the reputational damage a crisis could create for any organisation. The 24-hour real-time news cycle makes it important for organisation to get ahead of the story first (Ross, 2017; Sheng, 2019). The first 12 hours after a crisis breaks is always dominated by high volume of activities on social media and the internet (Elliot, 2018), and a bad footprint online never goes away (Kara, 2019). Crisis obviously create negative news which business organisations must avoid as bad news travel far and at a fast pace like wildfire immediately it breaks. The Freshfields survey discovered that over 25% of crises spread to international media within one hour and more than 66% within 24 hours and it took companies an average of 21 hours to respond (Freshfields Bruckhaus Deringer, 2013).

Fig. 2.6.1 Speed at which the news of a crisis spreads



Source: Freshfields 2013 Survey

Crisis communication in the digital age must involve all media outlets on all platforms to be able to reach the different segment of the society (Collins, et al., 2016). Online and social media platforms typically reach young people better while the older members of the population are better reached using the more traditional methods (Richardson, 2016). Crisis no doubt creates some confusion and social media and digital media news outlet have now become the most efficient method to deliver response messages in an emergency (Collins, et al., 2016; Kara, 2019) and it is better to be the first to disseminate the right and credible information. Additionally, creating a central point such as a dedicated, unambiguous, secure webpage to manage information on the crisis is a way to overcome the challenge of misinformation (Richardson, 2016; Anderson, 2018).

Technological advances have transformed communication and information dissemination and continue to do so, and the social media is valuable in crisis prevention and management and provides a faster information dissemination process (Collins, et al., 2016). All the different stages of intervention in a crisis event must be properly executed and require accurate, clear, concise, and consistent messages. The communication must be appropriate, devoid of unnecessary technical jargons and be suitable for everyone to understand. It must begin early, be reliable, holistic and include every information on what

is known or not known, the magnitude, cause, and possible duration so as to enable people to handle the threat and uncertainty from a position of knowledge (Collins, et al., 2016).

2.6.1 Delayed Response

There is always a period of confusion and inaction when a crisis hit and the temptation to stay silent possibly to buy time is always there. Staying silent creates a situation where rivals, adversaries and others who may be well-meaning but with little information tend to fill the vacuum and hence do more damage to an already challenging situation (Carter, 2019; Bonchek & France, 2018; Anderson, 2018)). The most useful set of immediate actions to take, should be determined and implemented and claiming that things are under control before the necessary steps are taken should be avoided, however, a firm promise to get things under control could be made (Carter, 2019).

People impacted directly by a crisis or disaster, and all stakeholders want to get information directly from the organisation involved (Donnelly, 2019). The pitfall in a crisis is to stonewall or try to deflect or use words or statements that are deliberately vague or misleading, it is advisable to speak clearly and plainly and to act directly and responsibly (Carter, 2019; Kara, 2019).

On June 02, 2014 at Merlin Entertainments' Alton Towers in Birmingham two cars on a roller coaster crashed; sixteen persons were trapped, four with serious injuries and because of the incident two young persons had their legs amputated. It was evident that overall preparedness was unsatisfactory as it took 17 minutes before emergency responders were notified. However, the CEO, Nick Varney on learning of the incident, took full responsibility and gave a clear and engaging response which helped to assure all stakeholders and reduce the reputational damage (Butler, et al., 2017).

Appearing the following day on BBC Radio's "Today" program. "Clearly we're absolutely devastated by what happened," he said, "and our thoughts are with those who were injured, and our hearts go out to them and their families. As a business, we are all about giving safe, fun, memorable experiences with the emphasis on safety. Clearly something went terribly wrong." When the interviewer asked what caused the accident, he replied, "We're trying to find the causes of an accident that shouldn't have happened. All roller coasters are designed so that two cars can't be on the track at the same time but clearly, they were. I'm not going to sit here and make excuses; I simply do not know what made the accident happen." As for the share price, he said, "You'll forgive me if I'm not really focused on the share price at the moment." Only the CEO could have credibly made statements of that sort, and they would have been meaningless unless they were backed up by the rest of the company. Indeed, during the following months, Merlin Entertainments paid the fines and damages demanded by the Health and Safety Executive (the U.K.'s regulatory bureau) without contesting them (essentially pleading guilty), and immediately put in place a series of safety measures.

As part of the crisis management process, full refund was also given to those who could not, because of the incident have access to the services they paid for.

2.6.2 The Power of Social Media

It is best practice to keep customers closer on all social media whether there was a crisis or not (Elena, 2016; Patil, 2019; Lu & Miller, 2019). Communication must be timely, robust, truthful and its dissemination must incorporate or harness the power of the different social media; Twitter, Facebook, YouTube, etc in order to be effective and reach the desired audience (Jordan-Meier, 2010; Richardson, 2016). Social media tools properly handled and harnessed to support two-way communication and stakeholder engagement can always become the best partner most especially in times of crisis (Kara, 2019). Social media platform for businesses should be properly operated, updated and monitored because every individual that is statutorily allowed to be on social media platforms belong to at least one, (salesfusion, 2020; Hassan, et al., 2015; Culp, 2019). However, with the phenomenon of 'fake news', every effort should be taken to disseminate the right message across to all stakeholders (Collins, et al., 2016). Transparency, credibility, authenticity and

responsiveness are some of the essential attributes that can help brands overcome the challenges a crisis presents (Kara, 2019).

2.6.3 Online and Social Media Trial

The effect of a crisis or disaster on any organisation is noticeable within minutes on search engines, social media and all other medium where people produce and consume information on the internet and may go round the world in less than 30 minutes (Ross, 2017). This may lead to an online trial of the case where the opinions are generally skewed against the organisation. A well-resourced customer care and crisis management team that constantly monitor online channels and give regular updates is vital (Mikušová & Horváthová, 2019).

2.6.4 Managing Social Media

The stressful environment created by a crisis or disaster demands more from everyone that is in the eye of the storm and around it, and no single individual can successfully manage alone, hence the need for collaboration and teamwork (Hagen, et al., 2019; Collins, et al., 2016). Organisations must be prepared to offer appropriate, timely, sincere, and sympathetic apology to all those who may have been impacted by the crisis after completing the due diligence to understand the cause and put in place a plan that will help avoid future occurrence, (salesfusion, 2020; Lee & Chung, 2012).

According to Jonah Berger, a professor of marketing, online stories go viral when guided by three principles: ethos, pathos, and logos in order to give it ethical, emotional and logical appeal (Konnikova, 2014). In the same vein, John McManus suggests that communication must pass the SMELL test where S is the 'source', M is the 'motive', E is 'evidence', L is 'logical' and L is denotes 'left out'. The source must be credible with the right motive, backed by correct and relevant evidence, put together logically in such a way that nothing is deliberately left out (Kara, 2019; McManus, 2017).

Organisations must empower their social media team to engage directly with the over 69% of 80% of web users who spend time on smart phones and are active on social media, (Culp, 2019; Donnelly, 2019). Online and social media channels offer great opportunity for organisations to share their message in a

crisis as well as the opportunity to listen to what people are saying so as to decide the best way to react to the situation (Richardson, 2016).

2.7 Crisis or Disaster Reduction, Prevention and Management

In the global business environment, no organisation is immune to the outbreak of a crisis and vulnerability increases as the organisation gains more market share or impact more lives (Crandall, et al., 2014; Butler, et al., 2017).

A crisis or disaster has the tendency to grow and spiral out of control and create more disruptions and destructions than necessary if not effectively managed (Chandler, 2014; Crandall, et al., 2014). Crisis management must involve anticipating potential crises without considering anything as unimportant or immaterial. Crisis prevention and management must now be seen in the same way as fire prevention with all the necessary tools and regular fire drills put in place (BoE, 2020). Business organisations and brands should create and put in place a functional CMP, test its workability regularly and include necessary process update (Bradshaw, 2017).

2.7.1 Crisis Preparedness

An organisation that has had a quick and easy or early brand success may become oblivious to the need to prepare for a time of crisis or disaster and how to manage it, while an organisation that has succeeded in managing many crises may become complacent and fail to see the need to build a serious CMP to handle or manage a crisis (Mitroff, 2018). Businesses and organisations that do not wait until a potential problem become an acute or a threatening situation before taking action tend to manage the crisis better (Hanenburg, et al., 2019).

Crisis preparedness is a competitive advantage that all business organisations must pursue to stay in business and excel above the competition (Crandall, et al., 2014; Kara, 2019). Zappos, a US retailer owned by Amazon revealed in 2012 that it was a victim of a cyber-breach involving about 24 million customer accounts. However, as part of its preparedness, preventative measures and CMP, Zappos had already stored encrypted credit card information and customer passwords on a separate server from other customer data. In the attack, this server was not compromised although access to it would have only

shown the encryption (Butler, et al., 2017). An important aspect of a CMP is preparedness, and this must be regularly updated to include every known, imaginable, or unimaginable threat or emergency, (Elliot, 2018; Culp, 2019; Hagen, et al., 2019). Preparedness will strengthen businesses and help them to overcome the impact of a crisis reasonably unscathed.

The best crisis-prepared organisation will always take immediate responsibility for the crisis rather than attempt to pass the buck or try to explain it away (Mitroff, 2018). The 2017 WannaCry cyber-attack which had a global impact happened due to a software vulnerability and the businesses and organisations that were able to effectively weather the storm were those who had installed the software patch that Microsoft had provided earlier that year (Butler, et al., 2017). The only viable and probably the best way to tackle the increased speed of the spread of modern crises is more and better preparation (Blair, 2019).

2.7.2 Opportunity to Learn and Grow

The most valuable crisis management tool after a crisis is resolved is self-examination and it presents opportunity for process improvement or regulatory reform (Carter, 2019; Morrisons, 2015). It is important for organisations to analyse past experiences they and others have had in crisis management with a view to learning from them and developing a robust approach to mitigate against future occurrence (Hanenburg, et al., 2019). Learning from a crisis is what a proactive organisation that hopes to avoid repeating the same mistakes must do and do very well through information sharing, analysis of facts and review of processes (Hagen, et al., 2019). Stakeholders and business organisations must realise that there is always a lesson to learn from any crisis and such lessons may require the need to review processes, carry out systemic changes internally or within the supply chain (Bonchek & France, 2018). In-built post-crisis analysis mechanism to assess the overall performance and effectiveness of the CMP and take necessary steps to address areas where improvement is required is important (Crandall, et al., 2014; Watkins, 2020).

2.7.3 Statutory and Regulatory Compliance

A crisis raises many legal issues, however, looking at a crisis solely on being legally correct may create more challenges, hence the crisis management team must be multi-disciplinary. It is important to have the right people, tools, data, information, process, and a proper mindset when handling a crisis (Bonchek & France, 2018; Anderson, 2018). Organisations that go far and beyond the minimum legal and compliance levels are most likely to be more effective in managing the fallout from a crisis or disaster.

2.8 Conclusion

Although it is difficult to determine with certainty the exact type of crisis that will occur, a holistic, workable and adaptable CMP that specifies the tasks and designates those to handle them, no matter the altered circumstance must be put in place by every business organisation irrespective of size. Communications, logistics, and legal aspects of the CMP must be given priority as any wrong step could destroy the overall effort (Butler, et al., 2017).

Due to globalisation and the integrated and interconnected nature of the supply chains, exposure to potential crisis continue to increase for all businesses. Crisis will remain a disruptive occurrence in overall business outcomes and crisis preparedness must be considered a more strategic priority in the entire business process (PwC, 2019). Leaders of organisations need to have better knowledge of crisis management and acquire all the related soft skills required to help them navigate the high-pressured crisis situation (erm.ncsu.edu, 2019).

The literature review has shown that many organisations continue to get it wrong when crisis hit, despite many expert opinions and guidance on crisis prevention and management. In addition, organisations tend to keep the real impact of crisis secret or under-reported if they can, partly to hide their vulnerabilities or to evade further scrutiny. Recent experiences indicate that many organisations continue to ignore best practices in dealing with the management of crises, this has in turn created more reputational damage and additional costs for such businesses (Turner, 2019).

3.0 Methodology

3.1 Introduction

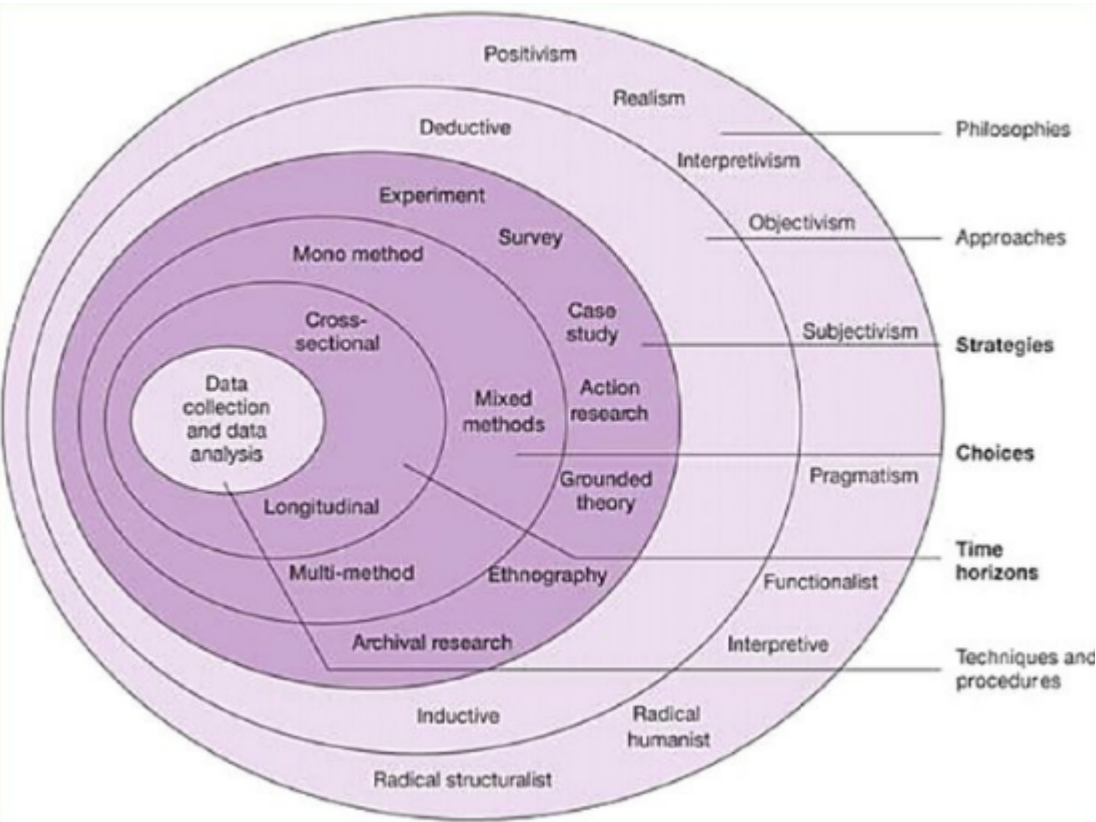
Methodology is the lens which determines decisions the researcher makes choices about the study (Harrison, et al., 2017). To be able to achieve the declared objectives in a research project, the researcher determines the best approach to conduct the study and this depends on the focus and nature of the subject and the desired objectives to be achieved (Sandland, 2016). The choice of methodology to use is dependent on the research questions, and the perspective of the research. The main objectives in this study are to explore the impact of a crisis on the stock price of listed international brands, determine how long it takes a brand impacted by any type of crisis to recover losses suffered in the value of its shares. An explanation of the rationale for the choice of the philosophy is given below.

3.1.1 Research Philosophy

Business and management research is amenable to a multiplicity of research philosophies, paradigms, and methodologies. However, the ontological assumption in this research is centred on the nature of reality and the interpretivist approach has been employed to analyse the nature of the reality of the fallouts and outcomes of business disaster and crisis incidents and its management.

The research onion is particularly helpful in determining the structure of a research and in explaining the choice of the techniques of data collection and the procedures used in the analysis (Saunders, et al., 2019).

Fig. 3.1.1.1 – The Research Onion

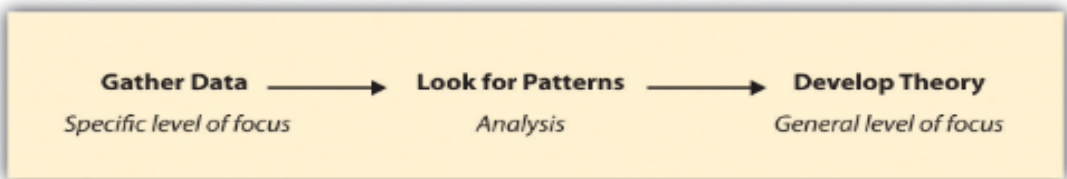


Source: © Mark Saunders, Philip Lewis, and Adrian Thornhill

3.1.2 Research Approach

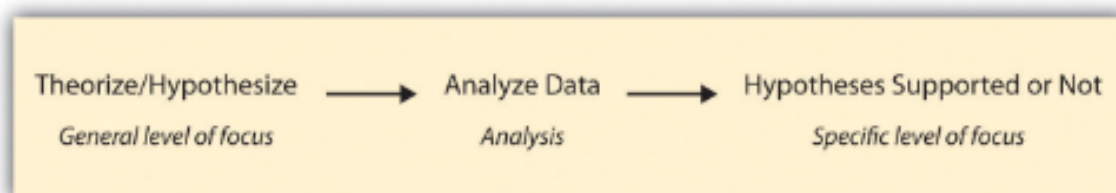
Research in the business and management spheres require pluralistic, philosophical and methodological research orientation (Saxena, 2019). Saunders, et al., (2019) opines that research approach is either by deductive or inductive reasoning. Deductive reasoning involves the creation of hypothesis while inductive involves a bottom up approach and is most appropriate for the social sciences as it captures the context in which the phenomenon is observed (Saunders, et al., 2019).

Fig. 3.1.2.1 Inductive Research



Source: (Saylor Academy, 2012)

Fig. 3.1.2.2 Deductive Research



Source: (Saylor Academy, 2012)

The inductive approach is more appropriate for research study of this nature, and data from secondary sources which captured the crisis incident management and their outcomes are employed in investigating the phenomenon. The research looks for patterns in the data from the different reported incidents of crisis across different businesses and settings with a view to developing a new theory to explain the observed patterns. However, business and the social sciences research is generally flexible and permits the use of both the inductive and deductive method, though the inductive is exploratory and allows for more flexibility.

3.1.3 Research Design

All social research takes place out of a background set of epistemological, axiological and ontological assumptions that provide an understanding of the nature of the real world and the people in it (Alvesson & Deetz, 2000). Business research therefore lies within the real, actual and empirical domain and the choices a researcher makes falls within a continuum (Saxena, 2019). The strategy in this research is to blend the various elements of the study coherently to address the research problems by outlining the data collection, sampling method and data analysis.

3.1.4 Research Strategy

There are multiple research strategies available to a researcher such as undertaking an experiment or a survey, archival research, ethnography, action research, case study, narrative inquiry, grounded theory as outlined in (Saunders, et al., 2019). A case study is a research strategy that explores a phenomenon in its real-life context and enables the researcher to undertake an in-depth inquiry of a single individual, group, or event to explore the causes of any fundamental principles. Case study methods are efficient for rare

occurrences that are difficult to replicate such as incidents of crises or disaster under study in this paper.

Table 3.1.4.1 When to use Case Study

Method	Form of Research Question		Requires Control of Behavioural Events?	Focuses on Contemporary Events?
Experiments	How, why?		yes	yes
Survey	who, where, many, much?	what, how, how	no	yes
Archival Analysis	who, where, many, much?	what, how, how	no	yes/no
History	how, why?		no	no
Case Study	how, why?		no	yes

Source: COSMOS Corporation (1983) (Baxter & Jack, 2008).

The case study enables the research to be undertake a rigorously in studying the subject matter without being tied down to the limitations imposed by ideological concepts and philosophies, (Sandland, 2016). Case study design approach is useful in answering questions such as ‘how’ and ‘why’; especially when the behaviour of those involved in the study cannot be manipulated and when it is difficult to separate the boundary between the context and the phenomenon (Baxter & Jack, 2008; Rowley, 2002). The case study method has been determined to be the most appropriate strategy for studying the impact of a crisis or disaster on international businesses.

3.1.5 Sources of Data

Research data is generally derived from two main sources: primary and secondary, although both sources can be used simultaneously to complement one another. Primary data are collected and compiled directly by the researcher while secondary data are those that others have collected and used, and which are readily available and useful to the researcher. Secondary data saves the money, time and energy that would otherwise have been expended on collecting primary data. Primary data takes time to collect and with attendant additional cost while secondary data are readily available. A

disadvantage of secondary data is that it may in some few cases not be perfectly suitable, however, it is the duty of the researcher to identify secondary data sources that are reliable and most suitable for the type of study to be carried out. Secondary data have been employed in this study to provide a clearer insight and interpretation of the nature, handling and outcomes of crisis or disaster management. Data from various secondary but reliable sources such as Bloomberg, Macrotrends, MarketWatch, Yahoo Finance, Y-stocks and data from various stock exchanges were used in the analysis. Adequate effort was made to validate and establish the integrity of the data through triangulation of sources.

3.1.6 Advantages of Secondary Data

A major advantage of using secondary data in this study is that the phenomenon being analysed cannot be replicated or performed as an experiment. The availability of the secondary data required in the public domain in form of historical records, analysis, news reports, company records, stock market reports, regulatory and government reports provides a large volume of data which would otherwise be difficult to compile by an individual researcher. The data used in this study are reliable and of high integrity.

3.1.7 Method of Data Collection

Secondary data was obtained from previous academic research studies and surveys undertaken or commissioned by reputable organisations, industry experts and leaders, government sources, stock market data, statistical reports, news sources and international business reports and analysis.

3.1.8 Data Sampling

According to Alvesson and Deetz, a research can be tackled in two aspects by first considering the purpose of the work and whether it is seeking to support dissensus or consensus (Alvesson & Deetz, 2000). In qualitative research, purposeful sampling helps in identifying and selecting cases that are connected to the phenomenon under consideration from which a lot of information can be gathered (Saunders, et al., 2019 pp 315; Palinkas, et al., 2013). In this study, the impact of a crisis on the stock prices of listed business organisations was explored by considering historical time series data obtained from stock market data, analysis, and reports. The research utilises purposive

or judgmental sampling which also enabled the different types of crises in the sub-groups to be included and to allow for comparison amongst the subgroups (Saunders, et al., 2019) pp. 321.

A list of identified crises in internationally listed businesses and brands from which the sample was selected is provided in the appendix.

Data was extracted from the different sources mentioned above specifically targeting publicly listed brands and businesses. Private businesses and those that had ceased to exist or have gone from public to private ownership were automatically excluded as their share price movements are no longer public or relevant for the study.

Inclusion in the sample was guided by the need for representation to cut across the different categories of crisis in the sample based also on occurrence. Any type of crisis that did not occur or was not reported had no probability of inclusion.

In the data analysis, the daily closing share prices were used in conjunction with the sector share price movements without any adjustments for any other unforeseen market variables or volatility.

3.1.9 Sample Size

A total of 20 cases found suitable were selected for study to represent all the categories. Selection was made based on the Freshfields classification to include behavioural, corporate, informational, and operational crisis although some types of crisis tend to occur more frequently than others.

3.1.10 Study Sample

s/n	Company	Crisis	Type
1	Nissan	Chairman arrested for financial mismanagement	Behavioural
2	Barclays Bank	Libor fixing scandal	Behavioural
3	Apple	Slowing down of battery	Behavioural
4	United Airlines	Public humiliation of customer	Behavioural
5	Credit Suisse	Spying on its employees	Behavioural
6	Wells Fargo	Opening unauthorised customer accounts	Behavioural
7	GlaxoSmithKline	Bribery	Behavioural
8	Starbucks	Racism row	Behavioural
9	Mylan	EpiPen price increases	Behavioural
10	Volkswagen	Diesel emission scandal	Behavioural
11	Tesco	Accounting scandal	Corporate
12	Facebook	Data breach and misuse 87m profiles	Informational
13	Marriott Hotel Group	Data breach involving 500m customers	Informational
14	Equifax	Data breach involving 143m customers	Informational
15	General Motors	Faulty ignition switches on cars	Operational
16	Samsung	Exploding Samsung Galaxy Note 7 phones	Operational
17	BP	Deepwater Horizon Oil Spill	Operational
18	Boeing	Boeing Max 737 Product design fault	Operational
19	Exxon Mobil	Exxon Valdez Oil spill	Operational
20	Toyota	Failure of acceleration pedal	Operational

3.1.11 Problems and Limitations

The study examined actual occurrence of crisis and disasters and the resultant impact on the business or organisation and other stakeholders. Data is limited to information available in the public domain. There was no complementary primary data collection, due to time constraints and the huge financial implications; hence, the need to depend on secondary data which in this case, are reliable and suitable to determine the phenomenon under study.

3.2 Conclusion

In conclusion, the methodology adopted in this research is the interpretive approach using qualitative data sources to derive a clearer understanding of the impact of crisis in the digital dispensation on businesses and brands. Determine how much impact the crisis have on the share prices of listed companies and brands and the average possible share price recovery to pre-crisis level.

The review of literature has shown among other things that businesses appear not to follow the basic guiding rules and principles of how to successfully manage a crisis to obtain the best outcome for everyone who may be impacted by it. Any perceived shortfall in their response and management of the crisis

may accelerate the fall in the stock price and create a delay in the recovery of such stock to pre-crisis level. This will entail measuring the impact of a crisis on the share prices from the first day of the stock market response to the crisis to determine the return of the share price to pre-crisis level.

4.0 Data Analysis

The 20 case studies are grouped in line with the Freshfields classification into behavioural, corporate, informational, and operational types. As expected, the sample size in each group are not equal.

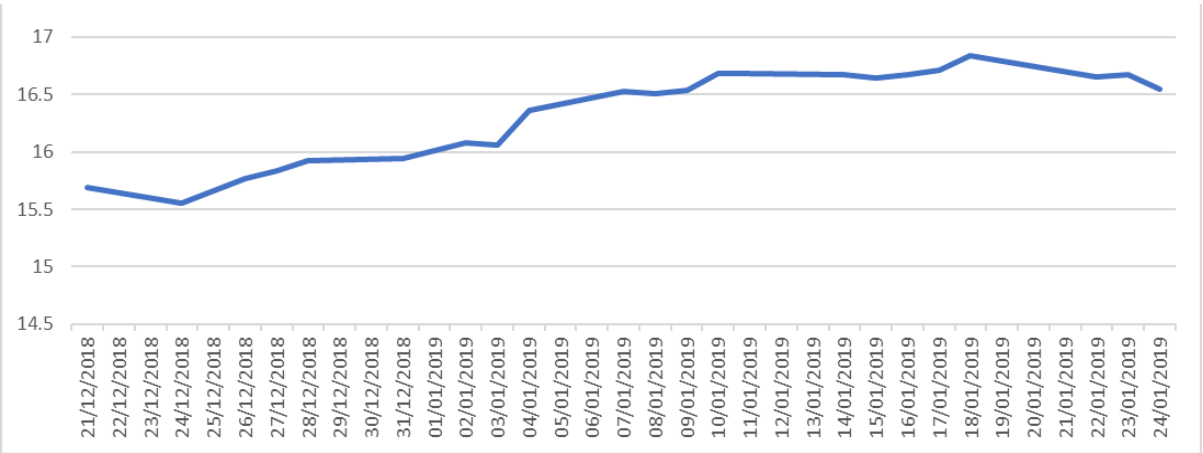
4.1 Behavioural Case Studies

4.1.1 Nissan

Nissan chairman arrested on charges of financial mismanagement - December 21, 2018

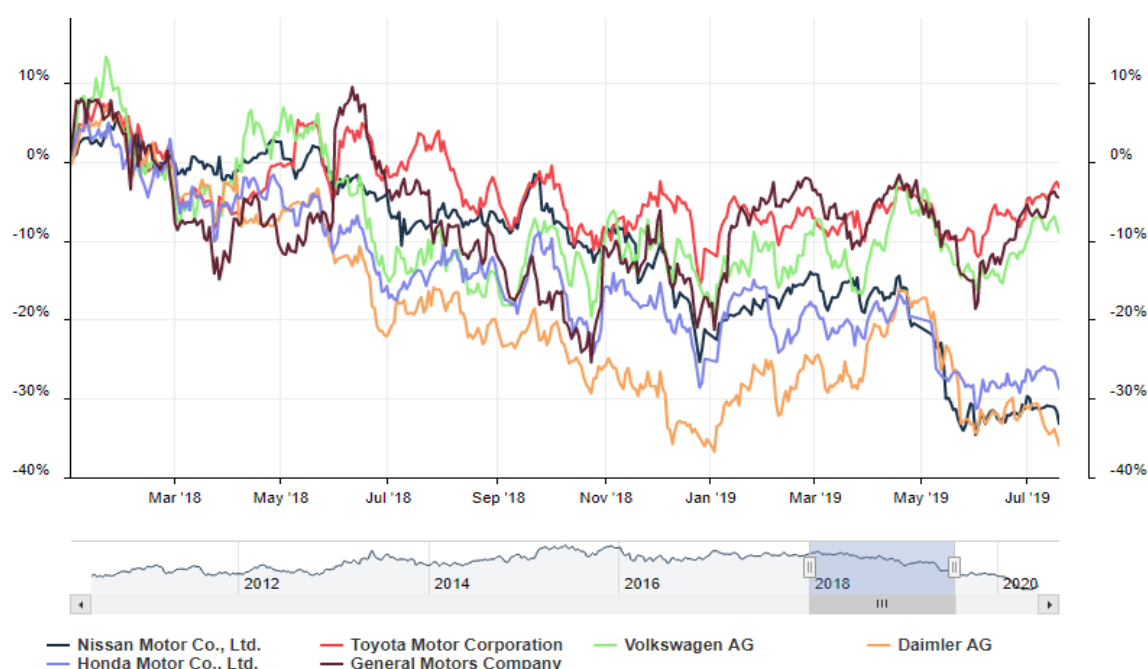
Background - Nissan Chairman Carlos Ghosn, who had been one of the most powerful auto industry executives was accused of allegedly underreporting his income and misusing company funds. The scandal became a global concern and put the Renault-Nissan-Mitsubishi alliance on hold. Ghosn and another senior executive, Greg Kelly, were arrested for fraud involving millions of dollars including underreporting their income and illicitly using investment funds and company funds for personal gain. Nissan promised to tighten internal controls and avoid concentrating too much power in one person in the future (Kageyama, 2018).

Fig. 4.1.1.1 – Nissan Share Price Movement From 21/12/2018



Source: Yahoo Finance

Fig. 4.1.1.2 Nissan Share Price Sector Performance Mar 2018 – Jul 2019



Source: Marketscreener.com

Remark: The data shows that Nissan's share price was relatively unaffected by the incident with only one trading day loss in the days after the incident was made public. The share price movement is consistent with the sector price movement which showed no deviation from the overall trend.

4.1.2 Barclays

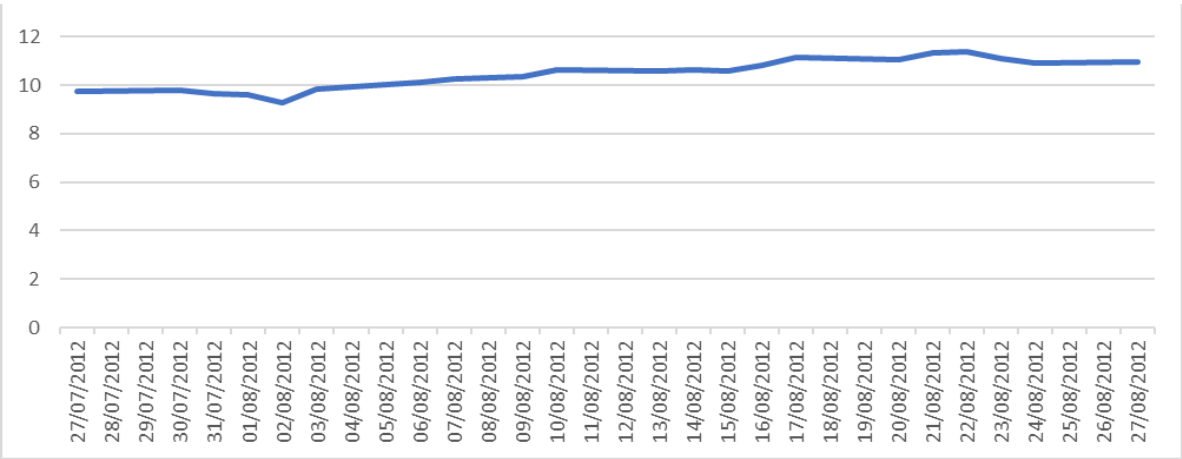
LIBOR, London Interbank offered Rate, fixing scandal - 27 July 2012

Background - LIBOR was determined by a self-selected, self-policing committee of the largest banks in the world. The rate was used to determine how much it would cost banks to borrow from each other (Vaughan & Finch, 2017).

In June 2012, Barclays plc, one of the world's oldest and largest international banks admitted that it had been involved between 2005 and 2009 in manipulating the LIBOR principally to have the undue advantage to increase its profits and limit losses from its trades in derivatives. Dishonestly low LIBOR submissions rates were made between 2007 and 2009 to overcome market speculation and questions about the bank's viability at the time of the global financial crisis. A settlement agreed with the US and UK regulatory authorities

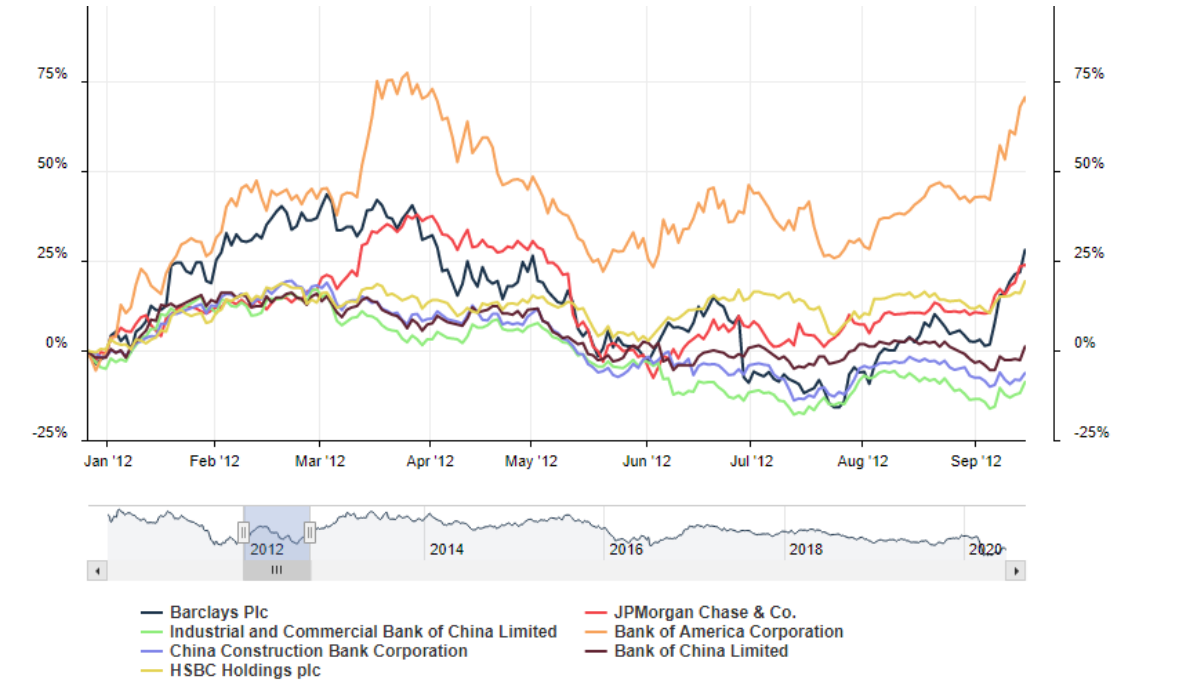
led to a fine of up to \$450 and the then CEO, Robert Diamond had to leave the position.

Fig. 4.1.2.1 Barclays Share Price Movement From 27/07/2012



Source: Yahoo Finance

Fig 4.1.2.2 Barclays Share Price Sector Performance Jan-Sep 2012



Source: marketscreener.com

Remark: The data showed that Barclays Bank share price movement was not significantly affected by the incident recovered with only 4 trading days of losses after the news broke.

Although public perception of banks and other financial institutions have always been under scrutiny, the data showed no evidence of any serious impact on the share price of Barclays during the period.

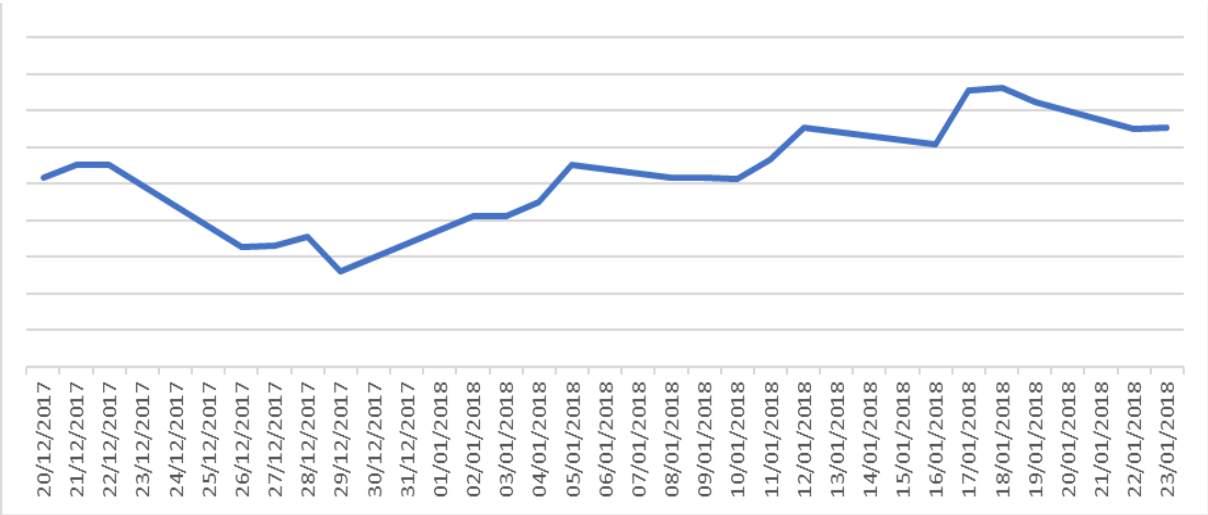
4.1.3 Apple

Slowing down old iPhone batteries - December 20, 2017

Background - Apple admitted on December 20, 2017 its iOS software was intentionally made to slow down the performance of older iPhones without customer knowledge, in a controversy tagged “Batterygate” which created doubts in the mind of consumers (Botsman, 2018). A \$500m agreement with authorities to compensate customers who bought any of the iPhone 6 and 7 in a deal which consolidated all class action lawsuits into one was made.

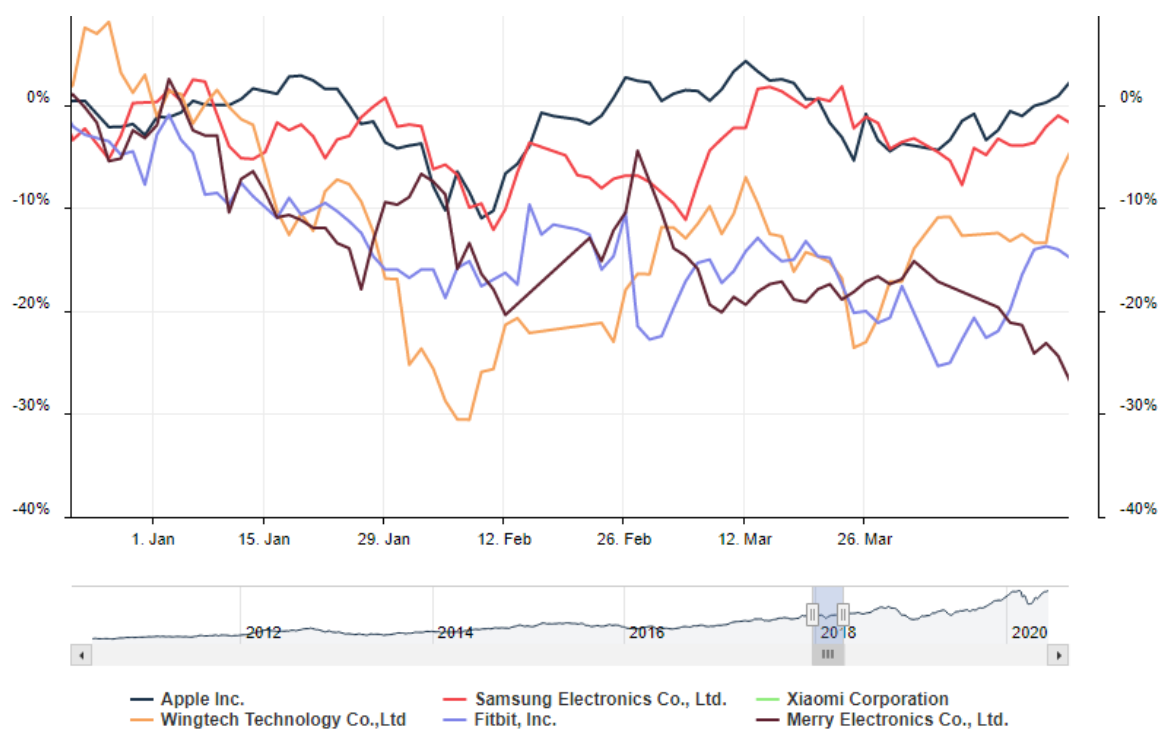
Anyone who is eligible would receive \$25 and a named class action suit member will receive between \$1,500-\$3,500, while \$90m was set aside for legal fees. A minimum pay-out of \$310m was set, payment amount would increase if fewer people file claims. On the other hand, if the claims exceeded the \$500m cap, each customer would receive less. Apple also offered to reduced battery replacements cost and gave partial refunds to those who pay for a new battery (Robertson, 2020).

Fig. 4.1.3.1 Apple Share Price Movement From 20/12/2017



Data Source: Yahoo Finance

4.1.3.2 Apple Share Price Sector Performance Jan – Mar 2018



Source: marketscreener.com

Remark: The data showed slight downward movement in the Apple share price was fully recovered on the trading day 8 and no significant impact. Prior to the incident, Apple had a relatively strong customer loyalty due to the perceived quality of its products, hence the public image, perception, and reputation did not appear to be significantly impacted. The incident showed that in the digital age, customers do not want to be taken for granted.

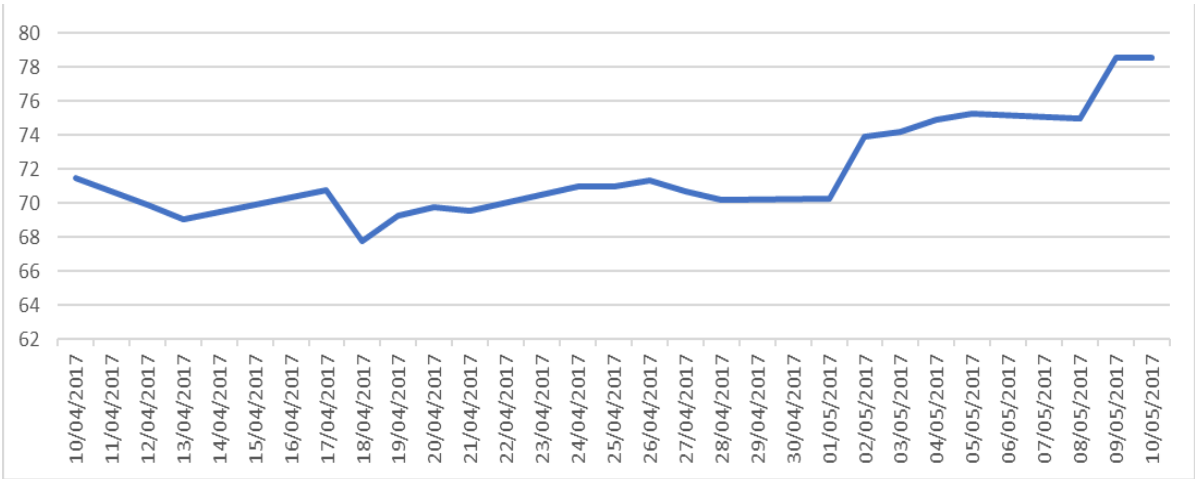
4.1.4 United Airlines

Public humiliation of customer - April 09, 2017

Background - On Sunday April 09, 2017, security officials were invited to remove one Dr David Dao, a passenger with valid ticket off the United Express Flight 3411 from Chicago to Louisville, Kentucky. Due to this improper treatment, the passenger was hospitalised; and it quickly became a global crisis for United Airlines due to many smartphones other customers used to capture the incident on video. In his first official response, CEO Oscar Munoz refused to acknowledge the seriousness of the situation and the injuries Dr Dao suffered, apologised only for “re-accommodating customers” until the

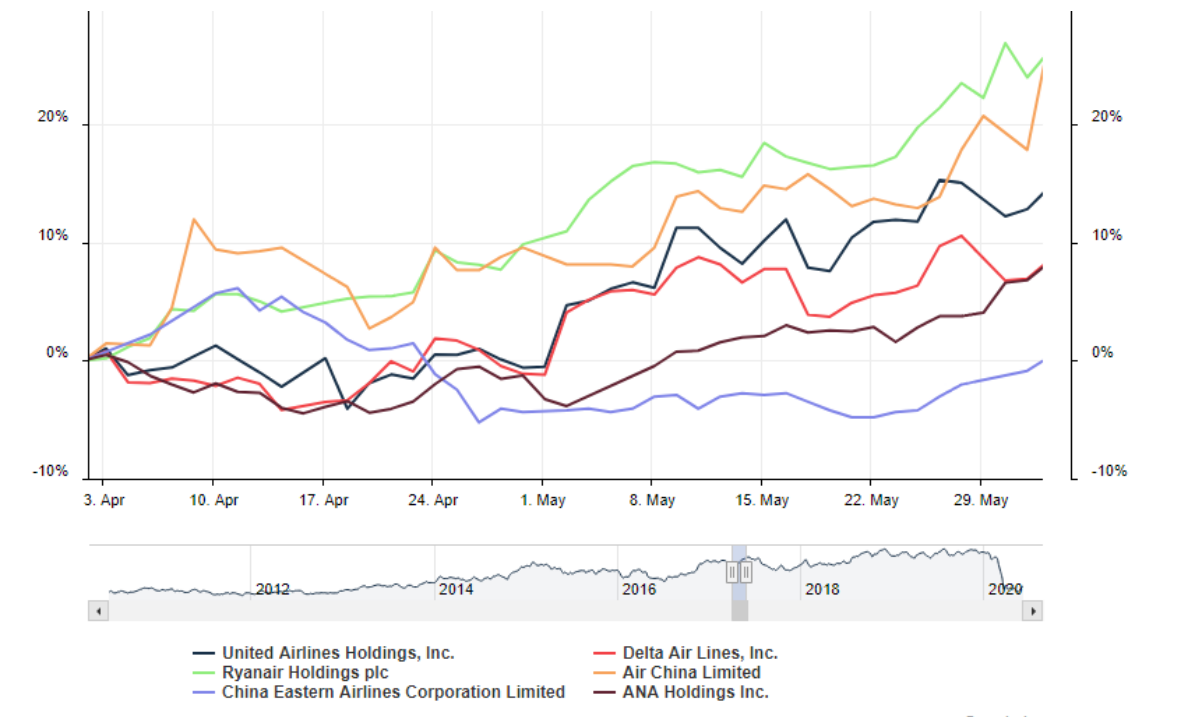
videos of the incident went viral and started creating a reputational damage to the airline, (Robin, 2017; Reklaitis*, 2017).

Fig. 4.1.4.1 United Airlines Share Price Movement From 10/01/2017



Data Source: Yahoo Finance

4.1.4.2 United Airlines Share Price Sector Performance Apr-May 2017



Source: marketscreener.com

Remark – United Airlines’ share price had 14 consecutive trading days losses before rallying to recovery on trading day 15 after the incident. After an initial misstep, the CEO rallied to manage the reputational damage with proactive steps taken to shake off the racism tag especially in view of the reputational damage it could do, considering the viral 2009 ‘United breaks guitar’ song which significantly affected its reputation and share price.

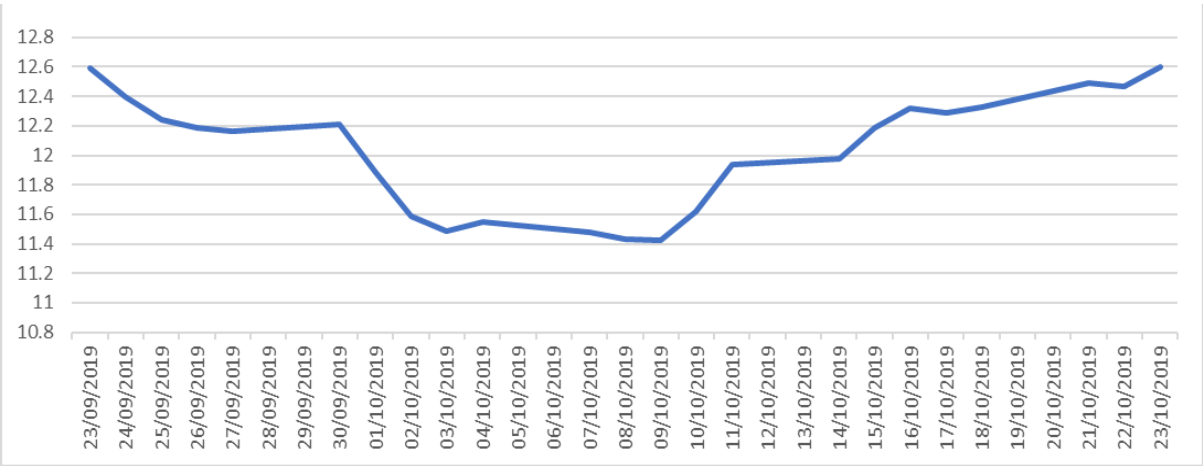
4.1.5 Credit Suisse

Spying on its employees - September 23, 2019

Background - Credit Suisse, Switzerland’s second-largest bank admitted to snooping on former executives using private investigators and led to CEO, Tidjane Thiam’s resignation.

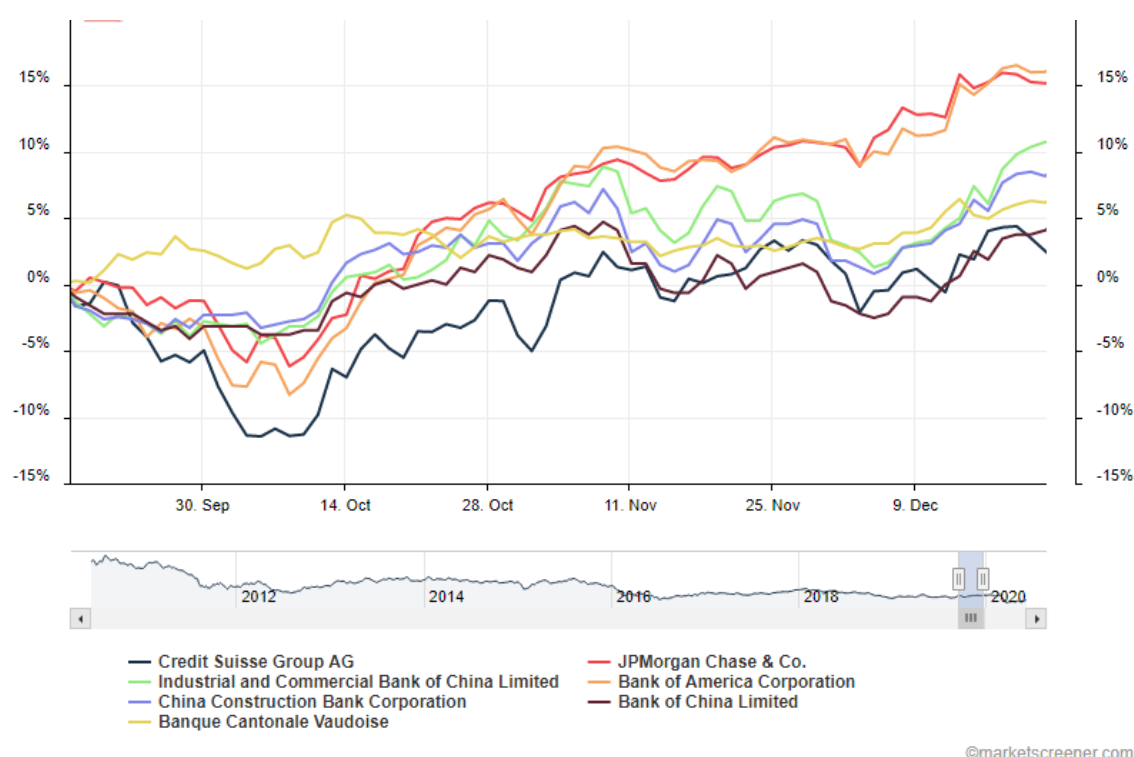
Internal investigation revealed that Credit Suisse had hired a firm called ‘Investigo’ to follow Imran Khan, who had recently left the bank for arch-rivals UBS. The investigator who followed Khan was reported to have died by suicide in September 2019 (Williams-Grut, 2020). The unprecedented clandestine operations created concerns regarding the reputation of the bank. Switzerland’s finance regulator launched a probe into the incident to scrutinize the bank’s corporate governance and surveillance activities. (Neghaiwi, 2019).

Fig. 4.1.5.1 – Credit Suisse Share Price Movement from 23/09/2019



Data Source: Yahoo Finance

Fig. 4.1.5.2 - Credit Suisse Share Price Sector Performance Sep-Dec 2019



Source: Marketscreener.com

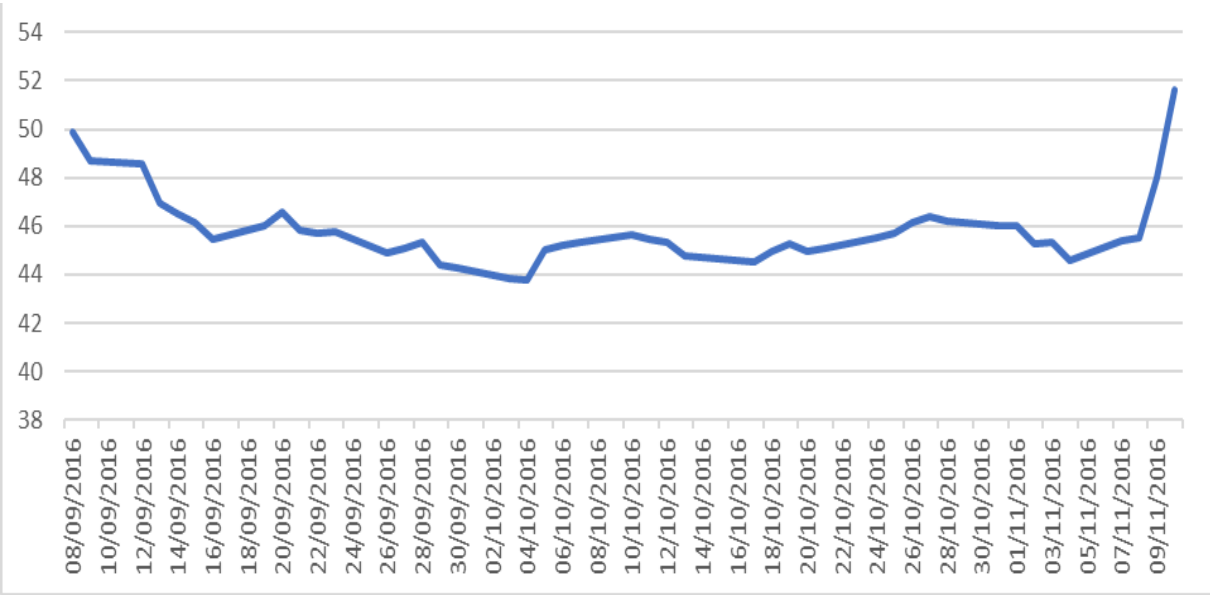
Remark: The share price of Credit Suisse was on a temporary downward slide of less than 10% although the recovery did not happen until after 21 trading days with the share price recovering on trading day 22. The swift removal of the CEO in addition to other measures was a move to reassure stakeholders and reduce the impact on the reputation of the bank.

4.1.6 Wells Fargo

Fake customer accounts - September 08, 2016

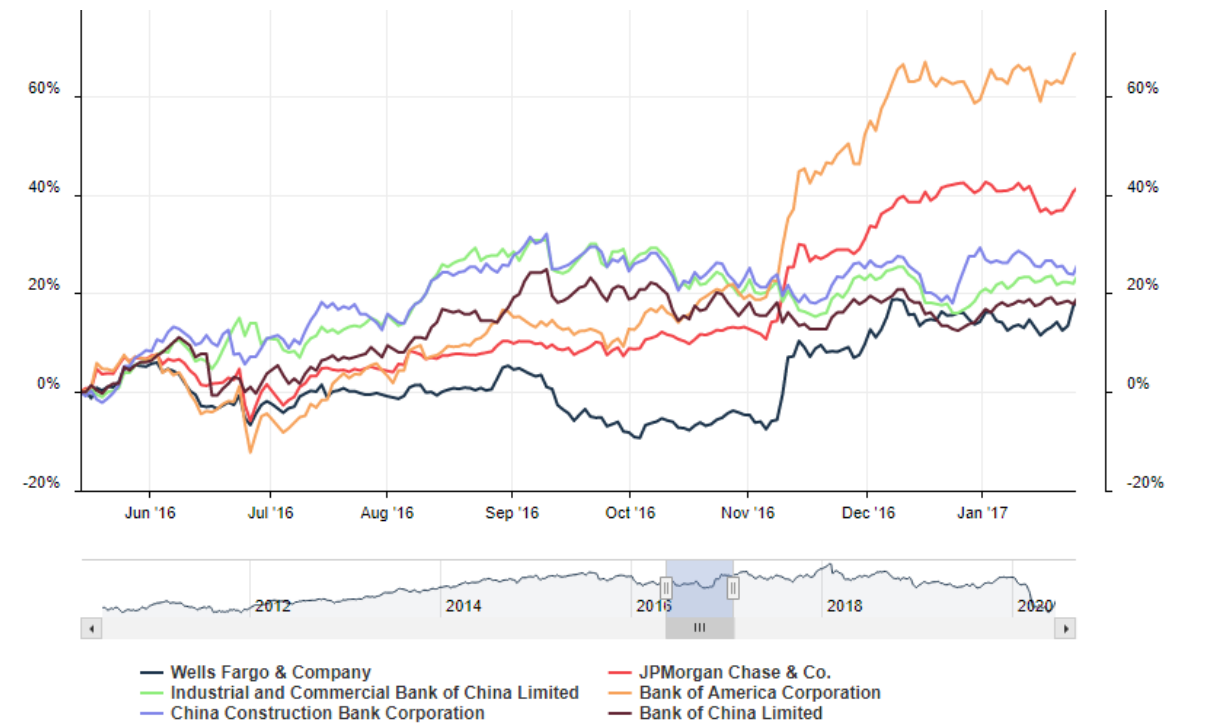
Background - Between 2002 to 2016, Wells Fargo, the 4th largest US bank set unrealistic sales target for its employees which made thousands of them to open numerous accounts for customers mostly under false pretences or without customer consent. Former CEO Stumpf was ordered to pay \$17.5m and banned from ever working at a bank again for his role in the scandal (Kelly, 2020). The bank suffered reputational damage which impacted on its profitability (Noonan & Shubber, 2020; Flitter, 2020). Wells Fargo later agreed with the authorities to pay \$3b in settlement of the criminal charges and the civil action lawsuits arising from its action.

Fig. 4.1.6.1 – Wells Fargo Share Price Movement From 08/09/2016



Data Source: Yahoo Finance

Fig. 4.1.6.2 Wells Fargo Share Price Sector Performance Jun 2016-Jan 2017



Source: Marketscreener.com

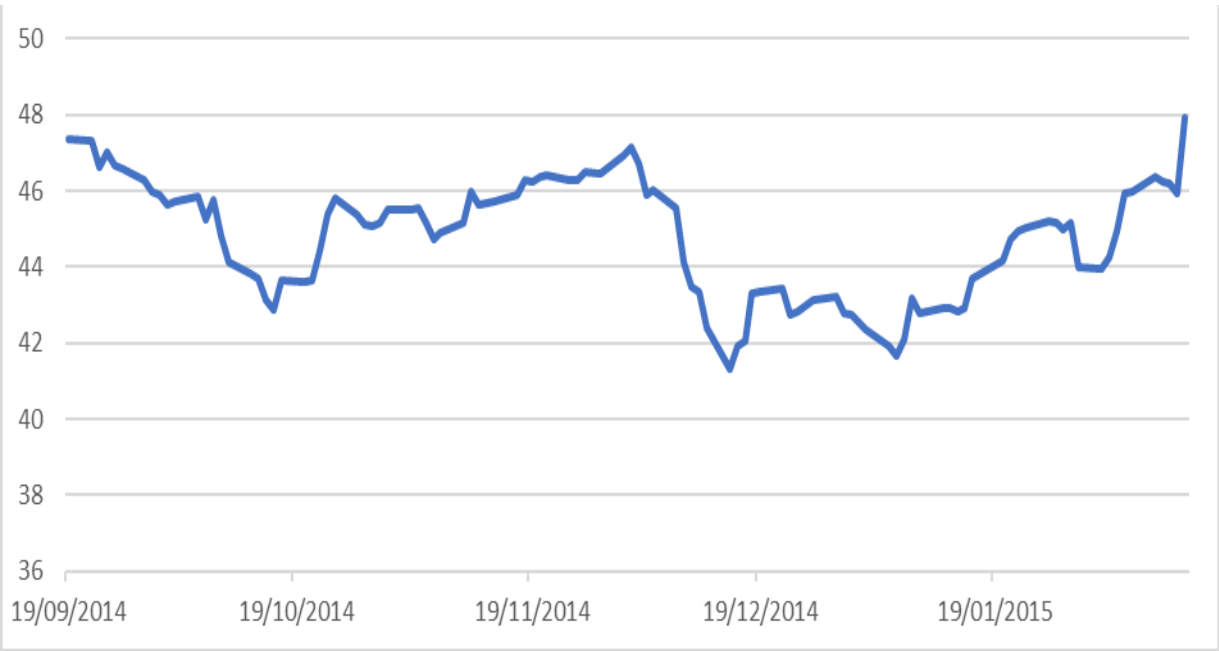
Remark – Evidence from the data showed that Wells Fargo’s share price was directly affected by the incident in comparison with the share price performance within the sector for the period. The share price however recovered to pre-crisis level at the end of 45 trading days after the incident.

4.1.7 GlaxoSmithKline

In July 2013, it was alleged that over £3b yuan (£320m) was given as kickbacks to doctors in China - September 19, 2014.

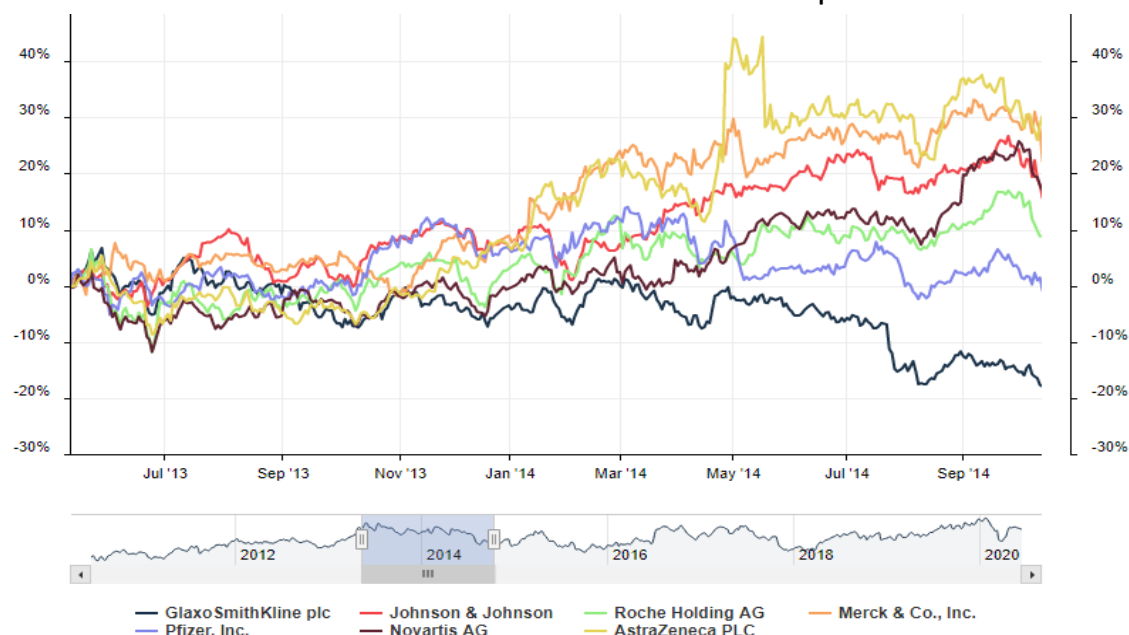
Background - In July 2013, GlaxoSmithKline (GSK) in China was accused of channelling amounts in the region of \$489m in bribes to health officials using a network of travel agencies. Former GSK head in China, Mark Reilly, was arraigned for corruption and sentenced to between two and four years in jail though he was eventually deported. GSK was fined to a record 3b yuan (\$489m), apologised to the Chinese authorities and pledged to take specific actions to re-establish itself as a dependable ally in China and globally.

Fig. 7.1.7.1 – GSK Share Price Movement From 19/09/2014



Data Source: Yahoo Finance

4.1.7.2 GSK Share Price Sector Performance Jul 2013-Sept 2014



Source: Marketscreener.com

Remark: The bribery allegations potentially prompted GSK to take unprecedented steps to change its marketing practices. The company decided to discontinue assigning individual prescription drug sales targets to staff, and healthcare professionals were no longer remunerated for speaking engagements and a new compensation scheme was introduced globally in all the countries it operates. In addition, its engagement with healthcare professionals; was streamlined and the process for the review and monitoring of the invoicing and payments system modified (Sullivan, 2018). The data revealed that GSK share price took 101 trading days to return to pre-crisis level.

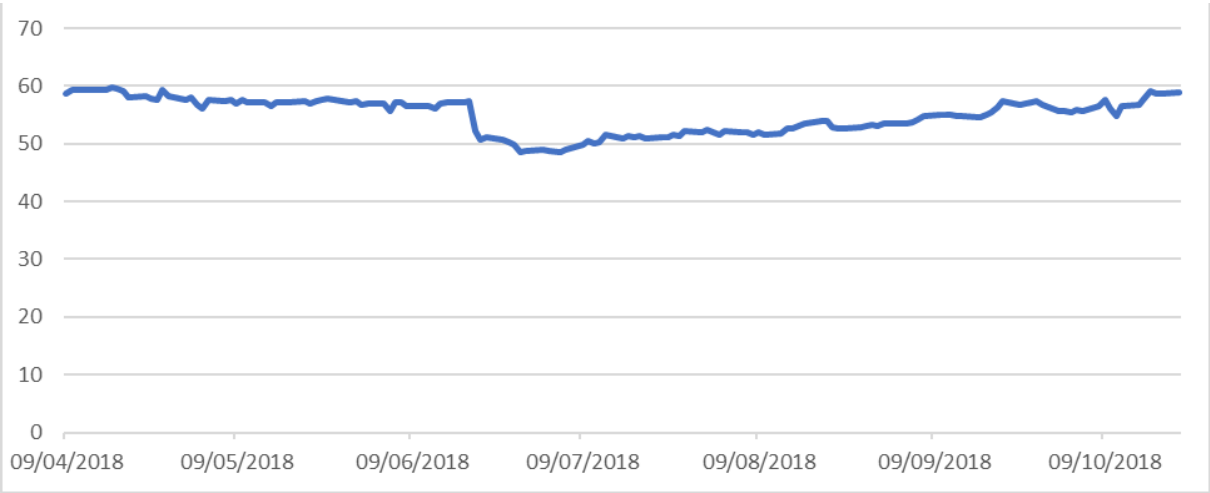
4.1.8 Starbucks

Racism row - April 12, 2018

Background - On April 12, 2018, two friends, who sat down at Starbucks downtown location in Philadelphia waiting for a third person for a meeting were arrested after a manager called 911 to accuse them of causing a disturbance and trespassing. The arrest, as recorded on mobile phones showed the men in handcuffs being taken away led to outrage and protests at Starbucks cafes all over the US. The men were later released with no charges filed; however, Starbucks and Philadelphia police were accused of racism.

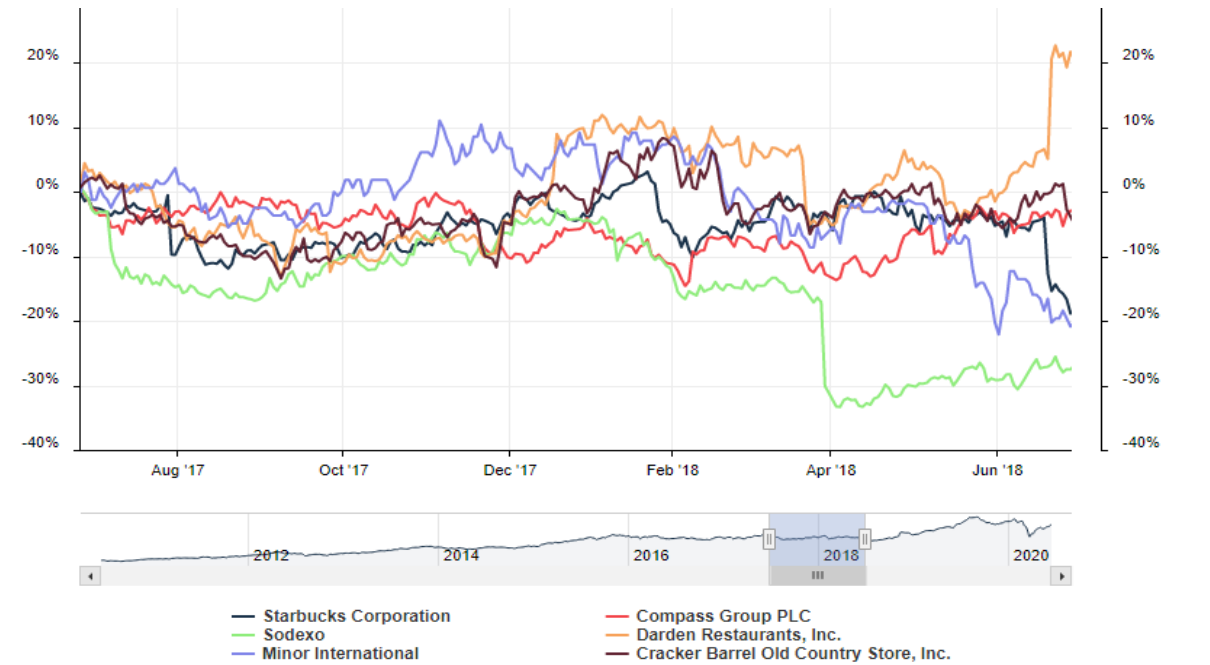
The Philadelphia police chief later apologised for his department’s handling of the incident and the CEO of Starbucks personally visited to apologise to the two men. Starbucks closed its over 8,000 locations in the US on May 29, 2016 to provide a one day training to its staff all over the US on racial bias and spent up to \$16.7m to protect its reputation (Avila, et al., 2019). In agreement with the two men, Philadelphia city Mayor Jim Kenny, pledged \$200,000 (£147,000) to the city’s new programme for public high school students who aspire to become entrepreneurs (cbsnews.com, 2018).

Fig. 4.1.8.1 Starbucks Share Price Movement From 09/04/2018



Data Source: Yahoo Finance

4.1.8.2 Starbucks Share Price Sector Performance Aug 2017-Jun 2018



Source: marketscreener.com

Remark - The data revealed that the impact of the incident was not immediately noticeable in the share price movement of Starbucks; however, after struggling for 4 trading days, a downward trend which took 137 trading days for the shares to recover to pre-crisis level was observed. The management of the crisis started on a slippery terrain but later effort to correct the mistakes helped to significantly reduce the reputational damage.

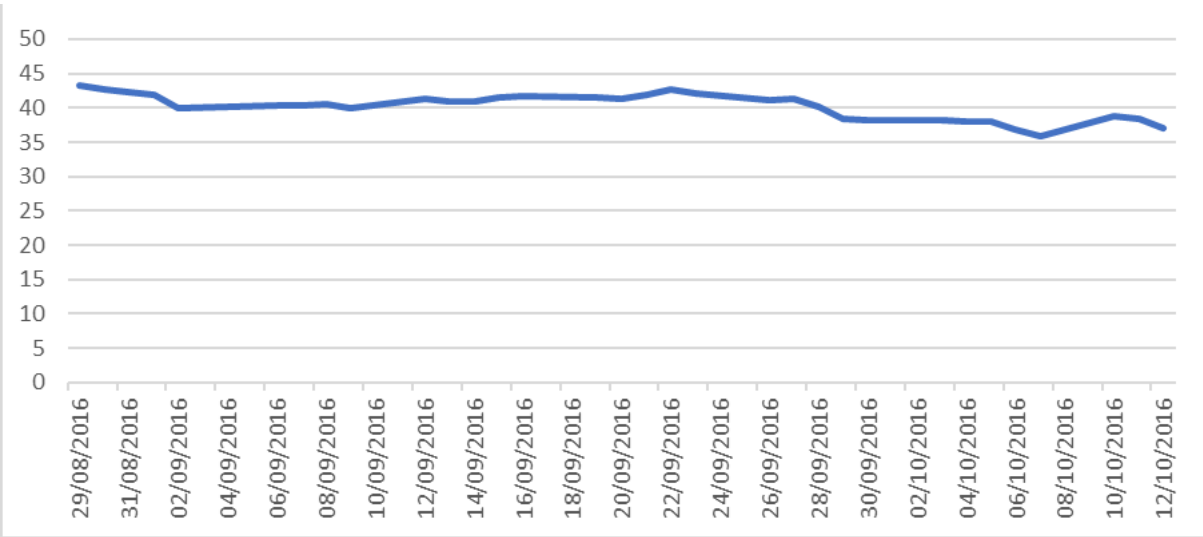
4.1.9 Mylan

EpiPen price increases - August 29, 2016

Background - EpiPen, a spring-loaded tool that helps to reverse an allergic reaction when stabbed into the thigh. It was noted that Mylan N.V. the global pharmaceuticals company that sells it progressively raised its price from about \$100 in 2009 for a pack of two to \$608.61 in 2016 because it was an essential product which many people with severe allergies depend on and require more than one.

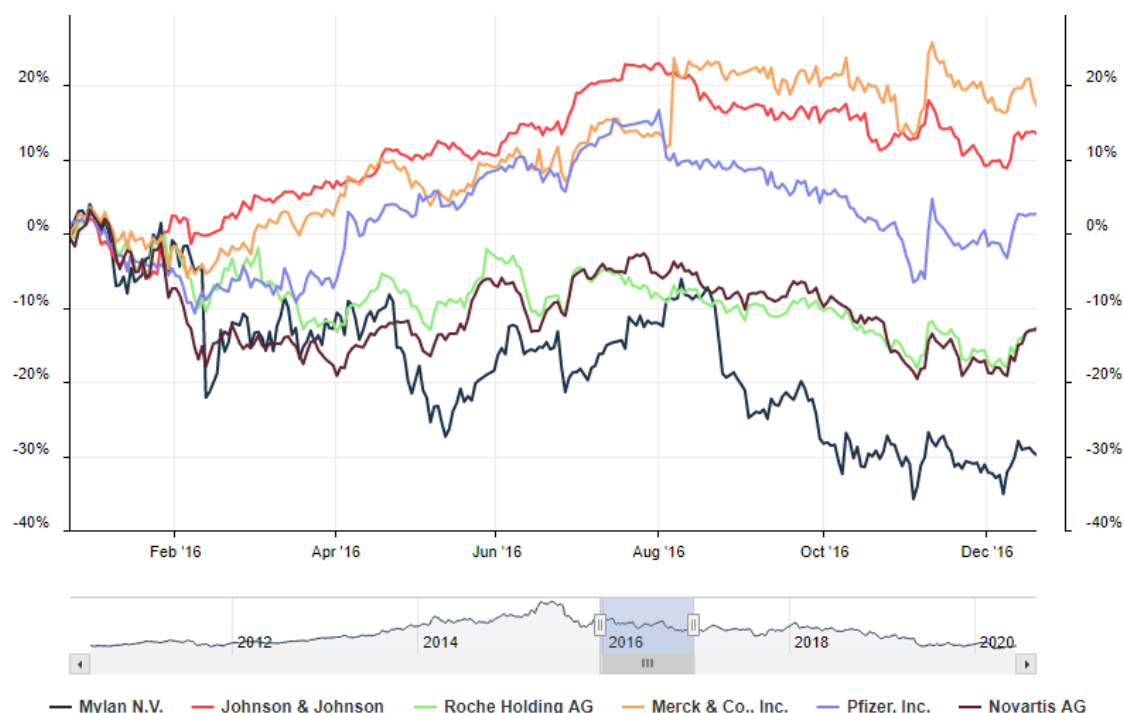
The EpiPen case was said to follow a pattern of prescription drugs price increase across board and one of the reasons many medications are more expensive in the U.S. than elsewhere. Public opinion on the increasing cost of US health-insurance was partly due to increases such as Mylan’s EpiPen price rises (Khazan, 2016; Chapelle, 2019).

Fig. 4.1.9.1 - Mylan Share Price Movement From 29/08/2016



Data Source: Yahoo Finance

4.1.9.2 Mylan Share Price Sector Performance Feb-Dec 2016



Source: marketscreener.com

Remark: The data suggests that Mylan share price was significantly impacted by the incident with the share price at some point losing as much as 16.8%. Price loss after the incident went on for 126 trading days. Due to public outcry and as a reputational damage control measure, Mylan later introduced a cheaper generic version of the EpiPen.

4.1.10 Volkswagen

Diesel emission scandal - September 18, 2015

Background - Car giant, VW in 2015 admitted installing a deceptive software device in over 11m of its vehicle worldwide of which 1.2m are in the UK and rolled out a “fix” in the EU to make the cars compliant with emissions laws. ‘Dieselgate’ as the incident became known, was made public on September 18, 2015 when the US Environmental Protection Agency revealed that VW and Audi vehicles had violated the Clean Air Act and led to investigations worldwide (Laville, 2019). The software was a defeat device that makes VW cars to release less pollutions in tests than in actual driving conditions. The health and environmental damage from the VW vehicles was huge and could

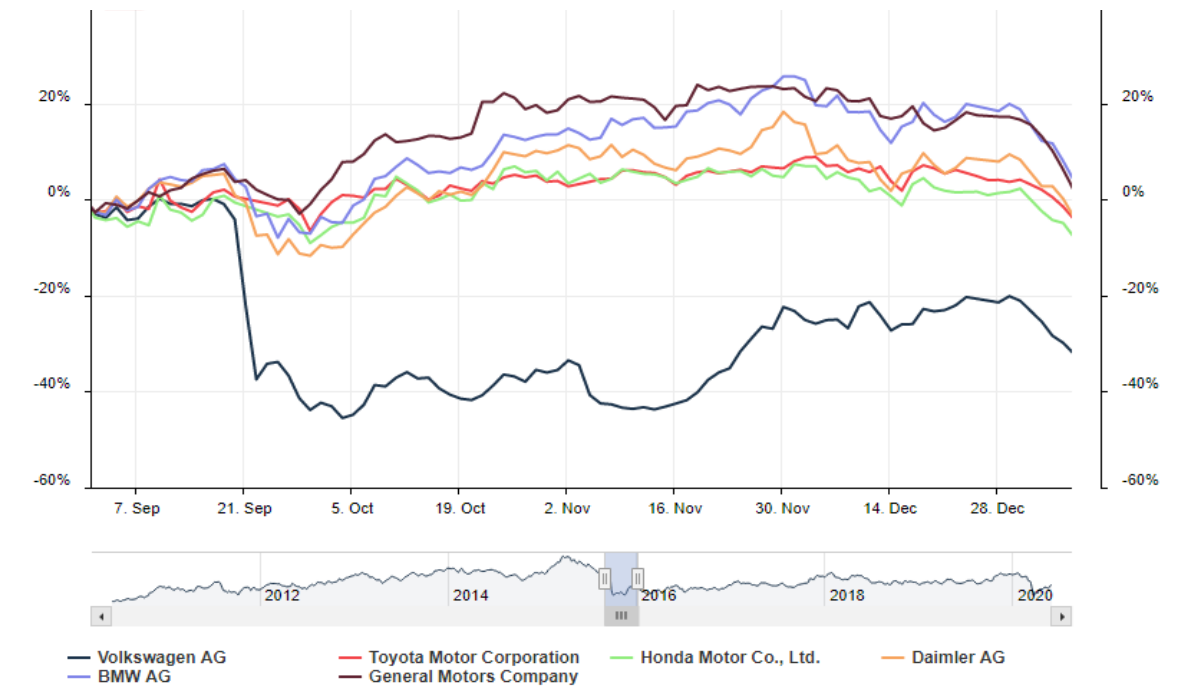
be equal to all NOx emissions from all power stations, vehicles, industry and agriculture in the UK’s put together (Topham, et al., 2015).

Fig. 4.1.10.1 – VW Share Price Movement From 18/09/2015



Data Source: Yahoo Finance

4.1.10.2 VW Share Price Sector Performance Sep – Dec 2015



Source: marketscreener.com

Remark – The ‘dieselgate’ scandal was adjudged to be one of the greatest corporate deceits and frauds in history. The public and the markets reacted with the same magnitude of concern for the long-term implication of the damage to the environment and the resultant health effect on everyone. As a corporate citizen, the public expected VW to be trustworthy and behave responsibly. In addition to the fines and legal costs, the massive reputational damage has continued to affect the company. Immediately after the incident, the share price of VW was on a sharp downward spiral and at some point, fell by more than 40% and the data analysis revealed that it took as long as 542 trading days to return to pre-crisis level.

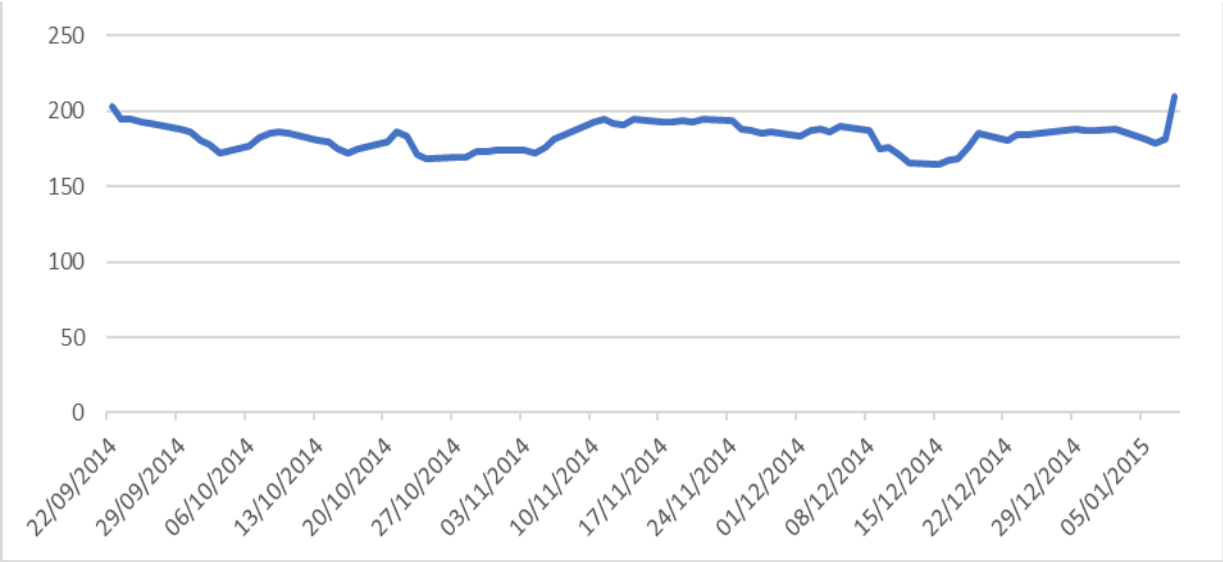
4.2 Corporate Case Study

4.2.1 Tesco

Accounting scandal - September 22, 2014

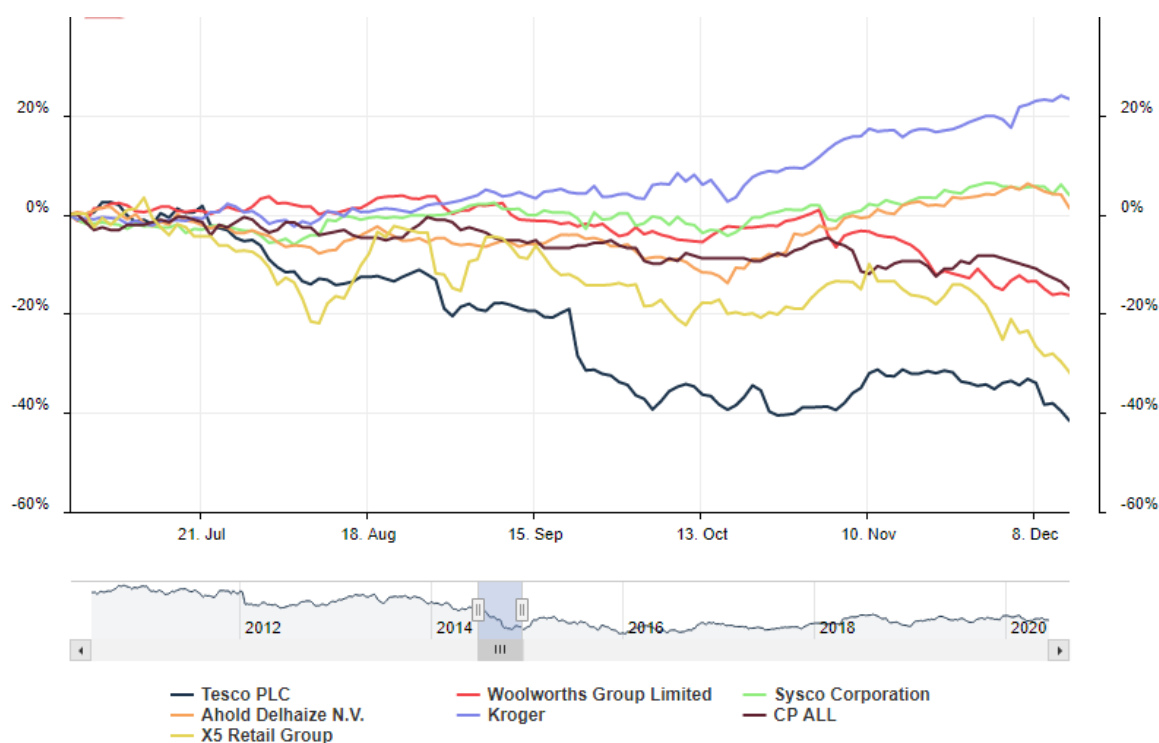
Background - On September 22, 2014, groceries giant, Tesco revealed that its profits had been overstated by £250m, later revised to £326m. The accounting scandal generated serious concerns over how a FTSE 100 firm could be caught “cooking the books”. Before the announcement, a series of profit warnings had reportedly led to a loss of about £2 billion in its market capitalisation. Eight directors were suspended, and three former executives (later acquitted) were charged with fraud after the black hole was discovered.

Fig. 4.2.1.1 – Tesco Share Price Movement From 22/09/2014



Data Source: Yahoo Finance

4.2.1.2 - Tesco Share Price Sector Performance Jul – Dec 2014



Source: marketscreener.com

Remark – The incident impacted Tesco’s share price and the downward spiral continued until trading day 75 after the incident when it fully recovered. In a 2017 agreement with authorities over the scandal Tesco paid £85m as compensation to investors and another £129m in fines and costs. In addition, in 2015, Tesco suffered a £6.3bn loss (Binham & Vandeveld, 2017). The new top management were proactive in handling the crisis and returning the company to good financial health. In 2020, investigations by the UK Financial Reporting Council ended with no evidence of misconduct found (Trentmann, 2020). Analysts believe the accounting scandal was a self-inflicted crisis due to incompetence of top management.

4.3 Informational Case Studies

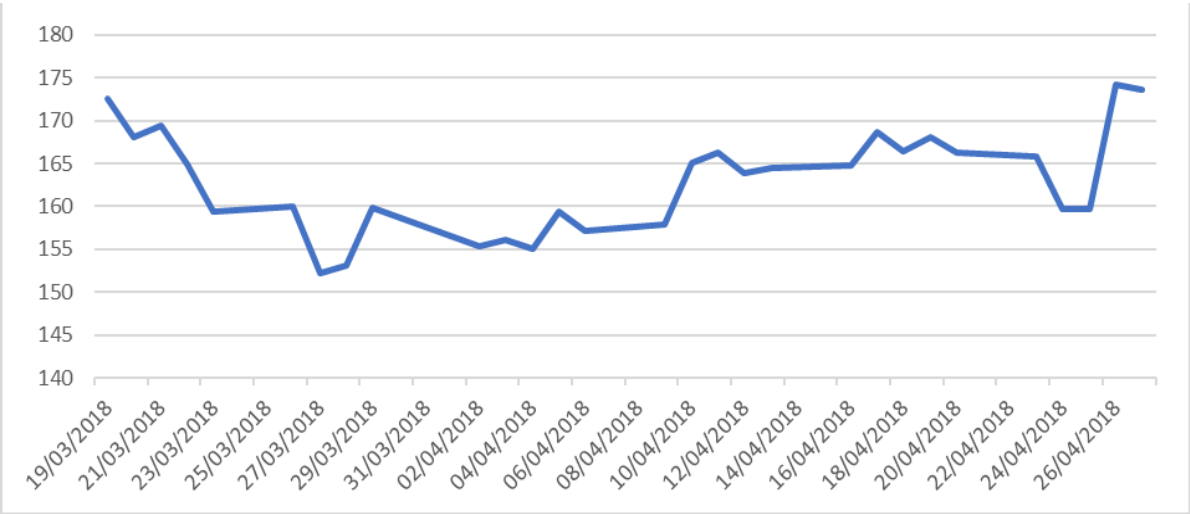
4.3.1 Facebook

Cambridge Analytica harvested data from 87m Facebook profiles - March 17, 2018

Background - On March 18, 2018 it was reported that Facebook profiles of 50 million users in a major breach of user trust, were gathered by the now defunct UK firm, Cambridge Analytica, for use in psychographic profiling. (Mirhaydari,

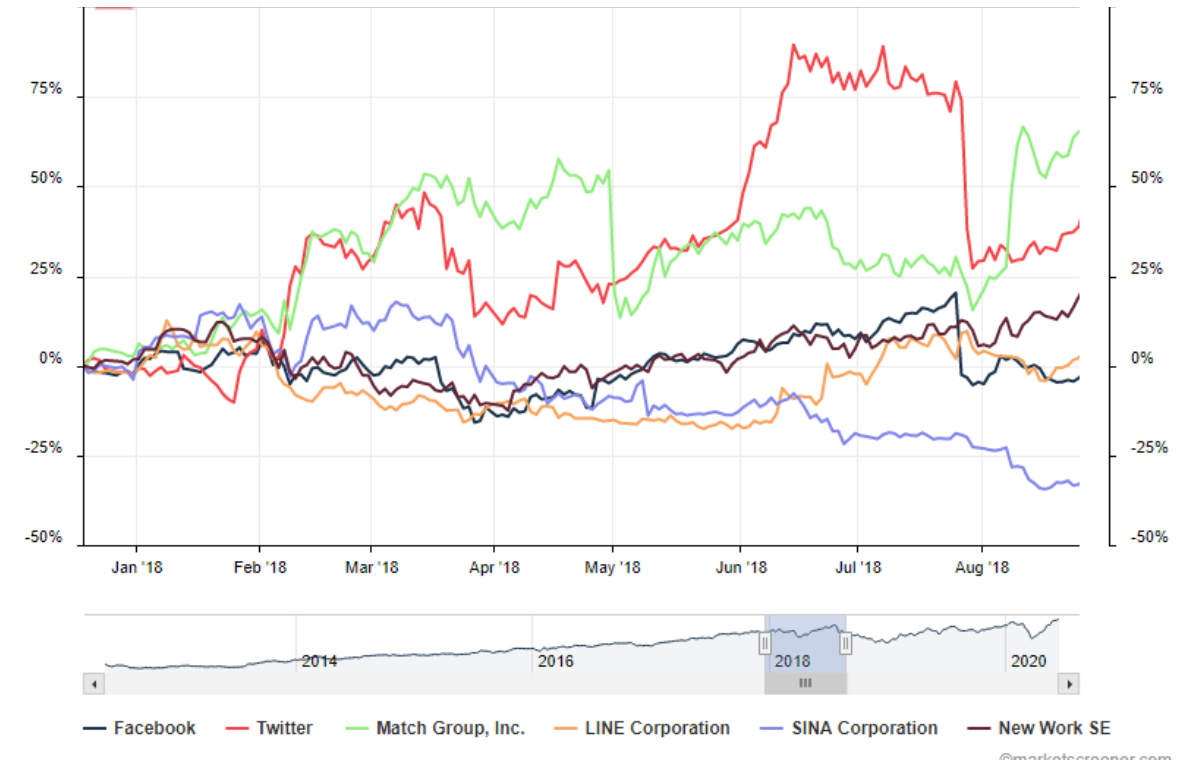
2018). The harvested data later revised upwards to 87m user profiles were said to have been used for political advertising during the 2016 American presidential elections.

Fig. 4.3.1.1 – Facebook Share Price Movement From 19/03/2018



Source: Yahoo Finance

4.3.1.2 - Facebook Share Price Sector Performance Jan-Aug 2018



Source: marketscreener.com

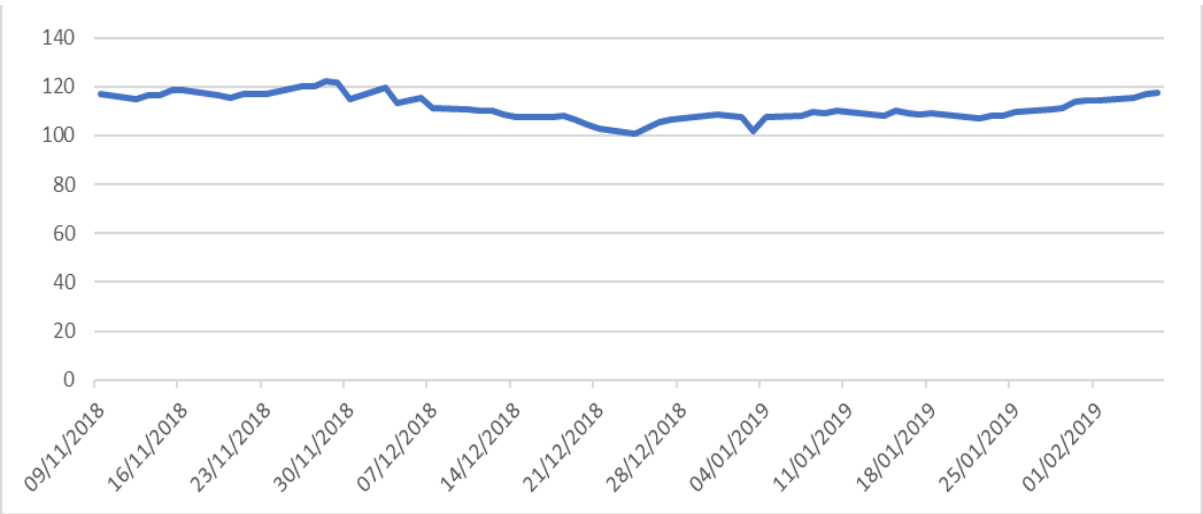
Remark: the data revealed that Facebook share price did not recover to pre-crisis level until trading day 27 after the incident though the magnitude of loss cannot be said to be significant.

4.3.2 Marriott Hotel Group

Data breach involving 500m customers - November 30, 2018

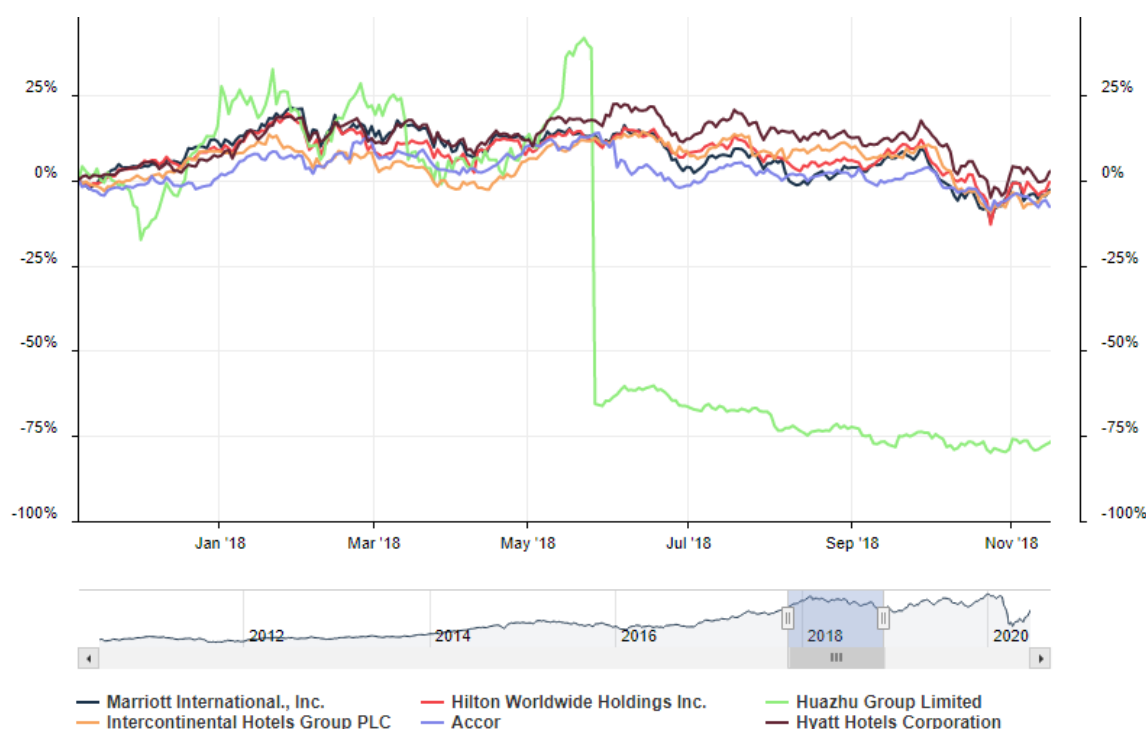
Background - Marriott International hotel group, the world’s largest hotel chain, reported that 500m guest reservation records in its Starwood division database had been compromised with attackers having had access to the Starwood network since 2014. For about 327m of customers’ phone and passport numbers, names, email and physical addresses, account information, gender, date of birth, arrival, and departure information were accessed. Some encrypted payment card information was also stolen. The accessed database included details of reservations made on or before 10 September 2018. It was unclear whether the encrypted payment information was stolen, customers were encouraged to be at alert over any suspicious transactions on their account.

Fig. 4.3.2.1 – Marriott Share Price Movement From 09/11/2018



Source: Yahoo Finance

4.3.2.2 Marriott Share Price Sector Performance Jan-Nov 2018



Source: marketscreener.com

Remark: Data shows that the market did not immediately respond to the incident however, after struggling for about 15 trading days the Marriott share price had a loss run of 42 trading days before bouncing back.

The relatively long period the hackers were able to access to the data before being discovered was a cause for concern, though Marriott who had just acquired the Starwood business handled the crisis with proper attention and concern to its customers. A dedicated website and a helpline were setup to provide affected customers with assistance. Customers were also provided a year-long subscription to one fraud-detecting agency to enable them to monitor their finances. Additionally, Marriott informed customers that no notification emails with attachments would be sent (bbcnews, 2018).

4.3.3 Equifax

Data breach involving 143m customers - September 07, 2017

Background – September 07, 2017, Equifax, one of the three largest consumer credit reporting agencies in the US, announced that a data breach which had potentially exposed 147m of customers' personal information. The names, home addresses, phone numbers, dates of birth, social security

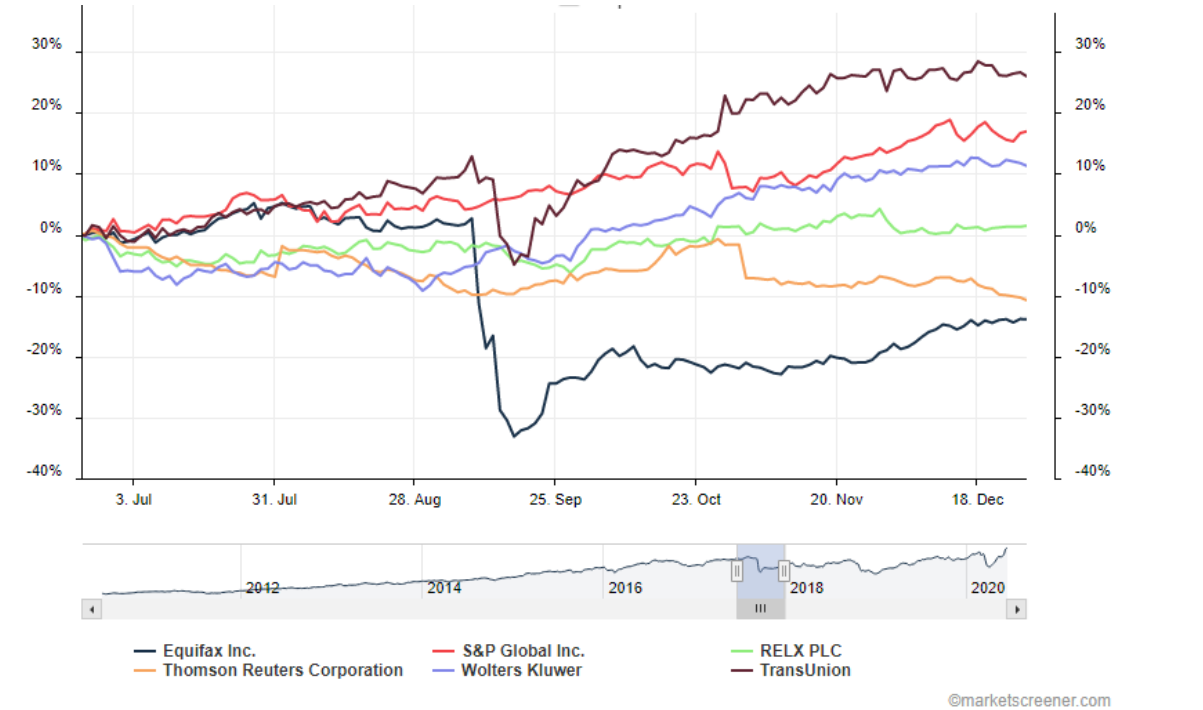
numbers, and driver’s license numbers were stolen. Credit card information of roughly 209,000 clients were also included in the breach. The importance and sensitive nature of the individual data held by Equifax to the general populace worldwide made the breach a cause for concern because it hit at the core of the service provided (epic.org, 2020; ftc.gov, 2020).

Fig. 4.3.3.1 – Equifax Share Price Movement From 07/09/2017



Data Source: Yahoo Finance

4.3.3.2 Equifax Share Price Sector Performance Jul-Dec 2017



Source: marketscreener.com

Remark: Data shows that Equifax share price lost up to 21.98% of its pre-crisis value at some point in the crisis and did not recover the loss until 474 trading days. As a credit monitoring agency, the public and the markets expected Equifax to implement impenetrable security for the sensitive data they keep.

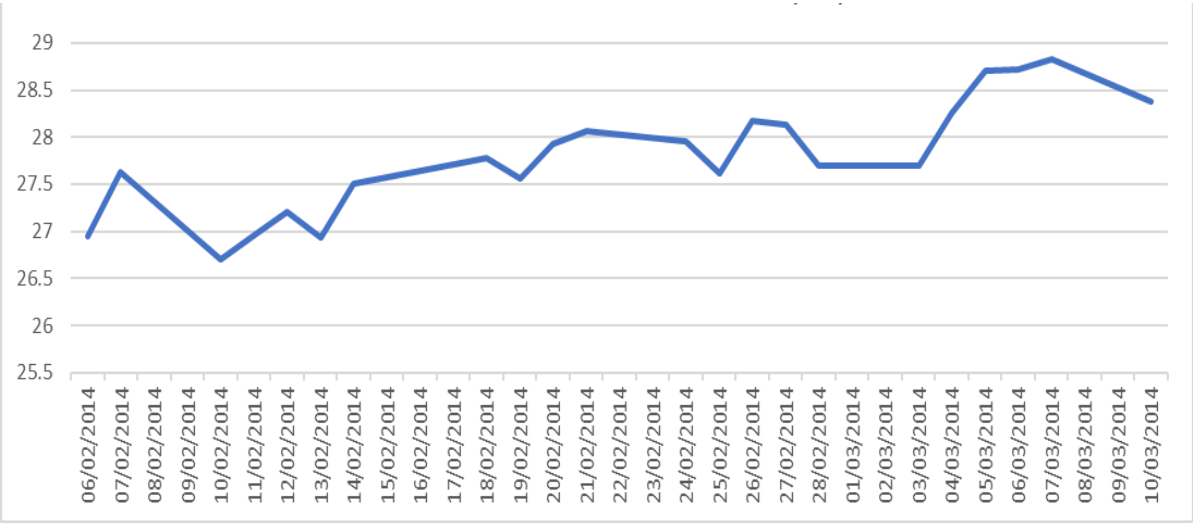
4.4 Operational Case Studies

4.4.1 General Motors

Faulty ignition switches on cars - February 6, 2014

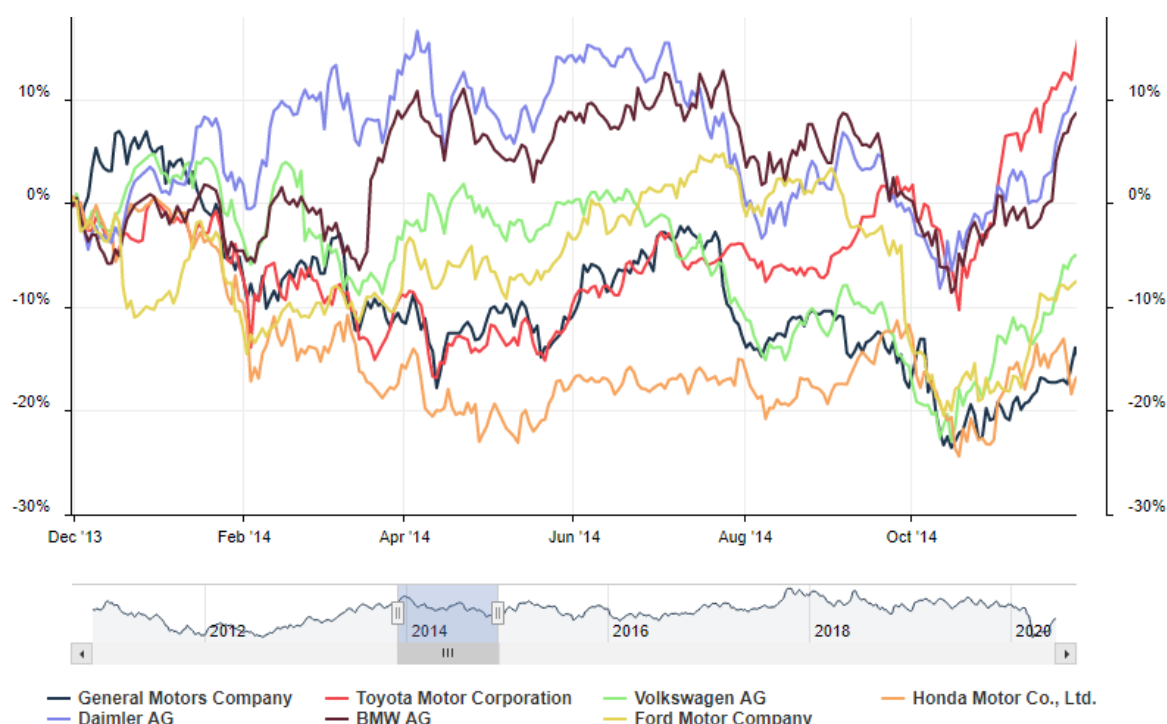
Background – the third largest global automaker, General Motors, faced consumer and public uproar in 2014 over the discovery of a defect in the ignition switch in some of its cars. In the first three months of 2014, GM issued a recall for 2.6 million of its small cars due to the faulty in the ignition switches that was already linked to many accidents with not less than 97 fatalities recorded from 2005. The faulty ignition switches could unintentionally shut off car engines and disable the airbags with the car in motion. Investigations later revealed that GM had known about the faulty switches since from around 2003 but was reluctant in fixing them, possibly due to the cost implications of recalling some 30.1m vehicles (Plumer, 2015).

Fig. 4.4.1.1 – GM Share Price Movement From 06/02/2014



Data Source: Yahoo Finance

4.4.1.2 GM Share Price Sector Performance Dec 2013-Oct 2014



Source: marketscreener.com

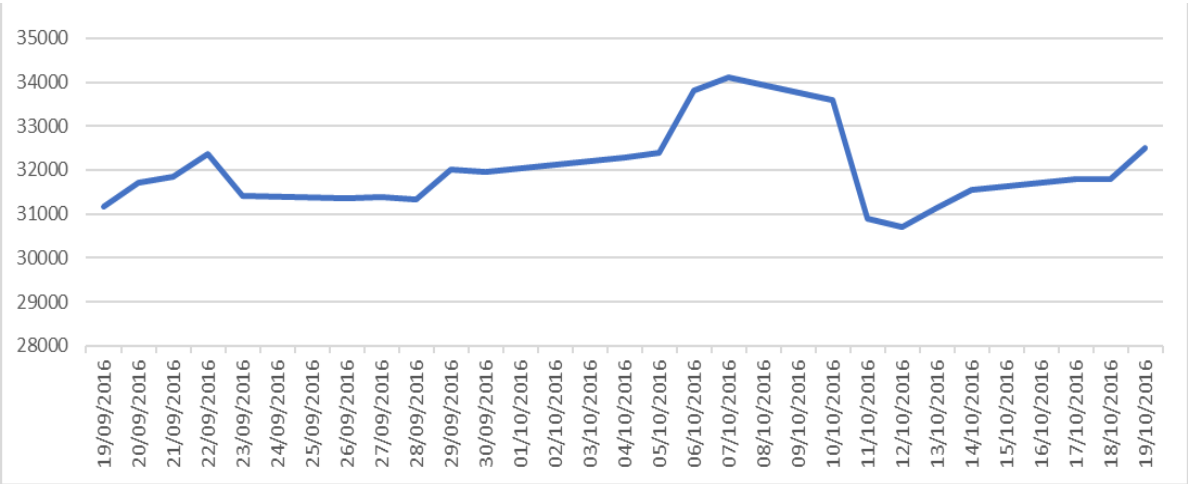
Remark: The data shows no evidence of any significant impact of the incident on the share price of GM with only 2 trading days of losses within 21 trading days before it bounced back and appreciated in value. GM had been highly trusted by the public and the non-significance of this incident could be an indication of this trust.

4.4.2 Samsung

Exploding Samsung Galaxy Note 7 phones August 24, 2016 - Recall and sales suspension 15/09/2016

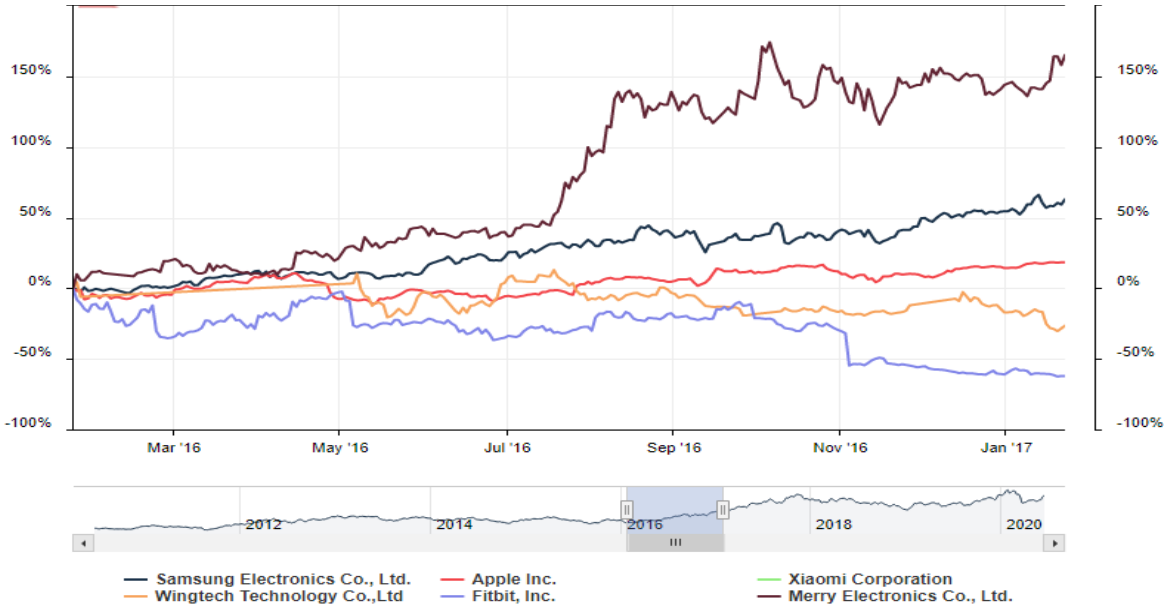
Background – On September 15, 2016, the electronic giant Samsung, suspended the sale of its Galaxy Note 7 and issued a recall, after it was confirmed that a defect in the phones' batteries had resulted in many fires and explosions. Due to safety concerns, the device was banned from flights in the US (Moynihan, 2017; Tsukayama, 2018).

Fig. 4.4.4.1 – Samsung Share Price Movement From 18/09/2016



Data Source: Yahoo Finance

4.4.2.2 Samsung Share Price Sector Performance Mar 2016-Jan 2017



Source: Marketscreener.com

Remark – The data shows that Samsung’s share price was not significantly affected by the recall and suspension of the sale of the Samsung galaxy S7 except for 3 trading days of loss. While the recall created some reputational damage, it did not appear to have seriously affected the public perception of the brand and the immediate suspension of sales and the eventual recall was probably seen as a responsible move by the public.

4.4.3 BP

Deepwater Horizon Oil Spill - April 20, 2010

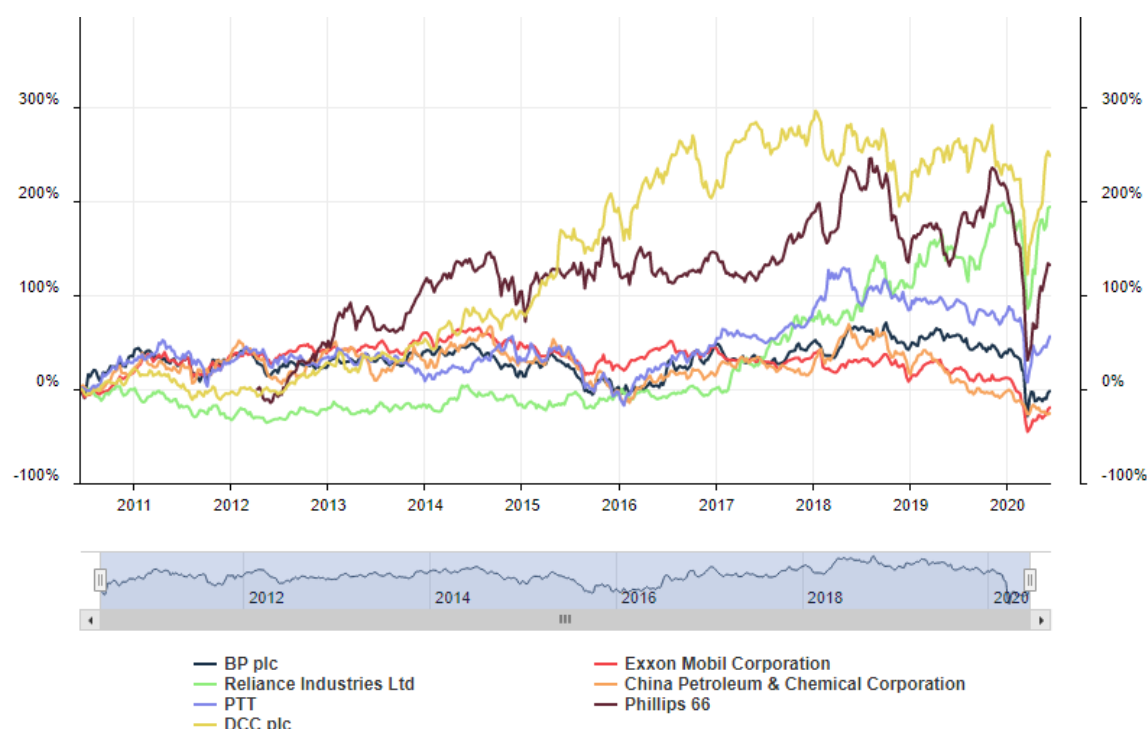
Background - The Deepwater Horizon oil spill started on 20 April 2010 after a well head blowout created an explosion and a fire on the Macondo Prospect BP operated in the Gulf of Mexico, which was about 42 miles off the coast of Louisiana, USA. It took 87 days before the oil flow could be stopped on 15 July 2010 and the well was sealed on 19 September 2010. The incident created the largest marine oil spill with about 4.9m barrels of oil discharged into the sea with unprecedented environmental pollutions. The Gulf’s coastal resources, such as fishes and aquatic wildlife were severely impacted and fishermen and others whose means of livelihood depended on those resources lost them during the period (Pallardy, 2020; noaa.gov, 2020).

Fig. 4.4.3.1 – BP Share Price Movement From 20/04/2010



Data Source: Yahoo Finance

4.4.3.2 BP Share Price Sector Performance 2011-2020



Source: marketscreener.com

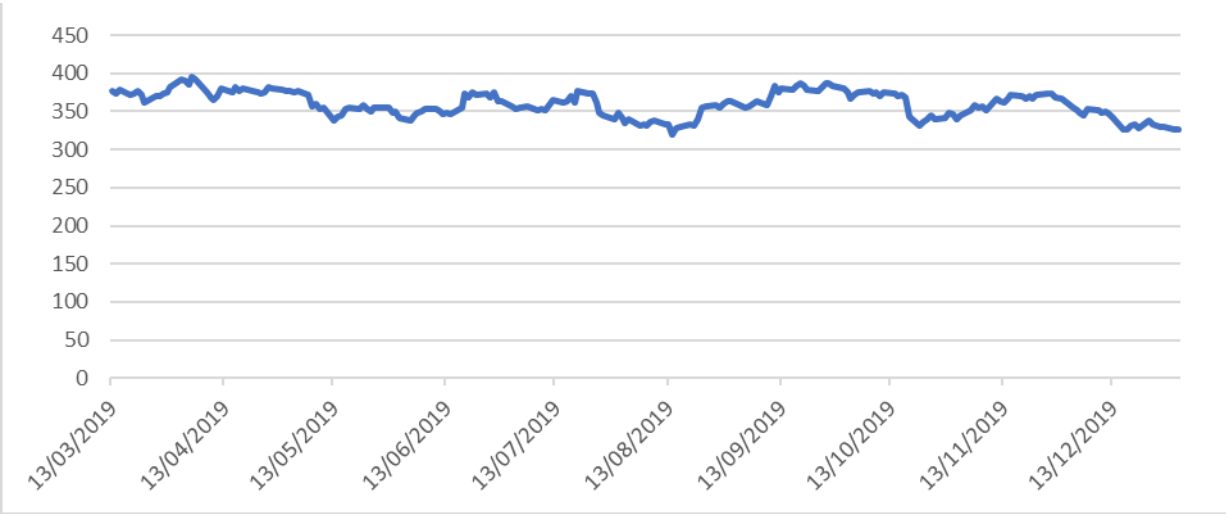
Remark: Data revealed that at the end of 21 trading days BP shares did not recover from the drastic loss suffered. Further observation from the data showed the share price has yet to return to pre-crisis level and BP's fortunes continue to slide. The share price suffered immediate and progressive price loss in the immediate aftermath of the incident and over a relatively long period. The then BP CEO Tony Hayward appeared to compound the situation by saying then in the tick of the crisis that he 'wants his life back' which gave the impression that there was no empathy on the part of BP concerning the massive environmental disruptions the incident created. BP also made various efforts to shift the blame to contractors and partners on the oil rig instead of taking full responsibility. Due to plummeting sales at its gas stations across the US because of the damaged reputation, BP had to reintroduce the Amoco brand gas stations which had earlier been discontinued after BP bought Amoco. The move was expected to make the public forget the reputational damage to the BP brand and return public trust.

4.4.4 Boeing

Boeing Max 737 design fault - October 29, 2018 - All Max 737 Grounded March 13, 2019

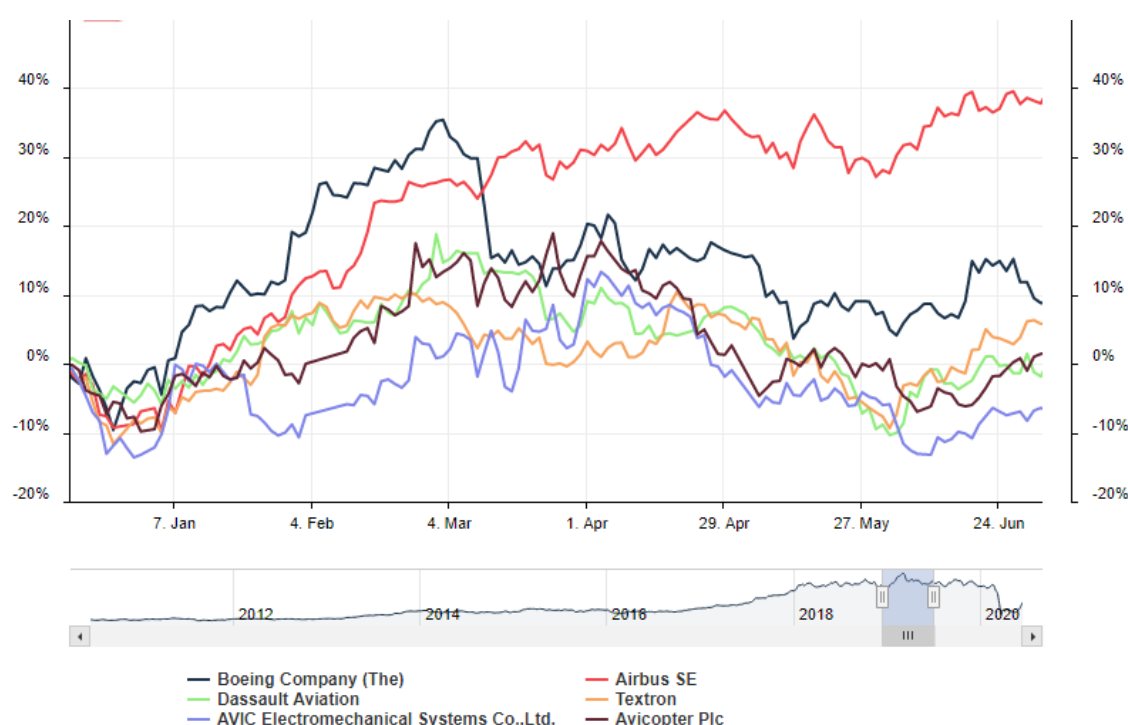
Background – Boeing designed the 737 Max with a set of new more fuel-efficient engines, updated avionics, and cabins in addition to having a longer range and lower operating cost. It was believed that since it was an upgrade to 737 previous models, pilots would require less training and could interchange easily between the models. Two crashes of the Max 737 in a space of five months with a combined 346 fatalities created serious concerns about the design, effectiveness, and efficiency of the additional features on the plane. The crashes also called attention to the need to review training standards, pilot experience and regulatory oversight. after the second crash, the Max 737 planes were grounded worldwide on 13/03/2019 while Boeing continued its effort to fix the design fault. (Slotnik, 2020).

Fig. 4.4.4.1 – Boeing Share Price Movement From 13/03/2019



Data Source: Yahoo Finance

Fig 4.4.4.2 Boeing Share Price Sector Performance Jan-Jun 2019



Source: marketscreener.com

Remark: The share price of Boeing recovered the losses suffered within 12 trading days and held on for a further 6 trading days before falling again. However, the grounding of the planes has put pressure on its share price which continued to fluctuate downwards below pre-crisis level. Boeing CEO Dennis Muilenburg in an effort to stop the decision to ground the planes spoke to the US President but this seemed to have compounded the situation as Boeing was being perceived as putting profit before customers' lives, and had to leave the post December 23, 2019. Many of the orders placed for the Max 737 by airlines were subsequently cancelled affecting revenue and has put continued to put pressure on the share price.

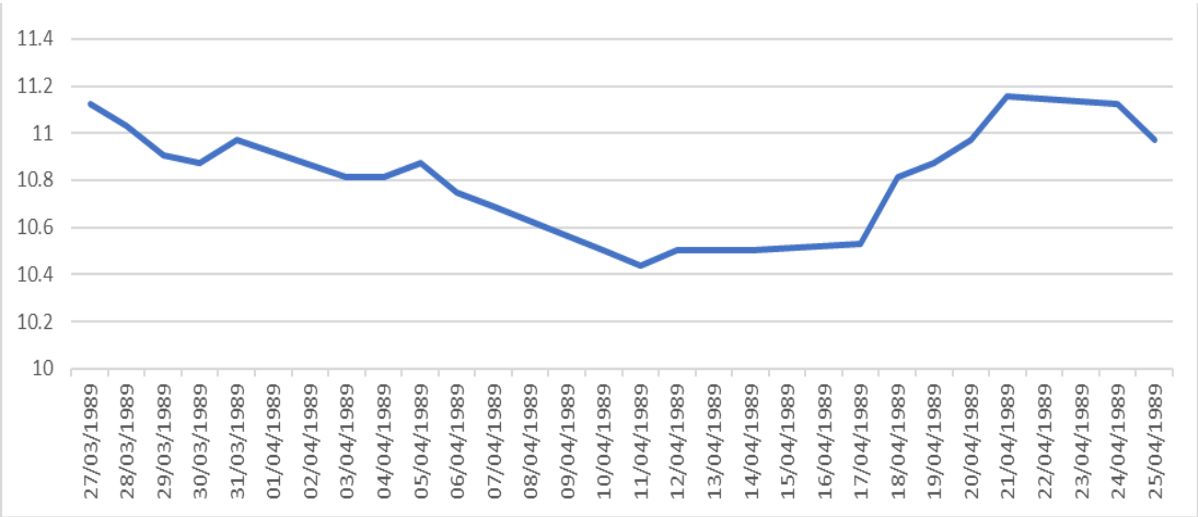
4.4.5 Exxon Mobil

Exxon Valdez Oil spill - March 24, 1989

Background – The Exxon Valdez oil spill occurred in the US Gulf of Alaska in Prince William Sound when the Exxon Valdez, an Exxon Corporation tanker ran aground when sailing from Valdez, Alaska, to California. Delay in the efforts to contain the spill and strong natural winds and waves spread almost 11m gallons (41,640 kilolitres) of crude oil across the area. About 1,300 miles

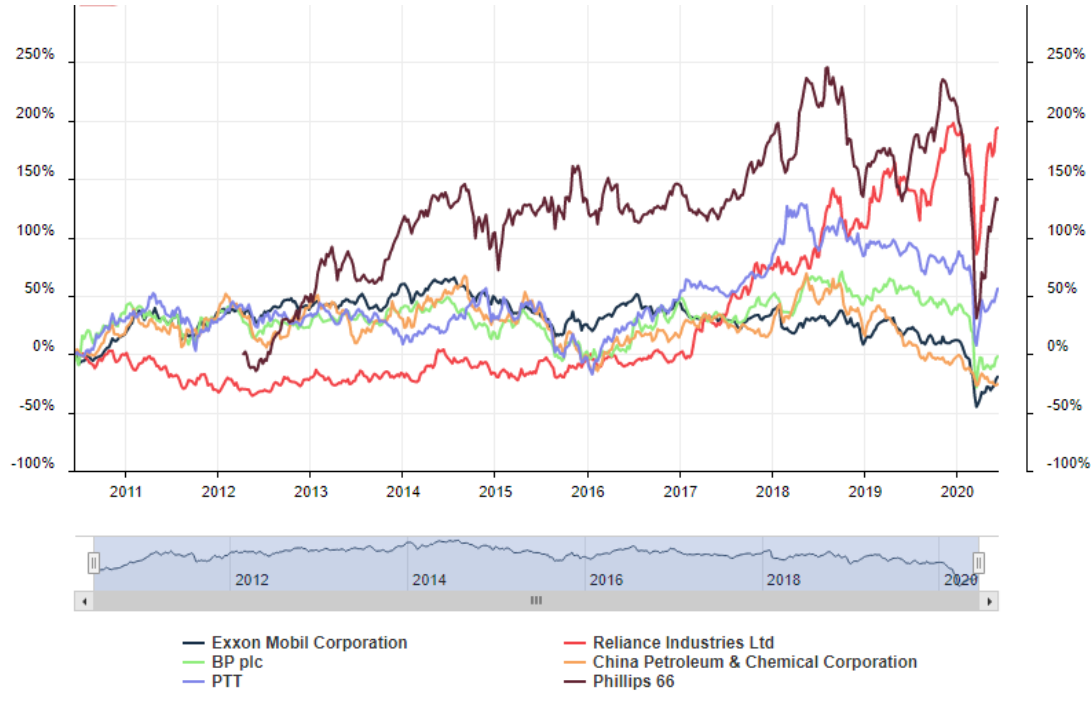
(2,092 kilometres) of shoreline were polluted and lot of the native wildlife, including herring, salmon, sea otters, killer whales, and bald eagles were destroyed (Ed, 2020).

Fig. 4.4.5.1 – Exxon Mobil Share Price Movement From 27/03/1989



Data Source: Yahoo Finance

Fig 4.4.5.2 Exxon Mobil Share Price Sector Performance 2011-2020



Source: marketscreener.com

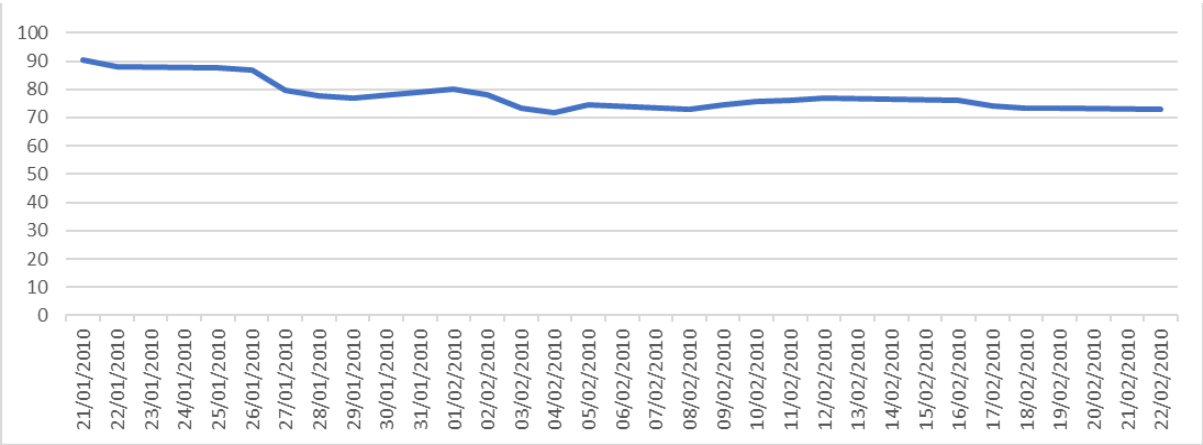
Remark: It took 19 trading days for the Exxon Mobil share price to recover to pre-crisis level. The U.S. Congress, as a result of the incident passed the Oil Pollution Act, 1990 which set out the procedures on future response to oil spills, the legal liabilities of responsible parties, and scheduled a 2015 date to ban the use of single-hulled tankers from U.S. waters (Ed, 2020).

4.5.6 Toyota

Acceleration pedal failures - January 21, 2010 (recall)

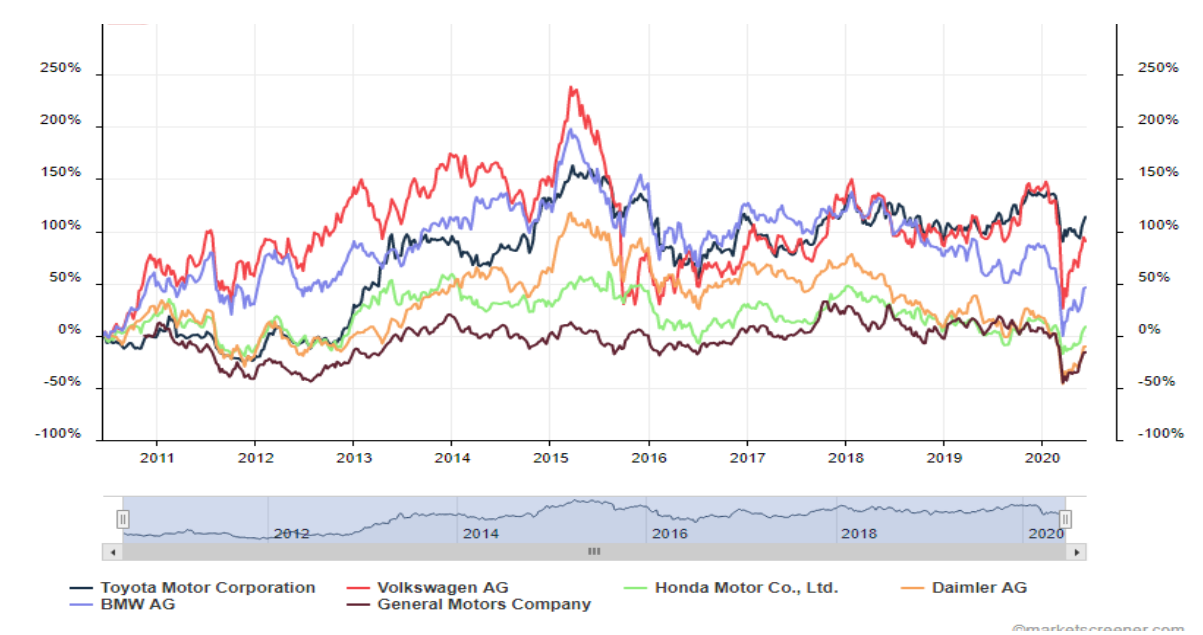
Background - In 2009, it was reported that accelerator pedals on some Toyota cars were getting stuck and trapping the drivers in cars that went out of control and eventually crashed. (Parrish, 2016). In 2014, Toyota admitted it had misled the public in defending the integrity of its product and hiding the defect and recalled 12 million vehicles worldwide between 2009 and 2010 (Cowan, 2014; Wasserman, 2014).

Fig. 4.5.6.1 – Toyota Share Price Movement From 21/01/2010



Data Source: Yahoo Finance

Fig 4.5.6.2 Toyota Share Price Sector Performance 2011-2020



Remark – Evidence from the data showed that Toyota share price loss though in line with the overall sector performance, continued for 268 trading days; the full recovery to pre-crisis level took place on trading day 269.

4.5 Summary

Table 4.5.1 – Trading Days Before Share Price Returned to Pre-Crisis Level

	Company	Crisis	Trading days before share price returned to pre-crisis level.	Type
1	Nissan	Chairman arrested for financial mismanagement	1	Behavioural
2	Barclays Bank	Libor fixing scandal	4	Behavioural
3	Apple	Slowing down of battery	8	Behavioural
4	United Airlines	Public humiliation of customer	15	Behavioural
5	Credit Suisse	Spying on its employees	22	Behavioural
6	Wells Fargo	Opening unauthorised customer accounts	45	Behavioural
7	GlaxoSmithKline	Bribery	101	Behavioural
8	Starbucks	Racism row	137	Behavioural
9	Mylan	EpiPen price increases	127	Behavioural
10	Volkswagen	Diesel emission scandal	542	Behavioural
11	Tesco	Accounting scandal	75	Corporate
12	Facebook	Data breach and misuse 87m profiles	27	Informational
13	Marriott Hotel Group	Data breach involving 500m customers	42	Informational
14	Equifax	Data breach involving 143m customers	474	Informational
15	General Motors	Faulty ignition switches on cars	1	Operational
16	Samsung	Exploding Samsung Galaxy Note 7 phones	3	Operational
17	Boeing	Boeing Max 737 Product design fault	12	Operational
18	Exxon Mobil	Exxon Valdez Oil spill	19	Operational
19	Toyota	Failure of acceleration pedal	269	Operational
20	BP	Deepwater Horizon Oil Spill	2556	Operational

5.0 Conclusion

The analysis showed that crisis impact negatively on the share prices of a listed company in different magnitudes depending on the type of crisis. Some brands were better able to manage the effect of a crisis through the implementation of a proactive crisis management plan. The time it takes for the share price of a company to return to pre-crisis level vary according to the type of crisis, the impact of the trauma created, the appropriate management of the crisis and other factors such as the public anger and resentment, the overall performance of the stock market as well as the performance of the sector a company belongs, regulator investigations and legal implications and how quickly issues relating to the crisis are resolved.

The data analysis showed that not all companies experience a fall in share price as a result of a crisis, Samsung's Galaxy Note 7 recall and the GM recall did not appear to have had any significant effect on their share prices during the period. A crisis incident tends to affect the stock prices of listed businesses based on the public consciousness and the impact of the incident and the news trail it generates determine the intensity of scrutiny.

The reaction of the stock markets may sometimes be delayed beyond the 48-hour window due to public holidays and weekends when markets are closed which sometimes allow brands to attempt to get their acts together in confronting the crisis. However, social, and online media and the 24-hour news cycle which has created increased consumer awareness and made information sharing, and analysis easier, continues to make it practically impossible for brands to escape the public scrutiny. The communications management aspect of the CMP becomes central to the impact of a crisis on the share price of a company because markets are driven by the direction of news and the type of information it gives. In line with the Freshfields study findings, delays, improper and inadequate management of a crisis would in most cases lead to a prolonged or sustained drop in share prices and top management may lose their jobs, such as in the BP, VW, Boeing case studies. The earlier the negative news of a crisis disappears the better for the share price of the affected brand. A run of good news rather than bad is required to help the share price rebound.

The impact of a crisis on the share price of a brand may be brief or prolonged depending on the type of crisis management plan implemented and other market conditions. Crisis incidents that resonate with people and which consequently reflect on the stock prices of affected brands were those that had a general effect on the environment, safety and health and well-being. When an organisation is discovered to be lying or trying to cover up an incident, consumers and the stock markets continue to push for the truth using all the available social media and the internet, it generates continuous negative news and the organisation or brand tend to suffer more losses on the stock market. Attempts by BP to transfer the blame to others and its improper handling of the entire crisis management process contributed to increase the reputational damage that impacted negatively on the business. BP gas stations in the US lost a lot of revenue and BP had to decide to reintroduce the Amoco brand that was discontinued when BP bought the business.

The data suggests a trend that indicates that incidents that creates a concern or trauma that consumers or the public identify as something that can happen to them, or has impacted them negatively, or affected their fundamental beliefs will always lead to negative and prolonged impact on the share price of the affected companies, BP's Deepwater, VW's diesel emission scandal, and Equifax data breach are examples.

The overall effect of a crisis incident on the share prices of brands and businesses is driven principally by many factors such as: whether the crisis was effectively managed with a high level of responsibility, responsiveness, and sincerity on the part of the organisation to be truthful and to quickly alleviate the suffering of those impacted by the incident.

The increasing global awareness of the dangers of climate change and the damage it creates to the environment have put these issues on the front burner hence, incidents that create serious environmental impact and destruction of wildlife tend to stay much longer and create more negative news and consequently impact negatively on the share prices of the businesses concerned over a longer period. The coverage of news on environmental

degradation because of the actions and inactions of an organisation may tentatively hinder the overall growth of the business.

The analysis revealed that crisis incidents such as data breaches tend to affect large numbers of people and is now beginning to have a much longer negative effect on stock prices than before. In the digital age, consumers worldwide have become emboldened and empowered to come together to institute class action lawsuits against erring businesses. Organisations that are not prepared to safeguard customer data are most likely to face more challenging times.

A crisis in which the regulatory authorities, government and international organisations are involved also tend to lead to further scrutiny over a longer period and consequently continue to impact negatively on the stock price of such companies as seen in the case study of BP, VW, Tesco.

Organisations that go from one crisis to the other gather bad news and a digital footprint that may hinder real growth or create reputational damage that may be difficult to overcome.

Competitors will take advantage of a crisis and any organisation going from one crisis to the other will spend more time firefighting and less time to innovate and concentrate on business growth. Reputational damage is a principal factor that impacts on the share price of businesses. Negative incidents give brands a bad name and image, however, proper management of at the earliest stage of the crisis management will help to overcome any reputational damage that may result from such crisis.

In the digital era, perspectives continue to change, and a crisis may combine with other external factors to destroy any brand no matter how long the business had existed. The case of Lehman Brothers points to the need for brands to do everything possible to avoid a crisis.

According to Karl Popper's principle of falsification, it is clear that the behaviour of the share price of a brand after a crisis of any type cannot be said to depend only on the impact of the crisis and not all crisis would inevitably lead to a remarkable fall in share prices.

6.0 Recommendations

In the digital age, increased access to news, information, reports, and analysis has made an average consumer better informed and businesses can no longer expect not to be under scrutiny one way or the other. Crisis continued to constitute a challenge to corporate organisations whether in the area of prevention or effective management, it is therefore important that businesses take adequate care to avoid any type of crisis by putting in place structures, systems, and processes that are strong enough to help them avoid a crisis or that leads to the very minimum crisis.

Behavioural crises are the type that are mostly brought upon businesses by the actions or inactions of the representatives of the organisation and are relatively easy to prevent, hence businesses must carry out their operations with integrity and due regard to their CSR such that illegal practices and lack of regard for all stakeholders are avoided.

In managing any crisis, communication plays a pivotal role. business organisations should avoid half-truths and lies and be as open as possible to stakeholders at all levels.

Future Research Direction from Author's Perspective

The financial and other associated costs of managing or navigating through a crisis is high and crisis may lead to the liquidation of the business. Further research and analysis on the overall effect of crisis on brands in terms of shareholder value; dividends, financial and legal costs of a crisis in the different market segments and for similar crisis type would be desirable.

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8.0 Appendices

8.1 Data Population

S/N	Company	Incident	Date	Remark
1	BP	Deepwater Horizon Oil Spill	April 20, 2010	
2	ExxonMobil	Oil spill	1989	
3	Barclays Bank	Libor fixing scandal	27 July 2012	
4	UBS	Rogue trading	Sept 2011	Loss of \$2.3b
5	Volkswagen	Diesel emission scandal	September 2015	Over 11m vehicles (2008-2015)
6	United Airlines	Public humiliation of customer	April 09, 2017	
7	Toyota	Failure of acceleration pedal	January 21, 2010	
8	Lehman Brothers	Financial mismanagement	Sept. 15, 2008	Led to the liquidation of Lehman Brothers
9	Nissan	Chairman arrested on charges of financial mismanagement	December 21, 2018	
10	Facebook	Cambridge Analytica Data harvesting	March 17, 2018	Up to 87m accounts
11	Equifax	Data breach	September 08, 2017	143m records
12	Boeing	Max 737 Product design fault	October 29, 2018	All Max 737 Grounded March 13, 2019
13	Starbucks	Racism row	April 12, 2018	
14	H & M	Racism row	January 07, 2018	
15	Johnson & Johnson	Suspected link of talc in baby powder to ovarian cancer	July 13, 2018	
16	Marriott Hotel Group	Data breach	November 30, 2018	About 500m customers
17	KFC	Lack of chicken leads to shutting of many outlets	February 16, 2018	

18	Chipotle Mexican Grill	E coli outbreak	October 31, 2015	
19	Pepsi	Kendal Jenner Advert	2017	
20	Bayer	Acquisition of Monsanto and its legal woes	June 07, 2018	
21	Dolce & Gabbana	Racism call in China	November 21, 2018	
22	Apple	Slowing down old iPhone batteries	December 21, 2017	
23	Thomas Cook	Overwhelmed by debt, collapses	September 23, 2019	
24	India's Jet Airways	Overwhelmed by debt, collapses	April 17, 2019	
25	Credit Suisse	Spying on its employees	September 23, 2019	
26	Deutsche Bank	\$7.2bn mis-selling scheme	December 23, 2016	
27	Baidu	Health care search engine scandal	2016	
28	Kellogg	Boycott of Breitbart news	2016	
29	Wells Fargo	Fake customer accounts	September 08, 2016	
30	Samsung	Exploding Samsung Galaxy Note 7 phones	August 24, 2016	Recall and sales suspended 15/09/2016
31	Air China	Race row	2016	
32	Mylan	EpiPen price increase	August 29, 2016	
33	Tesco	Accounting scandal	September 22, 2014	
34	Yahoo	Data breach	September 2016	
35	Sony Pictures Entertainment	Data breach	November 24, 2014	
36	TalkTalk	Data breach	February 27, 2015	
37	Coca-Cola	Funding anti-obesity research	August 09, 2015	
38	GlaxoSmithKline	Gave over £3m kickbacks to doctors in China	September 19, 2014	
39	General Motors	Faulty ignition switches on cars	February 6, 2014	

40	JP Morgan Chase	Cancellation of a special Twitter Q&A due to bad questions	November 14, 2013
41	Credit Suisse	\$5.3bn Mis-selling scheme	December 23, 2016
42	EasyJet	Data breach	May 19, 2020

8.2 Price Movement Data

Price movement data for the 20 selected sample.

Table 8.2.1 - Nissan Price Movement From 21/12/2018

	Date	Close	% Diff. From 21/12/2018
0	21/12/2018	15.69	0.000000
1	24/12/2018	15.55	-0.892288
2	26/12/2018	15.77	0.509879
3	27/12/2018	15.84	0.956023
4	28/12/2018	15.92	1.465902
5	31/12/2018	15.94	1.593372
6	02/01/2019	16.08	2.485660
7	03/01/2019	16.06	2.358184
8	04/01/2019	16.36	4.270242
9	07/01/2019	16.53	5.353735
10	08/01/2019	16.51	5.226259
11	09/01/2019	16.54	5.417470
12	10/01/2019	16.68	6.309751
13	11/01/2019	16.68	6.309751
14	14/01/2019	16.67	6.246017
15	15/01/2019	16.64	6.054806
16	16/01/2019	16.67	6.246017
17	17/01/2019	16.71	6.500950
18	18/01/2019	16.84	7.329509
19	22/01/2019	16.65	6.118547
20	23/01/2019	16.67	6.246017
21	24/01/2019	16.55	5.481192

Data Source: Yahoo Finance

Table 8.2.2 - Barclays Bank Share Price Movement From 27/07/2012

	Date	Close	% Diff. From 27/07/2012
0	27/07/2012	9.732718	0
1	30/07/2012	9.788018	0.56818661
2	31/07/2012	9.640553	-0.9469606
3	01/08/2012	9.612904	-1.2310436
4	02/08/2012	9.262672	-4.829545
5	03/08/2012	9.834102	1.04168229
6	06/08/2012	10.10138	3.7878833
7	07/08/2012	10.25806	5.39773165
8	08/08/2012	10.31336	5.96591826
9	09/08/2012	10.3318	6.15532
10	10/08/2012	10.61751	9.09092404
11	13/08/2012	10.58986	8.80683
12	14/08/2012	10.62673	9.18561495
13	15/08/2012	10.57143	8.61742835
14	16/08/2012	10.82028	11.1742475
15	17/08/2012	11.12442	14.2992533
16	20/08/2012	11.05069	13.5416849
17	21/08/2012	11.33641	16.4772883
18	22/08/2012	11.38249	16.9507634
19	23/08/2012	11.10599	14.1098509
20	24/08/2012	10.93088	12.3106207
21	27/08/2012	10.97696	12.7840959

Data Source: Yahoo Finance

Table 8.2.3 - Apple Share Price Movement Data From 20/12/2017

	Date	Close	% Diff. From 20/12/2017
0	20/12/2017	174.35	0.00000000
1	21/12/2017	175.01	0.37854257
2	22/12/2017	175.01	0.37854257
3	26/12/2017	170.57	-2.16805212
4	27/12/2017	170.60	-2.15084593
5	28/12/2017	171.08	-1.87553994
6	29/12/2017	169.23	-2.93662737
7	02/01/2018	172.26	-1.19874444
8	03/01/2018	172.23	-1.21595063
9	04/01/2018	173.03	-0.75710178
10	05/01/2018	175.00	0.37280985
11	08/01/2018	174.35	0.00000000
12	09/01/2018	174.33	-0.01147347
13	10/01/2018	174.29	-0.03442099
14	11/01/2018	175.28	0.533405775
15	12/01/2018	177.09	1.571545687
16	16/01/2018	176.19	1.055346106
17	17/01/2018	179.1	2.724404839
18	18/01/2018	179.26	2.816167956
19	19/01/2018	178.46	2.357327708
20	22/01/2018	177	1.519927679
21	23/01/2018	177.04	1.542866021

Data Source: Yahoo Finance

Table 8.2.4 - United Airlines Share Price Movement from 09/04/2017

	Date	Close	% Diff. From 10/04/2017
0	10/04/2017	71.52	0.000000
1	11/04/2017	70.71	-1.132548
2	12/04/2017	69.93	-2.223150
3	13/04/2017	69.07	-3.425611
4	17/04/2017	70.77	-1.048658
5	18/04/2017	67.75	-5.271249
6	19/04/2017	69.29	-3.118003
7	20/04/2017	69.8	-2.404913
8	21/04/2017	69.56	-2.740491
9	24/04/2017	71	-0.727065
10	25/04/2017	70.97	-0.769010
11	26/04/2017	71.33	-0.265653
12	27/04/2017	70.7	-1.146532
13	28/04/2017	70.21	-1.831653
14	01/05/2017	70.27	-1.747763
15	02/05/2017	73.94	3.383676
16	03/05/2017	74.21	3.761189
17	04/05/2017	74.91	4.739943
18	05/05/2017	75.3	5.285244
19	08/05/2017	74.98	4.837816
20	09/05/2017	78.55	9.829427
21	10/05/2017	78.55	9.829427

Source: Yahoo Finance

Table 8.2.5 - Credit Suisse Share Price Movement from 23/09/2019

	Date	Close	% Diff. From 23/09/2019
0	23/09/2019	12.59	0.000000
1	24/09/2019	12.4	-1.509134
2	25/09/2019	12.24	-2.779984
3	26/09/2019	12.19	-3.177125
4	27/09/2019	12.16	-3.415409
5	30/09/2019	12.21	-3.018268
6	01/10/2019	11.88	-5.639396
7	02/10/2019	11.59	-7.942812
8	03/10/2019	11.49	-8.737093
9	04/10/2019	11.55	-8.260524
10	07/10/2019	11.48	-8.816521
11	08/10/2019	11.43	-9.213662
12	09/10/2019	11.42	-9.293090
13	10/10/2019	11.62	-7.704527
14	11/10/2019	11.94	-5.162828
15	14/10/2019	11.98	-4.845115
16	15/10/2019	12.19	-3.177125
17	16/10/2019	12.32	-2.144559
18	17/10/2019	12.29	-2.382844
19	18/10/2019	12.33	-2.065131
20	21/10/2019	12.49	-0.794281
21	22/10/2019	12.47	-0.953137
22	23/10/2019	12.6	0.079428

Data Source: Yahoo Finance

Table 8.2.6 - Wells Fargo Share Price Movement From 08/09/2016

	Date	Close	% Diff. From 08/09/2016
0	08/09/2016	49.9	0.000000
1	09/09/2016	48.72	-2.364731
2	12/09/2016	48.54	-2.725453
3	13/09/2016	46.96	-5.891789
4	14/09/2016	46.52	-6.773551
5	15/09/2016	46.15	-7.515030
6	16/09/2016	45.43	-8.957919
7	19/09/2016	46.01	-7.795599
8	20/09/2016	46.56	-6.693389
9	21/09/2016	45.83	-8.156312
10	22/09/2016	45.72	-8.376755
11	23/09/2016	45.74	-8.336673
12	26/09/2016	44.88	-10.060122
13	27/09/2016	45.09	-9.639282
14	28/09/2016	45.31	-9.198398
15	29/09/2016	44.37	-11.082170
16	30/09/2016	44.28	-11.262531
17	03/10/2016	43.83	-12.164328
18	04/10/2016	43.75	-12.324653
19	05/10/2016	44.99	-9.839679
20	06/10/2016	45.18	-9.458921
21	07/10/2016	45.33	-9.158316

Data Source: yahoo Finance

Table 8.2.7 - GSK Share Price Movement From 19/09/2014

	Date	Close	% Diff. From 19/09/2014
0	19/09/2014	47.38	0.000000
1	22/09/2014	47.32	-0.126638
2	23/09/2014	46.64	-1.561845
3	24/09/2014	47.03	-0.738713
4	25/09/2014	46.68	-1.477419
5	26/09/2014	46.59	-1.667372
6	29/09/2014	46.29	-2.300549
7	30/09/2014	45.97	-2.975939
8	01/10/2014	45.9	-3.123679
9	02/10/2014	45.63	-3.693542
10	03/10/2014	45.74	-3.461374
11	06/10/2014	45.86	-3.208105
12	07/10/2014	45.25	-4.495570
13	08/10/2014	45.77	-3.398060
14	09/10/2014	44.81	-5.424230
15	10/10/2014	44.12	-6.880544
16	13/10/2014	43.83	-7.492611
17	14/10/2014	43.68	-7.809204
18	15/10/2014	43.13	-8.970029
19	16/10/2014	42.88	-9.497678
20	17/10/2014	43.67	-7.830314
21	20/10/2014	43.61	-7.956944
22	21/10/2014	43.63	-7.914732
23	22/10/2014	44.41	-6.268470
24	23/10/2014	45.36	-4.263402
25	24/10/2014	45.79	-3.355846
26	27/10/2014	45.37	-4.242300
27	28/10/2014	45.1	-4.812163
28	29/10/2014	45.08	-4.854367

Data Source: Yahoo Finance

Table 8.2.8 - Starbucks Share Price Movement From 12/04/2018

	Date	Close	% Diff. From 12/04/2018
0	12/04/2018	59.43	0.000000
1	13/04/2018	59.24	-0.319700
2	16/04/2018	59.43	0.000000
3	17/04/2018	59.83	0.673064
4	18/04/2018	59.5	0.117786
5	19/04/2018	59.22	-0.353355
6	20/04/2018	58	-2.406192
7	23/04/2018	58.16	-2.136968
8	24/04/2018	57.81	-2.725894
9	25/04/2018	57.71	-2.894163
10	26/04/2018	59.38	-0.084131
11	27/04/2018	58.36	-1.800436
12	30/04/2018	57.57	-3.129732
13	01/05/2018	58.13	-2.187446
14	02/05/2018	56.7	-4.593638
15	03/05/2018	56.13	-5.552749
16	04/05/2018	57.68	-2.944641
17	07/05/2018	57.45	-3.331649
18	08/05/2018	57.67	-2.961471
19	09/05/2018	57.04	-4.021536
20	10/05/2018	57.65	-2.995117
21	11/05/2018	57.27	-3.634528

Data Source: Yahoo Finance

Table 8.2.9 - Mylan Share Price Movement From 29/08/2016

	Date	Close	% Diff. From 29/08/2016
0	29/08/2016	43.22	0.0000000
1	30/08/2016	42.75	-1.0874618
2	31/08/2016	42.36	-1.9898195
3	01/09/2016	41.92	-3.0078736
4	02/09/2016	39.97	-7.5196666
5	06/09/2016	40.4	-6.5247546
6	07/09/2016	40.31	-6.7329938
7	08/09/2016	40.57	-6.1314228
8	09/09/2016	39.89	-7.7047708
9	12/09/2016	41.33	-4.3729731
10	13/09/2016	40.91	-5.3447500
11	14/09/2016	40.84	-5.5067120
12	15/09/2016	41.49	-4.0027741
13	16/09/2016	41.79	-3.3086533
14	19/09/2016	41.49	-4.0027741
15	20/09/2016	41.26	-4.5349444
16	21/09/2016	41.91	-3.0310064
17	22/09/2016	42.59	-1.4576608
18	23/09/2016	42.06	-2.6839426
19	26/09/2016	41.18	-4.7200392
20	27/09/2016	41.31	-4.4192502
21	28/09/2016	40.22	-6.9412308
22	29/09/2016	38.47	-10.9902820
23	30/09/2016	38.12	-11.8000969
24	03/10/2016	38.2	-11.6149928
25	04/10/2016	37.97	-12.1471538
26	05/10/2016	38.03	-12.0083338
27	06/10/2016	36.84	-14.7616864
28	07/10/2016	35.94	-16.8440579
29	10/10/2016	38.87	-10.0647892
30	11/10/2016	38.31	-11.3604810

Data Source: Yahoo Finance

Table 8.2.10 - VW Share Price Movement From 18/09/2015

	Date	Close	% Diff. From 18/09/2015
0	18/09/2015	162.4	0.000000
1	21/09/2015	132.2	-18.596058
2	22/09/2015	106	-34.729062
3	23/09/2015	111.5	-31.342362
4	24/09/2015	112.15	-30.942114
5	25/09/2015	107.3	-33.928567
6	28/09/2015	99.3	-38.854676
7	29/09/2015	95.2	-41.379310
8	30/09/2015	97.75	-39.809111
9	01/10/2015	96.5	-40.578816
10	02/10/2015	92.36	-43.128076
11	05/10/2015	93.52	-42.413793
12	06/10/2015	97.09	-40.215517
13	07/10/2015	104	-35.960589
14	08/10/2015	103.5	-36.268471
15	09/10/2015	106.6	-34.359605
16	12/10/2015	108.55	-33.158863
17	13/10/2015	106.3	-34.544331
18	14/10/2015	106.6	-34.359605
19	15/10/2015	102.8	-36.699503
20	16/10/2015	100.6	-38.054186
21	19/10/2015	99.19	-38.922410

Data Source: Yahoo Finance

Table 8.2.11 - Tesco Share Price Movement From 22/09/2014

	Date	Close	% Diff. From 22/09/2014
0	22/09/2014	203	0.000000
1	23/09/2014	194.5	-4.187192
2	24/09/2014	194.9	-3.990151
3	25/09/2014	192.5	-5.172414
4	26/09/2014	191.55	-5.640393
5	29/09/2014	187.8	-7.487683
6	30/09/2014	186.2	-8.275864
7	01/10/2014	180.2	-11.231529
8	02/10/2014	178.2	-12.216750
9	03/10/2014	172.15	-15.197047
10	06/10/2014	176.75	-12.931034
11	07/10/2014	182.6	-10.049258
12	08/10/2014	185.1	-8.817731
13	09/10/2014	186.7	-8.029558
14	10/10/2014	185.25	-8.743842
15	13/10/2014	180.6	-11.034480
16	14/10/2014	179.8	-11.428570
17	15/10/2014	174.9	-13.842367
18	16/10/2014	172	-15.270936
19	17/10/2014	174.55	-14.014777
20	20/10/2014	179.3	-11.674875
21	21/10/2014	185.9	-8.423648

Data Source: Yahoo Finance

Table 8.2.12 - Facebook Share Price Movements From 17/03/2018

	Date	Close	% Diff. From 19/03/2018
0	19/03/2018	172.56	0.000000
1	20/03/2018	168.15	-2.555635
2	21/03/2018	169.39	-1.837042
3	22/03/2018	164.89	-4.444830
4	23/03/2018	159.39	-7.632127
5	26/03/2018	160.06	-7.243857
6	27/03/2018	152.22	-11.787203
7	28/03/2018	153.03	-11.317802
8	29/03/2018	159.79	-7.400328
9	02/04/2018	155.39	-9.950162
10	03/04/2018	156.11	-9.532914
11	04/04/2018	155.1	-10.118215
12	05/04/2018	159.34	-7.661105
13	06/04/2018	157.2	-8.901252
14	09/04/2018	157.93	-8.478213
15	10/04/2018	165.04	-4.357907
16	11/04/2018	166.32	-3.616128
17	12/04/2018	163.87	-5.035931
18	13/04/2018	164.52	-4.659246
19	16/04/2018	164.83	-4.479599
20	17/04/2018	168.66	-2.260080
21	18/04/2018	166.36	-3.592951
22	19/04/2018	168.1	-2.584604
23	20/04/2018	166.28	-3.639313
24	23/04/2018	165.84	-3.894299
25	24/04/2018	159.69	-7.458273
26	25/04/2018	159.69	-7.458273
27	26/04/2018	174.16	0.927217
28	27/04/2018	173.59	0.596893

Data Source: Yahoo Finance

Table 8.2.13 - Marriott Share Price Movement From 30/11/2018

	Date	Close	% Diff. From 09/11/2018
0	09/11/2018	117.04	0.000000
1	12/11/2018	115.07	-1.683186
2	13/11/2018	116.55	-0.418659
3	14/11/2018	116.3	-0.632261
4	15/11/2018	118.31	1.085097
5	16/11/2018	118.65	1.375599
6	19/11/2018	116.5	-0.461382
7	20/11/2018	115.56	-1.264528
8	21/11/2018	117.17	0.111071
9	23/11/2018	117.26	0.187971
10	26/11/2018	119.9	2.443610
11	27/11/2018	119.97	2.503418
12	28/11/2018	122.19	4.400206
13	29/11/2018	121.84	4.101158
14	30/11/2018	115.03	-1.717363
15	03/12/2018	119.53	2.127476
16	04/12/2018	113.5	-3.024608
17	06/12/2018	115.32	-1.469584
18	07/12/2018	111.25	-4.947027
19	10/12/2018	110.81	-5.322969
20	11/12/2018	110.03	-5.989407
21	12/12/2018	110.07	-5.955230
22	13/12/2018	108.85	-6.997610
23	14/12/2018	107.66	-8.014351
24	17/12/2018	107.66	-8.014351
25	18/12/2018	108.24	-7.518799
26	19/12/2018	106.39	-9.099455
27	20/12/2018	104.19	-10.979151
28	21/12/2018	102.88	-12.098431
29	24/12/2018	100.99	-13.713263
30	26/12/2018	105.58	-9.791523
31	27/12/2018	106.63	-8.894398
32	28/12/2018	107.24	-8.373208
33	31/12/2018	108.56	-7.245389
34	02/01/2019	107.46	-8.185237
35	03/01/2019	101.74	-13.072456
36	04/01/2019	107.81	-7.886195
37	07/01/2019	108.01	-7.715310
38	08/01/2019	109.76	-6.220095
39	09/01/2019	109.2	-6.698568
40	10/01/2019	110.05	-5.972315
41	11/01/2019	109.42	-6.510597
42	14/01/2019	108.13	-7.612785
43	15/01/2019	110.18	-5.861245
44	16/01/2019	109.28	-6.630214
45	17/01/2019	108.47	-7.322283
46	18/01/2019	109.05	-6.826724
47	22/01/2019	107.26	-8.356117
48	23/01/2019	108.09	-7.646963
49	24/01/2019	108.24	-7.518799
50	25/01/2019	109.85	-6.143201
51	28/01/2019	110.53	-5.562203
52	29/01/2019	111.12	-5.058098
53	30/01/2019	113.64	-2.904991
54	31/01/2019	114.53	-2.144568
55	01/02/2019	114.57	-2.110390
56	04/02/2019	115.65	-1.187627
57	05/02/2019	116.91	-0.111071
58	06/02/2019	117.27	0.19651059

Source: Yahoo Finance

Table 8.2.14 - Equifax Share Price Movement From 07/09/2017

	Date	Close	% Diff. From 07/09/2017
0	07/09/2017	142.72	0
1	08/09/2017	123.23	-13.656108
2	11/09/2017	113.12	-20.739909
3	12/09/2017	115.96	-18.750001
4	13/09/2017	98.99	-30.640417
5	14/09/2017	96.66	-32.27298
6	15/09/2017	92.98	-34.851456
7	18/09/2017	94.38	-33.870518
8	19/09/2017	94.87	-33.527184
9	20/09/2017	96	-32.735426
10	21/09/2017	98.25	-31.158913
11	22/09/2017	105.04	-26.401345
12	25/09/2017	105.09	-26.366315
13	26/09/2017	106.05	-25.693664
14	27/09/2017	106.44	-25.420403
15	28/09/2017	106.37	-25.469449
16	29/09/2017	105.99	-25.735708
17	02/10/2017	107.81	-24.460484
18	03/10/2017	110.45	-22.610709
19	04/10/2017	111.93	-21.573711
20	05/10/2017	112.97	-20.845011
21	06/10/2017	111.34	-21.987111

Data Source: Yahoo Finance

Table 8.2.15 - GM Share Price Movement From 06/02/2014

	Date	Close	% Diff. From 06/02/2014
0	06/02/2014	26.95112	0
1	07/02/2014	27.62433	2.49789276
2	10/02/2014	26.69867	-0.936681
3	11/02/2014	26.96643	0.05683252
4	12/02/2014	27.20358	0.93672555
5	13/02/2014	26.92818	-0.0851245
6	14/02/2014	27.50193	2.04374832
7	18/02/2014	27.77733	3.0656132
8	19/02/2014	27.56313	2.27082981
9	20/02/2014	27.93032	3.63326685
10	21/02/2014	28.06803	4.14420671
11	24/02/2014	27.96093	3.7468243
12	25/02/2014	27.61667	2.46948577
13	26/02/2014	28.17513	4.54160768
14	27/02/2014	28.12923	4.37131047
15	28/02/2014	27.69317	2.75334414
16	03/03/2014	27.70083	2.78175112
17	04/03/2014	28.25164	4.82546976
18	05/03/2014	28.70299	6.50019812
19	06/03/2014	28.71829	6.55694901
20	07/03/2014	28.83303	6.98268647
21	10/03/2014	28.37403	5.27959565

Data Source: Yahoo Finance

Table 8.2.16 – Samsung Share Price Movement From 15/09/2016

	Date	Close	% Diff. From 15/09/2016
0	19/09/2016	31160	0.000000
1	20/09/2016	31700	1.732991
2	21/09/2016	31840	2.182285
3	22/09/2016	32360	3.851091
4	23/09/2016	31420	0.834403
5	26/09/2016	31360	0.641849
6	27/09/2016	31380	0.706033
7	28/09/2016	31340	0.577664
8	29/09/2016	32000	2.695764
9	30/09/2016	31960	2.567394
10	04/10/2016	32280	3.594352
11	05/10/2016	32380	3.915276
12	06/10/2016	33820	8.536585
13	07/10/2016	34120	9.499358
14	10/10/2016	33600	7.830552
15	11/10/2016	30900	-0.834403
16	12/10/2016	30700	-1.476252
17	13/10/2016	31140	-0.064185
18	14/10/2016	31540	1.219512
19	17/10/2016	31800	2.053915
20	18/10/2016	31780	1.989730
21	19/10/2016	32500	4.300385

Data Source: Yahoo Finance

Table 8.2.17 - BP Share Price Movement From 20/04/2010

20/04/2010	60.48	0
21/04/2010	60.09	-0.6448413
22/04/2010	59.55	-1.5377001
23/04/2010	59.88	-0.9920618
26/04/2010	57.91	-4.2493386
27/04/2010	56.33	-6.8617692
28/04/2010	57.34	-5.1917989
29/04/2010	52.56	-13.095236
30/04/2010	52.15	-13.773145
03/05/2010	50.19	-17.013891
04/05/2010	51.2	-15.343914
05/05/2010	50.99	-15.691134
06/05/2010	50.33	-16.782404
07/05/2010	49.06	-18.882273
10/05/2010	48.75	-19.394841
11/05/2010	48.74	-19.411372
12/05/2010	48.5	-19.808201
13/05/2010	48.1	-20.46958
14/05/2010	46.87	-22.503309
17/05/2010	46.57	-22.999339
18/05/2010	45.38	-24.96693
19/05/2010	45.27	-25.14881

Data Source: Yahoo Finance

Table 8.2.18 - Boeing Share Price Movement From 13/03/2019

	Date	Close	% Diff. From 27/07/20 12
0	13/03/2019	377.14	0
1	14/03/2019	373.3	-1.0182
2	15/03/2019	378.99	0.490527
3	18/03/2019	372.28	-1.28865
4	19/03/2019	373.43	-0.98373
5	20/03/2019	376.16	-0.25985
6	21/03/2019	372.7	-1.17728
7	22/03/2019	362.17	-3.96935
8	25/03/2019	370.46	-1.77123
9	26/03/2019	370.38	-1.79244
10	27/03/2019	374.21	-0.77691
11	28/03/2019	374.44	-0.71592
12	29/03/2019	381.42	1.134857
13	01/04/2019	391.54	3.818209
14	02/04/2019	390.75	3.608735
15	03/04/2019	384.74	2.01516
16	04/04/2019	395.86	4.963666
17	05/04/2019	391.93	3.921615
18	08/04/2019	374.52	-0.69471
19	09/04/2019	369.04	-2.14775
20	10/04/2019	364.94	-3.23488
21	11/04/2019	370.16	-1.85077

Data Source: Yahoo Finance

Table 8.2.19 - Exxon Mobil Share Price Movement From 27/03/1989

	Date	Close	% Diff. From 27/03/1989
0	27/03/1989	11.125	0
1	28/03/1989	11.03125	-0.8426966
2	29/03/1989	10.90625	-1.9662921
3	30/03/1989	10.875	-2.247191
4	31/03/1989	10.96875	-1.4044944
5	03/04/1989	10.8125	-2.8089888
6	04/04/1989	10.8125	-2.8089888
7	05/04/1989	10.875	-2.247191
8	06/04/1989	10.75	-3.3707865
9	07/04/1989	10.6875	-3.9325843
10	10/04/1989	10.5	-5.6179775
11	11/04/1989	10.4375	-6.1797753
12	12/04/1989	10.5	-5.6179775
13	13/04/1989	10.5	-5.6179775
14	14/04/1989	10.5	-5.6179775
15	17/04/1989	10.53125	-5.3370787
16	18/04/1989	10.8125	-2.8089888
17	19/04/1989	10.875	-2.247191
18	20/04/1989	10.96875	-1.4044944
19	21/04/1989	11.15625	0.28089888
20	24/04/1989	11.125	0
21	25/04/1989	10.96875	-1.4044944

Data Source: Yahoo Finance

Table 8.2.20 - Toyota Share Price Movement From 21/01/2010

	Date	Close	% Diff. From 21/01/2010
0	21/01/2010	90.42	0.000000
1	22/01/2010	88.17	-2.488388
2	25/01/2010	87.71	-2.997123
3	26/01/2010	86.78	-4.025657
4	27/01/2010	79.77	-11.778369
5	28/01/2010	77.67	-14.100863
6	29/01/2010	77	-14.841847
7	01/02/2010	79.94	-11.590352
8	02/02/2010	78.18	-13.536826
9	03/02/2010	73.49	-18.723734
10	04/02/2010	71.78	-20.614908
11	05/02/2010	74.71	-17.374474
12	08/02/2010	72.85	-19.431542
13	09/02/2010	74.6	-17.496130
14	10/02/2010	75.69	-16.290640
15	11/02/2010	76	-15.947797
16	12/02/2010	77.05	-14.786546
17	16/02/2010	76.01	-15.936736
18	17/02/2010	74.15	-17.993803
19	18/02/2010	73.44	-18.779027
20	19/02/2010	73.35	-18.878567
21	22/02/2010	72.93	-19.343064

Data Source: Yahoo Finance

Picture 1 - Deepwater Oil Spill Turtle Rescue and Rehabilitation



Capturing heavily oiled young turtles 20 to 40 miles offshore for rehabilitation; 14 June 2010
By NOAA's National Ocean Service - Flickr: Turtle Rescue and Rehabilitation,
<https://www.flickr.com/photos/40322276@N04/4700923872>

For additional images and videos of the Deepwater oil spill, use the link below:
<https://www.britannica.com/event/Deepwater-Horizon-oil-spill/images-videos>