



A managerial analysis of historic economic bubbles as basis for identifying future similarly economic losses

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ABSTRACT

The devastating effects of past economic bubbles are well documented. It takes a long time for countries, companies and individuals affected by these events to recover. In the first chapter the background, the context of and causal factors to the study were discussed. The problem statement was given, and the research objectives and research methodology were discussed. The limitations of the study were stated, and an overview of the research design and layout of the following chapters was presented.

In the second chapter, ten historic world economic bubbles, as well as three South African economic bubbles, were analysed to determine whether a life-cycle could be determined. It was found that they followed a similar life-cycle. During the literature review, a life-cycle for economic bubbles was found that had previously been determined by other economists. These two life-cycles were then compared and found to have similarities.

By using the identified life-cycle and patterns, current economic situations were looked at to determine whether it would be possible to detect an economic bubble as it was developing and thus be able to manage its effects better. Two possible future bubbles were discussed and compared to the life-cycle of historic economic bubbles. These are Cryptocurrency and Global Debt, and they were found to have similarities to previous bubbles.

In chapter three, interviews were used as part of a qualitative study to support the findings of the literature study. Twelve interviews were conducted during which each of the interviewees was asked the same twelve questions for this purpose. The information gathered from the interviews was loaded onto an MS Excel spreadsheet, and similarities in the answers were identified. The findings were then given in this study and discussed.

In conclusion, this study found that it was possible to identify the circumstances in which economic bubbles can develop. These bubbles are caused by a market shift or opportunities caused by consumer speculation within a commodity – most probably a new technology or innovation, or political or economic stimulus that includes access to cheap credit or a combination of these. Ways were found to identify developing economic bubbles by determining whether these occurrences were following the life-cycle of an economic bubble. Possible preventative measures would include but are not limited to, transparency within a market with freely available up-to-date, reliable information, stable political and economic environments with disciplined monetary policies restricting access to cheap

credit when necessary. Finally, a managerial framework was developed to assist with managing these economic bubbles. With this in mind, the research objectives of this study were achieved.

Keywords:

Economic bubbles, manage, markets, commodities, market shift, greed, hype, fear, panic, life-cycle, value.

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LIST OF ABBREVIATIONS

AAA-rated investments	–	Highest possible investment rating
CDOs	–	Collateralized Debt Obligations
DJIA	–	Dow Jones Industrial Average
GDP	–	Gross Domestic Product
IPO	–	Initial Public Offering
JSE	–	Johannesburg Stock Exchange
NINJA Loan	-	No Income, No Job, no questions Asked Loan
RSA	–	South Africa
SA	–	South Africa
SME	–	Small to Medium Enterprise
US	–	United States of America
USA	–	United States of America
ZA	–	South Africa

CHAPTER 1: ORIENTATION AND PROBLEM STATEMENT

1.1 INTRODUCTION

Economic crises, also called Economic bubbles, have become part of our modern world and their effects have been increasingly devastating on the economies of countries as well as the ability of the majority of their citizens to accumulate real wealth (Sornette & Cauwels, 2012:3-4). These bubbles can take years to develop and are called bubbles as they lead to economic boom and bust cycles. The term bubble came into official use with the passage of the “Bubble Act” in 1720 by the British Parliament (Petersen, 2014; Patterson & Reiffen, 1990:163).

With this in mind, is it possible to spot a developing bubble and more importantly, is it possible for a country, company or individual to manage the effects of such an occurrence effectively? In light of this, the study was done from a futurist inflexion point to find ways to manage economic bubbles effectively.

For this study, ten well-known bubbles in history were analysed starting with the Dutch Tulip Mania of 1634-1637 and ending with the US Housing Bubble of 2007. Although economic bubbles are nothing new, the rate at which they occur has increased with seven of the twelve occurring in the twentieth century.

The following important terms were used in the study and their definitions follow below. A **speculative bubble** can be defined as a situation in which temporarily high prices are sustained principally by investors’ eagerness rather than by reliable estimation of the actual worth of the asset (Shiller, 2015:xxxvi). An example of this was the 2007 US housing Bubble (Baker, 2008:73).

A **bubble** can be described as a build-up in the price of an asset that cannot be warranted by the essential supply and demand elements for that asset (Conerly, 2013). Furthermore, a bubble can be produced by any financial instrument or created in any traded commodity. Possible developing bubbles to watch out for in the future might be the Chinese economy (Sargen, 2016:153) and according to Shiller, Cryptocurrency (Detrixhe, 2017).

An **Economic bubble** can be defined as a market occurrence characterised by surges in asset prices to levels considerably above the fundamental worth of that asset. They are frequently hard to identify in real time because there is often no agreement over the actual real worth of the asset (NASDAQ, 2017).

The Longman business English dictionary (2006:290) defines a **market** as the action of buying and selling goods or services, or the value of the goods or services sold. **Hype** is defined as to try to make the public interested in a product or company through advertising or by getting it talked about a lot (Longman business English dictionary, 2006:226). The Cambridge Dictionary defines hype as advertising, news reports, and public praise for a new product or service, which is used to make people excited about buying or trying it (Cambridge Dictionary, 1999). In this research study, whenever hype was mentioned, this definition was what was meant and not Gartner's Hype Cycle. Lastly, an **economist** is someone who studies the way in which wealth is produced and used in an area (Longman business English dictionary, 2006:149).

1.2 CONTEXT

The saying goes that when America sneezes, the rest of the world catches a cold (Crosby & Bodman, 2005:226). In modern times, anything that happens in America, because of the size of its economy and its influence worldwide, has an amplified effect on the rest of the world for better or for worse.

This was demonstrated by the Global Financial Crisis of 2008 which was triggered by the US housing crisis and dumped the whole world in a recession. It is true that some countries were worse affected than others, but no country escaped its effects. South Africans were shielded from the worst of it by the then Minister of Finance, Trevor Manuel. This was done by preventing South African banks from investing in high-risk investments and by sound monetary and fiscal policies. Even so, South Africa was hit hard and went through a recession because of the slowdown in the global economy (Verick, 2012:377).

The following graphs have been added to illustrate the effect the crisis had on the South African economy compared to the economies of other countries that are important to South Africa and covers the years from 2006 until 2017.

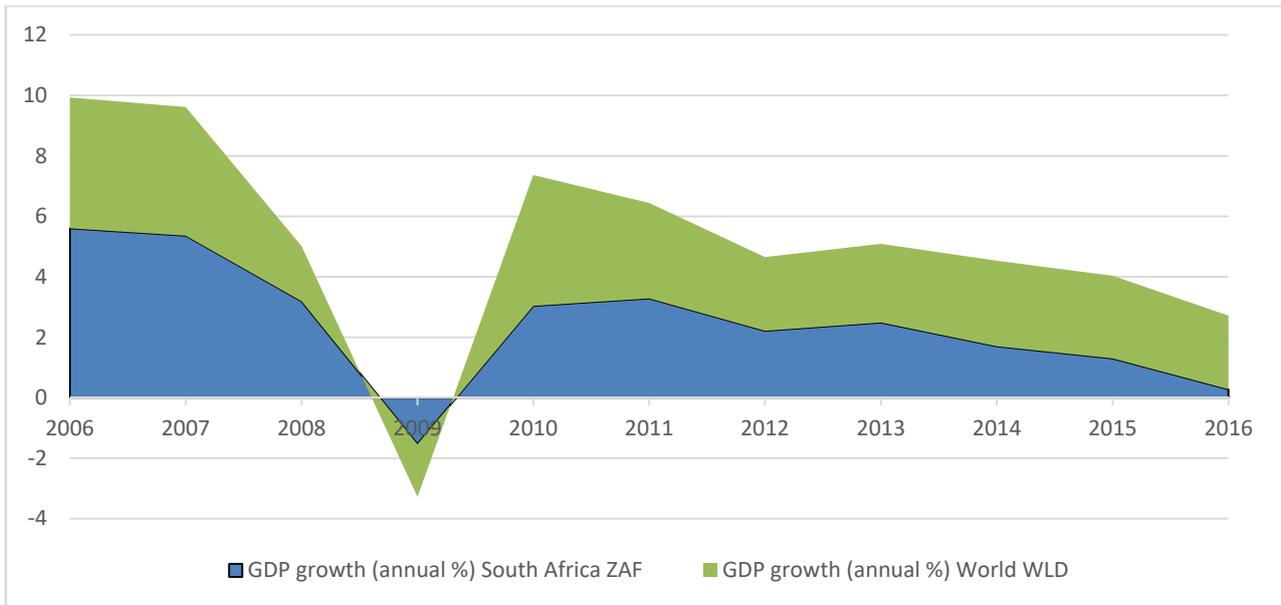


Figure 1.1: GDP annual growth % - South Africa vs the World Source: The World Bank (2017d)

Figure 1.1 above indicates the relationship between the South African economy compared to that of the world since 2006. More importantly, it shows the effect the 2008 Global Financial Crisis had on the South African economy despite the fact that South Africa had nothing to do with the creation of the crisis.

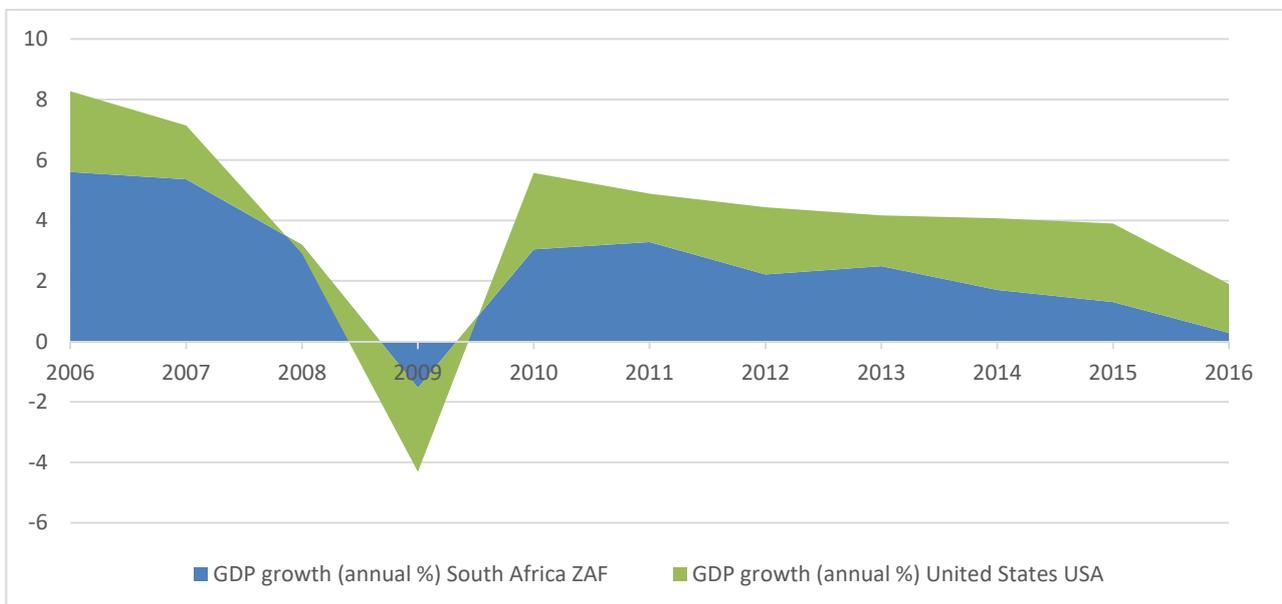


Figure 1.2: GDP annual growth % – South Africa vs the USA Source: The World Bank (2017c)

Figure 1.2 indicates the relationship between the South African economy compared to that of the USA, the economy responsible for the crisis, over the same period.

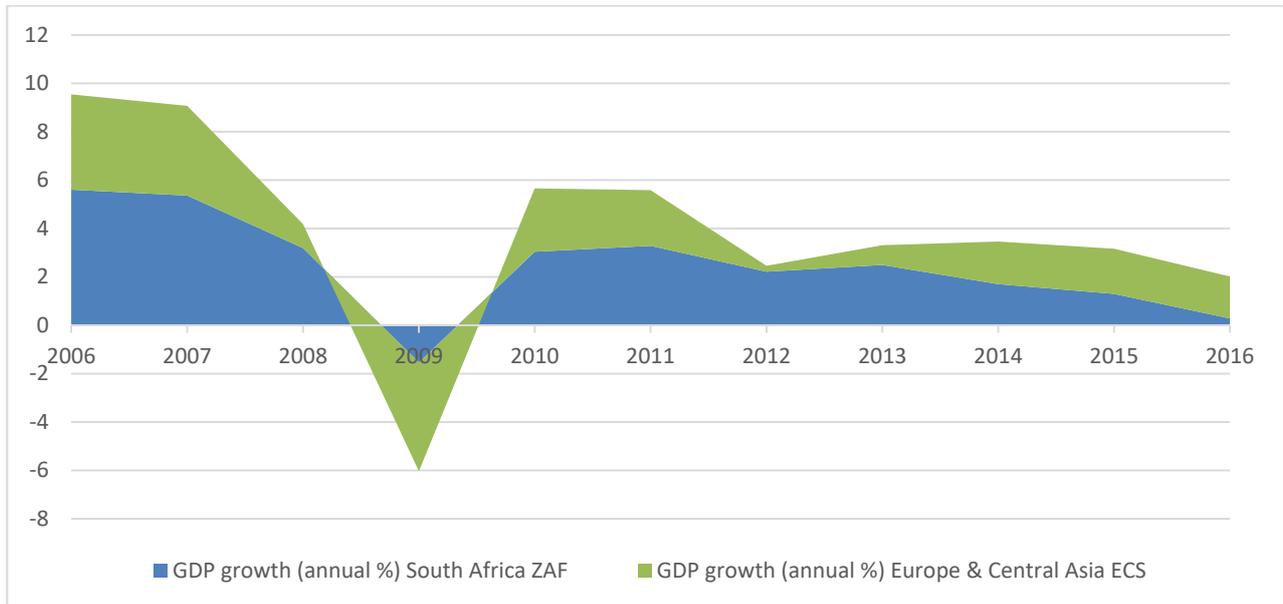


Figure 1.3: GDP annual growth % – South Africa vs Europe & Central Asia Source: The World Bank (2017a)

Figure 1.3 indicated the relationship between the South African economy and that of its biggest trading partners, Europe and Central Asia.

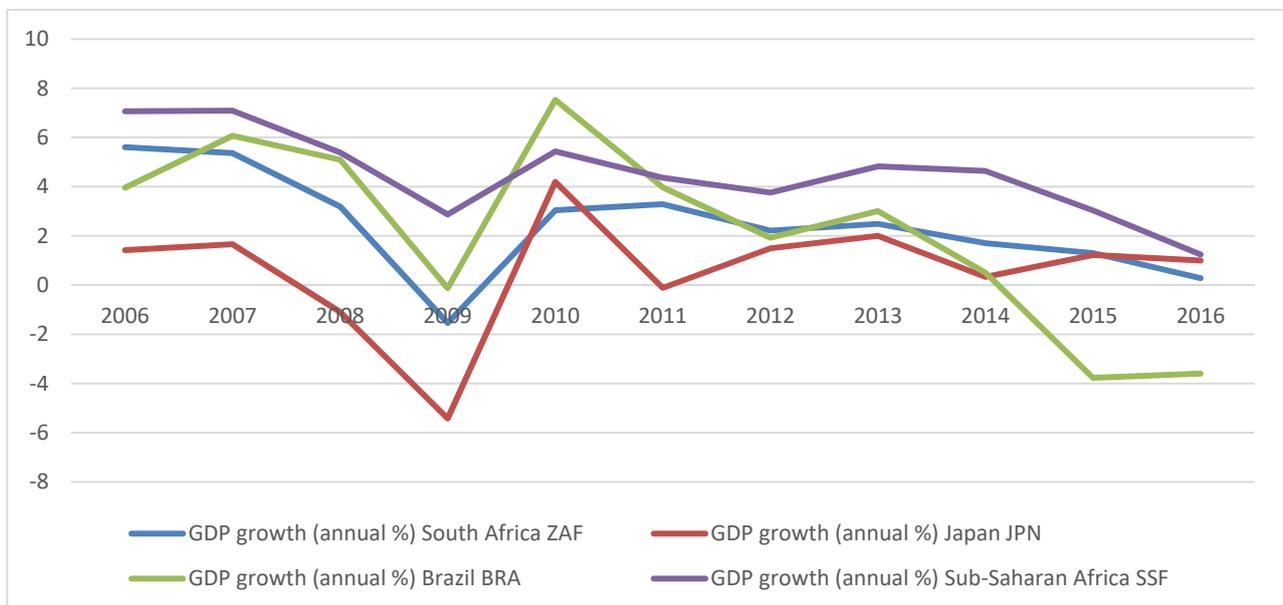


Figure 1.4: GDP annual growth % – South Africa vs Japan, Brazil & Sub-Saharan Africa Source: The World Bank (2017b)

Figure 1.4 above indicates the impact of the Global Financial Crisis on other important economies in the South African context.

Thus, because of South Africa's dependence on the global economy, it is important to be able to spot economic bubbles while they are developing to minimise the damage that can be caused to the country, companies as well as individuals.

1.3 CAUSAL FACTORS

The main cause for the development of economic bubbles is greed (Crastes, 2012:3). It is human nature always to want more than you have and to acquire it by the shortest route possible. That is why casinos make so much money. The global economic markets resemble global casinos with companies and individuals constantly betting for or against the market (Abraham, 2016).

The problem usually starts when the average citizen gets caught up in the market hype about an asset that can bring large, quick returns and thus is not investing for the long term, but to make easy money. This market hype then leads to the over-inflating of that asset, and so begins a game of musical chairs. The problem is that there are way too few chairs for the players. When the music stops, panic sets in as all involved try to get as much of their investment back as possible which inevitably leads to the crash of the price of that asset. Thus, the elements of a bubble can be listed as a market shift, greed, hype, fear and panic.

Another important aspect to take note of is that modern technology has made it much easier to create hype. There are a vast amount of media platforms available to spread a message. It also provides the tools to be able to buy and sell assets.

1.4 IMPORTANCE OF THIS STUDY

Economic bubbles have the potential to cripple the world's economy as can be seen by the effects of the Global Financial Crisis of 2008. Due to its robust trade and financial links, South Africans were hit hard by the Global Financial Crisis. The reason was that it came on top of the longer term structural problems in its economy and labour market. As a result, the country fell into recession late in 2008 and contracted by 1.7% in 2009 (Verick, 2012:377). As such, it is important to be able to identify the development of bubbles as early as possible to minimise their effects. It is not a question of if there will be another economic bubble but when and how big its impact will be.

This study has the aim to assist governments, companies as well as individuals to spot future economic bubbles as they develop and deal with them effectively.

1.5 PROBLEM STATEMENT

Currently, the world economy is in a very fragile state. Unfortunately, people often pay no heed to fine-tuned economic models. They do things that are not rational nor in their best interest and are justified not by numbers, but by emotion (Harford, 2008). As Alan Greenspan put it, "Herd behaviour is a key driver and an essential characteristic of speculative booms & busts" (Greenspan, 2013:25). It is therefore reasonable to assume that the next bubble could be even more catastrophic.

Numerous publications were written about the various bubbles that have occurred in the past. There are however very few academic articles about possible future bubbles and how to manage such events best. Consequently, there is a need to examine this issue and report on the findings.

It becomes very clear as to why it is important to be able to spot possible future economic threats. People need to be warned about bubbles as early as possible to help prevent their inflation and the ensuing damage that occurs when they pop (Colombo, 2015:1). Another benefit of early bubble detection is that it gives those who do take heed of these warnings time to limit their exposure to the negative effects of the bubble.

As a global economic village, all have felt to one extent or another the disastrous effects of a global economic crisis. Loss of income, loss of savings, loss of jobs, loss of homes, bankruptcy and all the emotions that go with this, for example, uncertainty, fear, despair, hopelessness, disillusionment, anger and so forth.

1.6 RESEARCH OBJECTIVES

The research objectives of the study were split into primary and secondary objectives:

1.6.1 Primary objective

The primary objective of this study was to learn from past economic bubbles to enable the individual, company and country to manage the effects of future economic bubbles better.

1.6.2 Secondary objectives

To achieve the primary objective of this study, the secondary objectives to be realised were:

- Identifying the circumstances in which bubbles can develop
- Identifying developing economic bubbles
- Identifying possible preventative measures
- Developing a framework to manage an economic bubble once it is identified

1.7 RESEARCH METHODOLOGY

1.7.1 Literature and theoretical review

As a basis to identify possible future economic bubbles, literature and theoretical reviews concluded historical world economic trends and cycles. The sources that were consulted included:

- Peer-reviewed journal articles
- Historical journals on the subject
- Articles on the subject by well-respected economists
- Newsprint, e.g., Economist, Financial Times & Business Day
- Business literature commonly found on the internet today, e.g., Forbes
- Benchmark Sources such as Robert J. Shiller, Didier Sornette, Carmen Reinhart, Peter M. Garber, Niall Ferguson
- Interviews with researchers and experts

1.7.2 Empirical research

To accomplish the research objectives of this study, empirical research was done by researching some of the best documented economic bubbles that have occurred in history to determine a pattern in the build-up to these economic bubbles (Petersen, 2014). It also allowed for the determination of a lifecycle of economic bubbles. The strategy followed to identify and choose the units of analysis was found in historical data. Ten bubbles were studied going back to the Dutch Tulip Mania of 1634 up to the Global Financial Crisis of 2008.

A qualitative approach was then followed to acquire the opinions of South African economists on ways to identify future economic bubbles and to manage their effects.

1.8 LIMITATIONS

1.8.1 Sources

The literature and theoretical reviews are limited to sources that are readily available on the Internet at the time, as well as publications readily available in libraries in South Africa until 31 October 2017.

1.8.2 Research

This study did exploratory research into some of the best known and documented economic bubbles readily available for research. The researcher acknowledges that there are well-known authors whose works are very relevant to this subject and was read but not referenced in this study as more focused works were referenced instead. These authors include but are not limited to Markus Brunnermeier, Robert Jarrow, Charles Kindleberger, Philip Protter and Richard Thaler.

1.9 LAYOUT OF THE STUDY

The mini-dissertation is divided into four chapters, which is presented as follows:

1.9.1 CHAPTER 1: Orientation and problem statement

This chapter discusses the background, context of and causal factors to the study as well as the problem statement. It also presents an overview of the research design and layout of the next chapters.

1.9.2 CHAPTER 2: Literature review

This chapter investigated, through a literature review, the causal factors and trends of past economic bubbles, internationally as well as in South Africa. These causal factors and trends were then used to identify possible developing bubbles.

1.9.3 CHAPTER 3: Empirical study

This chapter presents the research methodology by discussing the sampling methods used as well as the compilation of the survey instrument, namely a questionnaire, the study participants and the data collection. The results of the investigation are also presented and discussed.

1.9.4 CHAPTER 4: Conclusions and Recommendations

The conclusions and recommendations of the study, based on the literature review and empirical investigation, are presented in this final chapter. A framework on how to manage an economic bubble once it has been identified is also given, as well as recommendations for further study.

1.10 CONCLUSION

As a global economic village, all have felt to one extent or another the disastrous effects of a global economic crisis. To better manage the effects of a bursting economic bubble, it would be necessary to be able to detect such a bubble as early as possible. To be able to do this, a life-cycle of an economic bubble needed to be identified. Once identified, it would then be able to manage the effects more effectively.

It was believed that it would be possible to identify such trends and that it thus would be possible to more effectively manage the effects associated with the bursting of such a bubble. With this in mind, it was believed that this was a workable study.

1.11 CHAPTER SUMMARY

The devastating effects of past economic bubbles are well documented. It takes a long time for countries, companies and individuals affected by these events to recover. In this chapter the background, the context of and causal factors to the study was discussed. The problem statement was given, and the research objectives and research methodology were discussed. The limitations of the study were stated, and an overview of the research design and layout of the following chapters was presented.

CHAPTER 2: LITERATURE STUDY

2.1 INTRODUCTION

The literature study examined ten of the most well-known and best documented economic bubbles in history. All ten these bubbles took place in the Northern hemisphere. Over time, as the global economy has grown, the effects of these have become increasingly global starting with the Stock Market Crash of 1929 that led to the great depression (Colombo, 2012d).

Three bubbles in South Africa's recent history was also analysed to determine whether the pattern was similar to that of the global bubbles. These three are, the Speculative Stock Market Bubble of 2003-06, the House Prices Bubble that ended in 2009 and the South African Game Industry Bubble, late 1990s until 2016.

For this study, a crash in a market because of fraudulent activities from the start was not considered to be a bubble, for example, the Bre-X Minerals scandal in the mid-1990s. The prospecting samples at a Venezuelan mining site were salted with gold flakes by a geologist to trick people into believing that a major gold deposit was found (Silver, 2000:29). Major historical bubbles did not start based on a lie, but because of a shift in the market that opened new opportunities.

A few other concepts are important to elaborate on before the looking at the bubbles. The first is the two distinctly different ways to analyse a stock's value, namely a technical analysis and a fundamental analysis. In fundamental analysis, it is believed that the market price of a stock does not always match the true value of the company it represents. In contrast, in technical analysis, it is believed that the fundamental elements of a stock's value are already accounted for in the stock's price. Furthermore, it is believed that prices move in trends and that historical patterns in the market as well as in stock prices tend to repeat. So, in essence, fundamental analysis focuses more on the company itself, management, financials and so forth and technical analysis focuses on the price and trends of stock (Kulkarni & Kulkarni, 2013:236).

It is also important to understand the life-cycle of a company. A company is established because it can meet a need that has been identified. The better the company becomes at meeting that need, the more it grows. As long as that need exists, the company can exist, but as soon as that need declines or does not exist anymore, the company has to adapt by

finding another need to fulfil or it will go out of business. A recent example of this is of typewriter manufacturers. They either had to adapt or go out of business. An example of a company that has a continuous need for its product is Lloyds of London that specialises in freight insurance.

A possible paradox exists now. For if a company completely meets the need and the need therefor ceases to exist, the reason for the company's existence likewise disappears. Some unscrupulous people exaggerate in this scenario, expand or over inflate the need, by fraudulent methods, to extend a company's reason for existence. With the above mentioned information in mind the bubbles can be looked at.

2.2 TEN HISTORIC BUBBLES

In this section, ten past bubbles were discussed to see if a pattern could be identified.

2.2.1 The Dutch Tulip Mania of 1634-1637

The Dutch Tulip Mania is widely considered to be the first documented instance of a bubble market. The tulip was considered a rare and beautiful flower in Europe during this time in history and was found in the most stylish gardens of the age. The market was however not for the flowers but for the bulbs that were durable. There were two types of bulbs, exotic ones that fetched high prices and common bulbs that sold for a lot less (Garber, 1990:37).

In 1634, so-called non-professionals entered the trade in tulip bulbs in large numbers. This led to a rise in the price which in turn led to the hype in the trade of these bulbs that reached its peak on the 3rd of February 1636. By May 1637 the bulbs were trading below their 1634 prices.

There are alternate views on whether it was a bubble, most notably Garber (1990:38-39). Garber's hypothesis was however thoroughly disproved by Thompson (2007:100). The fact that there was a sharp rise in bulb prices above their fundamental values and then a subsequent dramatic collapse in the prices in 1637 cannot be disputed. At the height of the bubble a single rare bulb sold for more than the price of a fully furnished luxury house in Amsterdam at the time. This then qualifies it as a bubble for this paper as seen from the definitions given above.

Below figure 2.1 depicts the development and subsequent collapse of the prices for tulip bulbs during the period between 1634 and 1637 (Thompson, 2007:102).

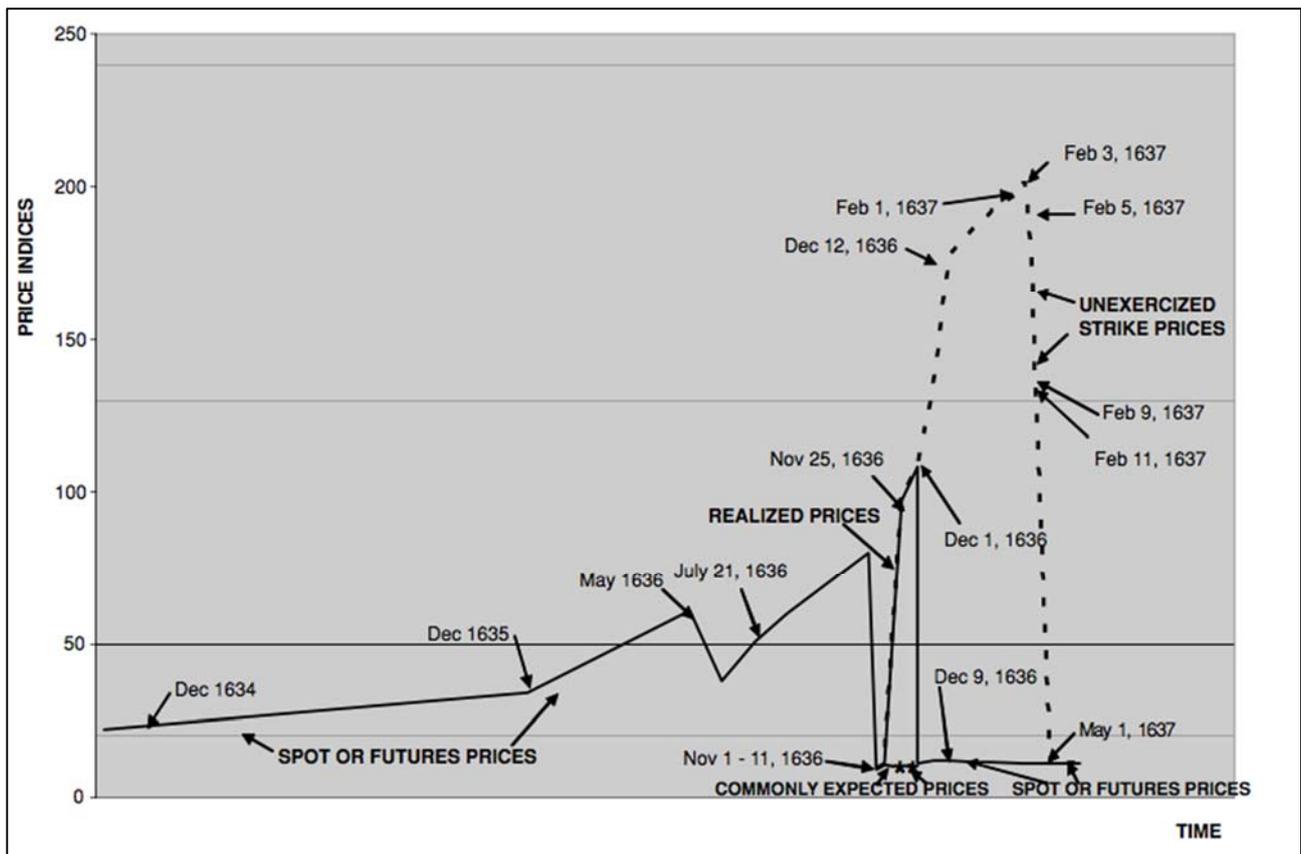


Figure 2.1: Tulip prices between 1634 & 1637 Source: Thompson (2007:103)

2.2.2 The South Sea Bubble (1716-1720)

The South Sea Bubble that burst during 1720 in Great Britain was labelled as a monument of human folly by Hunt's Merchants' Magazine (Hume Tracts, 1840:13).

In 1710, the National debt of Great Britain was out of hand because of two simultaneous wars it was fighting. With stories of unknown riches from buccaneers returning from the Americas and the wealth that Spain was able to accumulate in South America, a British joint-stock company, The Governor and Company of Merchants of Great Britain trading to the South Seas, was created on the 8th of September 1711. Many exclusive rights and privileges were given to the company to enable them to secure as much wealth as possible for the British Empire in the South Seas to alleviate the national debt situation (Hume Tracts, 1840, 98).

A portion of the national debt, 9,471,325 pounds was consolidated in the company, and the government would pay an annual interest of 6 percent to the value of 568,279 pounds. These monies would be paid out as dividends to the shareholders. These payouts, together with the rights, privileges and full backing of the British Crown and parliament led to thousands

of enthusiastic supporters which propelled the stock of the company to enormous prices within a few years. This was, however, nothing compared to the mania that was still to come (Dale, Johnson & Tang, 2005:234-235).

The company had very limited success in its South Sea ventures, and its main purpose seemed to be the consolidation of government debt (Temin & Voth, 2004:1655). In 1715 more than 800,000 pounds of government debt was added to its stock which increased the interest payment to more than 600,000 pounds per annum. This was again increased in 1719 to over 12,000,000 pounds, and crucially a subscription for 520,000 pounds of the stock was opened. This was sold at 114 pounds which were the start of the bubble, soon after the company won a bidding war with the Bank of England for the right to consolidate all the national debt. At this time the hype in the company stock really took off and at its height was trading at a 1,000 pound in only a few short months (Hume Tracts, 1840:99).

Shrewd investors, sensing that the price could not last, sold their shares and invested in other companies like the Bank of England and East India Company. This led to the inflation of the stock prices of these companies as well (Hume Tracts, 1840:104).

With hype in the market, numerous companies with no underlying value were created, and their stock bought at extravagant prices by the eager masses. Seeing the inevitable collapse of this folly, a royal declaration was issued on the eleventh of June 1720 forbidding the creation and trading of such company stock. Trade dampened for a short while only to break out anew later with increased excitement (Hume Tracts, 1840:105).

It is important to mention that most of the investors knew that these stocks were useless, but they were convinced that they would be able to sell them on at a large profit and they were utterly indifferent to who bought it from them. This mania engulfed the whole country and all walks of life (Hume Tracts, 1840:105). Inevitably these worthless companies started to fail at an ever-increasing speed which led to the collapse of the British economy and dumped a large portion of the population into poverty.

The South Sea company stock was trading at 1,000 pounds in August 1720, but by the end of the year, it was trading around the 100-pound mark (Hume Tracts, 1840:110-111; Temin & Voth, 2004:1656). Figure 2.2 below shows the rise and fall of the South Sea Company.

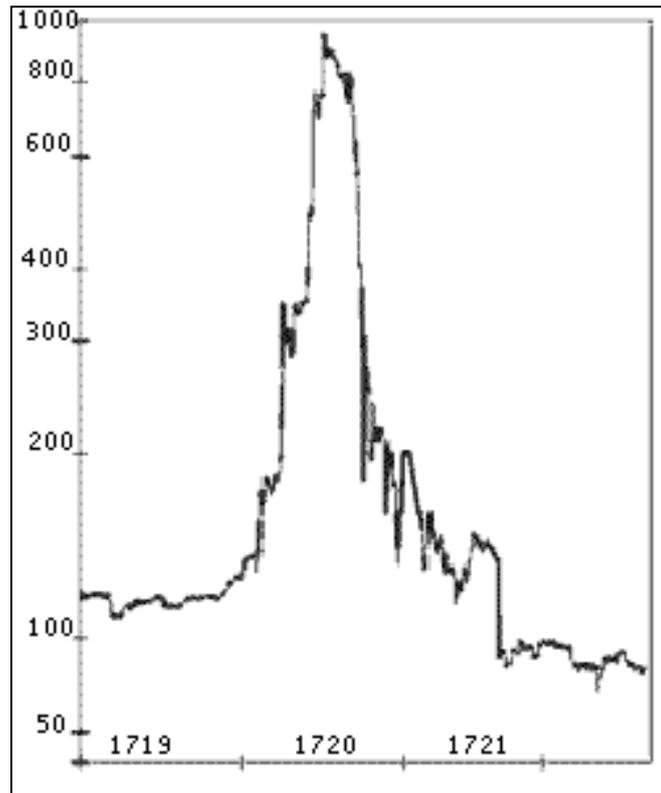


Figure 2.2: South Sea Company Stock Price (£): 1719 – 1722 Source: Wikimedia Commons (2006)

2.2.3 The Mississippi Bubble (1716-1720)

This bubble was created by John Law, a Scottish economist, in France during the same time as the South Sea Bubble in England. As in England, France had been bankrupted by wars. Due to the desperate situation of high taxes to try and service the country's debt and depressed economic activity, the environment was well-suited to Law's economic system. Law was permitted to establish France's first central bank in June 1716. This led to the creation of the Banque Generale Privee (General Private Bank) into which the government's debt was consolidated. Due to the lack of precious metals in France at the time, the bank was allowed to print paper money and was just not hampered by this shortage (Garber, 1990:42).

In August 1717, Law bought the Mississippi Company to assist the French colony in Louisiana. The company was listed in the same year and trading in its stock started. In 1718, the bank became the Royal Bank which meant that the notes were guaranteed by the king. Law started buying up rival trading companies and eventually had a monopoly on commerce on all the seas by 1719 (Garber, 1990:42).

By using an exaggerated marketing scheme, Law overstated the wealth of Louisiana. This led to wild speculation on the shares of the company during 1719. Shares in the company rose from 500 livres in 1719 to as much as 10,000 livres at the height of the bubble in mid-1720. When people then wanted to convert their notes into precious metals, this was not possible and by the end of 1720 Law was dismissed by the king. He fled from France and the country was left in economic ruin (Garber, 1990:45-46). Figure 2.3 below shows the share price of the Mississippi Company from April 1719 up to October of 1720.

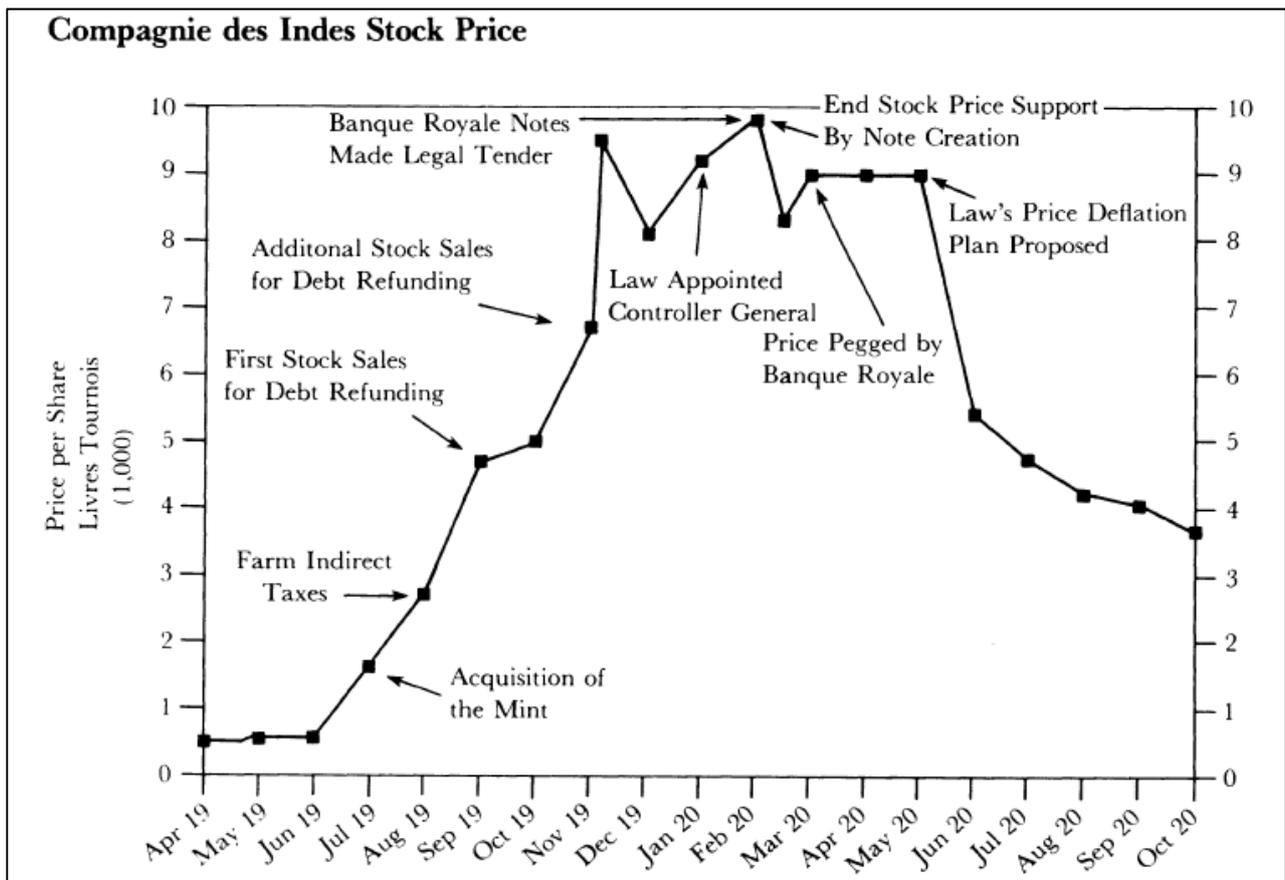


Figure 2.3: Share price of the Mississippi Company: April 1719 – October 1720
Source: Chen (2013)

2.2.4 The British "Railway Mania" Bubble (the 1840s)

This bubble had its origins in 1843 when railway company share prices started to rise after the economic slump of 1842. By the end of 1845, the mania was well and truly on its way and was fueled by an over exuberance towards the business prospects of railway development in the United Kingdom. Railway companies marketed themselves as virtually risk-free investments because of the huge demand that existed for new railway tracks. The financial press also supported this view, and this led to a frenzy in the trade of railway

company shares. This influx of capital by investors encourage railway companies to massively overbuilt thousands of kilometres of railway lines in the UK, even though more than a third of the 1844 to 1847 parliamentary approved railway lines were never built (McCartney & Arnold, 2003:822). Figure 2.2 below illustrates the British railway share prices between 1830 and 1850.

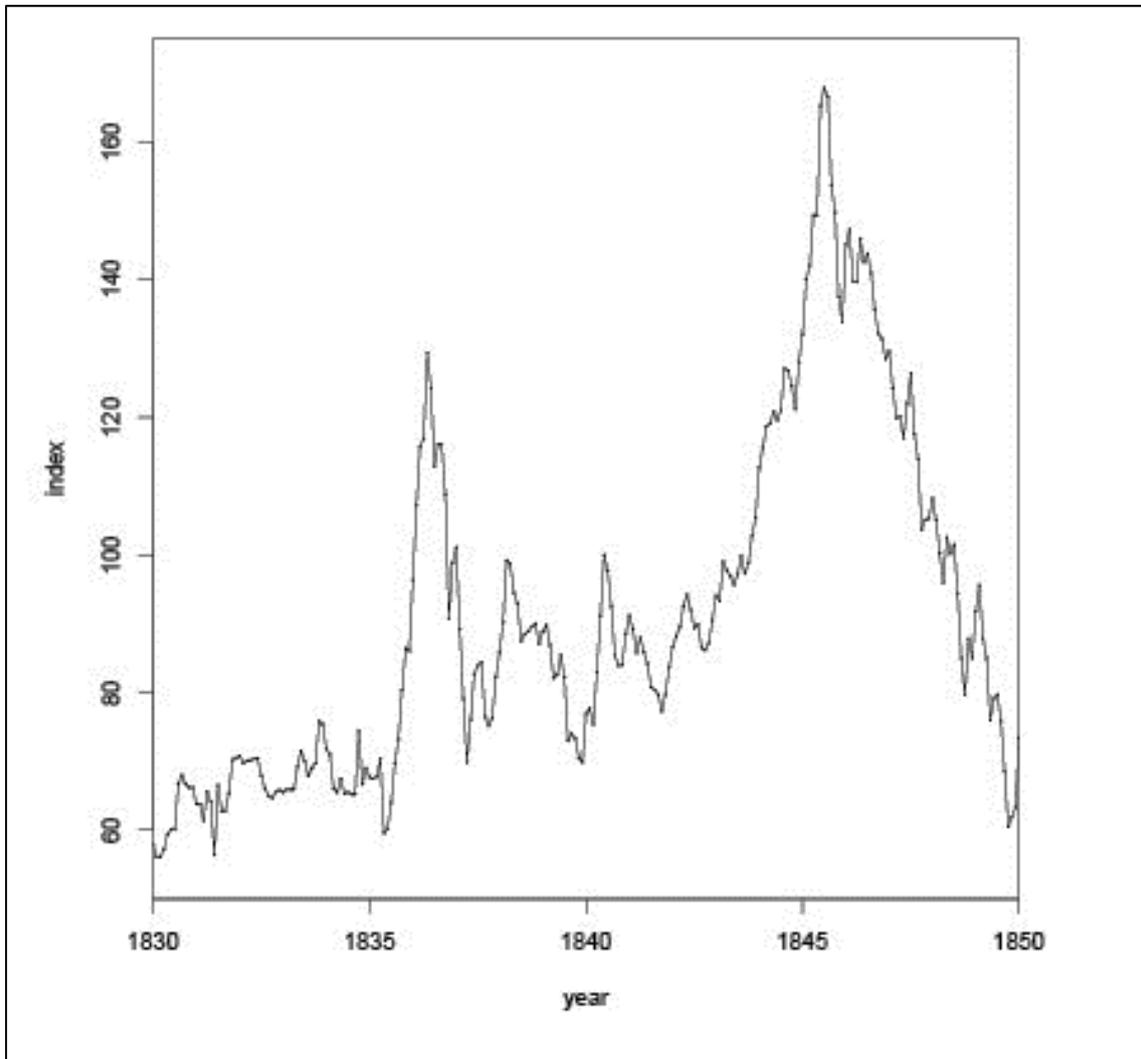


Figure 2.4: Index of British railway share prices Source: Odlyzko (2010:7)

The railway mania reached its peak in 1847, and when the bubble inevitably burst, many of the railway companies went out of business. The investors, mostly middle class, were ruined and an enormous debt was left by the bubble. Railway company stock reached its lowest point at the end of the 1840s (Odlyzko, 2010:5-8). Figure 2.3 below shows the British capital investment over the same period from 1830 to 1850.

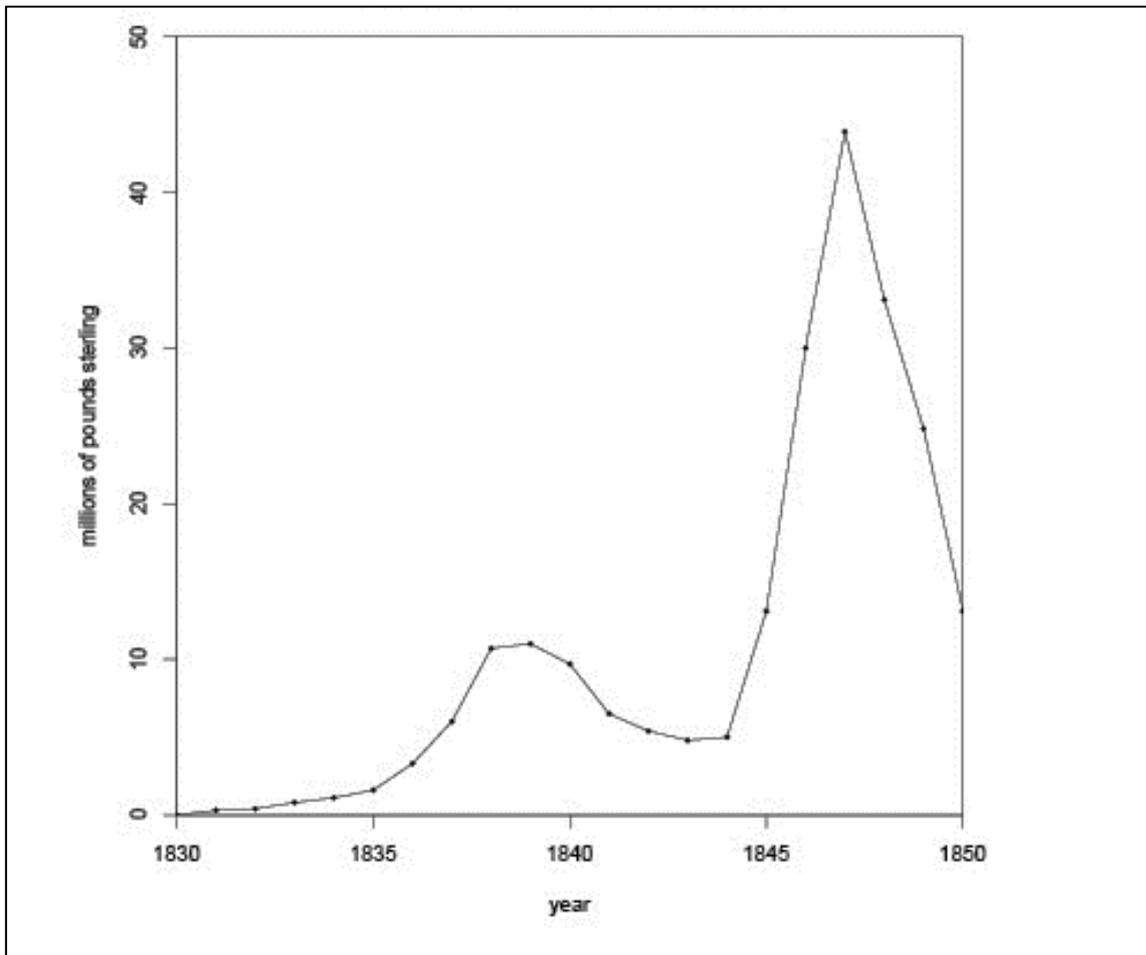


Figure 2.5: British railway capital investment Source: Odlyzko (2010:7)

2.2.5 The Florida Real Estate Bubble of the 1920s

America in the 1920s was a place of peace and growing prosperity (Cumming, 2006:8). More and more families could afford automobiles and were taking vacations in all parts of the country. Florida was especially popular for vacations because of the delightful weather and fine beaches. These factors led to a rise in the property market as affluent and middle-class families started to invest. Fuelled by a rising stock market and cheap money, Florida became known as the playground for the rich and famous, which further increased property prices. Investors on the lookout for opportunities spotted the rising real estate market and started to invest (Cumming, 2006:20). More and more people invested and this led to a property boom with people from all over the country taking note of this opportunity and investing in property. A frenzy of buying and selling properties ensued (Cumming, 2006:9). The bubble reached its height in 1925 with property prices quadrupling in less than a year (Cumming, 2006:15). Real estate prices had risen so high that they became top-heavy.

Investors lost interest, and earlier investors started to sell their properties to secure their profits.

Property prices started to fall, and this led to a panic in the market. Prices plummeted as over-indebted investors tried to sell their properties to avoid bankruptcy. In many instances, the properties did not sell, and the investors went bankrupt.

To make matters worse, South Florida was hit by a hurricane in September of 1926 (Cumming, 2006:14). The hurricane also created a tidal wave that turned the area into a swampland destroying 13,000 homes and killing 415 people (Colombo, 2012c). For good measure, Mediterranean fruit flies decimated Florida's economically-important citrus industry (Cumming, 2006:20). It took years for Florida's economy to recover, so much so that it was barely affected by the stock market crash of 1929 and the resulting Great Depression (Colombo, 2012c).

2.2.6 The Stock Market Crash of 1929

After a period of expansion in America during the 1920s, the stock market reached its height in October of 1929 (Colombo, 2012d). Stocks were greatly overvalued at the time because of the period of prosperity which created an explosive situation (White, 1990:67-68). Then markets started to slow down; unemployment went up, production declined, and people were struggling to repay their debts.

These factors led to the decline of stock prices in September of 1929 and on the 18th of October of the same year the fall began (Sirkin, 1975:231). This led to a panic in the market and on the 24th of October 1929, Black Thursday, over 12 million shares were traded. Bankers and investment companies attempted to stabilise the market by buying blocks of shares, but to no avail and the next Tuesday, the 29th of October stock prices collapsed completely and over 16 million shares were traded on the New York Stock Exchange in one day. This led to the loss of billions of dollars, bankrupting thousands of investors and dumping America and the Western industrialised world into the Great Depression that lasted until 1939 (Colombo, 2012d; White, 1990:68). Figure 2.6 below shows the Dow Jones Industrial Average (DJIA) for the period 1921 until 1932.

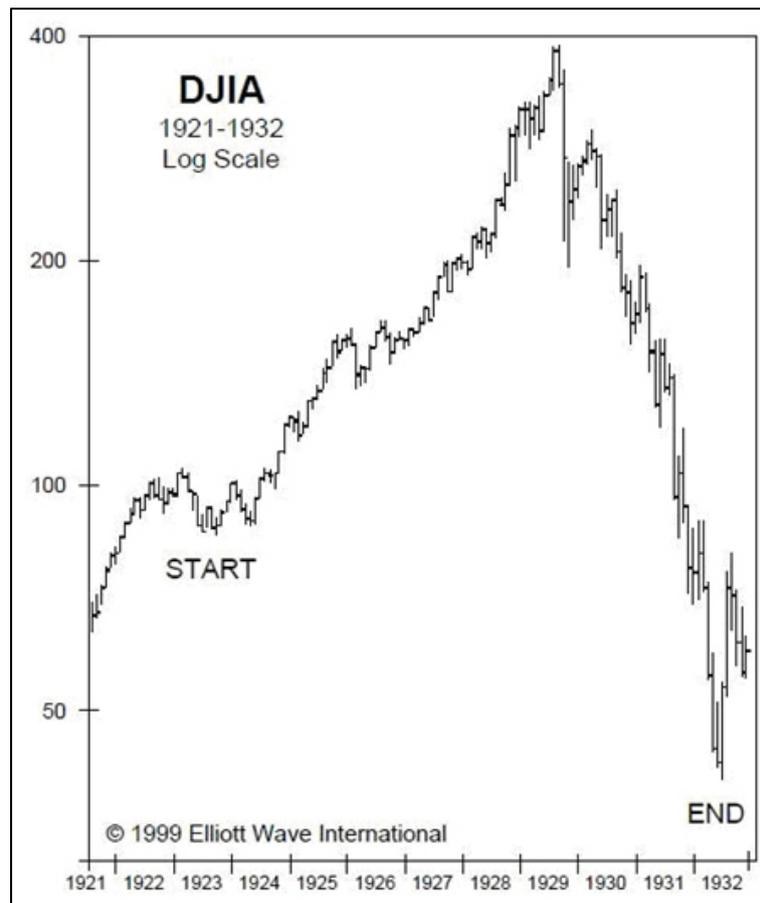


Figure 2.6: Dow Jones Industrial Average: 1921 – 1932 Source: Colombo (2012d)

2.2.7 Black Monday – the Stock Market Crash of 1987

October 19th, 1987, known as “Black Monday”, was the largest one-day market percentage drop in history to date. On that day the Dow lost 500 billion dollars which accounted for 22.6% of its value (Baur, Quintero & Stevens, 1996:320; Shiller, 1987:1).

The summer of 1982 in America was the start of a bull market for its stock market (Carlson, 2006:3). This was fuelled by low-interest rates and accompanied by leveraged buyouts, mergers and hostile takeovers. Companies were scrambling to get finance to enable them to buy each other out. This was because, at the time, it was believed that companies could grow exponentially by constantly acquiring other companies. To generate the necessary funds to buy out companies, these companies would sell junk bonds. These bonds paid high-interest rates due to the risk of default associated with them (Colombo, 2012a).

At the time, Initial Public Offering (IPO) by companies were also becoming drivers of the market excitement. This is when companies offer their shares for the first time. There was also general optimism about the changes that personal computers could produce in the way

of life of ordinary people. These factors lead to a contagious euphoria in the market in which investors wrongly believed that the stock market would always go up (Colombo, 2012a).

At the start of 1987 several allegations pertaining to illegal insider trading was being investigated. Inflation and the overheated market was of concern to the Federal Reserve due to the high rate of credit growth. Interest rates were raised to try and lower inflation and this led to a slowdown in the stock market.

Consequently, stock prices started to decline which prompted institutional trading firms to use portfolio insurance to protect themselves against further stock price losses. Portfolio insurance is used as a cushion in the stock market should the prices decline. Interest rates kept on rising, and institutional money managers also scrambled to hedge their positions.

On Black Monday, within minutes the futures market was flooded by billions of dollars' worth of sell orders. This caused the futures and stock market to crash. At the same time, many individual investors attempted to sell their stocks too, and this completely overwhelmed the stock market (Carlson, 2006:2). Markets around the world reacted by plunging in a similar fashion (Chossudovsky, 1997:2794). Figure 2.7 shows the extent of the one-day crash on October 19th, 1987.

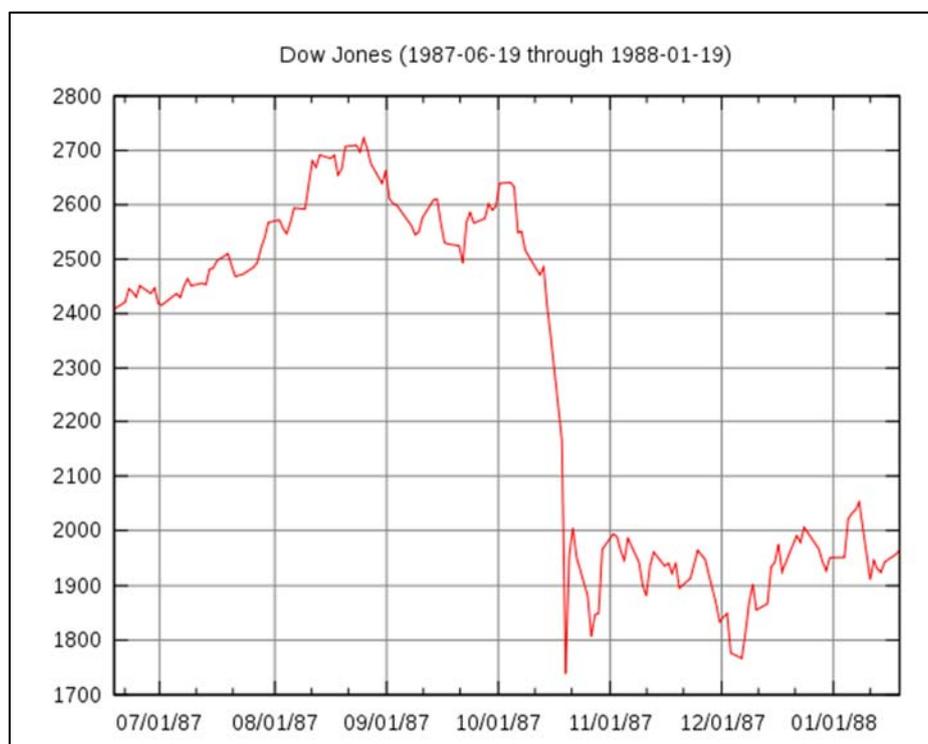


Figure 2.7: Dow Jones Industrial Average: 1986 – 1988 Source: Wikimedia Commons (2009)

2.2.8 Japan's Bubble Economy of the 1980s

In Japan, during the late 1980s, a bubble economy was driving stock and real estate prices to unknown heights as illustrated in Figures 2.8. This mania was fuelled by the three-decade long Japanese economic miracle and pushed the Japanese stock market to an all-time high in 1989 (Colombo, 2012b).

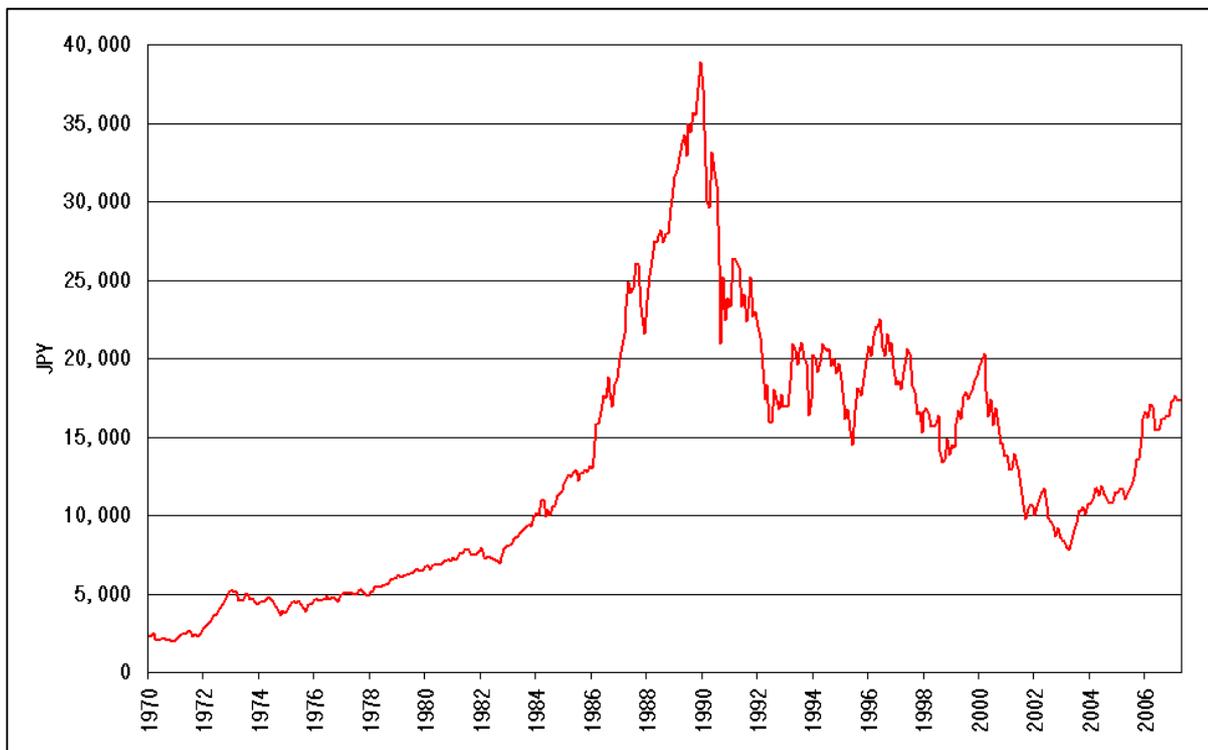


Figure 2.8: Nikkei Stock Index: 1970 – 2003 Source: Wikimedia Commons (2007)

This miracle led to overconfidence and a loose monetary policy in the second half of the 1980s. In turn, this led to deregulatory measures and aggressive speculation in the domestic real estate and stock markets, causing the prices of these assets to rise to unimaginable high levels (Hossain & Rafiq, 2011:24-28).

Companies used low-interest rate loans to buy real estate as well as stock in each other's companies which fuelled the rise in these asset prices. These soaring prices created tremendous wealth for investors which they used to buy art and subsequently created a bubble in the art world as well (Colombo, 2012b).

In 1989, monetary policies were tightened because of fears about the soaring prices. This move led to the crash of the Japanese stock market soon after which fell from its 39,000 high to 15,000 in 1992 (Colombo, 2012b; Hossain & Rafiq, 2011:29). As expected this led

to the crash in the housing market as well illustrated in Figure 2.9, plunging the country into a deep financial crisis (Colombo, 2012b).

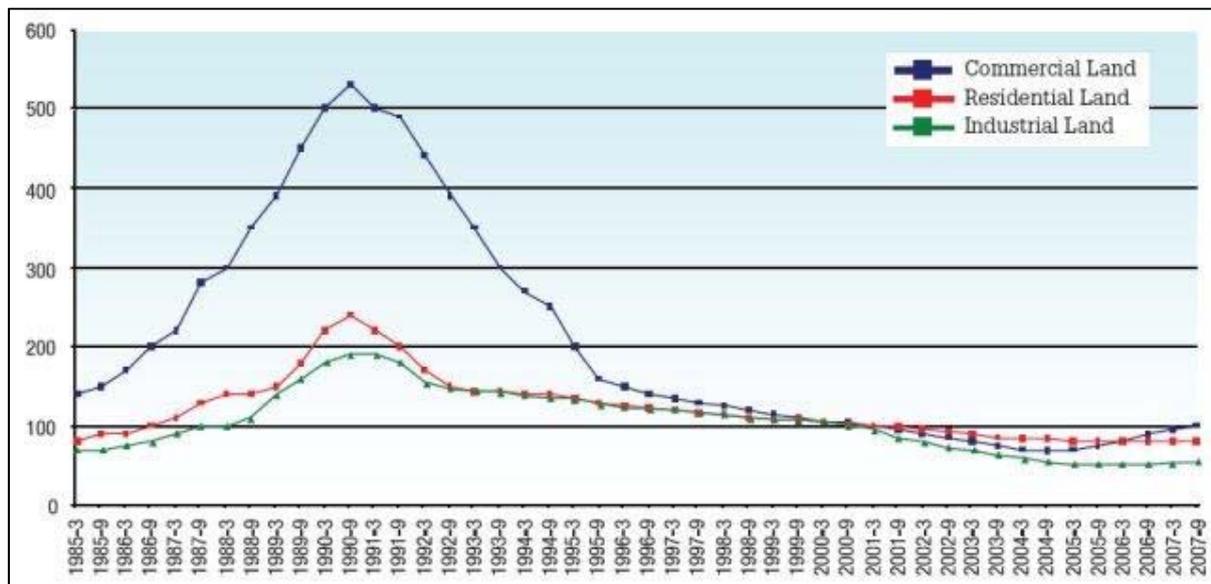


Figure 2.9: Japan: Real Estate Price Index for Six Large City Areas: 1985 – 2007

Source: Japan Real Estate Institute (2007)

2.2.9 The Dot-com Bubble (The late 1990s)

The late 1990s saw the dawn of the age of the personal computer and the Internet. This led to a period of excessive speculation in this market with many internet-based companies being founded (Sharpe, 2009:115). The technology moved from a luxury to an absolute necessity.

As a result of the fast pace of technological inventions and continuous improvements to the Internet, investors were very eager to invest in these types of companies. This led to the stock market bubble in the dot-com companies as they were known (Wheale & Amin, 2003:119).

Low-interest rates during this period also helped to fuel the bubble as cheap money was available. Venture capitalists also invested heavily in dot-com companies as it was believed that the technology was sure to bring a profit (Wheale & Amin, 2003:119). Even the Federal Reserve chairman at the time, Allan Greenspan, was promoting dot-com stock even though a wealth of evidence existed that the stock was overvalued (Teeter & Sandberg, 2017:93-94).

In March 2000, several leading high-tech companies sold large portions of their stock. This led to a panic in the market sparking a selling frenzy. The stock market lost ten percent of its value and investment capital started to dry up. A lot of dot-com companies became worthless within a matter of months. At the end of 2001, trillions of dollars' worth of investments were gone as most of the traded dot-com companies closed their doors (Wheale & Amin, 2003:120). Figure 2.10 below illustrates the rise and fall of this bubble.

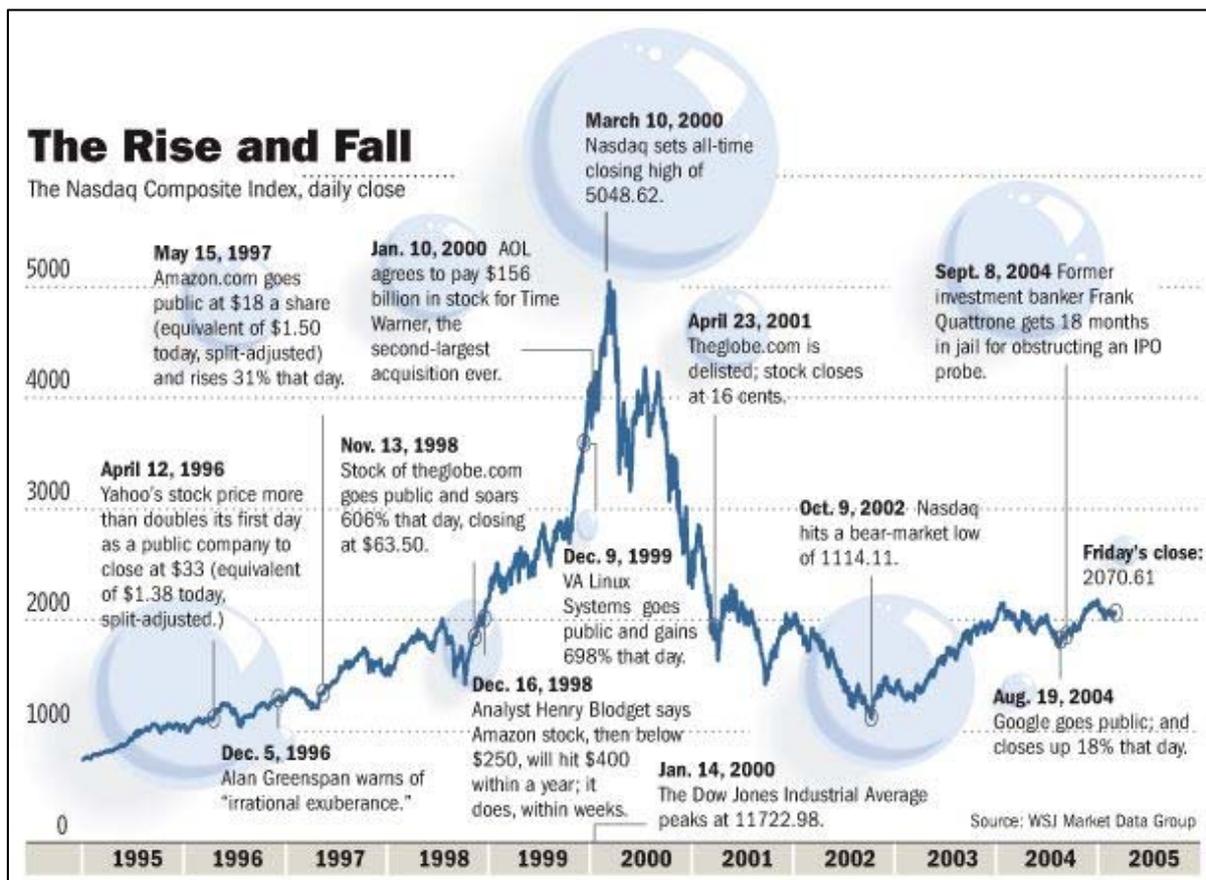


Figure 2.10: Technology stock returns during the Dot-com Bubble Source: Parker (2016)

2.2.10 US Housing Bubble of 2007

It all started with low-interest rates in the USA and a desire for all Americans to own a home. The problem was that loans were given to almost anyone without proper vetting. This meant that people that had no way of paying their mortgage were given 100 percent home loans with no down-payment (Byun, 2010:3; Levitin & Wachter, 2012:1180; Soros, 2008:312). These people were called Subprime borrowers, and the loans became known as NINJA loans (No Income, No Job, no questions Asked) (Soros, 2008:312). This was done because of the false assumption that the value of property always goes up. So, if you could not pay

your bills, you just remortgaged your house because of the rising equity within the property (Levitin & Wachter, 2012:1180).

These risky loans were then bundled together and sold to investors all over the world as Collateralized Debt Obligations (CDOs) with AAA credit ratings. The highest investment-grade rating available (Levitin & Wachter, 2012:1233).

As these mortgage defaults started to increase, the investments started to fail (Soros, 2008:312). This led to the bankruptcy of iconic companies such as Lehman Brothers & Bear Stearns as well as other giants such as AIG, Fannie Mae & Freddie Mac coming to the brink of collapse. If it was not for a federal bailout of these and other companies, they too would have failed. The crash in the US housing market had a worldwide effect, causing the Global Economic Crises of 2008 that led to the Great Recession of the world economy (Soros, 2008:312-313).

2.3 THREE RECENT SOUTH AFRICAN ECONOMIC BUBBLES

Three identified South African bubbles are briefly discussed. These bubbles had no impact on the world economy but are important in the South African context.

2.3.1 Speculative Stock Market Bubble of 2003-2006

During 2003 to mid-June 2006, a mini-bubble existed in the Johannesburg Stock Exchange (JSE). The bubble was fuelled by increased investments on the JSE that led to speculation in certain stocks. The speculation led to an increase in prices of the affected stocks, and thus their prices rose above that of their underlying values. This speculation ended with a collapse in the prices of those stocks and thus a market correction of their prices during mid-June 2006 (Zhou & Sornette, 2009:869).

2.3.2 House Prices Bubble in 2009

Evidence shows that a housing bubble existed during 2009 in the middle segment of the South African housing market (Das, Gupta & Kanda, 2011:71). The causes were relatively low-interest rates and a rise in the economic outlook of the members in this segment. The interest rate was lowered by the Reserve Bank to encourage economic activity that slowed down as a result of the Global Financial Crisis. This led to an increase in properties bought in the middle segment. The increase in activity led to an increase in property speculation and an accompanied bubble as a result of the increased activity. The effect was that

uninformed buyer overpaid for the properties they bought and subsequently had to sell at a loss if they had to get rid of the property.

2.3.3 The South African Game Industry Bubble (Late 1990s to 2016)

During the late 1990s, due to various reasons, an increasing number of South African farmers switched from traditional farming operations to game farming. This expansion of the market led to an increase in the prices of game which encouraged more and more farmers to switch. In a search for bigger profits, the market started to specialise in exotic game and later on into colour-variants within these species. The price of some variants skyrocketed to unsustainable levels which led to a decrease in the demand. This decrease in demand was further fuelled by market saturation and led to a dramatic collapse in prices during 2016 (Saayman, 2017; Van Schalkwyk, 2017).

2.4 SIMILAR LIFE-CYCLE IDENTIFIED

When comparing all these bubbles above, a life-cycle was distinguishable. All these events started with some **economic opportunity or market shift** that presented itself in a commodity, either in the form of a new technology or a possible solution to an economic problem. As a result of the market being unsure on how to price the commodity, an opportunity for speculation and increased profits existed. This was where **greed** set in. At that stage, a **hype** developed around the commodity. More and more investors were drawn in, and this created a frenzy of trading. The bubble picked up speed and prices skyrocketed as uneducated investors entered the market for reasons of profit. Inevitably the price of the commodity became top-heavy, and a slow-down ensued with shrewd investors locking in their profits. This created **fear** with some investors who then got rid of the commodity as well. As the price started to drop, **panic** set in and a frenzy of selling ensued, plummeting the price of the commodity and leaving most investors severely financially handicapped.

Because of this distinguishable life-cycle, it was possible for economic bubbles to be condensed into five stages:

1. Displacement: A change in economic conditions produces new and lucrative prospects for certain businesses.
2. Euphoria or overtrading: A response process sets in whereby growing anticipated returns lead to swift growth in asset prices.

3. Mania or bubble: This opportunity for easy capital gains draws first-time investors as well as charlatans ready to relieve these unwary investors of their money.

4. Distress: The insiders recognise that anticipated profits cannot conceivably substantiate the now excessive price of the assets and start selling to lock in their profits.

5. Revulsion or discredit: As asset prices decrease, the outsiders panic that causes a selling frenzy, causing the bubble to burst (Ferguson, 2008:121).

Three additional persistent features exist for stock market bubbles.

Firstly, those in the know, the insiders, use asymmetric information to exploit those on the outside fraudulently. Asymmetric information refers to insiders knowing more about the company than outsiders.

Secondly is the role of cross-border capital flows. Bubbles seem to flourish when capital flows freely between countries. Speculators, seasoned in the markets are much more likely to spot a bubble, buy low and sell high before the bubble bursts, giving them the upper-hand over naive and first-time investors. This means that in a bubble not all investors are irrational, or more to the point, some are less irrational hoping to time in the market.

Lastly, cheap money is needed for a bubble to occur. This means low-interest rates and low barriers to lending. This point emphasises the need for central banks to get it right and not create an environment in which a bubble can flourish (Ferguson, 2016:122).

Possible future economic bubbles were identified and analysed based on the criteria mentioned above to see if they fit the identified life-cycle pattern:

2.4.1 Cryptocurrency

Cryptocurrencies are digital currencies, also known as virtual currencies. The first and still most important Cryptocurrency, Bitcoin, came into existence after the Global Financial Crisis of 2008. It is completely decentralised with no server or central authority as opposed to centralised electronic money or centralised banking systems. This enabled it to gain popularity as people lost faith in the centralised banking system currencies of the world.

With its success, it opened the door for similar currencies, especially once it became popular and expensive. As of July 2017, more than nine hundred digital currencies were in existence, and more were being created. This has led many to believe there is a bubble in the

Cryptocurrency market. A quick look at the history of these currencies will show that they are highly volatile and fluctuate wildly.

Cryptocurrency as a whole might well be a bubble as the market is still struggling to correctly price it. Figure 2.11 below shows the distribution of Cryptocurrency market capitalisation in millions of Dollars on the 7th of August 2017.

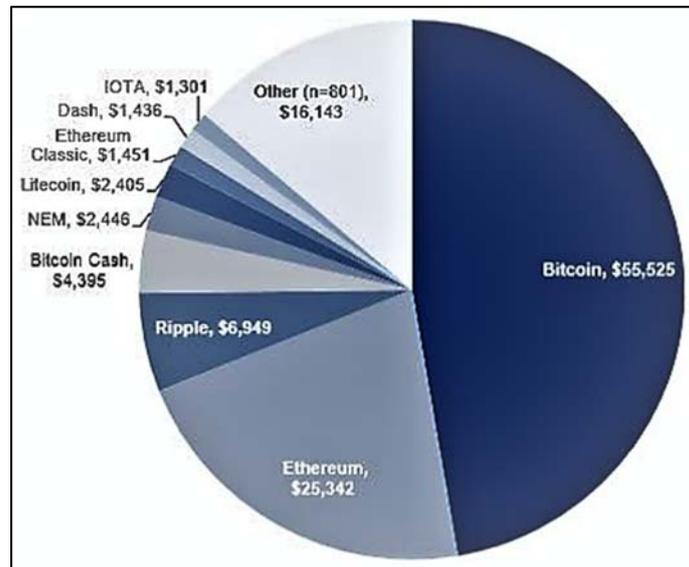


Figure 2.11: Cryptocurrency market capitalizations – 2017-08-07 Source: Coin Market Cap (2017)

When looking at the life-cycle of a bubble, it is obvious that there was a definite **market shift** that led to the creation of Cryptocurrency. The second step of **greed** is also present as can be seen from rising expected profits that lead to rapid growth in the value of different types of Cryptocurrencies. First-time investors have been drawn to the market which creates a **hype** within Cryptocurrencies. As said before, these currencies are very volatile with large movements in price. This leads to **fear** when investors take profit, or negative news is announced. **Panic** has however not happened with the currencies recovering and reaching new highs.

Thus, Cryptocurrency is showing the stages of the life-cycle of a bubble and is currently in the hype phase.

2.4.2 Global Debt Levels

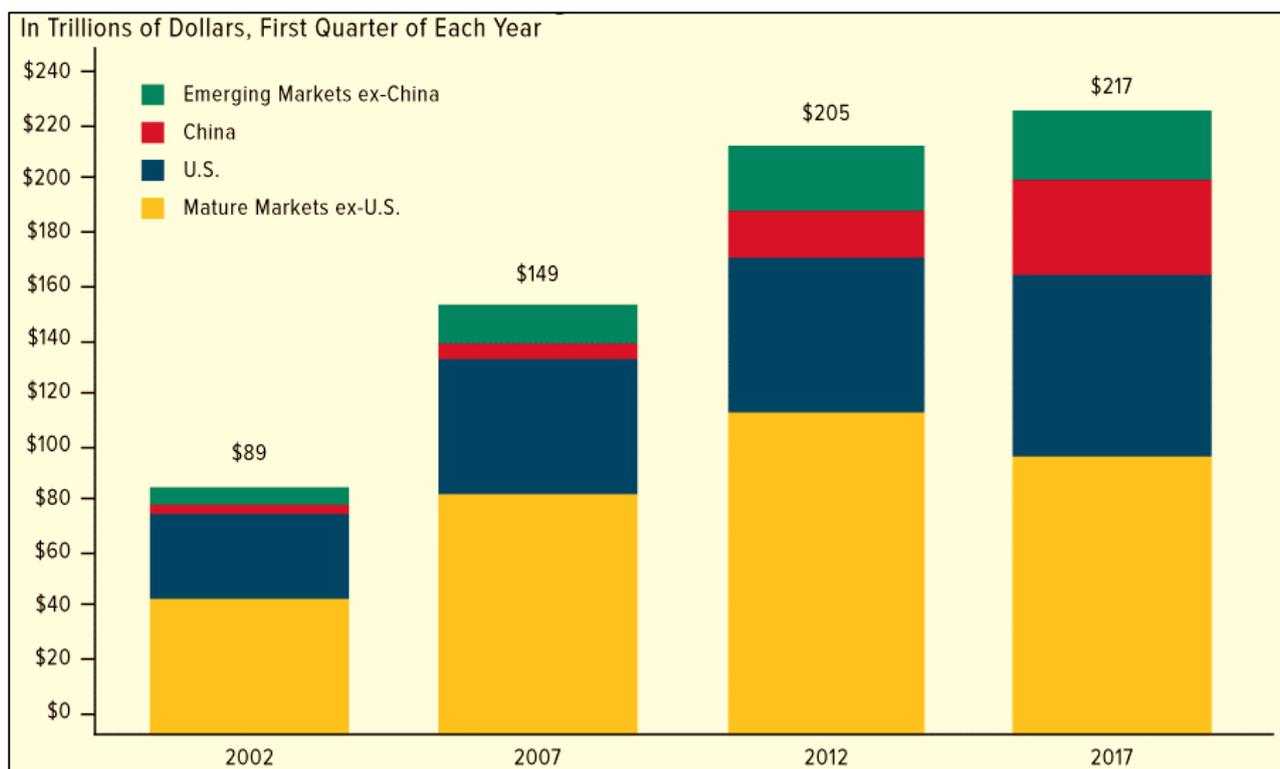


Figure 2.12: Total Global Debt Source: Holmes (2017)

As can be seen from the figure above, courtesy of The Institute of International Finance, global debt has skyrocketed since the US Housing Bubble in 2007 and the subsequent Global Financial Crisis. This was mainly due to efforts from central banks to alleviate the effects of the Global Financial Crisis. The figure is disquieting as it shows that in a period of supposed "coordinated growth", global debt has hit a new record high of \$217 trillion. This represents more than 327% of global gross domestic product (GDP) and is up \$68 trillion since 2007 which already saw a \$63 trillion jump from 2002. The figure also shows that China remains the leading source of global debt growth. Its total debt load is exceeding 300% of GDP (Reuters et al., 2017). The figure below shows China's total debt to GDP as well as a breakdown of its debt between the different sectors.

This level of global debt is a problem as it slows down economic growth and governments have to increase taxes to be able to service debt. This places even more financial pressure on the citizens that are themselves in some cases over-indebted. The situation is thus unsustainable (Reinhart & Kenneth, 2010:6-11).

When looking at the life-cycle of a bubble, we can again see that there was a **market shift** following the Global Financial Crisis. This led to the total global debt increasing significantly which correlates with the **greed** phase. Global debt has not decreased since the Global Financial Crisis and has increased by more than two and a half times in fifteen years. This correlates with the **hype** phase. When perusing journals and publications, it is clear that people are worried about these levels, but the **fear** phase has not yet set in.

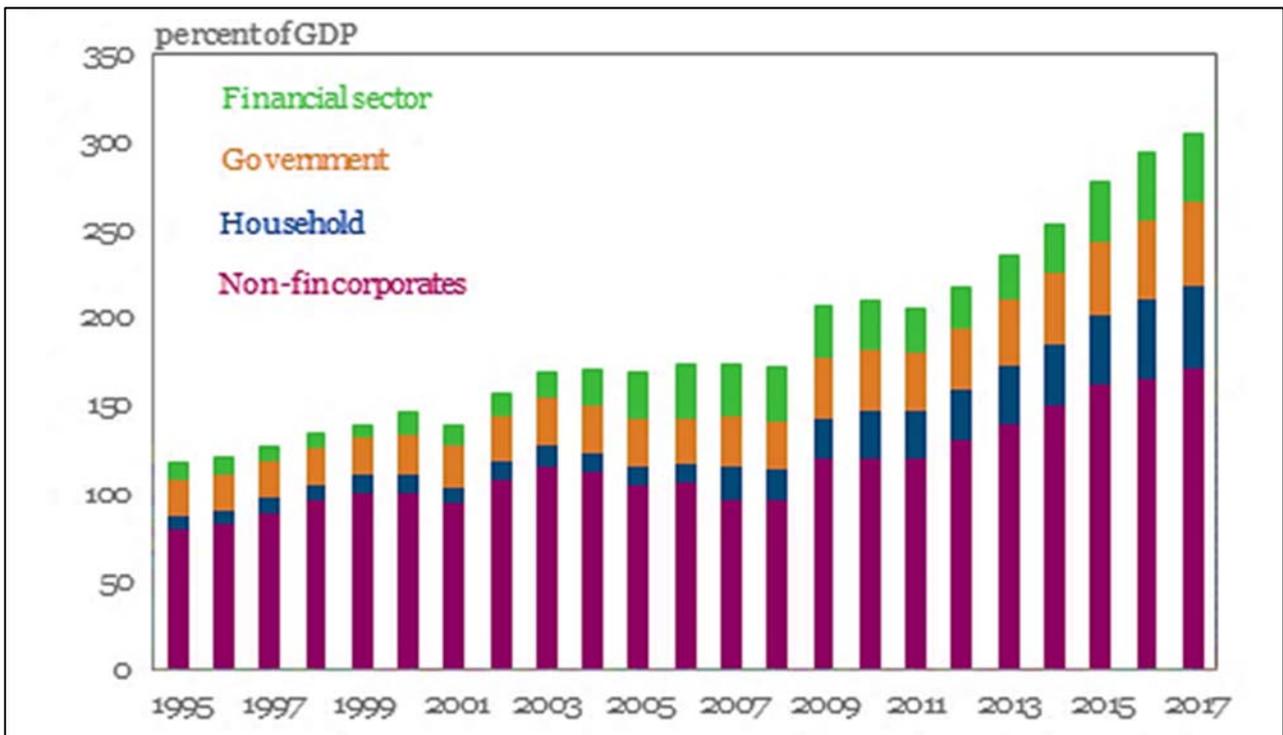


Figure 2.13: China: Total Debt-to-GDP Source: Institute of International Finance (2017)

2.5 CONCLUSION

A life-cycle for an economic bubble could be identified in the ten historic economic bubbles of the world as well as the three South African bubbles that were examined in this chapter. The life-cycle identified in this study starts with a market shift or opportunity. This is then followed by greed as early investors start buying up the commodity which leads to a hype around the commodity when less sophisticated investors start buying the commodity for reasons of profit. Next follows fear when doubts about the price of the commodity are raised, and sophisticated investors start locking in profits. Finally, the bubble bursts when panic sets in and investors scramble to sell off the commodity. Other economists call these phases displacement, euphoria or overtrading, followed by mania or the bubble phase, then distress and finally revulsion or discredit.

None of the above mentioned bubbles existed due to fraudulent activities at their start. They started as result of changes in economic conditions that created legitimate business opportunities. Cryptocurrency and Global Debt are following the life-cycle pattern of an economic bubble and are currently in the hype phase.

2.6 CHAPTER SUMMARY

In this chapter, ten historic world economic bubbles, as well as three South African economic bubbles, were analysed to determine whether a life-cycle could be determined. It was found that they followed a similar life-cycle.

A life-cycle for economic bubbles was found during the literature review that had previously been determined by other economists. These two life-cycles were then compared and found to have similarities.

By using the identified life-cycle and patterns, current economic situations were looked at to determine whether it would be possible to detect an economic bubble as it was developing and thus be able to manage its effects better.

Two possible future bubbles in the global arena were discussed and compared to the life-cycle of historic economic bubbles. These are Cryptocurrency and Global Debt, and they were found to have similarities to the previously discussed bubbles.

CHAPTER 3: RESEARCH METHODOLOGY AND FINDINGS

3.1 INTRODUCTION

The purpose of this chapter was to assist the researcher in meeting the research objectives that was stipulated in Chapter 1. To verify the findings of the researcher in the literature review, it was decided to use a qualitative approach to achieve this. The qualitative approach is a strategy whereby the emphasis is on words rather than the quantifiable collection of data that is analysed for results. Therefore, qualitative research does not exercise measurements. Qualitative research is about attitudes, feelings and viewpoints to obtain a better understanding of the research problem. During these types of studies, a researcher searches more deeply using interviews and documentation (Yin, 1994:49). Collecting data and developing the theory using data is referred to as the inductive approach (Saunders, Lewis & Thornhill, 2003:89). This inductive approach enables one to understand the social world by implementing examination and interpretation processes. The processes include the interpretation of the participant's world through their eyes are also known as their descriptive nature.

3.2 GATHERING OF DATA

The population of a study can be defined as the entire group of possible partakers in a study to whom a researcher would want to generalise the outcomes of an empirical study (Welman, Kruger & Mitchell, 2010:55). For this study, the population was **fifty-eight (58)** senior economists in the Gauteng and southwestern part of the North West Province of South Africa. The area was chosen as Gauteng is seen as the economic hub of South Africa and it was within easy driving distance for the researcher. As it was not possible for the researcher to interview all of the population due to time and schedule constraints, a convenience sample of twelve was taken from the population, and semi-structured interviews were conducted with them. A convenient sample can be defined as a process of accumulating data from members of a particular study population that are handily accessible to take part in the research study. As there is very little variation in the study population, such a sampling method is an effective way to collect data quickly and very efficiently (Botha, 2012:41-42).

By the seventh interview the information obtained started to conform to the previous interviews and full saturation, where no additional information was obtained, was reached

by the twelfth interview. This conforms to the opinions of respected authors (Bowen, 2008:137-152; Guest, Bunce & Johnson, 2006: 59-82; Marshall *et al.*, 2013:11-22).

Each of the interviewees was supplied with an interview protocol (Annexure A) as well as an informed consent form (Annexure B) via email. An example of the interview questions is attached as Annexure C. Each interviewee was asked twelve identical questions and their answers were recorded by taking notes and by making voice recordings of the interviews. Atlas-ti was used for sifting through the recordings, and an MS Excel spreadsheet was used to capture and group the data. The data was disseminated by looking for similar keywords, phrases or concepts in the different answers received. Percentages were calculated using the formula: $\text{part}/\text{total} * 100 = \text{percentage of the total}$. For example, if seven of the twelve interviewees gave a similar answer, the formula would be $7/12*100=58\%$ (rounded).

Q9 Key thoughts	8	IT	67%
	2	Politics or Economics	17%
	2	Debt	17%
	12		100%

Figure 3.1: Example of data dissemination

The data analysis spreadsheet was attached as Annexure D. Copies of the completed interview questions, and voice recordings are available if so requested.

3.3 RESULTS AND DISCUSSION

What follows in this section is the results and discussion of the answers received from the twelve interviewees. Ten of the interviews were conducted in Afrikaans as that was the interviewees' mother tongue. The interviews were then translated by the researcher. The essence of twelve interviewees' answers to each of the questions was captured on an MS Excel spreadsheet. Keywords and phrases were then identified within the text to see if there were similarities in the answers of the interviewees. Percentages were then assigned where possible to these keywords and phrases according to their frequency to enable analysis of the answers received.

The first question on whether they believed there are such things as economic bubbles all respondents agreed that economic bubbles do exist. The different personal definitions given by the interviewees in question 2 for an economic bubble differed somewhat in wording but not in context. An Economic Bubble was in essence defined by them as an asset or commodity trading above its fundamental value.

In response to the third question, only one interviewee disagreed that people should be informed about possible economic bubbles and is highlighted as an anomaly. Interviewee 7 felt it was not in the spirit of capitalism to warn people. With the other interviewees, there were three distinguishable thought groups. There was a difference of opinion about who should be responsible for doing the warning about possible economic bubbles. Forty-five percent of the interviewees thought that whether people would take the warning to heart was debatable. Thirty-eight percent of the interviewees thought that the position and level of authority of the person giving the warning were important and eighteen percent thought that you should warn people purely because it's the right thing to do.

Concerning question 4 on what the circumstances are in which a bubble could develop the answers were varied but could all be reconciled with a market shift or opportunity that presents itself. Fifty-eight percent of the interviewees indicated what can be condensed as consumer speculation within a commodity as a possible starting point. Twenty-five percent of the interviewees thought that innovations or technologies could lead to the formation of bubbles. Eight percent of the interviewees thought a political or economic stimulus could be responsible and eight percent thought easy access to cheap credit was a reason.

In question 5 the life-cycle of an economic bubble as discovered in the literature was given to the interviewees and asked if they agree with this life-cycle. All respondents indicated that they agree with this life-cycle.

Question 6 asked the interviewees whether they believed it was possible to identify a bubble before it bursts. All respondents indicated that they thought it was indeed possible.

In question 7 the interviewees were asked what the protective measures are that an individual, company or nation could take to minimise the impact of a bubble. This was a multiple answer question, but again main themes could be identified within the answers received. Effective government regulations were cited by fifty percent of the interviewees. Improving economic literacy, increasing transparency and making information available all have to do with the general public and was cited by five of the interviewees. Two of the interviewees indicated that in-depth research should be done to understand the risk and two indicated that a diversified portfolio was essential. Two interviewees also thought that if at all possible just to avoid the risk. One of the interviewees had no opinion on the matter.

Question 8 asked the interviewees how they would manage a bubble once it was identified. This again was a multiple answer question, but three broad types of reactions were

determined. The most popular was to make use of the bubble and make a profit where possible. With some overlapping, this answer was given by fifty percent of the interviewees. Three of the interviewees said to avoid it if at all possible with one interviewee overlapping with the previous answer as an either-or situation. A third of the interviewees took the position of preparing for the downside and protecting assets.

The answers to question 9 were again varied, but three definite possibilities could be identified. The question asked what the interviewees thought might be the next economic bubble. Sixty-seven percent of the interviewees thought that it would have something to do with Information Technology, possibly Cryptocurrency or another innovation within the industry. Twelve percent of the interviewees thought it would have something to do with international politics and the other twelve percent thought it would have something to do with Global and National Debt.

Question 10 asked of the interviewees what managerial implications they thought economic bubbles had. All interviewees indicated in their answers some risk or exposure limitation action as essential. It was also indicated that quality information was vital to be able to make informed decisions and to be able to assess the impact on a specific business sector. Thirty-eight percent of the interviewees also indicated that opportunities for increased profits should be explored and used if viable.

Question 11 was asked to ascertain whether the interviewees had been affected by past economic bubbles. Fifty-eight percent of the interviewees indicated that they had been directly affected by past economic bubbles, either positively or negatively. The other forty-two percent indicated that they had been affected indirectly to one extent or another. Mostly by the lost value of pension funds.

To end the interview, question 12 asked for any closing thought, comments or suggestions from the interviewees. This open question again had various responses ranging from a simple good luck with the study to an in-depth discussion of past bubbles or possible future threats. Another interesting observation from two of the interviewees was that people only see what they want to see. Suggestions for future research were also received.

3.4 CONCLUSION

The twelve questions asked of the interviewees were compiled specifically to test and verify the finding of the researcher in the literature study. The researcher had a good idea of what

the answers would be to the questions beforehand and found relatively early on in the interviews that there was much consensus among the answers of the interviewees.

After analysis of the interview answers, it was found that the interviews did support the findings of the literature review. The main findings were that there are such things as economic bubbles, that they follow a specific life-cycle and that it is possible to detect them before they burst. Valuable information was gathered on ways to effectively manage economic bubbles once they had been identified as well as their managerial implications.

Only one anomaly was recorded during the interviews, and that was Interviewee 7's answer to the third question where it was indicated that it was not in the spirit of capitalism to warn people about economic bubbles. Two of the interviewees were of the perception that people only see what they want to see. The researcher would also like to point out that there was a definite increase in the interview skills of the researcher as the interviews progressed.

3.5 CHAPTER SUMMARY

The purpose of this chapter was to use interviews as part of a qualitative study to support the findings of the literature study. Twelve questions that the researcher would like answered were compiled and twelve interviews were arranged for this purpose. The information gathered from the interviews was loaded onto an MS Excel spreadsheet, and similarities in the answers were identified. The findings were then given and discussed in this chapter followed by a short conclusion.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

The research objectives of the study were split into primary and secondary objectives. The primary objective of the study was to learn from past economic bubbles to enable the individual, company and country to better manage the effects of future economic bubbles. To achieve the primary objective of the study, the secondary objectives realised included identifying the circumstances in which bubbles can develop, identifying developing economic bubbles, identifying possible preventative measures and developing a framework to manage economic bubbles once identified. Figure 4.1 below is a visualisation of the keywords within this study. These are the words most frequently used in this document. The size of the words in the word cloud is also an indication of their frequency.



Figure 4.1: Keywords Word Cloud

4.2 CONCLUSIONS

This study was undertaken because of the ever-increasing impact that economic bubbles are having on individuals, companies and nations. As the main purpose of the study was to find ways to better manage economic bubbles in the future, the first logical step was to determine the circumstances in which bubbles can develop, and the study found that it was possible to identify these circumstances. It was found that these bubbles are caused by market shifts or opportunities which results in consumer speculation within a commodity – most probably a new technology or innovation, or political or economic stimulus that includes access to cheap credit. It could also be a combination of these.

When looking at these possible circumstances, could it be possible to prevent these bubbles from growing any further? Preventative measures would include but are not limited to, transparency within a market with freely available up-to-date, reliable information, stable political and economic environments with disciplined monetary policies restricting access to cheap credit when necessary.

It was also found that economic bubbles have a definable life-cycle by analysing historic bubbles and that they, therefore, could be detected before they burst. This led to seeking ways to manage the effects by assessing its possible impact, limiting exposure as far as possible and then by seeking opportunities for profit if it falls within the risk profile of the person doing the research. The humanitarian aspects of such events should also not be lost. The possible negative impact of such a bubble on other people associated with an individual, company or country should always be kept in mind.

Finally, a managerial framework was developed to assist with managing these economic bubbles. With this in mind, the research objectives of this study were achieved.

4.3 RECOMMENDATIONS

In this recommendations section, a framework is proposed on how to manage economic bubbles. For this purpose, it is important first to be sure that the bubble exists. This is ascertained by doing research and in the process determine in what sector of the economy it is. This is important as it will determine the available options. Once it is confirmed that a bubble does indeed exist but it is not in your sector of the economy, and your exposure is limited to none, you can either choose to ignore or avoid it or ascertain whether there is an

opportunity for profit. This decision will be influenced by you or your companies' risk profiles. Figure 4.2 gives a guideline to identify and manage possible economic bubbles.

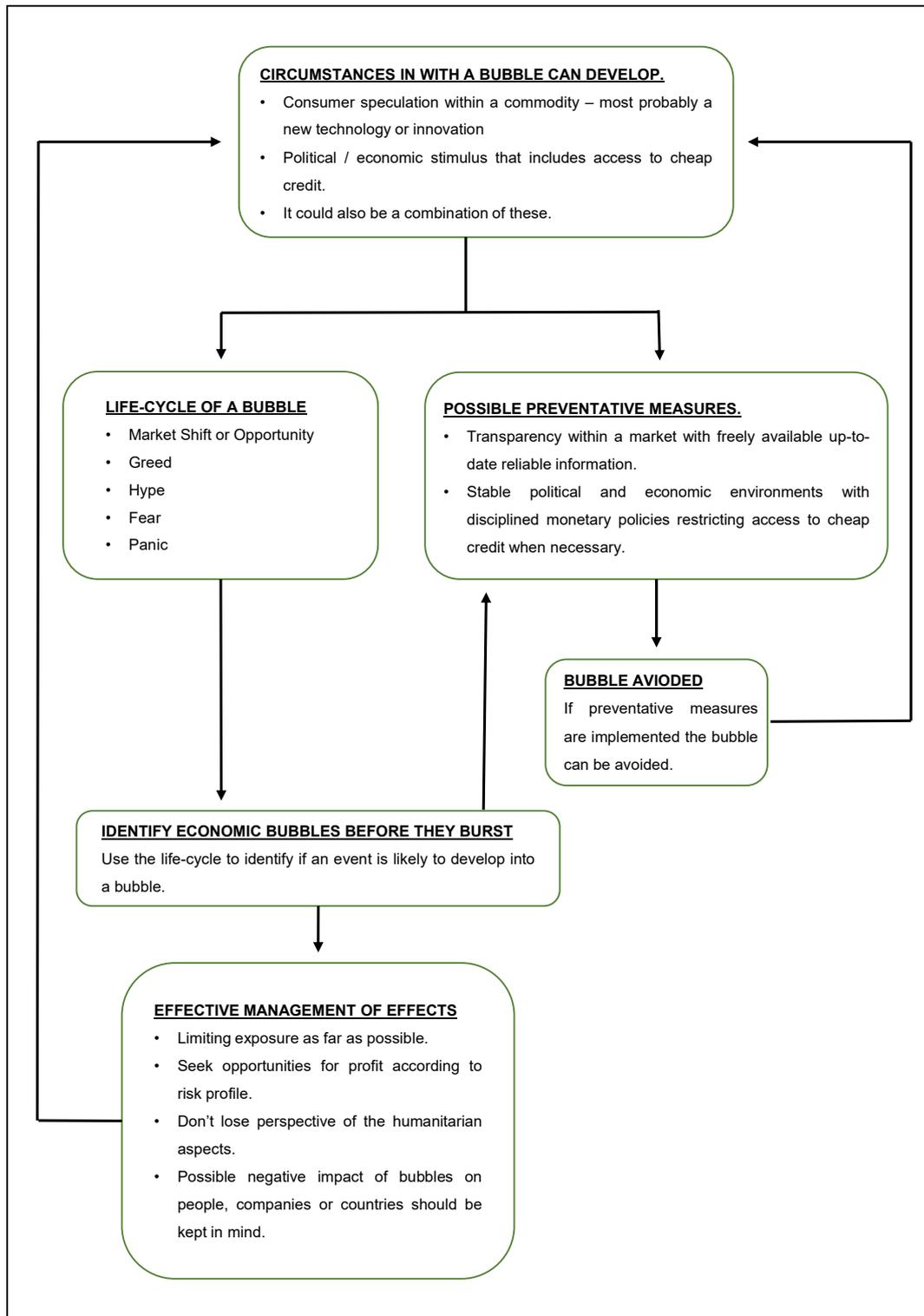


Figure 4.2: Managerial Framework for the management of Economic Bubbles

Should you, however, find that the bubble exists and is in your sector of the economy, you will first want to determine your exposure and put actions in place to limit it. Accurate

information is key as this will further determine your actions. These include managing your downside by lowering debt exposure, warning people and actively monitoring its progress. On the upside, new lines of business can be explored to limit exposure but also to take advantage of business opportunities that are available and then to act accordingly. Do not get caught up in the hype. It is also important to manage the humanitarian aspects by limiting job losses where possible, educating employees and providing information without creating panic.

4.4 ACHIEVEMENT OF THE OBJECTIVES OF THE STUDY

The primary objective of the study was achieved by analysing historic global and local economic bubbles to enable the individual, company and country to understand better and manage the effects of future economic bubbles. This was achieved by ascertaining the circumstances which allow economic bubbles to develop in the first place and then considering the current economic climate and identifying possible developing bubbles. Possible preventative measures were identified, and a framework was developed to manage economic bubbles once identified.

4.5 RECOMMENDATIONS FOR FUTURE RESEARCH

During the research done in this study, it was found that areas of future research could include more research into human psychology in dealing with economic bubbles, the so-called irrational exuberance. This field is known as behavioural economics and was recently placed in the spotlight by Richard Thaler who won the 2017 Nobel Prize for his research and for bringing behavioural economics into the mainstream. The need for future research in this area was also mentioned by several of the interviewees.

A further area for possible future research is a classification or categorisation of economic bubbles to enable people to assess better the risk associated with these bubbles and so that they can be up-or downgraded, much like hurricanes, to enable better management.

One last area could be to determine the survival strategy for small to medium enterprises (SMEs) with regards to economic bubbles.

4.6 CHAPTER SUMMARY

In conclusion, this study found that it was possible to identify the circumstances in which economic bubbles can develop. These bubbles are caused by market shift or opportunities

in the economy that causes consumer speculation within a commodity – most probably a new technology or innovation, or political or economic stimulus that includes access to cheap credit, or a combination of these. Various methods were found to identify developing economic bubbles by determining whether these happenings were following the life-cycle of an economic bubble. Possible preventative measures would include but are not limited to, transparency within a market with freely available up-to-date, reliable information, stable political and economic environments with disciplined monetary policies restricting access to cheap credit when necessary. Finally, a managerial framework was developed to assist with managing these economic bubbles. With this in mind, the research objectives of this study were achieved.

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ANNEXURE A: INTERVIEW PROTOCOL

Introduction (5 minutes)

- Introductions
- Thank the participant for taking part in this economic bubble interview.
- Remind participant of the main research question of the study: What can we learn from past economic bubbles to help prepare and protect the individual, company and country against such future events?

Informed consent (4 Minutes)

- If already have signed a consent form, proceed to step 3, Interview Rules.
- If not, review the consent form with the participant.
- Answer any questions the participant may have regarding the consent form.
- Ask the participant to sign a copy of the consent form.

Interview rules - Review the following with the participant (3 Minutes)

- The participant may defer answering any question at a later time.
- Candid answers are important in defining the participant's business experiences.
- The participant's responses are important and respected.
- Identifying information will remain confidential should the participant wish it to be.
- Ask the participant for permission to record the session.
- Ask the participant if there are any last questions. When satisfied start the recording and proceed.

Interview questions (43 Minutes)

- Ask the participant the interview questions as written in the appendix.
- Listen and make notes of the participant's answers.

Interview wrap-up (5 Minutes)

- Remind the participant that the interview conversation, as well as their identity and the identity of their company, will remain confidential if so requested.
- Inform the participant that he/she may contact the researcher or Supervisor at the NWU with any questions or concerns. The contact information is in the consent form.
- Thank the participant for his/her time and the opportunity to discuss their views and opinions.

ANNEXURE B: INFORMED CONSENT FORM



Informed consent documentation for _____

Title of the Research Study: A managerial analysis of historic economic bubbles as the basis for identifying future similarity economic losses

Ethics Reference Numbers: EMSPBS16/11/25-01/42

Researcher's Details: Vernon Clive Strong
Masters Candidate – Graduate Program in Business Administration

Email Address: vcstrong@gmail.com

Contact Number: 018 299 4625

Supervisor: Mr Johan Coetzee – NWU, Potchefstroom Campus, Building E3, Room 416

Telephone: 018 299 4012

Purpose of the Research:

You are being invited to take part in a **research study** that forms part of my MBA Mini-dissertation. Please take some time to read the information presented here, which will explain the details of this study. Please ask the researcher any questions about any part of this study that you do not fully understand. It is very important that you are fully satisfied that you understand what this research is about and how you might be involved.

Voluntary Participation:

Also, your participation is **entirely voluntary**, and you are free to say no to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part now.

What is this research study all about?

- This study will be conducted at a place and time of your choosing and will involve a semi-structured interview with predetermined questions.
- The aim of this is to gather information about your opinion of economic bubbles.

Why have you been invited to participate?

You have been invited to be part of this research because of your knowledge and experience in the economic field.

What will be required of you during this research?

You will be asked 12 questions about economic bubbles and your opinion about them. As the Delphi method will be used in this research, there will be a second round of questions via email. Here you will be asked to comment on the findings of the researcher, on the information gathered, during the interviews.

Anonymity

The participant's right to stay anonymous will be respected if it is required. Please indicate this in tick box provided in the declaration.

By whom is this study funded and are there any costs for you?

- This study is funded by myself.
- There will be no direct costs involved for you if you do take part in this study, except for your time and any possible inconvenience.

You will receive a copy of this information and consent form for your own purposes.

DECLARATION BY PARTICIPANT

By signing below, I agree to take part in the research study titled: A managerial analysis of historic economic bubbles as basis for identifying future similarity economic losses.

I declare that:

- I have read this information/it was explained to me by the researcher in a language with which I am fluent and comfortable.
- The research was explained to me.
- I have had a chance to ask questions to both the person getting the consent from me, as well as the researcher and all my questions have been answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be handled negatively if I do so.

I wish to stay anonymous.

Signed at (*place*) on (*date*) / / 2017.

.....
Signature of participant

DECLARATION BY RESEARCHER

I, Vernon Clive Strong, declare that:

- I explained the information in this document to
- I did not use an interpreter
- I was available should he/she want to ask any further questions.
- I am satisfied that he/she adequately understand all aspects of the research, as described above.
- I am satisfied that he/she had time to discuss it with others if he/she wished to do so.

Signed at (*place*) on (*date*) / / 2017.

.....
Signature of researcher

ANNEXURE C: INTERVIEW QUESTIONS

1. Do you believe that there are such things as economic bubbles?
If not, then what would you call the past economic extreme boom and bust cycles?
2. How would you define an economic bubble?
3. Do you believe it is important to inform people of a possible bubble and why?
4. What would you say is the circumstances in which a bubble can develop?
5. The following pattern for the development of economic bubbles has been identified:
 - Displacement: Market shift or opportunity
 - Euphoria or overtrading: Greed
 - Mania or bubble: Hype
 - Distress: Fear
 - Revulsion or discredit: Panic

Do you agree with this pattern?

If not, what pattern would you suggest and why?

6. Do you believe it is possible to identify a bubble before it bursts?
If not, why do you think it is not possible?
7. What are the protective measures that an individual, company or nation can take to minimise the impact of a bubble?
8. How would **you** manage a bubble once you have identified it?
9. What do you think will be the next economic bubble and why?
10. What managerial implications do you think economic bubbles have?
11. How have you been affected by economic bubbles?
12. Any closing thoughts, comments or suggestions?

ANNEXURE D: DATA SPREADSHEET

Interviewee / Question	1. Do you believe that there are such things as economic bubbles?	2. How would you define an economic bubble?	3. Do you believe it is important to inform people of a possible bubble and why?	4. What would you say is the circumstances in which a bubble can develop?	5. The following pattern for the development of economic bubbles has been identified: • Displacement: Market shift or opportunity • Euphoria or overtrading: Greed • Mania or bubble: Hype • Distress: Fear • Revulsion or discredit: Panic Do you agree with this pattern?
Interviewee 1	Yes	Small Supply Large Demand Market forces not effective in setting price Commodity takes on investment aspect Hype Creates own momentum Commodity / Asset extra value attached by market it does not have	Yes depend on which capacity you are Definitely if there is a fiduciary responsibility	Market shift in a commodity price rises above intrinsic value Supply and demand ineffective in determining price with in a commodity eco-system How easily is information available regulations	Yes
Interviewee 2	Yes	asset or commodity price above fundamental value	Yes possibility of huge financial losses and its impact	Greed Consumer speculation caused by economic circumstances and escape of hardship for 8-5ers	Yes
Interviewee 3	Yes	commodity trading far above its fundamental value	Yes Level of influence is important as to weight carried	Easy access to cheap credit	Yes
Interviewee 4	Yes	exceptional economic prosperity	Yes whether they will listen is a different matter	Uninformed investors The need to make money & better life money created not supported by underlying value	Yes
Interviewee 5	Yes	herd mentality overvaluation of an asset as a result of market sentiment	Yes because of potential for loss	High growth and profit in a commodity leading to greater investments market optimism	Yes
Interviewee 6	Yes	Over inflated commodity	Yes but people don't listen	Irrational exuberance psychological causes mass hysteria herd mentality	Yes
Interviewee 7	Yes	Inherent to capitalism as it is unplanned although trend is positive Uncertainty influences economic decisions Profit is in innovation knew technology draws investments This causes bubbles	People do but not in the spirit of capitalism and won't in personal capacity	Innovation	Yes
Interviewee 8	Yes	Unexplainable growth of a commodity	Yes but, People reactions are unpredictable and so you might not get the response you were looking for	Misinterpretations & Mismanagement Inherent in capitalism and develops out of economic activity	Yes
Interviewee 9	Yes	Opportunities that was created and exploited	Yes To minimize losses To give people choice whether or not they want to participate	Different stimulus exp. political economic	Yes
Interviewee 10	Yes	Any outside shock on the economy Inherent in markets	Yes Wealth damage investment values and pension funds affected Treasury to warn population Allow people to make decisions	Uncertainty & expectations Economic climate	Yes
Interviewee 11	Yes	Market phenomenon that does not follow economic realities and has own momentum	Yes Position determines whether people will listen	Economic opportunity that disturbs the norm with reactions to it	Yes
Interviewee 12	Yes	Impact on financial system Price related Must include Systemic risk with large amount of trade	Yes By Academics & public intellectuals	New technologies & Regulations or the lack thereof or lac of insight	Yes
	1	2	3	4	5

6. Do you believe it is possible to identify a bubble before it bursts?	7. What are the protective measures that an individual, company or nation can take to minimize the impact of a bubble?	8. How would you manage a bubble once you have identified it?	9. What do you think will be the next economic bubble and why?	10. What managerial implications do you think economic bubbles have?	11. How have you been affected by economic bubbles?	12. Any closing thoughts, comments or suggestions?
Yes with a lot of research Analytics of fundamentals	be on the lookout do research speak to others warn others Regulations	If there is money to be made, use the opportunity or avoid as much as possible be liquid - cash	Something with Money Fiat Money Cryptocurrency - will take a long time to develop because of global access to market. Driven by inequality	Limit exposure Explore new lines of business to limit impact	Direct: Lost money Gained by buying property cheaper	Recap of discussion Bitcoin
Yes but it stays speculation until it happens	Increase Economic literacy of population Effective Gov Regulations	avoid warn others	Something within the digital economy US Dollar / Global debt	Limit job losses Manage humanitarian aspects Educate employees Supply Financial advice	Indirectly	Future research: Psychological aspect: desire to escape circumstances
Yes by doing value analysis	Diversify	avoid	Bitcoin	Depends on the sector affected limit exposure lower debt exposure warn people	Indirect: pension	Future research: What is smme survival strategy
Yes analysis	avoid	take gains manage losses	Something in electronic economy Specific product within it	Do extensive research to verify that there is a bubble Manage risk and exposure	Indirect	Cryptocurrency ease of use trust
Yes natural value is usually available	diversify Monitor and regulate banking sector	See if you can make a profit warn people diversify Monitor carefully	cryptocurrency	Diversify Take advantage of situation Monitor Protective measures	Direct: Increase in interest rates had negative effect Slump in stock market - loss of value	Future research: behavioural economics
Yes because of the mathematical works of Sornette, Protter & Jarrow	No opinion	Trade with 1st mover advantage	Credit - National & Global	Determines your whole business environment Strategic decision makers must take careful note of possible bubbles as it determines the strategic direction of company	Yes - misspent tax money	Good that focus is on macro economics
Yes Pinpointing exactly difficult capitalism is bound to have bubbles	Applying rationality How they control themselves.	Would do nothing Depends on risk profile resign self to say took a risk Either made or lost money the way of capitalism	Something with IT	New technology making good money Co. accountants sound inform it there is a problem. Always a matter of numbers Act accordingly	positively because of innovation Nothing negative known	Bubbles have been happening for a long time because People see what they want to see Very much about learning
Yes	Level of interference should be measured and it depends on the circumstances as peoples reactions are unpredictable Change perceptions Create Incentives for people to abandon commodity without creating panic. Take care on how information is made available and what is said. Manage the Landing or Avoid	Make sure you understand what the bubble is Manage perceptions Manage the Landing Make sure of your market	National debt	Change perception Manage landing	Indirect	circumstances play an important role.
Yes	reduce the impact by making information available	Sense of practicality is key Evaluate and build scenarios Base decisions on that Err on the side of caution	IT: Information - Big Data How big data used properly changes a co. competitive edge political interference	Depends on if you are invested or not Information available Protect the co. position Limit exposure Alleviate impact	made some profit from properties after 2008	People only see what they want to see
Yes & No Indicators are available - Economy unstable Built in risk Unexpected shocks with its market reaction.	Depends on your risk profile & available funds Gov - Early warning signals Available information Think tank - Asset managers Capital protection	Look at what experts say act according to information Protect assets heed early warning signals Protect capital	SA Political crisis	Risk profile Identify risks Grade impact Contingencies & risk mitigation If risk management plan available then implement Important factors are: Frequency Severity Impact	Interest hikes & indirect - pension everybody is affected whether they know it or not	Classification or Categorisation of bubbles to be able to better manage Economic illiteracy biggest problem in SA
Yes Rational thinking will show it to be a bubble	Strong credit regulations Good Policies in place Keep discipline Risk management	Keep to good policies that are in place Use bubble to make profit if possible do not get caught up in the Hype	SA Grain market Des-Jan - Spreads will come to market because of record harvest and sitting with previous harvest because of low price. North Korea - US National & Int Nas Political Environment & reaction to it.	Good Policies Delegation of Power More long-term Planning horizon is important - Keep eye on market and make informed choices	made profit through currency fluctuation By using interest rate fluctuations to make money & to protect against interest rate hikes	SA Game industry
Yes With focus on trading volume & liquidity and less on price movement	Not possible to stop their development but a better job can be done to monitor them over time Monitoring markets - weighted price, liquidity & trading volumes Transparency in markets Rules regarding public access	Protection against collapse Investigate who benefitted most and hold them chiefly responsible	Currency related - most probably US-Dollar Cryptocurrency	Remove Price Risk in income statement Hedge price risk Take payments in different currencies Try and get out of foreign exchange control environment by changing jurisdiction	Positively and negatively	More transparency across all markets
6	7	8	9	10	11	12

ANNEXURE E: LETTER FROM LANGUAGE & TECHNICAL EDITOR



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Friday, 10 November 2017

To whom it may concern,

Re: Letter of confirmation of language editing

The dissertation **A managerial analysis of historic economic bubbles as basis for identifying future similarity economic losses by VC Strong (12302430)** was language and technically edited. The referencing and sources were checked as per NWU referencing guidelines. Final corrections remain the responsibility of the author.



Antoinette Bisschoff

Officially approved language editor of the NWU since 1998
Member of SA Translators Institute (no. 100181)

Precision ... to the last letter