### KERRY BALENTHIRAN

## THE 17.6 YEAR STOCK MARKET CYCLE

CONNECTING THE PANICS OF 1929, 1987, 2000 AND 2007

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Connecting the Panics of 1929, 1987, 2000 and 2007

**Kerry Balenthiran** 



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ISBN: 978-0857192-73-8

British Library Cataloguing in Publication Data A CIP catalogue record for this book can be obtained from the British Library.

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### **ABOUT THE AUTHOR**

Kerry Balenthiran studied mathematics at the University of Warwick and then worked as a Spacecraft Operations Engineer in the UK and at the European Space Agency. He qualified as a chartered accountant with Arthur Andersen and now works as a consultant within financial services. His mathematical background led to a fascination with the cyclical nature of stock market booms and busts.

### INTRODUCTION

The stock market first attracted my attention during the technology bubble crash in 2000. Everyone knew that there were no profits underpinning dotcom company valuations, but now it seemed that some of the revenues didn't exist either. A number of high profile frauds, such as Enron and WorldCom, were exposed by the 2001 recession. This was of particular interest to me because my employer at the time, Arthur Andersen, appeared to be at the centre of the accounting storm and I was facing the prospect of losing my job.

Most of my friends and colleagues were investing in the stock markets at the end of the 1990s. The fact that they knew nothing about investing didn't bother them, whatever they bought went up in price and therefore it was an easy way to make money. As far as they were concerned they couldn't go wrong.

My future wife and I saved up and bought our first house instead. All of my friends told me that this wasn't a good use of my money, house prices wouldn't rise as they had done in the past, the 1980s was a one-off. I have always been an independent thinker and I was in love so I ignored them all and did what I felt was best.

In hindsight we now know that the herd mentality that was prevalent at the time of the tulip mania in 1637 and the South Sea bubble of 1720 was in full flow at the end of the 1990s. I have no idea what causes it but it was there and this behaviour recurs consistently throughout history.

In 2003 I started investing in the stock market, confident that the once in a lifetime 1929 style stock market crash was behind us and that we were entering the start of another great bull market. There was much debate about whether the subsequent rally was a bear market rally or a new bull market but this didn't concern me at the time. The market was going up and so were my investments.

In February 2007 HSBC issued a shock profits warning related to its US mortgage business and *Moneyweek* magazine was reporting that the US and UK property bubbles would burst triggering a devastating banking crisis. My understanding of the markets was still somewhat limited but I knew enough to understand that a property crash was bad for consumer spending and therefore company profits. I decided to get out of the stock market and sold all of my investments so that I could concentrate on finding out more about bear markets.

At first I intended to study economics to understand the drivers of the wider economy, however the credit crunch had me questioning the value of mainstream thinking, particularly after I read George Soros' book *The New Paradigm for Financial Markets: The Credit Crisis of 2008 and What It Means.* Soros' ability to make money from the markets, while being dismissive of economic theory on the behaviour of stock prices, convinced me that I would be better off pursuing my own independent research.

The insurance industry is acutely aware of infrequent but regular reoccurring events such as 100 year floods or 250 year earthquakes. Just because something hasn't happened in our lifetime it doesn't mean that it won't, and I set about applying this same approach to stock markets. I believe that not having an investing or economic background has helped me in my study of bear markets and cyclical nature of stock markets.

### A cycle of length 17.6 years is not new

A cycle is a sequence of events that repeat over time. The outcome won't necessarily be the same each time, but the underlying characteristics are the same. A good example is the seasonal cycle. Each year we have spring, summer, autumn and winter, and after winter we have spring again. But the weather can, and does, vary a great deal from one year to another.

As you will see, the identification of a 17 to 18 year stock market cycle is nothing new; in fact a stock market cycle of length exactly 17.6 years is not new either. Art Cashin from Swiss bank UBS, interviewed on CNBC in 2009, discussed a bull market cycle (the overriding trend is up) lasting 17.6 years followed by a bear market cycle (the overriding trend is down) of 17.6 years. Cashin said that if you take the top of the bull market to be 2000, then subtracting 17.6 years gives 1982.4, the start of the bull market, and adding 17.6 years gives 2017.6, the end of this current bear market. Cashin also extrapolated the 17.6 year cycle back just as I have done. In addition to Cashin, in his book *The Great Super Cycle*, David Skarica references the work of Steven Williams of Cycle Pro Outlook who has also identified an alternating bull then bear cycle of 17.6 years using an inflation-adjusted Dow Jones Industrial Average.

What is new is that I have gone further and established not only the regular 17.6 year periodic cycle that exists in the stock market, but I have also identified the specific intermediate turning points that repeat within the 17.6 year cycle.

I have discovered a stock market cycle consisting of increments of 2.2 years that I have extrapolated back over 100 years. I have called this cycle, rather modestly (and, after all, it has to be called something), the *Balenthiran Cycle*. That is the subject of this book.

The fact that the full Balenthiran Cycle matches cycles that have already been by identified by Cashin and Williams aligns it with concepts that have already been brought into the public domain.

#### Shaping our understanding of the future

This book is aimed at serious investors, both professional and private. Serious investors tend to be open minded as they seek an edge that allows them to extract enhanced profits from the stock markets. The ability to anticipate the length of broad market trends and changes in the psychological mood of market participants is a clear edge that investors can profit from. In terms of seeking that edge, I have researched and provided answers to the following key questions:

- When does a bear market end?
- Was the 2009 stock market low the end of the bear market?
- When does a new bull market begin?

This book discusses the bear markets following the 1929 top, 1966 top, 2000 top and subsequent bull markets, and it illustrates the similar characteristics that all of these periods share and outlines my expectations for the remainder of the current bear market.

Whether you believe in stock market cycles or not, I'd ask you to read this book with an open mind and allow yourself to be surprised by what you read.

The purpose of looking back at the history of the stock market is to allow it to shape our understanding of the future.

# **CHAPTER 1**

### **Commodity Cycles**

## The twentieth century saw three long commodities bulls (1906-1923, 1933-1953, 1968-1982), each lasting an average of a little more than 17 years.

Jim Rogers, Hot Commodities

The first time I read about market cycles was in the book *Hot Commodities* by Jim Rogers. Rogers identifies three long-term secular commodity bull markets lasting approximately 17 years. The commodity markets are currently in a bull run that started in the late 1990s. Whether the gold price peaked in a speculative bubble in September 2011 and similarly oil in June 2008 is debatable. But what is clear is that there are cycles that run through the commodity markets and these cycles have a direct impact on the stock market.

The reason for these cycles is straightforward supply and demand, as the following illustrates:

- During the 1970s the oil price spiked in 1973 and 1979 due to tension in the Middle East restricting supply and peaked at nearly \$40 in 1980.
- Once supply stabilised prices fell but Western nations realised that they were overdependant on oil-producing countries and so alternative energy sources such as nuclear were developed, further undermining prices. In addition the high prices weakened demand considerably as consumers moved towards smaller, fuel efficient cars.
- An environment of low oil prices meant that there was little incentive to invest in oil production and new technology and smaller producers/refiners exited the market by being taken over by the oil majors, concentrating supply amongst fewer companies. The oil price hit a low of around \$10.
- Once again demand was surging due to a growing economy on the back of low manufacturing prices as a result of the low oil price. However, supply had been steadily declining due to a lack of investment and now oil prices started to rise.

• The oil price increased and peaked at \$147 in 2008 and the resulting increase in inflation and interest rates, which reduced disposable incomes, caused homeowners to default on their mortgages and triggered the global credit crunch and subsequent recession.

Similar supply and demand and over/under investment drivers impact all commodity markets and these take many years to filter through to the point where cost effective alternative products and/or sources of supply are available and there is a demand for these alternatives.

Rogers' book discusses the commodities cycle at length and also touches on how it affects the stock market:-

Studies have confirmed this negative correlation between stocks and stuff. Two recent studies, for example, headed by Barry Bannister, a capital-goods analyst for Stifel Nicolaus and Co., the financial services company, show that for the past 130 years "stocks and commodities have alternated leadership in regular cycles averaging 18 years."

It looks as if God himself were a trader who enjoyed playing the stock market for 18 years or so and then switched to futures, until he got bored again, after another 18 years or so, and went back into the stock market.<sup>I</sup>

### The impact of commodities on the stock market

The impact of commodities on stock markets can be thought of as follows: commodities (raw materials) are purchased by producers and manufacturers to make goods, they in turn sell to retailers and ultimately consumers. Consumers use their disposable income to consume stuff and to spend on property.

- 1. At the beginning of the cycle commodity supply is low; this causes commodity price inflation. Manufacturers respond by putting up prices to maintain margins. Ultimately this reduces demand as consumers have to economise. Consumer spending falls and stock markets fall.
- 2. The feedback mechanism causes commodity prices to fall, now manufacturers get a boost to their profit margins and company profits and stock prices rise. Competition increases and the economy grows.
- 3. Increased corporate profitability causes wages to increase and when combined with falling commodity prices, real disposable incomes increase.

<sup>&</sup>lt;sup>I</sup> Hot Commodities, Jim Rogers.

4. The economy continues to grow, consumers buy houses or trade up and eventually consumer demand peaks. Demand exceeds supply and commodity prices rise and the whole process starts again.

To summarise, the rising commodity prices increase input costs and reduce company profits, and also consumers' disposable incomes (demand). Conversely falling commodity prices reduce input costs and boost profits and disposable incomes. As Rogers states:

There is no mystery to it. What could be more straightforward in this world than its very basic materials? Corn is corn, lead is lead, and even gold is just another thing whose price depends on how much of the stuff is around and how eager people are to own it. And there is certainly no magic to figuring out the direction in which prices will go in the long term. These alternating long bear and bull markets in metals, hydrocarbons, livestock, grains, and other agricultural products do not fall from the sky. They are prime players in history, the offspring of the basic economic principles of supply and demand. When supplies and inventories are plentiful, prices will be low; but once supplies are allowed to become depleted and demand increases, prices will rise, just as inevitably.<sup>2</sup>

The existence of a commodity cycle makes sense based on supply and demand and associated over/under investment. Studies have confirmed that commodities and stocks are negatively correlated and Bannister has shown that they alternate in regular cycles averaging 18 years.

#### But why 18 years?

In the following chapter we'll find out about recognised business cycles of varying lengths that have been identified and the causes of these cycles. We'll then look at how these cycles impact the stock market and drive booms and busts.

# **CHAPTER 2**

Business Cycles – A Historical Perspective

### The disadvantage of men not knowing the past is that they do not know the present.

G. K. Chesterton

There is a tendency among people to disregard the past, a belief that the past is history and that it has no role in terms of learning about the future. Past behaviour, in terms of markets and people, can be very insightful in terms of anticipating the future course of action.

Our understanding of business cycles doesn't appear to have improved significantly since the Great Depression. Prior to 2007 there was a general complacency that the business cycle had been tamed and this complacency arguably contributed to the banking crisis.

The banking crisis of 2007/8 was by no means a one off and by looking back at history we can gain a better understanding of what causes these crises. Much of this knowledge has long since been forgotten, since banking and finance professionals from the early 1900s are no longer with us and are therefore not able to inform people today.

Before getting to the 17.6 year stock market cycle I'll explore some of the drivers of the stock market, particularly the business cycle identified by Clement Juglar and more specifically the credit cycle that was first documented by John Mills in 1867.

The term *business cycle* refers to changes in economic activity that reoccur over a number of years. A business cycle comprises periods of growth, stagnation and decline (recession). Once one business cycle ends a new period of growth emerges and the cycle continues. When Juglar first identified the business cycle he called it a fixed investment cycle, however today it is also referred to as an economic cycle.

#### Juglar, Mills and Kitchin

Juglar, a French physician, was the first to identify an investment cycle of prosperity, crisis and liquidation with a periodicity of between 8 and 11 years, and he believed that prosperity leads to over-speculation that leads to a crisis. This became known as the *Juglar Cycle* with an approximate length of nine years.

British businessman John Mills presented the theory that business cycles are driven by credit cycles governed by the psychological mood of the masses. Mills believed that business cycles consisted of three periods: after a panic or crisis there will be a **post panic period** of depressed trade where credit is restricted; a **revival period** where trade and employment pick up and credit becomes more widely available; and then finally a **speculative period** where numerous new enterprises are started as cheap credit is easily accessible and capital is mis-allocated again leading to a bust. Mills' view was that the psychological mood drove the availability and price of credit, i.e. the credit cycle. During the revival period, risk taking gradually increases and demand for credit increases. As lenders see profits increase and defaults decrease, they lend more and the lenders' risk taking increases. The revival period leads to speculation and then crisis, where mounting capital losses cause risk aversion among lenders and credit is restricted to the very best borrowers. Mills advocated that each period lasted approximately three years and that these three periods of three years would repeat periodically ad infinitum. John Mills is quoted as saying:

Panics do not destroy capital; they merely reveal the extent to which it has been destroyed by its betrayal into hopelessly unproductive works.<sup>3</sup>

Dr. Warren F. Hickernell summarises the Mills Theory in *Financial and Business Forecasting* (1928) as follows:

Mills bases his credit cycle theory upon two main elements; first, the tendency of human nature to exaggerate prospects for prosperity when prices rise and to underestimate business opportunities when trade is depressed. The second factor is the rate of interest, which causes wide-awake and intelligent men to expand operations when capital is abundant and to curtail operations when credit is dis-intended relative to metallic banking reserves.<sup>4</sup>

In addition to the nine year cycles above, American economist Joseph Kitchin discovered a shorter cycle lasting between 40 and 59 months (3 1/3 to 5 years) that was attributed to

<sup>&</sup>lt;sup>3</sup> John Mills, article read before the Manchester Statistical Society, December 11, 1867, on Credit Cycles and the Origin of Commercial Panics. As quoted in *Financial crises and periods of industrial and commercial depression*, Burton, T. E. (1931, first published 1902).

<sup>&</sup>lt;sup>4</sup> Financial and Business Forecasting (1928), Dr. Warren F. Hickernell.

the time lag between raw materials building up in inventories and businesses reducing output in response to falling demand.

#### **Kuznets, Kondratieff and Schumpeter**

Further cycles were identified by the American economist Simon Kuznets (a 15 to 25 year demographic/building cycle for which he won the Nobel Memorial Prize in Economic Sciences).

Russian economist Nikolai Kondratieff discovered a 45 to 60 year cycle. However the Kondratieff cycle is not accepted by modern economists due to the inability to identify a cause and also disagreement over identifying when these cycles start or finish. The cycle that Kondratieff identified appeared to cease in the post war period, which has caused many to question whether the Kondratieff cycle really exists at all, although Korotayev and Tsirel have found evidence of a 52/53 year "Kondratieff" cycle, as we shall see.

Demographic shifts in populations influence the longer cycles, as the recent boom in China has shown. A new generation of young people finishing school, finding employment, buying a car, clothes, going out with friends, buying a home, furnishing their home, having children, reaching their peak lifetime earnings, saving for retirement and living on fixed retirement incomes are predictable patterns of spending and are well known influences on business cycles.

Kitchin believed that these cycles repeated and that the larger cycles were aggregates of the smaller cycles. It is possible that these cycles are multiples of two or three nested cycles; i.e. three years, six years, nine years, 18 years, 27 years, 54 years, etc., however this is just conjecture and has not been proven.

Following the Great Depression, a huge amount of effort was put into understanding the cause of the crash and subsequent depression and also identifying the solutions that would allow the economy to recover and grow again. The long period of uncertainty that followed the 1929 crash had people believing that the roaring '20s was an aberration and that America would never achieve that level of prosperity again.

Joseph Schumpeter, who was an American economist at Harvard like Kuznets, thought differently and consolidated the then current research and thinking on these different cycles in his 1939 book *Business Cycles: A Theoretical, Historical, And Statistical Analysis of the Capitalist Process.* Schumpeter believed in a creative and destructive innovation cycle, that the Great Depression was a natural consequence of that cycle and that a new era of prosperity would come again in time. Schumpeter also believed, like Kitchin, that the different cycles were simply multiples of the shorter frequency cycles (3 x Kitchin = Juglar, 2 x Juglar = Kuznets, 3 x Kuznets = Kondratieff).

#### Kondratieff and spectral analysis of world GDP growth rates

Andrey Korotayev of the Russian Academy of Science and Sergey Tsirel of the University of St Petersburg sought to find evidence to support the existence of Kondratieff Waves, which they believed should be apparent in world GDP growth rates, that is if Kondratieff Waves really did exist. In 2010 they published their research paper documenting the results of their spectral analysis<sup>5</sup> of world GDP growth rates between 1871 and 2007. They performed two studies, one using the raw data and another in which they smoothed the actual post World War 1 and 2 annual growth rates but kept the cumulative GDP values intact. Both results showed the existence of a long wave cycle of approximately 53 years (Kondratieff) and they reported:

...in both spectra one can detect distinctly the Kondratieff Cycle (its period equals approximately 52-53 years)... $^{6}$ 

Within the second study, using the smoothed geometric mean GDP growth rates, they noted a cycle that they identified as a Kuznet Cycle:

As can easily be seen, within the spectra of corrected series the Kondratieff Cycle clearly dominates; however the cycle of 17-18 years is also rather salient (it can be identified as the third harmonic of the Kondratieff Cycle).<sup>6</sup>

Korotayev and Tsirel also stated that:

Note that, in addition to Kuznet swings, our spectral analysis also detects a rather salient presence of economic cycles with periods 6-8 years and 3-4 years that can be tentatively identified with respectively, Juglar and Kitchin cycles.<sup>6</sup>

Cycle theory and study has a good pedigree, but it appears to have fallen out of fashion in recent times, at least in the mainstream media. As we can see, economists from all over the world have identified a variety of cycles attributed to different causes; credit cycles, inventory cycles, demographic cycles and commodity cycles. It seems that these different cycles are related to each other as the large cycles may be multiples of the smaller cycles. In the following chapter I'll discuss the modern view that business cycles are driven by human psychology and animal spirits before moving on to the 17.6 year stock market cycle.

<sup>&</sup>lt;sup>5</sup> Spectral analysis is a form of data analysis that concerns a series of measurements that are ordered in time. It is used to identify cyclical patterns that may be embedded within the time series data.

<sup>&</sup>lt;sup>6</sup> Korotayev, Andrey V., & Tsirel, Sergey V. 'A Spectral Analysis of World GDP Dynamics: Kondratieff Waves, Kuznets Swings, Juglar and Kitchin Cycles in Global Economic Development, and the 2008–2009 Economic Crisis'. Structure and Dynamics. 2010. Vol.4. #1. P.3-57.

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