Long Waves of Strikes in South Africa: 1886–2019

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Abstract

This thesis is underpinned by a single question: What combination of factors gives rise to and produces turning point strikes and turning point strike waves? The thesis contends that long wave theorists have neither examined the combined effect of the escalation of the class struggle, the characteristics of the structural effects of strike waves and the types of labour turning points, nor explained how the theory accounts for the general movement towards the intensification of strikes and strike waves. To counteract this shortcoming in long wave theory, and in the absence of a general theory of strikes or a standardised method to study strike dynamics, this thesis employed strike statistics, econometrics, and economic and labour history to identify the short- and long-term patterning of strikes and strike waves over long periods (1886–2019) of expansion and contraction of the capitalist economy. While the findings of this thesis confirm Mandel's theory that the trigger of initial strike waves is a clustering of cost-cutting technological innovations and changes to the labour process, they, more importantly, demonstrate that it is the combination of other dynamics – business cycle fluctuations, long-standing grievances, levels of mobilisation capacity and political factors that culminate in strike waves and have structural effects – that intensify the class struggle. The central contribution of this thesis is the introduction of the concepts of a turning point strike, an initial rupture and a turning point strike wave that combine to produce structural change. These enable an understanding of the general movement of strikes, from an initial turning point strike wave that signals the deepening and broadening of the class struggle and results in structural effects that lead to increased levels of labour mobilisation and changes in industrial relations, to a historical turning point strike wave that ushers in political reforms, revolution or defeat of the working class, leading to a political turning point. This then marks changes in political representation and economic and social policy. The thesis concludes that turning point strike waves follow a specific patterning, making it possible to predict the next round of turning point strike waves globally.

Keywords: long waves, strike waves, turning points, business cycle, mobilisation, institutionalisation, trade unions.

Declaration

I declare that "Long Waves of Strikes in South Africa: 1886–2019" is my own work, that it has not been submitted for any degree or examination at any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Full name: Edward Cottle

Date: 3 March 2020

Signed:

Acknowledgements

This thesis is a product of a lifelong, collective learning process that had its genesis in the 1980s in my days as a high school activist at Crystal Senior Secondary School in Hanover Park where I first experienced the notion of a student-worker alliance. It was in township community organisations, the Hanover Park Civic Association and the Cape Youth Congress (CAYCO) that I encountered a diverse group of organic intellectuals, who became my fellow comrades and taught me that the "struggle" is the best school. Thus, my student activism at the "University of the Left" (University of the Western Cape), from SANSCO, CODEMO, the Student League, and the Marxist Theory Seminar Committee to the Workers' International League of South Africa, where practice met theory, collectively helped to produce the ideas, thinking and experiences that went into this thesis. I am indebted to the many collectives where the wave of change towards a new social order compressed the learnings, debates and diversity of theoretical positionings that left an indelible mark on my work in the trade union movement, civil society organisations and, most recently, the Labour Research Service (LRS).

I owe much of the thought underpinning this thesis on strikes to my years at the LRS, where I headed collective bargaining support for the trade unions and learned much from workers' own intellectual contributions in shaping discourses of the class struggle both within and outside the trade unions. My reflections over the course of many years at the LRS, as well as the tribulations I saw first-hand and experienced, led me eventually to open a copy of Mandel's *Long Waves of Capitalist Development* and attempt to theorise strikes in South Africa as part of workers' education. I had no intention of turning an initial paper on strikes presented to the LRS into a PhD thesis until Professor Robbie van Niekerk visited our offices and persuaded me to do a PhD at the Institute for Social and Economic Research. I am indebted to his intervention and support in completing this PhD.

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List of Abbreviations and Acronyms

AMCU	Association of Mineworkers and Construction Union
ANC	African National Congress
AMWU	African Mine Workers' Union
AWUSA	African Workers' Union of South Africa
CCMA	Commission for Conciliation, Mediation and Arbitration
COSATU	Congress of South African Trade Unions
CNETU	Council of Non-European Trade Unions
CUSA	Council of Trade Unions of South Africa
FEDUSA	Federation of Unions of South Africa
FOSATU	Federation of South African Trade Unions
GDP	Gross Domestic Product
HTP	Historical Turning Point
ILO	International Labour Organization
ITP	Initial Turning Point Strike
LRS	Labour Research Service
MWU	Mine Workers' Union
NEDLAC	National Economic Development and Labour Council
PTP	Political Turning Point
RDP	Reconstruction and Development Programme
SACP	South African Communist Party
SACTU	South African Congress of Trade Unions
SATLC	African Trades and Labour Council
SALB	South African Labour Bulletin
NUM	National Union of Mineworkers
NUMSA	National Union of Metalworkers of South Africa
SAFTU	South African Federation of Trade Unions
TUCA	Trade Union Council of South Africa

Chapter 1: The Context

Despite the preponderance of studies of strikes and strike waves since the late 19th century, no general theory of strikes or strike waves has been developed (Ross and Hartman 1960, 1; Franzosi 1995, 349). A fundamental rationale advanced as to why a general theory has not been developed is because the forms of strike waves change over time and the contexts in which they occur have constantly changed with the development of capitalism (Brenner 2008, xxxvii; Atzeni 2010, 18). Just as economic history is mainly built around business cycles, labour history is built around significant periods of labour mobilisation. The forms of strikes depicting large scale mobilisation are commonly referred to as strike waves. The manifestation of strike waves, however, does not always follow the same predictable rhythm of the fluctuations of the business cycle, but takes varied forms in different periods, thus making it extremely difficult to examine causal dynamics, theorise and define its forms and patterns over time. This is compounded by the fact that while some strikes or even strike waves fizzle out with little impact, others become turning point strike waves which generally alter labour-capital relations. It is against this backdrop that this thesis investigates the temporality of strike waves and turning point strike waves in South Africa between 1886–2019.

Definitional Complexities

A strike is a "social phenomenon of enormous complexity which, in its totality, is never susceptible to complete description, let alone complete explanation" (Gouldner 1954, 65). The significant definitional disputes in the literature around what constitutes a general strike or a strike wave highlights their complexity. Hamann et al. (2012, 1033), while arguing that "there is no generally agreed-on definition of the term general strike or its various synonyms, such as political strike and protest strike", nonetheless defines a general strike as "a temporary, national stoppage of work by workers from many industries, directed against the executive or legislative arms of government, to enforce a demand or give voice to a grievance". She does not, however, describe these strikes as strike waves, raising the question of whether a general strike can be a strike wave.

Adding to this definitional complexity, specifically in the South African context, are the various terms ascribed to strikes in the country. For example, in discussing what is generally known as the 1922 Rand Rebellion (or Rand Revolt), the South African Marxist historian, Baruch Hirson, in his 1993 paper calls it a "General Strike", whereas Webster refers to it as a strike and to the

strike wave in South Africa of 1973 as mass strikes (Webster 2017, 142), both of which represented turning points. Neither Hirson nor Webster provide definitions of these strikes. Boll (1989, 56), however, focusing on those periods where strikes exceed "normal" strike activity – "having marked significant high points in both political and trade union activity" – terms them strike waves. Boll's definition of a strike wave appears to incorporate most of the characteristics ascribed by Hamann et al. (2012) to a general strike, which occurs in several industries simultaneously and does not a confirm to a "normal" pattern in strike dynamics, unless in a country experiencing a heightened class struggle.

Mandel (1995, 126–127) on the other hand incorporates strikes, general strikes and strike waves into the concept of class struggle-cycles without offering any definitional clarification of the concepts used except that they tend to cluster around the turning points of long waves of capitalist development. In an earlier work, Mandel (1980, 498) qualifies his use of the term mass strikes to mean those periods when the class struggle intensifies and combines the "economic and the social – in other words, *political* – class struggle". In this sense, mass strikes are combinations of semi-political and political strike waves. However, both Boll's definition of a strike wave and Mandel's definition of a mass strike emphasise the political and are thus similar.

Silver (2003a, 45) further exacerbates the definitional complexity by using "wave of labour unrest" and "high points of labour unrest" interchangeably with a strike wave. For instance, she says, "Japan did experience a major wave of labour unrest…[while]…the newspaper indexes did not single out the automobile industry when reporting on the strike wave…". Silver, also, describes the European strikes of the late-1960s and the Brazilian, South African and South Korean strikes of the 80s as "strike waves" (2003a, 52, 55, 59). In addition, for Silver, "labour unrest waves" also represent turning points in labour–capital relations (2003a, 465).

The distinction between a strike wave and a mass strike in the literature is thus not clear. This departure point, which forms part of the underpinning of the current study, is underscored by Luxemburg who argues that it is not possible to define a mass strike since it has such varied forms, specific to the contexts in which they occur:

> …the mass strike in Russia displays such a multiplicity of the most varied forms of action that it is altogether impossible to speak of 'the' mass strike, of an abstract schematic mass strike.

> All the factors of the mass strike, as well as its character, are not only different in the different towns and districts of the country, but its general character has often *changed* in the course of the revolution. (Luxemburg 2008, 120; my emphasis)

It is against this backdrop of definitional complexity that I posit an eclectic view, that strike waves manifest variously in terms of form and tactics employed, depending on the context in which they occur and the working-class traditions of struggle peculiar to that context. What is constant in this view, whether the strike wave takes the *form* of a general strike, an industry-specific strike or multiple strikes across industries and occupations, is that a significant change in the level of contestation among labour, capital and the state has occurred. In this sense, any strike wave, notwithstanding similarities with any other strike wave, where these exist, comprises a unique combination of elements. Given this tension between flexibility and specificity, how can we define the varied and complex phenomenon of a strike wave in its broadest terms?

In my view, a strike wave comprises a distinctive coalescence of industrial actions, in pursuit of resolving an economic, political or social demand, that significantly exceeds the levels of those in surrounding years. The most appropriate distinction in the characterisation of strike waves is to be found in their outcomes – their structural effects. In this light, strike waves can be compared with outbursts of strikes, such as the 1922 white miners' strike, the 1946 African mineworkers' strikes, the 1973 Durban strikes and the 2012 Marikana strike, all of which demonstrate the power of strikes to create upheaval in the established order, whether at an economic, political or social level. This is a consequence of the extraordinary amount of pressure on the economic, political and social system that strikes can generate, which, under the right conditions, could lead to structural change such as the reconfiguring of the industrial relations system, the economy or political system. These kinds of strikes are referred to as "turning point" events (Sewell 1996; Gentle 2012; Kasrils 2012; Legassick 2012; Alexander 2013; Webster 2017; Cottle 2017).

There is however a tendency in the literature to treat a turning point "event" and a "turning point wave of labour unrest" as synonymous. One of the exceptions is Alexander (2013, 605), who demonstrates, correctly in my opinion, that turning point events are those strikes that set off strike waves; however, he mistakenly (again, in my opinion) reduces the structural effects of those waves solely to the turning point "event". Silver (2003a) perpetuates this inclination

to consider a turning point "event" and a "turning point wave of labour unrest" synonymously. For instance, she does not refer to turning point "events", but rather to "turning point waves of labour unrest", which she argues affect the course of history of labour–capital relations and are the motors of socio-political change which ultimately register structural changes (Silver 2003a, 195). Consequently, the relative importance of the turning point "event" and the combined effect of the "turning point wave of labour unrest" is not resolved in the literature.

My approach therefore introduces the concept of a *turning point strike* and a *turning point strike wave*. The former is "the initial rupture, an occurrence [which] only becomes an historical event…when it touches off a chain of occurrences that durably transforms previous structures" (Sewell 1996, 843; my emphasis). Although Sewell did not apply turning points to labour history but to political events, his definition clarifies the relationship between the "initial rupture" (turning point strike) and the "chain of occurrences" (turning point strike wave) that produces structural change. This is due to the cumulative force resulting from the initial rupture "in one particular structural and spatial location [that] also produces reinforcing ruptures in other locations" (Sewell 1996, 843). In other words, while significance is attached to the initial rupture, the structural effects are the product of the combined ruptures of the turning point strike wave.

In my view, the initial turning point strike (ITP), which is an event, functions as a trigger or spark that sets off a wave of strikes – a strike wave that ultimately results in structural changes. It constitutes a turning point strike wave in which economic demands *can* dominate political demands. Mass strikes, on the other hand, can also be turning point strike waves which are political or semi-political in character and can effect structural changes. Thus, the distinction between a strike wave and turning point strike wave is determined by their relative effectiveness in effecting structural change. A strike wave that occurs under normal circumstances of industrial relations, in my opinion, also sets off ruptures, but they are almost immediately "neutralised and reabsorbed" and do not "durably transform previous structures" (Sewell 1996, 843). For example, a general strike over privatisation may trigger widespread mobilisation and re-open policy for review. However, the institutional framework for review of policies in which trade unions participate acts as a countertendency, effectively neutralising the mobilisation and maintaining the status quo.

The *nature and extent* of structural changes also allows for differentiation between different types of turning point strike waves. On the one hand, there are those that signal the start of the class struggle, the initial turning point strike wave (ITP), the structural effects of which mainly lead to increased levels of labour mobilisation and changes in industrial relations. On the other hand, we have what I call a tsunami or revolutionary turning point strike wave. This type does not resemble normal strike waves or turning point strike waves because their wavelength is far longer, indicating a much deeper process of change. Rather than appearing as a breaking strike wave, a tsunami or revolutionary strike wave may initially resemble a rapidly rising tide and consist of a series of consecutive turning point strike waves. It is thus quantitatively and qualitatively much more potent than turning point strike waves. The tsunami or revolutionary turning point strike wave eventually culminates in a historical turning point strike wave (HTP). This signals the end of the revolutionary wave, ushering in *major* political reforms, revolution or the defeat of the working class. However, in the absence of a revolutionary turning point strike wave, a historical turning point strike wave may still occur, with structural changes in the political system, industrial relations and the economic system – a political turning point (PTP).

In this study, by focusing on the structural effects of strike waves, I reduce the complexity of macro-historical forms of strike waves, enabling a level of consistency of analysis. This allows the study to focus on and illuminate the temporal dynamic of strike waves and turning point strike waves, and their macro-historical patterning in South Africa from 1886–2019.

Central to the concept of temporal dynamic is the notion of events and their culmination.[1] This is reflected in the following:

> While events are sometimes the culmination of processes long underway, events do more than carry out a rearrangement of practices made necessary by gradual and culminative change. Historical events tend to transform social relations in ways that could not be fully predicted from the gradual changes that have made them possible. (Sewell 1996, 843)

However, since the focus of Alexander's (2013) study is on formulating a theory of the Marikana event, his emphasis is not on the process of the *culmination* leading *to* the historical event. This is clearly demonstrated in Alexander's (2013) application of Sewell's theory to the

[1] A culmination is understood as "the highest or climactic point of something, especially as attained after a long time" (Oxford Living Dictionaries).

Marikana turning point strike in which he limited his study to the event itself and its effects without exploring the processes leading to the culmination of the event.

I employ the notion of culmination to shed light on various strike waves such as the one in 1973, the occurrence of which is surrounded in "mystery" (IEE 1977, 38) and whose causes are deemed inexplicable. This allows for an analysis that can illuminate the significance of preceding strikes and strike waves, those "sequences of occurrences" (Sewell 1996, 843), to elucidate the nature of causation of turning point strike waves. Only in this way can social science unravel the mystery, the "surprising break" (Sewell 1996, 843), as this study will demonstrate.

Problem Statement and Research Purpose

Notable events are events that "change the course of history" (Sewell 1996, 841–881). Turning point strike waves can be considered in this category. They tend to erupt without warning, and when they do, their sheer magnitude bewilders everyone, resulting in mystification and widely incongruent speculation as to their causes. It is therefore surprising that the causes and effects of turning point strike waves have not yet been fully theorised and have received only scant attention from scholars, marked by the absence of a standardised methodology to study them. In addition, the area is dominated by quantitative studies that focus solely on the temporal aspects of turning point strike waves with inadequate attention paid to their qualitative aspects. Furthermore, no theory or competing theories of strike waves have been developed in South Africa. The purpose of this study therefore is to explore the development of a viable new theory that employs the integration of the different theories of strikes, concomitantly broadening the scope of extant research in theorising the dynamics of strike waves and turning point strike waves in South Africa.

Research Aims and Questions

As no standardised method for the study of strikes and strike waves exists, this thesis aims to refine and further develop strike methodology to test for the presence of turning point strike waves. Consequently, the central concern of this study is the temporality of turning point strike waves in South Africa. In addressing this concern, I employ the Marxist theory of long waves of capitalist development (Trotsky 1921, 1941; Day 1976; Eklund 1980; Shaikh 1992, Mandel 1995) to examine long waves of strikes in South Africa over the period 1886–2019. In addition,

to ensure a lucid picture of strike patterns in both the short and the long term, I incorporate the business cycle approach to strikes into long wave theory since Mandel's exposition of long waves did not deal with the correlation between strikes and business cycles. My analysis examines the linkages between offensive and defensive strikes on the one hand and capitalist business cycles (7–10 years duration) and long waves (40–60 years duration) of capitalist development on the other. It therefore requires scrutiny of both the quantitative and qualitative aspects of strikes and strike waves to capture the relevant dimensions of their various underlying factors in order to reveal their causal dynamics and structural effects. A key goal of this study is thus to evaluate the potential contribution of micro and macro theories of strikes, such as economic hardship, mobilisation and political exchange, to an understanding of the dynamic of strikes. The underlying intention is to contribute to an integrated theorisation of turning point strike waves and the patterning of long waves of capitalist development.

A further key goal of this study is to determine an accurate periodisation of long and turning point strike waves in South Africa. In my own work to date (Cottle 2017), in which I broached such periodisation not previously undertaken in South Africa, I developed a conceptual model through which I periodised the long waves as (i) upturn: the mining revolution (1886–1913); (ii) downturn: the consolidation of racial capitalism (1914–33); (iii) upturn: the rise of manufacture and commercial agriculture (1939–1973); and (iv) downturn: the period of neoliberalism (1974–2015). Within this periodisation I examined the temporal dynamic of turning point strikes and strike waves. The current study, however, with the employment of econometric methods that are more scientific, will reveal an increased accurate periodisation of long waves in South Africa that may call my earlier findings (2017) into question.

Against this backdrop, the research questions for this study are:

- What is the specific combination of factors (economic, organisational, institutional and political) that gives rise to and produces turning point strikes and turning point strike waves?
- Can long wave theory discern the "relational link", the specific combination of factors, which give rise to turning point strike waves? Or are the variables that give rise to turning points too complex and varying – the "mystery" that makes it impossible to provide an adequate theory to explain their occurrence?

- Is there a similarity in pattern of turning point strikes and turning point strike waves in South Africa, a so-called developing country, and those in Europe and America?
- Does the application of long wave theory in a southern country have the explanatory power to predict the next turning point strike waves globally?

Outline of the Chapters

The rest of this thesis attempts to answer the research questions posed above. Chapters 2 and 3 function to examine various theories that inform my contribution to a theory of turning point strike waves. Whereas the focus of Chapter 2 is on a critical evaluation of two competing Marxist theories, Mandel's long wave theory and Silver's product cycle theory, both which seek to explain the temporality of strike waves and turning point strike waves on a global scale, Chapter 3 reviews the power of business cycle, economic hardship, resource mobilisation, institutional and political-exchange theories to explain the occurrence and intensity of strikes.

As there is no standard method in the study of strikes, I develop my own method in Chapter 4 where statistics, econometrics, and economic and labour history are combined to capture adequately both the short- and long-run dynamic of the factors that coalesce to produce strike waves and turning point strike waves. Utilising this methodology, Chapter 5 then introduces the periodisation of long waves in South Africa within an international context to examine and analyse their patterning together with the short- and long-term movement of strikes.

Chapters 6, 7 and 8 apply long wave theory to South Africa within the distinct phases of capitalist development, each phase representing a long wave: 1886–1939, 1939–1990 and 1990–2019. The chapters examine both labour and economic history, and apply the quantitative methods outlined in Chapter 4 to illuminate the temporality of all the strike waves in South African history. I further examine both macro and micro factors using the various strike theories, the business cycle, long wave, economic hardship and mobilisation to examine the factors that produce strike waves and their patterning. Reference is also made to institutional factors that have a strong bearing on shaping strike dynamics.

Chapter 9 synthesises the empirical and theoretical research findings of this study and, drawing on these, outlines the combinations of factors that produce strike waves and their temporality.

In this way, the study's contribution to new knowledge in the area of long waves of strikes in South Africa is summarised.

Chapter 2: Marxist Theories on the Temporality of Strike Waves

With the intensification of capitalism since the late 19th century, strikes have emerged worldwide as the primary form of labour protest. The fundamental cause for the prevalence of strikes is that capitalism has been unable to overcome the contradiction of social production with private ownership of the means of production, providing a permanent class conflict between workers and employers. Strikes occur regardless of political expansion or contraction or the level of a country's economic development.

The magnitude of strikes, however, has not been consistent across time or space, but is marked by ebbs and flows along the historical timeline. Long periods of abatement often give the impression that strikes have withered away (Ross and Hartman 1960, 42–51), only for them later to re-emerge, frequently on a massive scale, as strike waves. How are these ebbs and flows to be explained? And what are the underpinnings of the strike waves that often result?

In attempting to answer these questions, this chapter examines two competing Marxist theories on the temporality of strike waves: Mandel's long wave theory and Silver's product cycle theory.

2.1 Long Wave Theory

While both economic and political explanations of strikes have their roots in Marxism (Friedman 2009, 16), long wave theory has historically been used to examine and theorise the temporality of strike waves and economic turning points of long waves.

Long wave theory (Trotsky 1921, 1941; Mandel 1980, 1995; Cronin 1980; Screpanti 1984, 1987; Silver 1992, 1995; Reijnders 1992; Metz 1992; Wallerstein 1992; Dockes and Rosier 1992; Franzosi 1995; Kelly 1997; Hobsbawm 2015) has historically been used to examine the temporality of strike waves in industrialised countries. Long waves are characterised by relatively lengthy periods of expansion (upswing) and of contraction (downswing) over 40–60-year intervals compared with the 7–10-year business cycles. Although mainstream economists were sceptical of long waves of capitalist development (econometric techniques in use failed to detect long waves, since they were designed to detect business cycle fluctuations), long wave theorists maintained that strike waves tend to cluster around either the peaks or troughs of long waves of capitalist development, or around both. Their position was bolstered

by Metz's (1992) breakthrough employment of a new econometric filter technique that detected long waves, providing a new consensus as to the existence and periodisation of long waves. Wallerstein, in his closing remarks at the proceedings of the Long Wave Conference held in Brussels in 1989 put this conclusion eloquently:

> The resistance to acknowledging the existence of 'long waves', is, when all is said and done, astonishing. All modern science presumes the normality of patterned fluctuations. No doubt there is more to reality than patterned fluctuations, but there seem to be no real phenomena that do not fluctuate in ways that can eventually be summarised empirically as patterns. (Wallerstein 1992, 339)

Mandel added precision to Wallerstein's observation. Specifically, he defines long waves as "long waves of output, employment, income, investment, capital accumulation, and long waves of rates of profit" (1992, 317), observing that there is an asymmetrical, rhythmic alternation between radical technological revolutions (during expansionist long waves) and basic cost-cutting technologies (during depressive waves) (1995, 30–31). As a consequence, he argued that while there is a reluctance to change labour organisation radically during expansionist long waves, as this would interrupt high levels of profit, experimentation with the labour process typically occurs at the end of the expansionist wave – a turning point – that develops into a "long term struggle cycle" (1995, 34–36). He further contends that there are exogenous factors such as "changes in the overall balance of class forces and inter-capitalist relationship of forces, the outcomes of momentous class struggles and of wars" (1995, 76) that can lead to radical upheavals in the average rate of profit, advancing a stagnating long wave into an expansionary long wave. Moreover, he asserted that the transition of an expansive long wave to a long wave of contraction is considered "endogenous whereas the upturn is not, but rather is dependent on those radical changes in the general historical and geographic environment of the capitalist mode of production that can induce a strong and sustained upturn in the average rate of profit" (1995, 42). In Mandel's scheme, there is both an endogenous (the downturn from an expansive long wave) and an exogenous (the upturn from a depressive long wave) turning point. In other words, the rise and decline of significant periods of labour mobilisation follow predictable patterns which are closely synchronised with the long-term fluctuations of the capitalist economy.

In my view a weakness in Mandel's scheme, echoed by its omission at the 1898 Brussels conference, is its failure to account for the relationship between shorter business cycles and long wave in explaining the temporality and patterning of strike waves. We need to turn to the ideas of Trotsky to do this, since he was the first to recognise the existence of a correlation between long waves and recurring patterns of class struggle (Trotsky 1921). In his speech at the Third International Congress,[2] *The World Economic Crisis and the Tasks of the Communist International*, he argued contrarily to expectations of the imminent collapse of capitalism in the context of the global crisis of 1920–1921:

> …capitalism has two types of motion. The first is the motion seen in the development of productive forces. The curve moves upward, and this ascension takes place through fluctuations and oscillations – namely, the fluctuations of crisis and boom. If we have stagnant development, let us say over a period of fifty years, we will still observe cycles, but they will not be as precise as in a feverishly vibrant capitalist country…In the economic sphere these constant disruptions and restorations of the equilibrium take the shape of crises and booms. In the sphere of inter-class relations, the disruption of equilibrium assumes the form of strikes, lockouts, revolutionary struggle. In the sphere of inter-state relations, the disruption of equilibrium means war or – in a weaker form – tariff war, economic war, or blockade.

Trotsky ([1923] 1941, 112) argued that the upward turning point of capitalist long waves are "determined not by the internal interplay of capitalist forces but by those external conditions", the exogenic factors: strikes, revolutionary struggle, war, trade war or blockade. Kondratieff, [3] basing his argument on Marx's scheme of the industrial (business) cycle, disagreed, concluding, "long waves arise out of causes which are inherent in the essence of the capitalistic economy" (Eklund 1980, 389). Trotsky argued that Kondratieff had confused periodically recurring (business) cycles and long cycles with the same "rigidly lawful rhythm" which he derived from Marx's industrial cycle to make "an obviously false generalisation from a formal analogy" (Trotsky [1923]1941, 112). In other words, Trotsky opposed a monocausal theory of 'long cycles' constructed analogously from Marx's explanation of industrial (business) cycles. Furthermore, contrary to Kondratieff's view, he maintained that epochs of capitalist development (the capitalist curve) are not cyclical but asymmetrical (Trotsky [1923]1941,

[2] The Third International Congress was held in Moscow 22 June–12 July 1921 (https://www.marxists.org/history/international/comintern/3rd-congress/index.htm).

[3] It was Kondratiev, head of the Moscow Institute of Economic Investigations, heeding the call of the Third Congress who undertook to further investigate the 'long cycles' of capitalist development in 1922. Though Kondratieff was not the first to elaborate an analysis of a long wave, he marshalled substantive empirical evidence (Eklund 1980, 389).

114). Moreover, economic development is not an automatic process but is dependent upon the interplay of exogenic factors. Put differently, the regularity of business cycles does not apply to the length of each long wave of capitalist development. Capital accumulation is thus characterised by cyclical fluctuations around a long-term asymmetrical curve of capital development.

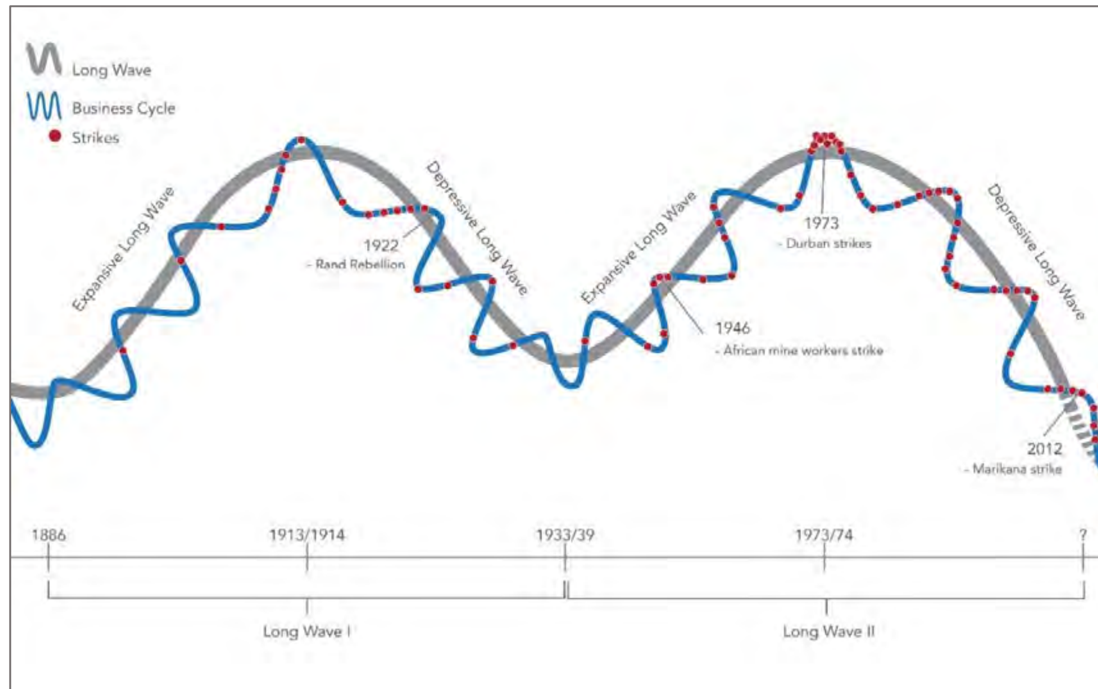
Trotsky used long wave theory to challenge a widespread view at the Third International that economic crises would exacerbate workers' grievances and dramatically increase strike frequency, and that workers would automatically seek revolutionary social change. In other words, the material structures alone would guarantee that the working class would become socialists and revolution was consequently inevitable (Friedman 2009, 20). The predominant view in the Third International is what contemporary scholars would refer to as a grievance theory of strikes, strikes that increase in periods of economic crisis. Trotsky (1921) disagreed. Drawing on his experience of workers in Russia, he stated:

> Many comrades say that if an improvement takes place in this epoch it would be fatal for our revolution. No, under no circumstances. In general, there is no automatic dependence of the proletarian revolutionary movement upon a crisis…In 1910, 1911 and 1912, there was an improvement in our economic situation and a favourable conjuncture which acted to reassemble the demoralized and devitalized workers who had lost their courage…On the eve of the war the working class had become so consolidated, thanks to this period of prosperity, that it was able to pass to a direct assault.

In other words, it is periods of a boom in the business cycle that provided the "breathing spell during which it [the working class] could undertake to reorganise its ranks" (Trotsky 1921). In this way, Trotsky integrated both short-term and long-term fluctuations in the capitalist economy to examine and explain the temporality of strike waves and periods of heightened class struggle. Excluding Hobsbawm ([1964] 2015), Trotsky's approach has been neglected by long wave scholars, reflected in its absence from proceedings at the 1989 Brussels conference. If capital accumulation is characterised by cyclical fluctuations around a long-term asymmetrical curve of capitalist development, then the concept of "class struggle cycles" to explain the close synchronisation of strike waves with the long-term fluctuations of capitalism is inadequate. As strike waves and turning point strike waves tend to cluster around the turning points of long waves, they too display an asymmetrical patterning in the long run. This is illustrated in Figure 1. In this study, I refer to long waves of strikes as this term best captures

the fluctuations of strike activity in both the short and the long run. I define long waves of strikes as the semi-autonomous, macro-historical fluctuations of strikes over the long-term asymmetrical curve of capitalist development.

Figure 1: South Africa's long waves of capitalist development.



Source: Cottle (2017).

The conceptual model in Figure 1 locates the major strike waves of 1922 (mid-way down the depressive long wave), 1946 (just after WWII) and 1973 (on the peak of the long wave). These are closely aligned with the international strike waves identified in studies by both Silver (ended in 1984) and Mandel (ended in 1974). My study (Cottle 2017) identified 2012 as a major strike wave occurring toward the end of a depressive long wave. It should be noted, however, that neither rigorous techniques in strike statistics nor an econometric test to prove the existence of long waves in South Africa was employed in that study. This study is thus the first application of long wave theory to a southern country and the first attempt to provide a temporal profile of strike waves and turning point strike waves in South Africa.[4]

[4] See Annexure 3 for a detailed discussion on the empirical approach to business cycles and long waves.

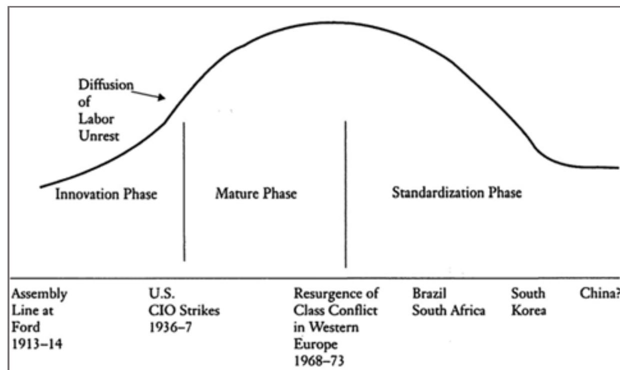
2.2 Product Cycle Theory

In *Forces of Labour* (2003a) Beverly Silver proposes an alternative to the notion that a close connection exists between labour unrest and long waves, instead advancing the idea of a dynamic process in which strike waves correlate with product cycles. Using this dynamic process as a departure point, she provides a compelling explanation of, amongst others, the historical patterns of labour unrest. This dynamic process is visualised through a historic analysis of major manufacturing industries (e.g. textiles and automobile)[5] in which lead product lifecycles play the principal role in producing high points of labour unrest – turning points that alter labour-capital relations. Product lifecycles start with an *innovative* stage, proceeds to a *mature* stage and are followed by a *standardisation* stage. These are shown for the automobile industry in Figure 2. A movement from higher to lower profit levels marks each phase of the product cycle. The timespan of the cycles is directly related to economic variables such as competition and factor costs, but also to incidents of labour unrest and various 'fixes' to maintain profitability levels. These fixes include spatial, technological, product and financial fixes.

Silver (2003a) argues that once a labour movement is a show of force in the innovative stage, employers respond by employing the *spatial fix* strategy to accelerate and diffuse production to new sites of production, leading to a mature phase of the product cycle. The contradiction inherent in this strategy is that workers' bargaining power is relocated to new sites of production. For example, the most profitable automobile innovation stage in the United States reached its limit by 1937, resulting in the relocation of the industry to Europe where its limit was reached (the mature stage) with the high-point strike waves of the 1960s–1970s (Silver 2003a, 77–78, 39). Thus, even though labour was weakened in the auto industry in the leading industrialised world from which productive capital emigrated, the investment in cheap labour countries, such as South Korea, Spain, Brazil and South Africa, in the *standardisation phase* in the 1970s and 80s, created powerful new labour movements which, with the expansion of the lean, post-Fordist mass production model, led to a broader struggle for democracy in the late 20th century (Silver 2003a, 5).

[5] Silver expanded her product lifecycle model to all industries by including the transportation sector, arguing that it is fundamental to all sectors and thus key in the respective historical moments of the production process (Silver 2003a, 97).

Figure 2: The automobile life cycle and labour unrest waves



Source: Silver (2003a).

The post-Fordist model, a *technological fix* (the reorganization of the labour process and the introduction of new technologies), combined cost-cutting measures and a reduction in secure employment conditions. Instead of subduing labour, this *fix* exposed capital to disruptions in the flow of production, thereby increasing the workplace bargaining power of labour. Thus, neither the spatial nor the technological fixes employed by capital resolved its attempts to create a permanent, stable, post-Fordist system of production (Silver 2003a, 42). In fact, with the advent
of the growing auto industry in Mexico and China, both the result of a new round of spatial fixing, Silver's prediction of a renewed cycle of labour militancy (Silver 2003a, 43) has come to fruition, with several strikes occurring in Mexico and China's auto sector, now the world's single largest automobile market (Martinez 2009; Lüthje 2010; Chan and Nadvi 2014; Partlow 2015). According to Silver (2003a, 65), this new cycle of labour unrest in the lead industry of the 20th century provides an optimistic expectation that a strong, independent autoworker labour movement will be formed at the beginning of the 21st century. For Silver,

> …historical capitalism has been characterized by a series of overlapping product cycles (product fixes) in which the late stages of one product cycle overlap with the initiation of new product cycles – the new cycle initiated almost invariably in high-income countries. Working class formation and protest are key processes underlying both the shifts from phase to phase within a product cycle and the shift from one product cycle to the next. (2003a, 76)

In Silver's theory, world labour unrest is central to the dynamic rise and decline of lead *product cycles* with the attendant shifts in workers' bargaining power. The spatial shifts in autoworker militancy are identifiable through an analysis of "high points" of strikes that share similar

characteristics (Silver 2003a, 45). The high points rise unexpectedly, and workers rapidly achieve major victories amid hostile, anti-union employers and in some cases governments. These autoworker struggles took on a broad political form beyond the confines of the industry to include other sectors (Silver 2003a, 46).

Employers responded in the short term by promoting responsible unionism and institutionalising collective bargaining, to ensure cooperation from the trade unions. In the medium term, they used increasingly automated technology with new investments being located away from trade union strongholds. These two methods combined ensured that the workplace bargaining power of workers was undermined at the point of production. In turn, high waves appear whenever a spatial fix strategy of capital has been employed (Silver 2003a, 47).

As labour unrest shifts within manufacturing (from textiles to automobile), a similar phenomenon occurs between and within other industries. For example, in order to escape intense competition in established spheres of production, capital first shifted to new industries and product lines – the *product fix*, and when competition was too widespread and intense, it shifted out of trade and production entirely and into finance and speculation – the *financial fix* (Silver 2003a, 132–133).

Initially, the financial fix led to high levels of investment in the Second and Third World, resulting in new class formation and increased bargaining power of the labour force. In response, international finance institutions emerged to employ debt instruments to manage the contradictions inherent in the developmentalist social contract. While governments used the funds to promote rapid industrialisation, they simultaneously deployed them to accommodate labour, create employment, expand public services, provide food subsidies and so on. In turn, these changes led to stress on the fiscus and debt repayments. The spatial and financial fixes thus created similar contradictions to those in the First World. Consequently, the power and influence of labour movements in the Second and Third World grew throughout the 1970s and 80s, peaking in the early 1990s (Silver 2003a, 164–645).

However, as Silver argues, these economic processes are integrally related to and cannot be divorced from political processes. According to Silver, the highest peaks of global labour unrest followed immediately after the two World Wars, which massively impacted the temporal

dynamic and pattern of labour unrest that occurred in both the metropolitan and those of the semi/colonies (Silver 2003a, 125–127).

The overall dynamic of labour unrest in the first half of the 20th century had, in Silver's view, a rising and explosive character while in much of the second half it tended to decline and was far less explosive. This is explained by two broad reasons. First is the relationship between the product cycle dynamic and the World Wars. In the first half of the 20th century, the World War dynamic overwhelmed the product cycle dynamic in that labour unrest for the duration of the Wars had a worldwide effect. However, in the post-World War II period the hegemony of the US enabled the product-cycle dynamic to flourish where "geographical relocation leads to spatial shifts across time in the epicentre of labour unrest" (Silver 2003a, 130–131). Second, the countries in the core accommodated labour movements after World War II through firm level, national and international social compacts.

However, these social compacts soon started to fail and from the 1980s labour protest increased, then also collapsed, though only in the core countries. A lagged pattern appeared in the post-colonial world, also rising in the 1980s then collapsing in the early 1990s. This context drove Keynesianism in the core countries with some form of developmental economics arising in countries on the periphery. This differentiation between core and peripheral countries precipitated repression as a more prominent form of control in the Third World than the First World (Silver 2003a, 156–158).

According to Silver (2003a), the Golden Age of capitalism (1945–1973) was short-lived and efforts to intensify the pace of labour to rejuvenate this age led to open revolt and non-cooperation. Strike waves and radicalism re-emerged in Western Europe resulting in an explosion in wages and intensifying the fear that capital, the state and unions had lost control over the labour force. The counterattacks by capital and the state took on an indirect form through integrating labour at the shop floor in an attempt to create "hegemonic factory regimes" which only created temporary solutions (Burawoy quoted in Silver 2003a, 162). The spatial fix then became the weapon of choice of capital and by the 1980s labour's shop floor gains had been overrun. Labour fought to retain the established social contracts, resulting in defensive waves of strikes as the standardisation phase took effect with the relocation of capital to countries of the south.

Silver argues that while the transformation of the labour process has substantively weakened labour, the results for both capital and labour have not been clear-cut. The reasons for this are twofold. Firstly, the lack of availability of the "monopoly windfall" profits accrued in the innovation stage of the lifecycle of products has diminished the possibility of stable labour-capital accords. Secondly, recurrent technological innovations in the North, together with technological and spatial fixes and protectionism continuously reproduce the divide between capital and labour (Silver 2003a, 170). The consequence of this division is the constant reproduction of strong grievances and bargaining power in much of the post-colonial world in the 20th century (Silver 2003a, 170). This position begs the question: Will there be an increasing trend in bargaining power in the 21st century?

Silver's theory (2003a) appears to suggest two major discontinuities in respect of this question. The first is that there is no leading candidate for either a new leading product/industry or a robust working-class formation with strong bargaining power. However, she maintains that the bargaining power of workers was only partially reversed in the 20th century (Silver 2003a, 108, 172–173). The second discontinuity is in the realm of war which had a worldwide impact on waves of labour unrest. The turn to automation of war represents a shift from labour intensive to capital intense warfare and for Silver this implies that the kind of explosive labour unrest associated with war is not likely to occur in the 21st century (Silver 2003a, 174–176).

2.3 Product Cycle versus Long Wave Theory

A key question arising from the literature review thus far is which theory, long wave theory or product cycle theory, is best positioned to explain the temporality of strike waves and turning point strike waves. For Mandel it is the capitalist long wave in which the temporal aspects of strike waves – those strike waves that alter labour capital relations or turning points – are located, whereas for Silver, the product cycle is the unit of analysis of historical capitalism. Both thus focus on the world-historical scale.

This section offers a comparative examination of Mandel and Silver's competing Marxist theories on the temporality of strike waves and turning points. I attempt to highlight the similarities in both but place emphasis on where the theories depart. I apply the theories to the South African case and reference recent world events to ascertain the explanatory power of each theory.

The timing of the strike waves is similar in both theories, which stress changes related to the rates of profit and labour process as crucial in understanding strike waves. A distinction, however, is that while long wave theory's phases of capitalist development incorporate technological revolutions and recognise lead industries, strike waves are the outcome of the *aggregate* decline in the rate of profit and changes in the labour process in which strike waves and turning points are the combined consequence of workers' protest in different industries. Silver, while recognising technological revolutions and lead industries/products, demonstrates the shifting nature of strikes within and between industries; she maintains that high-point strike waves are based on leading industries/products. A significant departure of her position from that of Mandel, however, is that long wave theory is a predictive model used by key Marxists to predict both turning points and opportunities for the resurgence of the labour movement:

> Indeed, in all key countries today the partial retreats and partial defeats suffered by the labour movement and the liberation movement after 1974-75 leave their fighting potential largely intact and make a new upsurge of class struggle not only possible but likely. This has already occurred in Brazil, South Africa, South Korea, France, Poland, Spain and Italy. It is starting to occur in the USSR and China as well and will probably spread to more and more important countries. (Mandel 1992, 332).

This difference between Silver and Mandel's positions is magnified by the fact that Silver's prediction in 2003 of China's entry into industrial conflict had already been predicted by long wave theory 11 years earlier. It would appear then that Silver's model is limited to possibly identifying lead industries and strikes but not historical turning points in the Mandelian sense. Another distinction between the two theorists is that whereas Silver does not clearly indicate the possibility of the services sector becoming a lead industry in which associational power is likely to dominate, Mandel's model leaves this aspect open since it acknowledges that due to the dynamic of strike waves their exact source within industries *cannot be predetermined*. Russia, which was regarded as a "backward" country, yet saw the first socialist revolution, serves as a good example.

A further differentiation between the two theorists is that whereas Silver outlines a specific spatial dimension in time (including developing countries) and space, Mandel's theory only includes advanced industrial economies. In a sense, however, both were responding to the "withering away" thesis which appeared in the 1960s and 1990s, respectively, and thus serve as applications in the development of Marxist theory effectively countering the "race to the

bottom" thesis. In doing this, both argued that the various countertendencies employed by capital and the state can only be temporary as the crisis of capitalism is systemic and can only be overcome through socialism.

Silver's limited treatment of the distinction between Marx-type struggles (struggles against exploitation in production) and Polanyi-type struggles (struggles against the commodification in the market) is another difference between her theoretical position and that of Mandel. Although she does differentiate, her theory is largely about Marx-type struggles. The fact is that Silver cites only two cases of Polanyi-type struggles (2003, 106; 167) for the 21st century. This led Burawoy (2003, 3) to charge that Silver, "invokes Polanyi-type struggles as a residual only when Marxian explanations don't work". The question is why for Silver the Marxian categories do not work. She does not explain this in her work as appears evident in her definition of Marx-type and Polanyi-type struggle:

> By Polanyi-type labor unrest, we mean the backlash resistances to the spread of a global self-regulating market, particularly by working classes that are being unmade by global economic transformations as well as by those workers who had benefited from established social compacts that are being abandoned from above. And by Marx-type labor unrest, we mean the struggles of newly emerging working classes that are successively made and strengthened as an unintended outcome of the development of historical capitalism, even as old working classes are being unmade (Silver 2003a, 20).

Implicit in Silver's definition is a reproductive scheme, which concerns the unmaking and making of old and new working classes, as products of commodification and relative de-commodification. By commodification she means leaving the reproduction of labour largely to unregulated market forces, whereas she views relative de-commodification as the protection of labour power and the subordination of profit to the livelihood of labour, such as provided under welfarism. Further, she argues that for Marx the major struggles are at the point of production while for Polanyi they are in the labour market (2003a, 17). However, if we apply Marx's reproductive schema we find that it is well articulated within the major transformations of capitalism and the shifts within the patterns of accumulation. As Marx explains:

> When viewed, therefore, as a connected whole, and in the constant flux of its incessant renewal, every social process of production is at the same time a process of reproduction. (Marx [1867] 1990, 711)

According to Saad-Filho and Fine (2016, 60), in the reproductive sphere are the "non-economic relations, processes, structures, powers and *conflicts*" and where capital has little control over the reproduction of the working class – the "unintended outcome", as Silver (2003a, 20) puts it (my emphasis). Further, in Silver's (2003a) exposition of her reproductive scheme, the technological fix does not make explicit the implication of the reduction of the turnover-time of fixed capital and thus fails to see the unity of production and reproduction in the Marxian sense. As Mandel (1976, 245) argues:

> The real consequences of the reduced turnover-time of fixed capital, of the accelerated obsolescence of machinery and of the corresponding increase in the importance of intellectual labour in the capitalist mode of production is a shift in the emphasis of the activity of the major owners of capital. *In the age of freely competitive capitalism, this emphasis lay principally in the immediate sphere of production, and in the age of classical imperialism in the sphere of accumulation (the dominance of financial capital); today, in the age of late capitalism, it lies in the sphere of reproduction.* (Italics in original.)

In other words, the emphasis in shifts in the turnover-time of fixed capital has changed the dynamic of the business cycle, continuously shortening it since the period of free competition, classical imperialism and neo-liberalism. Since fixed capital is now prone to rapid obsolesce, its rapid turnover-time has had a direct impact in the reproductive sphere, compelling capitalists to plan all costs with precision, including long-term labour costs within which long-term collective bargaining agreements with trade unions are the simplest (Mandel 1976, 237–238).

After World War II collective bargaining agreements tended to be at odds with the laws of the market and gave way to state mediation in the form of government income policies and/or wage proclamations which themselves later conflicted with the laws of the market (Mandel 1976, 238–239). Government income policies and wage proclamations were in fact aimed at limiting wages and included measures to constrain the ability of trade unions to bargain freely as well as restrictions on the right to strike. This led to the intensification of the integration of trade union apparatuses into the state, with a subsequent decline in trade union membership, changes in the transformation of the workforce and collisions of ordinary trade union members against the burgeoning trade union bureaucracy, as well as wildcat strikes (Mandel 1976, 239–242). In other words, government, business and trade unions collaborated under late capitalism to set the *market price* of labour-power in the reproductive sphere. This was indeed a key development in the golden age of capitalism. However, it was unable to resolve the valorisation

problem for capital because Keynesianism could only provide a temporary solution within a system of capitalist competition that perpetually and rapidly reduces the turnover-time of fixed capital, which has a direct impact on profits. This process had a simultaneous and direct impact on the unmaking and making of the working class. As Mandel explains:

> If a shortage of labour-power, i.e., a situation of actual full employment, which is not propitious to big capital, can be avoided, and the industrial reserve army at the same time be reconstituted, then the measures just mentioned will in actual fact have a certain temporary effect … [and thus]…The struggle over the rate of surplus-value moves into the centre of the dynamic of economy and society. (Mandel 1976, 239; 473)

In other words, the measures which involve substantial interventions of the state in the *labour market* eventually re-established class antagonisms, resulting in the endogenic turning points in the late 1960s and early 70s. Thus, in my view, the distinction between Marx-type (point of production) and Polanyi-type struggle (labour market) creates an artificial dichotomy between production and reproduction and the interrelated and relative autonomous levels of struggle as articulated in the Marxian category of class struggle to which we now turn.

According to Burawoy (2003, 4), Silver essentially presents a conventional mobilisation theory in that "workers organize themselves when they have power (whether structural or associational) rather than when they are powerless". There is some validity to this critique as workplace power essentially refers to the concentration of workers in production (the pre-organisation of workers because of the labour process) which in part explains the intensity of spontaneous actions that Silver examines. However, if workers had workplace power, which is a consistent variable, then strikes should be a consistent dynamic arising out of the organisation of production. However, since this is not the case, it is clear that Silver thus fails to distinguish between what I term *latent* and *active workplace power*. Workers have a reserve of *latent power*, which arises from the very nature of coerced co-operation in the labour process, which remains dormant until suitable circumstances prevail. Further, her approach does not provide a satisfactory explanation of the temporal dynamic of strikes/waves since she ignores the relationship of the different *industrial cycles* which comprise the business cycle and are a key measure of rising and declining profitability. She explains only shifts in percentages of strikes within and between industries, and the forms and shifts of power within these. Further, while she provides a temporal *profile* of strike waves, she does not account for their *temporal dynamic* in either the short or the long run. Thus, in Silver's approach, the high-point strike waves

(which are turning points) are located within the temporal profile of turning-point strike waves of unrest identified in the World Labour Group database. By focusing on the high point (a peak in the number of strikes) of strike waves, Silver mistakenly identifies these as the turning point in the turning point strike wave.

Silver's characterisation of turning points and lead product cycle/industries does not fit the situation in South African. The worldwide wave of labour unrest in the 1920s and 1930s identified by Silver (2003a, 84) took place in textiles, whereas in South Africa the 1922 and 1946 turning points were in mining. The 1973 turning point strike wave in South Africa, which was largely in textiles, does not feature in Silver's periodisation of high waves, while the 1979–1980s automobile strike wave in South Africa, which Silver viewed as a turning point strike wave is not regarded as such in the South African literature. Yet, a strike in 1973 by 2 000 workers in Durban at a new brick factory built in a *minor* industrial area (which had new technological innovations and thus a new labour process) is regarded in South African labour history as a seminal historical event because it coheres with Sewell's (1996, 843) view of an "initial rupture…[which sets off]… a chain of occurrences that durably transforms previous structures and practices."

Silver mistakenly identified the high point 1979 automobile strike as the turning point as she regarded it as the final straw in prompting the legalisation of trade unions, resulting as this did from "a new and uncontrollable wave of strike action" (Silver 2003, 59 quoting Seidman (1994, 185). Indeed, her characterisation of the 1979 automobile strike was the same as that at the start of the 1973 strike wave, which had started at the upturn in the business cycle. However, in actual fact, the 1979 strike wave came both at the end of a strike wave and the beginning of the next wave of strikes (with a lapse of one year between the two) and thus bore a similar character to the 1973 strike wave since they were both offensive waves. The legalisation thus came at the end of the first wave (six years later, in 1979) as – in the words of Sewell – "historical events are never instantaneous happenings: they always have a duration, a period that elapses between the initial rupture and the subsequent structural transformation" (1996, 845). Hobsbawm's view provides clarity on this aspect:

> the spark is readily available within the business cycle, or in political events ... [i]t is however, not necessary that all sections of labour should be at the point of ignition, the 'explosions' have great power to propagate themselves, once they begin in one area of industry. (1968, 140; 130)

The last straw is thus not a turning point but part of the subsequent ‘occurrences’ adding to the structural effects of the turning point strike wave.

Further, Hobsbawm, like Mandel, argues that technological innovations tend to cluster, affecting workers in different sectors simultaneously, although those industries at the forefront of rapid technological revolution (as in the brick factory example) are inclined to feature prominently in the ‘explosion’. In the South African case, clustering of this nature occurred in the mid-1960s during the rapid increase of research and development in the mining, manufacturing and agriculture sectors (Gelb 1991, 116–117) which in part explains the magnitude of the strike wave. However, as Hobsbawm demonstrates, significant technological change is not a necessary pre-condition for such explosions, since they can ignite as a result of increased intensity in work requirements (Hobsbawm 1968, 143).

Mandel further argues that the patterns of strikes in industrialised and less-industrialised countries are not the same, with variations occurring across a range of industrialised countries as well, since economies are never completely synchronised. Deviations from the general trend are thus explained in relation to the specific circumstances of each country (Mandel 1992, 319). This reflects Hobsbawm’s position, as he insisted that “explosions”, or strike waves, can only be analysed within their specific contexts as each explosion is unique (1968, 145) and

> [o]nly individual analysis can reveal the specific combination of tensions, which make up any given ‘explosion’ and attempts to discover exactly the same combination (as distinct from the general family of resemblance in the patterns) are likely to be unsuccessful. (1968, 174)

In practice, according to Hobsbawm (1968, 145) these various sorts of patterns of the “general family” combine to cause explosions in both “static and expanding industries” as well as “technically inert and dynamic ones”. Silver’s insistence on searching for the lead industry to discover the same combination does not allow for a holistic analysis of the strike dynamic and turning point strike waves in the 21st century. This is demonstrated in her use of the definite article “the” in identifying “the” lead industry.

Lee (2003) argues that Silver “sometimes retreats from her more deterministic moment, wavering between her predictions of, on the one hand, a strong and independent labour movement arising in China, the site of the latest round of global auto investment” (Lee 2003, 5), and at the same time, “the decline of autoworkers’ role in labour militancy together with

the loss of the industry's leading role in capitalist development" (Lee 2003, 5). In a later work Silver (2014) seems to confirm this vacillation. For example, while she acknowledges the key role of the automotive sector in China in the 2010 strikes, she changes direction and argues that five of the six top fortune-500 employers are in the retail sector, earmarking it as the potential lead industry in the 21st century and thus possibly the new site of working-class formation. However, her focus and uncertainty in identifying the lead industry or product blurs her ability to see the historical turning point in the technology sector in China. For example, she omits the suicides in her elaboration of the strike wave of 2010 in China (2014, 51), captured in the extract from Cheng Li below, and only emphasises the autoworker strikes.

> The industrial/labor unrest reached its peak during the suicides at the Foxconn plant in southern China, which drew serious public attention. As of August 28, 2010, 16 workers had jumped from the high buildings at the factory, which resulted in 13 deaths. As a historical turning point, ever since, there has been an increase in strikes and collective labor disputes everywhere in China. (Li 2017, 132)

Silver thus misses the significance of this new but dreadful, limited form of protest, which I shall call *collective bargaining by suicide*. As the workplace and residence of the employees who committed suicide were in the same industrial complex, their suicides occurred at the point of both production and reproduction. For Marx, it is extremely problematic when workers are directly dependent on their employer for accommodation (1990, 1084) because of the extent of control over the workforce and the constraints placed upon their freedom, especially to strike, that results from such an arrangement.

In the aftermath of the suicides early in 2010, widespread strikes took place in June in the automobile industry and among metal workers and coal miners (Li 2017, 132). The outcome of the protest was a 70% increase in wages (Macartney 2010). On 28 October 2010, the Law on Social Insurance was legislated. It was the first ever, comprehensive social security system law promulgated in China and covered pension, medical aid, workers' compensation, unemployment insurance and maternity insurance (Global Legal Monitor, 2010) – all structural effects.

Silver's theoretical shortcomings are further underlined by the fact that while highlighting the role of labour in Egypt's 2011 Arab Spring, she does not conclude that the event was a historical turning point, even though it led to the overthrow of Mubarak (2014, 2018). Moreover, when

reflecting on South Africa, importantly, she completely omits the 2012 farmworkers' revolt, a struggle that unfolded in the spheres of both production and reproduction. The key issue illustrated in these shortcomings is the fact that two decades into the 21st century no clear leader appears identifiable. What explains this limitation of product cycle theory? It would seem it can be accounted for by the underpinnings of the theory itself, as a sectoral based, stages of growth model. This rationale is reflected in the following extract from the 1847 *Communist Manifesto*:

> The need for a constantly expanding market for its products chases the bourgeoisie over the whole surface of the globe. It must nestle everywhere, settle everywhere, establish connections everywhere. (Marx and Engels, 2005)

In Silver's theory, the product cycle and the location choices of the capitalist class are determined almost exclusively by the resistance of workers in the innovative, mature and standardisation phases of the product cycle to the exclusion of and – as put by Taylor (1986):

> ...not in relation to the evolution and development of other products either in a market context of competition and substitution or in an intrafirm context…and the model never comes to grips with the mix of local and MNC production that will occur with progressive internationalism. (Taylor 1986, 755)

The process of this progressive internationalism has enabled a wider scope for location decisions "through the development of the forces of production and circulation, and concentration of capital in enormous corporations, [which] have led to the unprecedented spatial 'generalisation' of capital" (Storper and Walker 1983, 2). As capital's locational capability increases, making it easier to relocate its location of production, it should pay more attention to differentiated labour which in a competitive business environment is a necessity. In this process, capital must scan this geographically differentiated workforce in terms of conditions of purchase, performance capacity, actual performance, and reproduction in location (Storper and Walker 1983, 3–4).

The appeal of Silver's product cycle theory lies in its simplicity, which is also its main weakness. While the quest for new markets and their continuous expansion are the *sine qua non* of capitalist development, to reduce location choice primarily to worker resistance or placidity, as Silver does, is to obscure the dynamics of the system taken as a whole. Mandel, conversely, while able to define a lead industry, does not attempt to reduce the class struggle

to specific industries at the point of production or reproduction. This approach is consistent with former Marxists who have rather tended to focus on the outcomes of strikes (the relative autonomy), pointing *politically* to shifts in the leading role of sections of the working class and class consciousness as the course of class struggle unfolds.

Principally, I argued that Silver's product cycle theory relies too heavily on over determinism, and that turning point strike waves are not mainly determined by lead industries. Apart from the turning point strike wave of 1973, all recognised turning points of 1922, 1946 and 2012 occurred in mining, despite the restructuring of the South African economy since 1886. Mandel's long wave theory incorporates the labour process and argues that technological innovations tend to cluster and thus workers in different affected industries feature prominently in strike waves. However, while both theories introduce economic and political factors as causal explanations of the temporality of strike waves, neither developed a theory of turning point strike waves. To develop a theory of strikes waves, all the factors that produce strike waves must be considered, while the convergence and divergence in the temporality of countries experiencing strike waves needs to be accounted for. Achieving this cannot be exclusive to a macro-level study but must include the micro-dynamics that allow for culminations to manifest in strike waves. The combinations of factors, macro and micro, are therefore discussed in Chapter 3.

Chapter 3: Strike Theories from the Late 19th and 20th Centuries

Franzosi (1995, 10) contends that five theories of strikes have emerged from the late 19th and 20th centuries: business cycle, economic hardship, mobilisation, institutional approach and political exchange. The debates around these are evaluated in this chapter.

3.1 Business Cycle Theory

While Marxists (Engels 1845; Marx 1853; Lenin 1912; Trotsky 1921) in the late 19th and early 20th centuries linked strikes over wages to the oscillations of the business cycle, Marxist scholarship has largely ignored the quantitative study of strikes and, consequently, the Marxist framework in strike literature is rather slim (Franzosi 1995, 11). This apparent dearth of interest among Marxists in studying the linkages between strikes and business cycles could be because they were subsumed by the all-encompassing concept of the "class struggle". Subsequently, the rich scholarly tradition of research on strikes has been dominated by neo-classical economists who have focused on the temporal dynamics of strikes, relating them to the short- and medium-term fluctuations in levels of economic activity, namely business cycles (Franzosi 2002, 10).

Whereas Michael Shalev (1980, 134, quoting Hiller 1928) asserts that the earliest linkage made between strikes and business cycles, with the former as "coincident to prosperous trade", was in 1868, Pohl (2018, 20) accords the first reference to Rist in 1907. My review, however, indicates that this association was made earlier, by Engels in 1845, who showed that both prosperous trade and a trade depression can provide the conditions for a strike. Citing the structural dynamics of capitalist growth, he made a partial analysis of the causes of strikes, alluding to the role of trade union demands in relation to the business cycle (Engels, Chaloner and Henderson [1845] 1958, 9–11), asserting that – unless there are exceptional circumstances – trade unions employ strikes:

> …to regulate wages according to the profits of employers. They desired to raise wages whenever a favourable opportunity presented itself…Thus if there is a trade depression, the unions themselves have to acquiescence in a reduction of wages…[When the] workers demand more wages as soon as business improves they are often able to force the manufacturer to pay higher wages by threatening a strike. If the manufacturer is short of workers he is not able to resist such a demand. (Engels, Chaloner and Henderson [1845] 1958, 244, 246–247)

However, once the employers (capitalists) have secured a full complement of labour, the workers cease to hold the bargaining chips with the result that their wages are lowered to

subsistence levels. In other words, market conditions determine the demand for labour which, in turn, dictates its *market power*. This competition between labour and employers – which forms the historical basis of the business cycle theory of strikes – is linked to the fluctuations in business and invariably results in a pool of unemployed – surplus workers or a reserve army of labour (Engels, Chaloner and Henderson, 89–91). Herein lie the historical origins of the business cycle theory of strikes.

Lenin ([1913] 2004) went further than Engels and, in examining the quantitative aspects of the business cycle in relation to strike dynamics, was the first to provide a definition of offensive and defensive strikes linked to the oscillations of the business cycle. He defined "offensive strikes (when the workers demand an improvement in their living and working conditions) and defensive strikes (when workers resist changes introduced by the capitalists worsening living and working conditions)". Similarly, Alvin Hansen (1921), one of the pioneers of statistical studies, drew the following conclusion in his paper, "Cycles of Strikes":

> In the period of long-run falling prices labour is on the *defensive*. A disproportionate part of the struggle of labour is directed against the reduction of wages, the lengthening of hours, and the worsening of conditions generally. With regard to wages, especially, labour is battling to hold what it has already gained…On the other hand when the general trend of prices is upward we may expect to find labour becoming aggressive. Employers are no longer trying to reduce wages; they are endeavouring to prevent wage increases…It must take the *offensive*. The struggle between labour and capital now becomes most bitter in the years of prosperity. For this there are two reasons: first, it is in the prosperous years that prices and living costs rise; and second, the large profits accruing in years of prosperity give rise to a contest over its distribution. (618; my emphasis)

While Hansen's (1921) research made the important observation that workers' struggles become defensive during periods of economic contraction, and they hold on to what they have already achieved, it also confirmed the tendency of strike activity to increase during prosperous years. This is caused by a combination of factors. During periods of prosperity when demand for products is high, signalling the potential for making large profits, employers are hesitant to have their production interrupted. Consequently, workers are in high demand and – since it is relatively easier for them to find alternative employment – they are more willing to pressure employers into providing better conditions and to strike if necessary. In other words, in boom periods labour's *marketplace power* increases and it can take the offensive (i.e. demand more

than it has). Conversely, during periods of economic contraction, the *marketplace power* of labour declines. This is owing to the constant threat of a reduction in labour and a concomitant increase in unemployment, increasing the bargaining power of employers, while decreasing the tendency to strike. There is a remarkable resemblance between the explanations of Hansen and Engels, as well as Lenin's definition of offensive and defensive strikes. The centrality of business cycles in explaining strike patterns finds support in various other quarters as well. For example, Casutt (2012, 28) showed that – at least in the cases of Austria and Germany during the period investigated (1901 to 2004) – short business cycles played a role in strike patterns. There is however a crucial distinction between mainstream economic theory and Marxist theory of business cycles.

The shortcoming of the neo-classical business cycle model is its inability to account for countercyclical strike behaviour and the attendant increase in strikes even under conditions of high unemployment. For instance, massive unemployment weakened the unions in the late 1920s and early 1930s in Britain, but it had the opposite effect in the 1970s (Mandel 1980, 38). A more recent study by Pohl (2018, 36) found no connection between business cycle fluctuations and strikes in Spain for the period 2002–2013, concluding that increases in strike frequency were related to higher levels of unemployment following the massive economic downturn during the Great Recession of 2007–2009. In other words, in this period, the strikes were related to grievances caused by the economic crisis. Pohl's contribution, though of great value, is limited in that it is confined to one business cycle, which distorts the overall patterning of the fluctuation of strike dynamics.

3.2 Economic Hardship Theory

According to Franzosi (1995, 98), Tilly (1981) evaluates the contention that economic hardship theory is based upon the assumption that grievances are the key cause of strikes when conditions become intolerable. His critique draws on Durkheim's argument that during the Industrial Revolution rapid and comprehensive socioeconomic deterioration results from the large-scale social changes emanating from the social division of labour that caused both individual and collective disorder. In other words, the stress of rapid structural change can generate personal grievances which accumulate, resulting in a shared consciousness and common grievances triggering collective action (Haimson and Tilly 1989, 8). After investigating the data on collective action over several hundred years, Tilly (1981) contended

that the argument is "either circular or extraordinarily difficult to translate into verifiable propositions" (Serge 2016, 29). This was particularly so because Durkheim's theory could not be applied beyond the special period of the Industrial Revolution and could not be considered as a general theory (Serge 2016, 29).

According to Franzosi (1995, 98) the Durkheimian approach has since been developed to understand strike dynamics. In terms of economic hardship theory (grievance theory) strikes are expected to occur during times of economic crisis, when working conditions deteriorate and grievances mount. The grievance theory and business-cycle theories are thus diametrically opposed as strikes assume a rational cost-benefit analysis of the short-term economic returns to collective action during periods of prosperity. The economic hardship theories of collective action seek to exclude these economic calculations as people act collectively during hard times (Franzosi, 1995, 10).

At a certain level of analysis, the grievance theory does accord with the Marxist theory of the labour process and rapid structural change. This is evident in Engels's analysis of the disruptive power of capitalist development and Marx's analysis of the labour process and the development of the strike method. The key difference between the economic hardship and Marxist theories, however, is in their respective location of the source of strikes. Whereas the former focuses primarily on economic conditions, the latter asserts that the source of the strike is to be found at the level of the labour process itself, within which changes in the labour process are constantly revolutionised as the basis of social antagonism. Put differently, while economic hardship theory advances the idea that grievances are the cause of strikes, Marxian analysis regards it as a manifestation of the labour process. As succinctly articulated by Atzeni:

> For our understanding of workers' mobilization, the contradicting and conflicting nature of the capitalist labour process, as organization of production driven by valorization, is crucial. Spontaneous, unexpected, unorganised forms of resistance, the sudden mobilizations of previously loyal workers, the transformations of apparently economistic types of conflict into political ones, are all forms of mobilization that can be explained just by reference to the existence of a structure that constantly reproduces conditions for conflict. The same structure that has justified the historical appearance of trade unions as organisations representing workers' interests and that explains the existence of daily routine struggles at the point of production between workers and management. (2010, 20–21)

The drive for the realisation of the valorisation of capital expressed within the fluctuations of the business cycle plays an important role in explaining the offensive and defensive character of strikes. For Marxists, grievances can be placed theoretically within the "dynamics of production-valorisation-competition" (Atzeni 2010, 21). The dynamics of production-valorisation-competition forms the basis upon which the development of class consciousness and concomitant forms of mobilisation emerge within the working class.

3.3 Mobilisation Theory

Tilly (1988, 14, 43) credits Marxists with the first theorisation of collective action as the outcome of the organisation and division of society into social classes. Through common and shared beliefs, this preorganisation of society into social classes results in conflicting interests and enables social class representation in the form of trade unions and political parties. However, according to Tilly (1988, 14), while class representation in mass movements is readily available, they do not always reflect the "true interests" of the participants. This assessment is clearly debatable. Early Marxists had consistently revised their views on trade unionism (Hyman 1975) and polemicized the existence of a labour aristocracy (Moorhouse 1978) within the labour movement. Whatever the case, the essential point in relation to collective action is that while Marxists emphasise strong organisation as the basis for successful mobilisation, they nevertheless regard spontaneity as essential in achieving the goal of revolution (Luxemburg 2005). In other words, they view both organised and disorganised mobilisation as two disparate components of a single action, eventually centralised holistically by the Communist Party, as in the example of the 1917 Russian Revolution.

Unlike the Marxist view that incorporates spontaneous worker action as an aspect of collective action, and contrary to economic hardship theory, the mobilisation theory of social movements that emerged in the 1960s sought to explain collective action in terms of "long-term changes in group resources, organisation, and opportunities for social action" (Jenkins 1983, 530). Consequently, collective action is explained as a product of organised rather than disorganised mobilisation (Franzosi 1995, 10). Mobilisation theorists argue that grievances are caused by the changing nature of power relations and structural conflicts of interest (Jenkins 1983, 530). For them, grievances are constant, secondary features of the structural changes that have occurred and thus provide an unsatisfactory explanation for strike action.

According to Franzosi (1995), in light of the increased organisational capacities of the working class, Shorter and Tilly (1974) use mobilisation theory to explain sustained strike action in the long-term patterns of strikes. This approach, while recognising economic and structural factors underpinning strikes, highlights the fact that greater organisational sophistication has resulted in an increase in the frequency and number of strikes, and in a reduction in working days lost. This approach therefore argues that it is organisational capacity that has the ability to shape and transform strike dynamics over long-term periods (Franzosi 1995, 10–11).

Hibbs (1978) posited an early critique of mobilisation theory. He conducted a statistical study of strikes in developed countries such as Belgium, Canada, Denmark, Finland, France, Italy, the Netherlands, Norway, Sweden, the United Kingdom and the United States, from 1900–1972. He found that strike movements tended to correlate with the business cycle and during the post-war periods most strikes were sporadic and spontaneous actions, unauthorised by trade unions. The strike explosions or strike waves occurred towards the end or just after the wars in order to safeguard the war-time gains and to resolve long standing grievances that accumulated over a period of production "discipline" (Hibbs 1978, 157). Here Hibbs's analysis of long-run trends conflicts with mobilisation theory by accounting for the role of grievances in spontaneous "disorganised" collective action in strike waves. His findings are consistent with that of Luxemburg's examination of the general strike in St Petersburg which she attributed in part to long-standing grievances related to the labour process in the textile sector. Another critique of mobilisation theory was put forward by Serge (2016). He argued that for collective action to take place, there has to be a breakdown in labour-capital relations arising out of a workers' grievance (Serge 2016, 29).

A key problem in mobilisation theory is thus understanding the level of organisation in the "disorganisation" as there is "spontaneity and spontaneity" as Lenin (1901) argued. Against this backdrop, in the absence of trade unions and where no other similar organisational pre-conditions exist for sustained mobilisation, how can the increased levels of industrial action be accounted for? One explanation is the concept of solidarity.

The social sciences have generally focused on the preconditions to social action to understand how solidarity works. Social solidarity is explained through social networks, the leadership of individuals, strengths of trade unions and thus "overall confusing cause with effect" (Atzeni 2010, 25). The capitalist labour process is a form of workers' coerced co-operation and thus

objectively creates a form of *pre-existing embryonic solidarity*. The embryonic solidarity is two-fold and achieved through the practical aspects of work in which workers are engaged in and are dependent on each other in the course of the production process. The recognition of the authority of the employer is direct and has the power to determine both levels of pay and the conditions of employment itself. Further, the authority and power of the employer by its very nature immediately creates a situation of 'us and them', an opposition despite the fact that workers and employers need to reach some form of accommodation within the production process (Atzeni 2010, 25). As Hyman unequivocally asserts:

> The experience of work inevitably generates informal processes and resistance, of refusal to display obedience and diligence beyond certain limits, of insistence on priorities opposed to those of the employer. (1975, 64)

In other words, this two-fold process in workers' consciousness transforms individual identities into collective identities (Atzeni 2010, 25). Thus, the organisational basis of collective solidarity already pre-exists within the capitalist labour process as "their unification into one single productive body, and establishment of a connection between their individual functions…brings them together and maintains them in that situation" (Marx 1990, 449–50). It is therefore the very practice of workers and employers which objectively unites them in the process of production, simultaneously producing a contradiction, an opposing set of interests, thereby creating a pre-existing, embryonic consciousness of social solidarity.

Mobilisation theory neglects the role of this contradiction in its analysis of trade unions, strike action and the broader class struggle. This neglect is illustrated by Hyman (1975, 64) who illuminates the role of contradiction within trade unions. He argues that while trade unions act formally *against* the dominance and control of the employer, they are at the same involved in "*external* relationships of control" and themselves subjected to influences and pressure from employers and the state. Furthermore, *internal* process of control simultaneously pervade unions in their entirety, including their structures, members and officials (Hyman 1975, 64). This dual scission of *internal* and *external* power relations is crucial in understanding the role of trade unions in the patterns of strikes and strike outcomes, both in the short and long term. Employers and the state may both be threatened by strike action and, through their use of external power, seek to subsume the trade unions to ensure the stabilisation of the capitalist system:

> It is a rule in a capitalist society that any institution or reform created *for* or *by* the working class can by that very token be converted into a weapon against it – and it is a further rule that the dominant class exerts a constant pressure towards this end…The working class is only concretely free when it can fight against the system which exploits and oppresses it. It is only in its collective institutions that it can do so; its unity is its strength, and hence its freedom. But precisely because this unity requires disciplined organisation, it becomes the natural objective of capitalism to appropriate it for the stabilisation of the system. (Anderson 1967, 276 quoted in Hyman 1975, 67–68)

According to Hyman (1975), total sublimation of trade unions to function as an agency *for* capital to exert power *over* their members is never fully attainable, although this can be partially achieved. This is the result of the internal-external power dynamics underpinning the structural dimensions in which trade unions operate and that cultivate the development of union bureaucracies and impose constraints on their internal democracy. In essence, thus, the socialist rhetoric of trade unions remains immured in paper and speeches while collective bargaining seeks to accommodate the external power as "they confine their aims within these innocuous limits" (1975, 89). In this formalisation of collective bargaining, trade union officials – including shop stewards – become increasingly detached from the general membership and mired in enforcing strict control over strike actions (1975, 168, 185). However, this formal and full control of trade union bureaucracies over their rank and file members is always partial. In certain periods of intense conflict, trade unions may lose control to "informal solidarities" at the workplace (1975, 156–157). These can be viewed as the product of institutionalised social conflict, the inevitable foundation of the labour-capital relationship.

3.4 Institutional Theory

Ross and Hartman (1960, 42–51) developed institutional theory to explain the general decline in trade union growth and strike activity in the industrialised world. In *Changing Patterns of Industrial Conflict* – perhaps one of the most important comparative quantitative investigations of the time – they concluded that industrial conflict had "withered away". Based on a long-run analysis of strike statistics from 1900–1956 in Denmark, Netherlands, the United Kingdom, Germany, Norway, Sweden, France, Japan, India, United States, Canada, Australia, Finland and South Africa, their findings indicated

> …a pronounced decline in strike activity throughout the world. Man-days of idleness in the late 1950s were fewer than the late 1940s and the late 1930s despite an increase in the population and trade union membership. (Ross and Hartman 1960, 4)

Contrary to mobilisation theory, institutional theorists argue that it is the institutionalisation of collective bargaining that leaves a lasting imprint on patterns of strike activity. On this basis, Ross and Hartman identified three main reasons for the decline in strike activity:

- Employers have developed more sophisticated policies, procedures and multi-employer organisations with increasingly sophisticated approaches in bargaining with labour. Also, employer attitudes towards unions have changed and good relations with unions is seen as a duty of management (Ross and Hartman 1960, 47–48).
- The state has become central as employer, economic planner, welfare provider and supervisor of industrial relations where exhaustive dispute settlement techniques have been developed and legislation on collective bargaining for entire countries implemented (Ross and Hartman 1960, 50).
- In many countries labour has forsaken the strike in favour of political exchange. With the state playing a prominent role in the economy in socialising certain key industries in the economy, high levels of strike activity have declined. In this new period, strikes do occur but mainly take the form of 'demonstration' strikes and not 'trials of strength'.[6] (Ross and Hartman 1960, 50)

Indeed, thus, according to Ross and Hartman:

> …the effect of these procedures on frequency and the duration of strikes depends upon their relationship with the country's collective bargaining system…[and]…if they support the collective bargaining system … or provide a workable substitute for it, they can serve to reduce strike activity. (Ross and Hartman 1960, 52)

In other words, institutional theories argue that the "institutionalisation of collective bargaining has imprinted a periodic pattern on strike activity, the period being determined by the durations of collective contracts" (Franzosi 1995, 11) and the fact that collective bargaining arrangements tend to cluster around the same period in any given year. In this context of relative stability, the sometimes-large aggregate strike statistics can be understood as the result of the

[6] Ross and Hartman (1960) characterised strikes of prolonged duration as "trials of strength" and those of short duration as "demonstration stoppages".

differentiation between centralised bargaining involving entire industries and local bargaining. This distinction allows for fragmented bargaining arrangements in which the latter results in far more numerous strikes than the former.

However, Ross and Hartman's work (1960) has come under scrutiny because of political exchange theories which focus on the long-term pattern of strike dynamics within the related changes in capitalist power structures.

3.5 Political Exchange Theories

A few years later, by the early 1970s, the overwhelming resurgence in strike waves in industrialised countries[7] resulted in the demise of Ross and Hartman's (1960) "withering away" thesis. These events led to attempts to re-evaluate existing theories in order to understand the potential of industrialised countries to generate intense social conflicts in the light of social science which had "stressed the integration of the working class into the socioeconomic fabric of modern capitalist nations" (Hibbs 1978, 153). Contrary to the withering away thesis, comparative studies show that declines in industrial conflict between labour and capital only occur when labour and social democratic governments are able to consolidate gains for labour (Hibbs 1978; Korpi and Shalev 1980). They assert:

> …because of the advantages of political action, we assume it is in the interest of labour to attempt to move the centre of the gravity of the manifestation of its conflict of interest with capital from the industrial to the political arena. To the extent that this is possible organised conflict is likely to decrease. This transformation takes place through various processes of political bargaining with and through the state where labour, although still the less powerful class, can extract concessions from capital (and vice versa). In some instances, however, the outcomes of the bargaining and compromises may work to decrease the mobilisation of the working class. That the processes of political bargaining and compromise are fraught with risks of working class mobilisation is illustrated by the experiences in some countries, for instance Britain. (Korpi and Shalev 1980, 328)

The concession made to labour in the political exchange is largely through the mechanism of social consumption and the redistribution of national income. In this way, the class struggle shifts away from the private market to the political arena "where labour and capital compete

[7] For example, in France (1968), the "hot autumn" in Italy (1969), in the United Kingdom (1972 and 1974) with sharp upturns in strike activity in Canada (1969, 1972), Finland (1971), and the United States (1970) (Hibbs 1978, 153). Within this international strike wave, we also had the Durban strikes of 1973 in South Africa.

through political negotiation and electoral mobilisation" (Hibbs 1978, 154). The redistribution though the public sector thus constitutes a major aspect of the payoff for the shifting away of industrial conflict from the private sector (Korpi and Shalev 1980, 325). In other words, the *emphasis* of the contestation is able to shift from the productive sphere to the reproductive sphere.

Furthermore, Hibbs disputed the "withering away" thesis of Ross and Hartman as industrial conflict declined significantly only in Belgium and the United Kingdom, with negligible decreases in Denmark, Netherlands, Norway and Sweden. In the five other countries, strikes either increased or fluctuated around the mean level (Hibbs, 162). An obvious problem in making a comparison between Hibbs (1978) and the Ross and Hartman (1960) studies is that they did not use the same sample of countries. Hibbs left out Germany, Japan, India, Australia and South Africa, obviously leading to different results.

However, the importance of the study by Hibbs (1978) lies in its identification of the differentiating levels of strikes in industrialised countries and the dramatic increase in strike levels during the 1960s and 70s, thereby exposing the limitations of the institutional approach to strike theory. These findings are also consistent with Hyman's (1975, 64) theory of the partial nature of the "external relationships of control" of capital and the capitalist state. The weakness of the long run analysis of Ross and Hartman lies in their focus on using strike statistics to explain the institutional dimension of strikes and their resulting patterns. They did not locate the relationship between the short- and long-term strike patterns within the short- and long-term development of capitalism itself and thus could not foresee that capitalism and its institutions are in constant flux, driven by competition, crises and the unfolding class struggle.

This postulation of the indistinct cyclical pattern of strikes is further supported by Casutt's (2012, 45–46) findings on strike activity in Switzerland. These show that they were low during the 1900s, largely as a result of the peace accord agreed to by the large metalworkers union in 1937, as well as the organisational fragmentation of Swiss trade unions and the favourable economic conditions in the 1950s and 1960s that did not require strike action on the part of workers.

There are thus several factors, such as the role of collective bargaining and corporatist arrangements that inhibit or control the timing of strike action. Furthermore, corporatist arrangements that result in long-term agreements and changes in the level of capitalist development, where full employment and improved living standards are achieved in advanced capitalist countries, can bring about long periods of relative social peace (Casutt 2012, 48). This factor thus functions as a countertendency to cyclical strike movements, which is central to political exchange theories of strike action.

3.6 Conclusion

The theories of strikes that were developed between 1921–1978, the business cycle, economic hardship, resource mobilisation, the institutional approach and political exchange, all have their roots in the Marxist theories of the mid-19th and early 20th century. Although each theory makes valid contributions to the theorisation of strikes, they cannot adequately explain strike dynamics, in particular strike waves and the unfolding patterns of strikes. Their major weakness is that they isolate certain aspects of strikes instead of studying the dynamics of strikes holistically, within the dynamic of social change of capitalism itself. The lack of a holistic study of strikes is itself a reflection of a lack of progress in developing a suitable methodology with which to study them. Chapter 4 provides an attempt to remedy this situation.

Chapter 4: Methodology

This study employs the Marxist approach to inquiry. It therefore starts inductively (drawing general laws from particular instances) since, in this approach, as espoused by Marx, the concrete is the "real starting point" in the final goal of knowledge production, which is viewed as the "reproduction of the concrete in the course of thought" (Mandel 1979, 14). In other words, abstract knowledge is the evolution from a past progression of the concrete into the abstract. This abstract, the whole, is only true, "if it succeeds in producing the unity of the diverse elements 'present in the concrete' [and only if] each stage of the analysis [is] subject to 'control either by the facts, or by practice'" (Mandel 1979 quoting Lenin, 14).

In terms of the precise stages of an investigation, Marx considered that the "empirical appropriation of the material should precede the analytical process of cognition" (Mandel 1979). From this process and after appropriation of the material in detail phenomena can be analysed to identify their "inner connection as an integrated totality" (Marx quoted by Mandel 1976, 18).

Drawing on both the underpinnings of the Marxist approach to enquiry and its broad framework, the research design of this study is well-positioned to contribute to the theorisation of strikes and turning point strike waves, since in this work they are viewed as a unity of theory and empirical historical fact. This stance – which contends that strike dynamics are not insulated from their broader context – finds support in Burawoy's (2007, 9) assertion that there cannot be "micro processes without macro forces or macro forces without micro processes". Thus, by viewing and analysing the macro and micro dynamics of strikes as a unity, over both the short and the long run, this research will illuminate the temporal patterning of strikes and strike waves, as well as the factors that produce them. In doing so, the research fills a gap in the work of long wave theorists who, because they limit their analysis to strike waves of long duration, are unable to provide a comprehensive elucidation of the factors that produce them, despite having illuminated their temporality.

4.1 Methodologies in Strike Research

Despite the centrality of the 'class struggle' to the Marxist theoretical framework, its contribution to empirical research on strikes is slim (Franzosi 1995, 11). Furthermore, although Mandel (1995) and Silver (1995) both combine quantitative and qualitative methods of

investigation in theorising the temporal aspects of turning point strike, waves there is a dearth of research that adequately incorporates these approaches in analysing the temporal dynamics of strikes and strike waves. Mandel, on the one hand, with the use of new econometric tools, has been successful in investigating the quantitative aspects of long waves (Kleinknecht, Mandel and Wallerstein 1992, 5). He, however, derived his general class struggle trend from historical knowledge and not from empirical data (1995, 126). Silver's (2003) product cycle, on the other hand, is a conceptual model that drew on the World Labour Group Database (WLGD) (2003, 194–195). The WLGD, however, has limitations as a source of data since it uses the *London Times* and *New York Times* to derive a count of labour unrest and has been consequently been justifiably criticised as a "dataset that would seem particularly sensitive to journalistic, proprietorial and policy-makers definitions of what was newsworthy" (Kelly 1999, 88). Both Mandel and Silver's models thus have weakness in their measurement of *reality*, namely the former's class struggle curve and the latter's product cycle and WLGD. Further, neither theorist equally examines both the defensive and offensive character of strike waves, focusing primarily on the latter.

Franzosi (1995) conducted arguably the most extensive empirical study of strikes in the 20th century. To achieve this, he developed a unique inductive method that combined statistical data and historical, ethnographic evidence that was able to test the explanatory power of various theories (viz. business cycle, economic hardship, resource mobilisation, the institutional approach, political-exchange theory and long wave theory) on the temporality of turning point strike waves in Italy from 1950–1980. Since his approach was first to examine the strike statistics and then test each strike theory in relation to historical and ethnographic research, his methodology combines quantitative and qualitative techniques.

Franzosi's conclusion was that "one of the most serious problems in the literature is the lack of integration between competing approaches" and that mainstream theories were narrow and unable to take into account the multiplicity of processes that lie in the genesis of strikes (1995, 12, 351). However, Franzosi asserts that Marxism with its point of departure of totality, "can account for the simultaneous interplay of various actors on the stage of history, and it allows for the introduction of change into the system" (1995, 351) and thus, by implication, would function as a suitable paradigm within which to examine strikes and their causes. Despite this suitability, Marxists have not developed a general theory of strikes, nor have non-Marxists. Franzosi (1995) argues that a general theory of strikes must be located in the broader theoretical

framework of political economy, since this will allow for accounting the simultaneous interplay of various social processes (economic, organizational, institutional and political). Consequently, the theory should be able to explain (1) the cyclical nature of strikes; (2) the occurrence of strike waves; and (3) "turning points". It must also be able to (4) link class conflict to the underlying class structure. Franzosi, however, ultimately did not develop a general theory of strikes (1995, 346, 354). This study does not attempt to achieve the latter but to contribute in that direction based on the South African experience.

In formulating a methodology for the current study, a central question thus arises as to the most appropriate theoretical framework – one that is sufficiently flexible to enable the integration of the various theories of strikes – to employ. Mandel's long wave theory and Silver's product cycle theory provide (as outlined in Chapter 2) theories of the development of capitalism and the role of class conflict and *not* general theories of strike waves. Their works did not specifically study the combinations of the general movement of strikes except for the temporal aspect of strike waves and turning points in relation to the product cycle and long waves.

In the absence of a standard method to study strikes, this study – borrowing from Franzosi – combines statistics, econometrics, and economic and labour history to develop a unique approach that can adequately capture and reveal the short and long run patterning of strikes and strike waves. Furthermore, the method developed for this study is able to incorporate long wave theory and the business cycle, which are key economic explanations of temporal dynamic of strikes, as well as technological innovation, changes in the labour process and class structure as the material basis of conflict – *the macro-factors*. This approach too enables specific attention to be given to analysing the *micro-factors* underpinning notable strikes, using the lens of the main strike theories (viz. business cycle, mobilisation, economic hardship and long wave theory).[8] Furthermore, I use South African labour history where detailed analyses of strikes are to be found which can assist in understanding the micro-dynamics of strikes. By employing both the micro and the macro, the short and the long-term approaches, an analysis of strike dynamics and their "inner connection as an integrated totality" (Marx quoted by Mandel 1976, 18) is possible.

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[8] I refer to the institutional approach and political-exchange theory when they are relevant to a particular context.

4.2 Disputes on the Measurement and Temporality of Strike Waves

The literature on long waves has been primarily engaged in the application of quantitative techniques to prove the existence of long waves and their synchronisation with strike waves. A persistent and major concern undermining this approach is that there has been no "clarification of the nature of the relationship between Kondratieff cycles and the evolution of class conflict" owing to the fact that it is difficult to verify empirically the qualitative concept of 'class struggle' or 'social explosion' (Screpanti 1987, 100). Lenin (1912, 1913) and Trotsky ([1932] 2008, 26) using strike statistics had argued that a significant quantitative increase in strikes would signal qualitative changes in working-class consciousness. Similarly, Hobsbawm's (1968, 127) formulation that strike waves "mark qualitative and well as quantitative changes" is well supported in Wallerstein's (1992, 339) formulation that "real phenomena" can be "summarised empirically as patterns". For Hobsbawm, the qualitative changes are the changes in strike tactics, levels of coordination, new ideas and policies and extension of strikes and trade unionism to new industries. Here I would add, changes from economic to political demands (grievances) and vice versa, rank and file movements, and the breakdown of racial and gender barriers to organisation and unity. In other words, for long wave theorists, changes in the *practice* of the working class reflects qualitative shifts. The question, however, is whether qualitative aspects can be measured empirically as patterns. Since notions like 'intensification of class struggle', 'social explosion' and 'high points of labour unrest' are qualitative concepts, long wave theorists identified measurement as a key problem.

In response, Shorter and Tilley (1974)[9] developed a method of measuring 'acuteness' of strikes. They defined the year in which the number of strikes (F) is at least 50% higher than the mean of the previous five years, which is then deemed as the year in which a strike wave commences. This view was reinforced by Beittel's (1995, 93) findings, which suggest that indicators of the number of working days lost as established by Bordogna and Provasi (1979) can be used to identify strike waves. Franzosi (1995, 259–261), however, argued that this operational definition of a strike wave is inadequate, as the 1969 Italian strike would not meet the requirements as a wave year, despite its historical peak in the number of days lost (D). Similarly, Hobsbawm (1984, 10) argued that while new quantitative techniques in labour history were an advancement, there was a tendency to "exaggerate the value of the data to

[9] In Screpanti (1987, 105).

which the new techniques can be applied and neglect those to which they can't". Thus, in the February Revolution in Russia, while there were fewer strikes and days lost than in preceding strike waves, the number of strikers (S) increased to over a million workers. Noting this problem, Koenker and Rosenberg (1989, 182) argued that were Shorter and Tilley's operational definition of a strike year applied to the February 1917 Revolution in Russia, it would not be considered a wave year.

Screpanti's (1987, 100) proposed solution to the quandary was to employ strike indices that measure strike *intensity* as "any changes occurring in the 'qualitative' nature of class struggle" and that these "...should also manifest themselves in the intensity of strike waves". Strike indices found in government statistics that can measure intensity and reveal the patterning of strikes are number of strikes or strike frequency (F), number of strikers or size (S) and days lost (D). Screpanti's conclusion of his statistical procedure was that the most intense strike waves manifest around the peak of the long waves in 1869–1875, 1910–1920, and 1968–1974. Based upon his empirical findings, Screpanti argued that his methodology can account for the relationship between the class struggle and the existence of long waves.

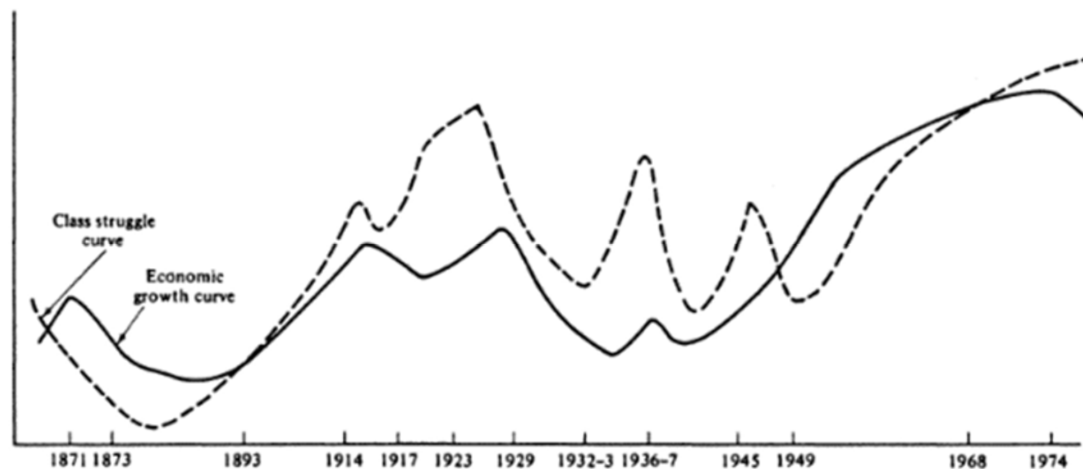
Silver (1992) criticised Screpanti's statistical method as inadequate, since measurements of strike intensity cannot be reduced to core economies and should integrate core and peripheral countries if an accurate picture of temporality is to be observed. In addition, she argued that strike intensity cannot merely amount to notions of class struggle, since the intensity of strike waves involves forms of resistance beyond strikes and includes a variety of protest types. She thus preferred the concept of "labour unrest waves". She furthermore maintained that not only were government statistics inadequate, but that they did not exist for large time periods during the Wars. Moreover, she pointed out that the World Labour Research Group (WLRG) Database at Binghamton University had already developed the most extensive labour unrest database globally. The database, using reports from the *New York Times* and the *London Times* captures a count of labour unrests from 1879–1990. The conclusion of her research was that a 'great explosion' took place in 1889–1890, 1911–1912, 1919–1920 and 1946–1948, indicating that there is no close connection between class struggle and long waves of capital accumulation. Rather, for Silver the periods of intense class struggle are closely associated with the World Wars during which a breakdown of the old hegemony occurred, while declining in the periods of the new emerging hegemony. Surprisingly, although the WLRG database did not show 1968–1972 as a period of intense labour struggle, it did record the struggles by students, women

and minorities for these years. South African labour history does not concur with Silver's finding since the 1973 strike wave in Durban is a well-established fact.

Mandel (1995, 126) derived his general class struggle trend from historical knowledge and not from empirical data. He nonetheless contended that despite his approach, "Silver has drawn up a curve based on newspaper reports of major workers' struggles, which dovetails quite closely with my own projected curve" (Figure 3). Mandel argued that the reason for the divergence of the results was that Silver had left out Spain, a country that peaked several times in the twentieth century. Gattei (1989), he asserted, had used the number of days lost to measure strike waves in four European countries (1995, 126). The peaks in days lost occurred in 1893, 1905–1906, 1911–1913, 1919–1921, 1926 to which Mandel added France 1936–1945, Spain 1912–1937 and Germany 1933–1948. These fluctuations in strike waves are more extensive than Silver's and are thus able to incorporate the peaks in strike activity around the peaks and troughs of long waves. The challenge of measuring the intensity of the strike waves was however still not resolved.

In order to overcome this challenge, Kelly (1999, 89), using statistical evidence from various authors, concluded that the most intense strike waves occur towards the end of the upswing of the long wave (1869–1875, 1910–1920, 1968–1974) and less intense strike wave towards the end of the downswing of the long wave (1889–1893, 1935–1948).

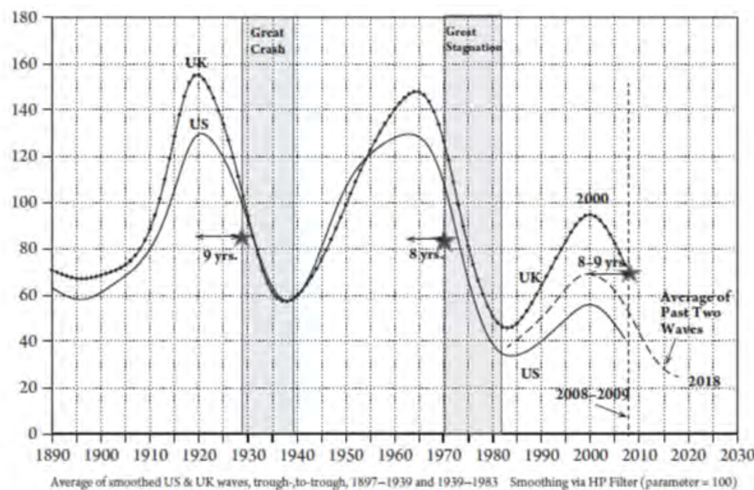
Figure 3: Long waves in European class struggle and long waves in economic growth.



Source: Mandel (1995).

The methods employed by the various long wave researchers to establish evidence of the temporality of strike waves vary enormously. A key problem to all these methods is that the authors do not use the same sample of countries within which to test their various methodologies, giving rise to a variation of results. There is also no agreement on standardised data to employ to study strike waves. Silver's WLRG database is based upon hegemonic newspapers wherein the proof of labour unrest waves is sought from the perceptions of the writers. An obvious problem is that her source of data led her to incorrectly conclude that there was no major upsurge by workers in the 1968–1972 period. In a similar vein, Screpanti relied on inadequate government statistics which failed to record strikes adequately during the World Wars, resulting in an underestimation of major strike waves around the troughs of long waves. Kelly's interpretation too was not based on a set of standardised data, but an interpretation of other authors' work and, consequently, akin to a 'guestimate' of the intensity levels of the strike waves. Mandel, despite bringing greater rigour to his conclusion that the class struggle intensifies towards the end of the long wave, he limited his study to European countries. Consequently, while he may have located strike temporality around both the peaks and troughs of long waves, questions remain as to the adequacy of his method, exacerbated by the absence of peripheral countries from his analysis.

Figure 4: Long waves in capitalist development (USA and UK).



Source: Shaikh (2016).

Using Shaikh's (2016) recent and updated long wave study (Figure 4), Mandel's argument appears to hold. The international character of strike waves in the early 21st century align with the intensification of class struggles toward the end of the depressive long wave. Here we can place the major strikes and strike waves in Portugal, Spain, Greece, China, the USA, the UK, Iceland, Turkey, Egypt, Tunisia, Germany, France, India, Cambodia, Brazil (Gallas and Norwak, 2016) and South Africa between 2010 and 2018.

Despite the resurgence of strikes in recent years, studies on the temporality and comparisons of the intensity of strike waves within a long wave perspective has been marked by an almost complete absence in labour studies literature. Without a global analysis of strike intensity, it is not possible to assess convergence and divergence in the temporality between southern and northern countries. Neither can we assess whether the main axis of the class struggle has shifted to the south or whether there is an oscillatory mechanism at play. Labour scholars are yet to develop a worldwide strike database that adequately captures strike intensity and its temporal patterning.

Having dealt with the empirical disputes on long waves of capitalist development (Chapter 2) and the measurement of strikes waves in this Chapter, I now turn attention to the specific empirical application of quantitative techniques to examine economic long waves and strike waves in South Africa.

Chapter 5: Long Waves of Strikes in South Africa (1886–2019)

During apartheid (1948–1994), quantitative data on strikes were published by the Department of Manpower, the Council for Scientific and Industrial Research (CSIR), the Indicator Project South Africa, the Industrial Relations Research Unit, and Andrew Levy Industrial Relations Data (IRD). Since the first democratic elections in South Africa in 1994, strike data have been published by the Department of Labour, the International Labour Organisation, and the Development Policy Research Unit. Strike data for the apartheid period exclude many strikes, as only those reported to the Department of Manpower were counted (Howe 1984; Levy 1985). Building on Backer's (1995) strike data covering 1910–1994, Van der Velden and Visser (2006) from the International Institute of Social History (IISH) in the Netherlands reviewed available data from 1900–1998 in an attempt to complete the time series, and noted missing data for the following years: 1908–1909, 1925 and 1940–1941.

Strike data since 1994 are extensive, particularly from 1999 when the Department of Labour began publishing annual Industrial Action Reports that include both strikes reported by employers and all forms of industrial action reported in the press. In any case, any underreporting of strikes in official datasets would not impact significantly on discerning strike patterns, as secondary sources can be used to augment those datasets, and absolute numbers (e.g. of strikes) are less important than relative numbers. Nonetheless, in order to ensure comprehensiveness, this study employs secondary sources, such as the Union of South Africa Official Yearbook, the South African Institute of Race Relations and Andrew Levy & Associates to augment the official datasets. The IISH dataset has also been updated and now includes the missing strike years of 1897-1905, 1908–1909, 1940–1941 and 1995–1998.[10]

Three aggregate measures are used in the analysis of the strike data: number of strikes (F), number of workers involved (S) and number of days lost (D) to determine whether or not there is consistency in the combination of these variables of strikes making up strike waves. In line with an inductive approach, the strike data are used to identify the presence of strike waves for the entire historical period under review, shedding new light with a timeline and *count* of strike waves in South Africa, thereby making an empirical contribution to the literature.

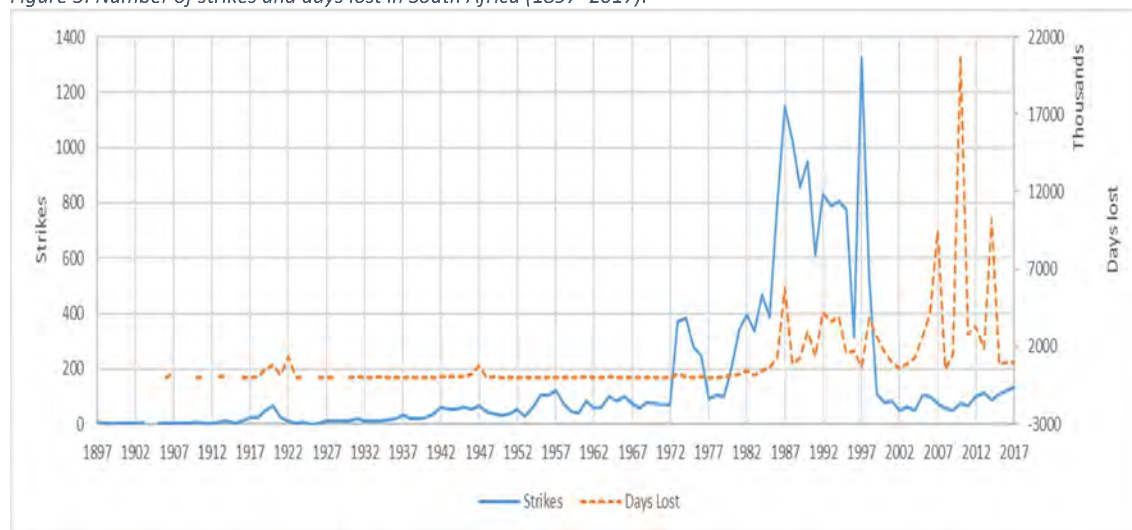
[10] Not all the IISH data were complete and the data excluded numbers of days lost, notably the 288 000 days lost in 1907, the significance of which I explain later. As part of this thesis, I reviewed and updated the strikes dataset from 1897–2017 (see Annexure 1).

5.1 Measuring Strike Waves in South Africa

In examining long waves of strikes in South Africa for the period 1886–2019, the uneven nature of fluctuations in strike data (specifically F, S and D) is depicted visually in Figures 5 and 6 below. There is no uniformity displayed between the number of strikes and days lost or number of strikes and strikers, with the strike variables appearing to fluctuate independently of each other. Further, none of the variables F, S or D displays any regularity or visible patterning, with ebb and flow evident across the historical timeline.

However, despite some ebbs, there is an incremental increase in the number of strikes from 1917 to 1972 (Figure 5). These are particularly visible in 1920, 1934–1937, 1942–1947, 1954–1957 and 1964. Massive spikes in strike numbers then followed until 1999, followed by a marked decline that lasted to 2017. The years 1920, 1922 and 1947 saw spikes in days lost, followed by a plateau that lasted until 1986. Between 1987 and 2017 there were ebbs and flows in the number of days lost, peaking around 2010. Interestingly, the number of days lost between 2005 and 2016 outstrips the 1980s. In terms of correlation between strikes and days, except for the 1980s and 1990s, there appears to be none. In fact, strikes and days lost between 2005 and 2017 move in opposite extremes.

Figure 5: Number of strikes and days lost in South Africa (1897–2017).



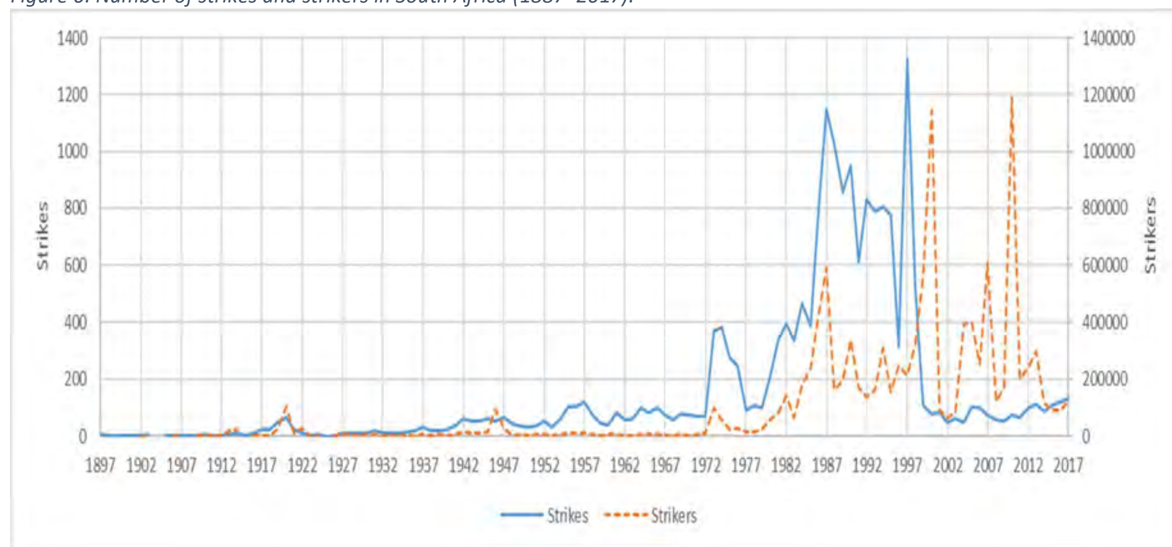
Source: Strike data –Annexure 1, broken line = missing data.

In terms of existing labour turning points, 1922 and 1946 both show spikes in the number of strikes. In addition, while 1973 shows a significant spike, this is surpassed between 1980–1988. The upward trend in the number of strikes from 2012 interestingly does not outstrip that of

circa 2005. Days lost on the other hand appears to correlate with the number of strikes in 1922 but not in 1946, 1973 or 2012, with spikes in days lost occurring between 1985–1998 and in 2007, 2010 and 2014.

There appears to be a correlation in the number of strikes and strikers (Figure 6) in 1920 and 1946. The latter then maintains a constant level until 1972, despite the incremental increase in strikes. After this, until 1997, the number of strikes and strikers appear to correlate, followed by a marked break between 1998–2017 when they moved in opposite extremes.

Figure 6: Number of strikes and strikers in South Africa (1887–2017).



Source: Strike data –Annexure 1, broken line = missing data.

As a labour turning point, although contrary to expectation, the number of strikers and strikes peaked in 1920 and not 1922 during the Rand Rebellion. Strike and striker numbers then appear to correlate in 1946 and 1973 but not in 2012, when there was low strike frequency but high worker participation. It is only in the 1980s and 1990s that strikes, strikers and days lost appear to correlate, revealing a period with widespread and persistent industrial action.

At this stage, using strike statistics to visualise strike dynamics does not yield much useful insight into long wave strikes in South Africa between 1886–2017. This quantitative method has serious limitations since it cannot accommodate variables such as changes over time in working population size and the number of industries, resulting in a perspectivist distortion in the number of strike waves that occurred. Moreover, using the traditional quantitative method

to calculate strikes waves[11] absurdly indicates that no strike waves occurred in South Africa in the late 1980s and 1990s. Both the visual presentation (Figures 5 and 6) and labour history paint a different picture: these years were characterised by intense, sometimes turbulent strikes and a general increase in the level of class struggle. Consequently, it must be deduced that the measure of a strike developed by Shorter and Tilly (1974) and Bordogna and Provasi (1979) is only applicable in the European context where strike wave years are shorter than in a southern country like South Africa. This called for the development of a measure that could capture a 20-year period (1980–1999). After examining several variations, the only measure to capture this period adequately is when the number of strikes, days lost and strikers in that year exceed the mean of the preceding 20 years by at least 50%.[12] Only in this way would the measurements identify strike waves within long periods of intense strike action. Using this measure, there were 52 strike wave years in South Africa between 1897 and 2017 (Table 1 below). This approach thus illuminates the strike data meaningfully and provides a full historical timeline of strike waves in South Africa.

To further illustrate the efficacy of this approach, it is instructive to note that the traditional, accepted quantitative method of using the measure of F to test for the currently accepted turning point strike waves of 1922, 1946, 1973 and 2012 was unsuccessful, identifying only 1973 and 2012 as wave years. However, by using the days lost indicator, 1922, 1946 and 1973 were successfully identified as having turning point strike waves, while 2012 was not. The inclusion of S was unsuccessful, with only 1946 and 1973 registering as currently accepted turning point strike waves. Thus, the combination of F and D appear adequate in identifying most turning point strike waves. However, the significance of using S is that it illuminates those turning point strike waves with higher confidence and participation rates of workers than those that do not. In other words, S highlights the magnitude and extent of mass mobilisation. Simultaneously, S also indicates that a turning point strike wave, which demonstrates the enormous power of workers, can also have participation rates that are lower than those in surrounding years. In this case, S highlights that a smaller section of the working class, a vanguard, wields enormous power. For example, although 1922 and 2012 had 264% and 75% lower participation rates than 1920 and 2010 respectively, those years are regarded as the

[11] i.e. The number of strikes and days lost in a year exceed the mean of the preceding five years by at least 50%.

[12] If we use number of strikes (F) then there are only 26 strike waves. If we use number of day lost, we have 34 strike waves. If we only use the number of strikers, then we have 23 strike waves.

turning point strike waves. Furthermore, F and D did not identify 1945 or 2000 as wave years, illustrating not only the significance of S as an important backup measure, but also simultaneously illuminating those years in which pronounced working-class mobilisation occurred.

Table 1: Historical timeline of strike waves in South Africa

(F) strike wave	(S) strike wave	(D) strike wave
		1907
1910		
1911		
1913	1913	1913
1914	1914	1914
1916		
1917		
1918		
1919		
1920	1920	1920
		1922
		1934
1937	1937	
		1941
1942	1942	1942
		1943
	1944	1944
	1945	
	1946	1946
		1947
1954		
1955		
1956		
1957		
		1961
1964		1964
	1972	1972
1973	1973	1973
1974	1974	1974
	1980	1980
1981	1981	1981
1982	1982	1982
	1984	1984
	1985	1985
1986	1986	1986
1987	1987	1987
**1988		
**1989		
**1990	**1990	**1990
**1992		**1992
		**1993
		**1994
**1997		
	**1998	**1998
	**1999	**1999
	2000	
		2005
		2006
	2007	2007
	2010	2010
2012		
		2014

Source: Calculations by author
***F, S and D at least 50% of the mean of 20 years*

An important consideration in an investigation into strikes and strike waves, touched on at the beginning of this chapter, is the sources of data utilised. Beittel (1995) employed the World Labour Group (WLG) 'mentions indicator'[13] of labour protest and government data on days lost to conduct the first and only quantitative study of strike waves in South Africa. Consequently, his study could identify only 14 strike waves over the period 1915–1990, resulting in an acknowledgement that the WLG database had failed to identify 1919–1920, 1941–1944 and 1946 as wave years. The current study relied on revised and updated government strike statistics as a major quantitative source of data and managed to identify 33 strike waves for the same period. This demonstrates that despite their shortcomings the revised and updated government strike statistics are a more reliable source than the WLG database.

The quantitative data analysed thus far provides a new window on strike waves in the period under examination, which demands a re-examination of the strike waves in South Africa which may call into dispute accepted turning points. In order to ascertain whether such may be necessary, it is imperative to use an open method to interrogate the data. This will enable the discernment of other factors at play in strikes, allowing observation in full of the long waves of strikes.

5.2 South Africa's Long Wave Patterning

Unlike Mandel's exposition of long waves of capitalist development which focused on class struggle cycles and long waves, omitting the correlation between strikes and the shorter business cycle, this study incorporates the business cycle approach to strikes into long wave theory to bring into sharp relief the macro-historical patterning of strike waves. This is important as it assists in the location of the temporality of strike waves and allows us to observe the tendency for offensive and defensive strikes and turning point strike waves to align with cyclical fluctuations in the business cycle (7–10 years) and long waves of capitalist development (40–60 years). This combination of the business cycle approach and long wave theory is necessary in the South African context as strike waves and turning point strike waves tend to cluster towards the end of the upswing, along the downswing and in the troughs of long waves. However, this is not the full picture. There are strike waves and turning point strike waves that occur in a downswing of the business cycle, indicating deeper factors that are at

[13] The WLG data for South Africa presently consists of mentions of labour unrest in the *Times* (London) and the *New York Times*, covering the period from 1906 to 1990.

work. To decipher these factors, specific social structures are examined idiosyncratically through the lens of a range of strike theories[14] in order to reveal the nature of the causation underpinning strikes.

Long wave theorists generally do not explicitly specify labour turning points but rather locate "class struggle cycles" around economic turning points (peaks and troughs) of long waves. Where many of these theorists differ is in their view of when the most intense strike waves occur: around the peak or the trough of the long waves (see Chapter 4). There are also among these theorists those who, while not distinguishing between different types of labour turning points, do specify labour turning points (Cronin 1978; Kelly 1999) that are related to ruptures in mobilisation, breakthroughs in forms of trade union organisation, changes in ideology and industrial relations. In contrast to long wave theorists, this thesis argues that while ruptures (structural effects) readily occur, the nature and extent of the resultant structural change allows two distinct labour turning points, which bear a direct relationship with the long-term patterning of long waves, to be differentiated. The initial turning point strike waves (ITP) are those that signal that the class struggle has begun, the structural effects of which mainly lead to increased levels of labour mobilisation and changes in industrial relations. The other, a historical turning point strike wave (HTP), which ushers in political reforms, revolution or defeat of the working class, leads to a political turning point (PTP). Political turning points typically signal changes in political representation and economic and social policy. In exceptional circumstances, there are also tsunami or revolutionary turning points strike waves, occurring between ITPs and HTPs, such as those in the 1980s, (between 1972–1990) which seek to challenge the continued existence of the capitalist social order.[15]

A key question that this research therefore strives to answer is whether an examination of long waves in South Africa, a so-called developing country, will reveal a similar pattern of long waves in Europe and the USA. To assist in constructing a response to the question, we need to return to the Long Wave Conference held in Brussels in 1989. Here Wallerstein argued that, "many long-wave analysts work with a model that, unless a country is 'industrialised', with a large, wage earning-proletariat, there can be no real cycles. I challenge this" (1992, 342). By employing a conceptual model based on South Africa's economic history to determine the

[14] i.e. Economic hardship, mobilisation, institutional and political exchange theories.
[15] See Table 2 and Figure 18 for verification of ITPs that occur around peaks and HTPs that occur along depressive waves and around troughs of long waves.

patterning of the 3rd long wave[16] and a spectral analysis for the 4th and 5th long waves (see Table 2 and Figure 18), this study supports Wallerstein's challenge to long wave theorists, noting that it is indeed possible for less-industrialised countries to exhibit long wave patterning. The spectral analysis of long waves further reinforces this position since it verifies the facts of the economic history of capitalist development in South Africa. While the economic history of South Africa does not refer to long waves, it does to economic phases in the development of South African capitalism. These phases provide the foundation for an investigation into the long-run dynamics of growth and contraction, thus forming the theoretical basis of the long wave analysis in the current study, bolstered by the fact that the theory of long waves has been proven. The approach adopted in the study, then, combines the work of economic history with the results of the econometric studies, including the business cycle reference turning points, to identify more precisely the temporal dynamic of turning point strike waves.

Table 2: Long waves of capitalist development (1st–6th wave)

Periodisation	***1st Long Wave***		***2nd Long Wave***		***3rd Long Wave***		***4th Long Wave***		***5th Long Wave***		***6th Long Wave***	
	Trough	**Peak**	**Trough**	**Peak**	**Trough**	**Peak**	**Trough**	**Peak**	**Trough**	**Peak**	**Trough**	
Europe												
Mandel	1790	1826	1847	1873	1893	1913	1939/48	1966				
Metz		1798	1820	1860	1885	1912	1943	1972				
UK												
Metz & Shaikh					1889	1909	1930	1966	1982	2000	2018?	
USA												
Shaikh					1895	1920	1939	1965	1983	2000	2018?	
South Africa												
Cottle					1886	1913	1939	1964	1990	2005	2019?	

Source: Metz (1992) and Mandel's (1995) periodisation of European countries (1st to 4th wave), Anwar Shaikh (2016) (5th to 6th wave) and Cottle periodisation of South Africa (3rd to 5th wave)

What Table 2 and Figure 18 show is that the long wave patterning of a less industrialised country such as South Africa is indeed similar to that of industrialised countries. South Africa's long wave patterning only begins with the 3rd long wave in 1886, almost a hundred years after the 1st long wave in industrialised countries in 1790.[17] South Africa's long wave patterning has remained relatively synchronised with the industrial north where there was a nation-

[16] It was necessary to do this owing to a lack of standardisation of GDP data. This limitation should in future be overcome with new quantitative techniques to harmonise GDP data from 1886 to the present.
[17] To avoid confusion, I have numbered South Africa's long wave patterning in line with international patterning.

dependant, lead-lag time structure of 2–7 years.[18] Of significance is the lag time of 7 years in South Africa at the beginning of the 5th long wave, which I explain in Chapter 7 of this study.

The study is thus dealing with two interrelated levels of analysis – the business cycle and the long waves of capitalist development – within which to locate the macro-historical patterning of strike movements. My argument is that although strikes in South Africa are procyclical (Annexure 4, Figure 17), this merely expresses a tendency towards procyclicality as not all strikes, or strike waves, completely conform to business cycle theory expectations and there are instances or periods during which strikes display a countercyclical pattern. Furthermore, the short-term patterning of strikes and strike waves, while expressing a tendency to be procyclical, the long-term movement of strikes are countercyclical (Annexure 5, Figure 18 and Annexure 10, figure 19e)). This is a new discovery and contradicts Mandel's European class struggle curve (Figure 3) where the patterning of the class struggle displays a convex curve that mirrors the patterning of long waves of economic growth, very much like a business cycle. In this study, the short-term patterning of strikes displays a convex movement (cyclical) while the long-term patterning of strikes displays a concave movement (countercyclical). This contradiction of a simultaneous convex and concave patterning expresses a unity of movement within the long waves of strikes. The significance of this finding is that it provides empirical proof of Mandel's theory of the "relative autonomy of the class struggle cycle *from* long waves" (1995, 114; my emphasis), a controversy that emerged at the Long Wave Conference in 1989. Mandel had argued against a "mechanical-economic (economistic) rectilinear determinism" and in favour of a "dialectical parametrical socio-economic determinism". The former view argued that the class struggle was increasingly weakened by the increasing pool of the reserve army of labour (workers' market power decreases) leading to defeats, whereas Mandel argued that in the long term the class struggle "relatively desynchronizes" from economic forces as levels of consciousness and organisational capacity change (1995, 115). Thus, while I have shown that Mandel's depiction of the European class struggle curve is incorrect, my empirical findings confirm the veracity of his theory.

This study begins in 1886. Both business cycle reference turning points and long waves base the periodisation of a business cycle and long wave from trough to trough (one cycle/wave) to measure the cycle/wave period. According to Katzen (1964, 66) the period 1882–1886 is

[18] See Metz (1992, 92).

characterised as a severe depression (trough) before the discovery of gold in the Witwatersrand in 1886 which gave impetus to the recovery. The period 1886–1890 was one of prosperity in Europe and America and money came flowing into the new gold mining industry in South Africa (Katzen 1964, 65). This period thus marks the "take off" of the industrial revolution in South Africa.[19]

By using long waves periodisation to examine offensive and defensive strikes as well as turning point strike waves, this study aims to shed light on the economic, social and political factors – many of which remain unidentified in the literature – that produce strike waves. To achieve this, the next three chapters (6–8) seek answers to the one looming question: What is the specific combination of factors that gives rise to and produces turning point strikes and turning point strike waves?

[19] See Annexure 5 for the results of the spectral analysis and South Africa's long wave patterning.

Chapter 6: Strike Waves of the 3rd Long Wave (1886–1939): The Industrial Revolution

In the historical trajectory of South Africa, 1886 – for a number of reasons – was a watershed year. First, it marks the discovery of gold on the Witwatersrand. As both the most rapidly growing, innovating industry in South Africa and the country's lead industry, not only did gold mining attract the largest share of investment, it also had a powerful causal effect on economic fluctuations (business cycles) in the broader economy (Katzen 1964, 43). The business cycles of South Africa were closely tied to those of Britain, which had the largest share of foreign investment. Coming "...at the bottom of a long and severe depression" (a trough of the long wave) that fortuitously coincided with a period of prosperity in Europe and the USA, finance flowed into the new mining industry with relative ease, contributing to a phase of economic revival in South Africa (Katzen 1964, 64–65). The burgeoning industry, particularly in the Transvaal which by 1898 was producing 27.5%[20] of the world's gold output (Richardson and Van Helten 1930, 2), determined the location of new towns and the development of the railway system to access the sea for export (Katzen 1964, 44–45). However, this "Golden Era" also laid the foundations for industrial strife since it greatly accelerated the wave of European immigration, with these artisans and professional miners viewing the large layer of African[21] migrant workers as their competitors (Katz 1999, 74). The resulting tension was exacerbated by the need to cut costs in the context of strong downward pressures on profit margins resulting from the high capital investment required for deep-level ore extraction, compounded by factors such as the ore being low grade with a fixed price on the world market. Since wage costs made up 69% of working costs, half of which went to the scarce supply and high turnover of African labour (Richardson and Van Helten 1930, 3), the focus of cost minimisation was aimed at securing a greater pool of low-cost labour with a maximisation of labour productivity (Johnstone 1976, 19–20).

Second, mining dramatically altered the social structure of South Africa, transforming it from a largely agrarian society to one based on hierarchical capitalist social relations. At the top of this new social class structure, shaped like a pyramid, were the mining capitalists, followed by

[20] The gold industry experienced phenomenal growth, averaging 36,3% per year, before the Second Boer War (11 October 1899–31 May 1902); also known as the South African War and the Anglo-Boer War), and 12,7% between 1904–1910 (Katzen 1964, 64–69, 44).

[21] In this thesis, the term 'African' refers to descendants of indigenousness tribes in South Africa who through colonial conquest were forced into wage labour.

landlords and a small petty bourgeoisie in manufacturing. Established European immigrants (Afrikaners) in agriculture and allied industries, and another group of European immigrants who had settled in South Africa after the discovery of diamonds and gold (Wiehahn Report 1981, xviii) came next, together with Africans, making up part of the labour supply. The composition of European (white) labour was further complicated by the division between the landed, who took possession of most productive land, and landless classes that was almost complete by the end of the 19th century. Whites who had lost land in this process became transformed into a class of workers in urban areas who became completely proletarianised (Johnstone 1976, 52). Most African workers, however, remained semi-proletarianised, had access to some means of subsistence on land outside of the property market, were integrated into tenant farming and engaged in periodic migrant labour (Johnstone 1976, 57).

Third, from the onset of the industrial revolution in South Africa in 1886 with the discovery of gold on the Witwatersrand, white workers leveraged both their technical skills and the European tradition of craft unionism that they – an artisanal class – had inherited. In terms of the former, they exerted strong workplace power (control over the labour process) while the latter, because of the scarcity of local skilled labour, gave them enormous market power. These combined to ensure they could secure their employment and incomes. Their position was additionally strengthened through the associational power they had developed, which included unions, such as the British craft trade unions that had existed since 1881 (Horrell 1961, 1) and the quasi-industrial union, the South African Mine Workers' Union which was formed in 1913 (Johnstone 1976, 56) and political parties, like the Labour Party that was formed in 1909 to advance the interests of white workers. Trade union growth for labour was slow in the early years, with a membership of a mere 3 800 by 1900 that reached only 9 178 a decade later (Republic of South Africa 1961). There were exceptions to the general patterns of unionism in the Cape and Natal, where some unions had coloured, Asian and white, and in some instance, African members too. Generally, the unions were exclusively white (Horrell 1961, 27). As far as strike action is concerned, ironically those by black (coloured, African and Indian) workers seem to have had the greatest impact in those early years. Andrews (1940, 13) notes that although strikes by white workers occurred as early as 1889, these, whether organised through formal or informal means, were infrequent in the early industrial phase. Strike action by black labour, who generally constituted a class of coerced, unfree, unskilled labour, however, has a longer history and was both more frequent and disruptive than white action. Although they had weak workplace power, they had held informally organised strikes in the transport sector as

early as between 1850s–1870s (Gottschalk and Smalberger 1977, 74) as well as on the mines in 1901–1902 (Warwick 1983, 20). They were able to organise riots and several short-lived strikes (Jeeves 1985, 21–23, 48, 50–51). In addition, African migrant workers expressed their marketplace power indirectly through the defensive action of desertion back to the reserves, resulting in significant disruptions to gold production and large-scale labour shortages. The acute shortage of African labour in 1904 prompted the recruitment of unskilled, indentured Chinese labour to work on the mines, to maintain medium-term profit levels (Davies 1979, 53). The problem of the scarcity of African labour would be finally overcome with the Land Act of 1913, which denied land ownership to 87% of the African population and forced them into what amounted to labour reserves (Webster 1983, 10).

These three factors underpin the choice of 1886 as the starting point for the study of long waves in South Africa undertaken in this thesis. The factors mentioned make it abundantly evident that from this juncture the very nature of the social structure in South Africa fomented the conditions for intractable competition between white and black workers. Within a racially discriminatory class system, the euphemistically termed 'colour bar' that formed the foundation of the labour system relied on expensive skilled and semi-skilled white labour and cheap unskilled black labour within a racially discriminatory class system, further entrenching racial and class divides and creating a volatile work environment (Johnstone 1976, 3). Technology and the need to keep gold mining profitable also played a role. Deep-level mining of necessity required constant technological innovation while the pressure to increase the rate of surplus-value in the industry demanded cutting costs of labour. It was at the intersection of these imperatives that power relations between white and black workers were transformed. For example, in the process of capital accumulation and experimentation, mining capital "discovered" that the task of using rock drill machines, initially operated by skilled white workers, could be satisfactorily transferred to black workers (Davies 1979, 66).

Against this backdrop, this chapter argues that not only did 1907 witness the first major contest between capital and labour (Shear 1994, 1) but, when viewed as a whole, the strikes from 1907–1922 mark the first turning point strike waves in South African history. They should thus be viewed not in light of their isolated disruptive action, but as a clustering of industrial conflict which commenced towards the end of the expansive long wave (1886–1913). I further argue that labour historians, because of a lack of interest in long wave theory in South Africa, have missed the important macro-historical patterning of South Africa's industrial conflict and its

relative synchronicity with the European waves of 1905–1906, 1911–1913 and 1919–1921 (see Chapter 1).

However, illuminating temporality does not suffice as an explanation of the turning point strike waves. To achieve this, we need to explore specific strikes, turning points and strike waves through the lens of various theories of strikes, specifically business cycle, economic hardship, mobilisation and long wave theory, to ascertain their explanatory power in deciphering the combination of factors that produce turning point strike waves.

6.1 The 1907 Turning Point Strike Wave

Localised strikes took place in 1884 (1 strike), 1889 (1 strike), 1895 (1 strike), 1897 (6 strikes), 1898 (1 strike), 1902 (4 strikes), 1903 (6 strikes), 1905 (1 strike) and 1906 (1 strike)[22] (see Annexure 1). The number of strikes for both 1906 and 1907 is counted as a single strike (1), with the distinction, however, that the strike in 1906 was localised whereas 1907 saw a completely new tactic emerge: the general strike.[23] On a quantitative level, the turning point strike wave of 1907 was exceptional in the short history of strikes in South Africa, underscored by the 288 000 days lost compared with the 2 646 days lost in 1906[24] and the number of strikers – 6 400 – in contrast to the 49 strikers in 1906.[25]

In keeping with the long wave of expansion strikes in the early history of South Africa, between 1886–1898 (up to just before the South African War; see Annexure 2), strikes were generally procyclical, with their character, which was contingent on their alignment with fluctuations in the business cycle, either offensive or defensive. Evidence of this correlation is found in a comparison of Gitsham and Trembath's (1926, 15–23) and Harris's (1991, 42) chronology of strikes and demands with Katzen's (1964, 64) cyclical history of South Africa. In the pre-war years, offensive demands were for increased wages and piece rates, minimum wages and reduced working hours. Defensive strike demands were against the introduction of piecework,

[22] For a chronology of the early strikes, see Gitsham E. and Trembath J 1926. *A First Account of Labour Organisation In South Africa*. EP & Commercial Printing Co., Ltd, 16–17. Also see, Harris K 1991, "The 1907 strike: a watershed in South African white miner trade unionism." *African Historical Review*, 23 (1): 32–51.
[23] The controversy around counting a general strike as a single strike rather than multiple strikes is unresolved in strike statistics.
[24] Labour history does not report any major strikes prior to the 1907 strike wave.
[25] There were 50 and 160 strikers in 1902 and 1903 respectively.

any reduction in wages, only half-day holidays on Saturdays and the introduction of the two-drill system[26] without increased remuneration.

The highest consecutive increase in strikes occurred during the post-South African War boom period, in 1902 and 1903. These strikes were, however, defensive and relatively long. Two notable examples include a six-week strike at the Crown Reef Gold Mine related to the introduction of piecework, and a three-week strike at the Village Main Reef Mine sparked by the inception of the three-drill system[27] (Harris 1991, 42). This anomaly can be explained by the exogenic effect of the South African War which had brought mining to an almost complete standstill. Unlike the Cape and Natal, which enjoyed prosperity in these years, the Transvaal and Orange Free State suffered major destruction. At the end of the war, the recovery effort meant prioritising major financial investments in mining in 1902–1903 and dealing with the shortage of African labour which was hindering production and was temporarily resolved only with the importation of a reserve army of Chinese labour in 1904 (Katzen 1964, 66).

The boom, although short-lived, saw a new wave of European immigration and allowed for large-scale imports of capital goods, general imports and the extension of credit (Katzen 1964, 66). There was, however, an over-importation of capital goods which, coupled with a decline in military expenditure and the destruction of the infrastructure incurred in the Transvaal and the Orange Free State during the South African War, and compounded by the world economic crisis in 1907, resulted in a prolonged depression (a downturn in the business cycle) between 1903 and 1909. Thus, ironically, despite the rapid expansion of output in the gold mining industry during 1904–1909, new investment remained low (Katzen 1964, 66–67). This situation was exacerbated, causing a decline in profits per ton of gold, by the gold price which stayed at pre-war levels and the high operational costs, including wages (Feinstein 2005, 104–105). It was this period that afforded the conditions for the 1907 initial turning point strike wave, providing the momentum for the most intensive and distinct forms of industrial conflict in the following years: 1910–11, 1913–1914, 1916–1920 and 1922.

[26] Each white miner was expected to manage two drill systems with five African labourers. This was a shift from operating one drill with the support of two African labourers.
[27] This was a shift from white miners managing two drill to three drill teams simultaneously. The increase in drills was an occupational hazard and exacerbated the spread of miners' phthisis (Shear 1994, 2).

Business cycle theorists would argue that in the context of high unemployment rates amongst Afrikaners and a new wave of immigration, the downswing was an opportune moment for capitalists to cut wages and other costs. This is because existing white miners' market power would have decreased and they would be more hesitant to strike for fear of losing their jobs (Shear 1994, 4). Consistent with business cycle explanations, the demands of the miners were defensive and the 1907 strike was of long duration, related to the prevention of a wage cut of 15% and to the introduction of the three-drill system (Andrews 1940, 19). Against a backdrop of increased bargaining power, the mining magnates refused to negotiate with the white miners whom they regarded as "costly inefficient white skilled miner[s]" (Harris 1991, 46). Eventually, the 1907 Rand Miner's Strike became a "contest of power" and lasted three months before it was quelled.

Business cycle theory can for the most part explain the procyclical character of strikes in the pre-war period, but it cannot account adequately for the mixed characteristics in the post-war period strikes of 1903 and 1907 that exhibited both pro- and countercyclical features. This is owing to the fact that unlike long wave theory, which incorporates political aspects, business cycle theory does not accommodate the *political* impact of war on industrial mining cycle as a distinct industry. In turn, this explains why the struggle of the white miners was defensive despite the broader boom. However, while business cycle theory can account for the defensive character and length of the 1907 strike, as employers were reluctant to accede to wage increases in a period of lower profit rates, it cannot provide an explanation for the increase in the number of workplaces on strike (48 in total) including the massive increase in the number of workers, since lower strike frequencies are expected in the downswing of the business cycle.

Grievance theorists and long wave theorists have much in common in their depiction of the 1907 strike wave. Both would agree that the catalyst of the 1907 strike wave was the prolonged depression in which employment insecurity and cost cutting measures placed severe strain on the capacity of the white working class to reproduce itself. As mainly first-generation miners, the economic crisis threatened their job security on which they depended in order to settle permanently in the Transvaal (Shear 1994, 6), a situation exacerbated by the fact that they had no alternative form of subsistence including no access to productive land. In line with business cycle arguments, their predicament was further compounded by the recent migration of unemployed Afrikaners, eager to find employment on the mines, to the mining towns. They threatened the market-place power of the immigrant miners as they could eventually be trained

and employed at cheaper rates. A further pressure that raised the spectre of dramatically eroding the workplace power of white miners was the simultaneous cost-cutting move by mining capital that involved an increase in the supervisory responsibilities of white miners concomitant with a reduction in the number of white semi-skilled workers by handing over some semi-skilled productive work to black and Chinese workers. The structural insecurities of white miners both in the sphere of production and reproduction thus had the readymade ingredients for an explosive strike. For grievance theorists, the economic crisis of 1907 and the resultant chaotic strike explosion confirms the character and high levels of disorganisation of the white miners which allowed the miners to overrun the police force and pose a significant challenge to the army. But viewed from this perspective, all cost calculations are lost in such kinds of conflicts as workers are willing to prolong strike action at great expense to themselves and their families. This is because, for grievance theorists, crises deepen structural insecurities and sharpen the conflicting interests, making labour grievances the key mechanism to explaining the temporality of the strike wave. But the crisis of 1907 was not as deep as the gold and financial crisis of 1889–1890, which had resulted in a depression that lasted until 1892. It was a period in which there was also uncertainty of future investment as the "outcrop" gold had been exhausted unlike 1904–1909 where gold production continued to rapidly expand (Katzen 1964, 64, 67). The fact is that no strikes were recorded between 1889–1892 despite the structural insecurities of the first-generation miners. There are thus contradictions in the explanation of grievance theory as to how the level of mobilisation in the 1907 strike wave was achieved, undermining its argument that a high level of disorganisation was the primary reason for the chaotic explosion.

Contrary to grievance theorists, mobilisation theorists would argue that the absence of strikes in 1889–1892 compared with their high occurrence between 1902–1909 can be explained by increased levels of organisation among labour. They would point to the growth of trade unionism in South Africa, as well as the employment of a new tactic, the general strike, to bolster their position. In their view, it was increased mobilisation and the utilisation of this new approach that resulted in the 1907 strike explosion. However, the facts and figures tell a different story and an examination of the 1907 general strike indicates that spontaneity predominated and that the level of trade union organisation was rather poor.

Trade union membership on a national level was 3 800 by 1900 (Republic of South Africa, 1961). Strikes could "generally be described as spontaneous" and in notable instances were led

by worker committees and not trade unions (Harris 1991, 39–40). Upon commencement of the 1907 strike, the Transvaal Miners' Association had a total membership of 300 and the events leading to the general strike were not planned but forced upon the trade union (Gitsham & Trembath 1926, 28). The initial meeting to discuss the strike was poorly attended and the union played a restraining role, hoping that a compromise could be reached without having to embark on a strike (Shear 1994, 4; Harris 1991, 46–47). Despite the general hesitancy of miners to strike, a group of 60–70 workers at the Knights Deep Mine did strike, igniting a wave of poorly organised sympathy strikes at 10 other mines. Because of the high level of disorganisation, a general strike was only called after two weeks, initially involving 27 mines, which later grew to 48, but still did not have the full active support of the majority of the workforce (Shear 1994, 10–11). So acute was the lack of organisation that at its peak only 4 171 out of 20 600 white gold miners were on strike.[28] Furthermore, by the end of the three-month strike, union membership in mining had only increased to just over 1 000 members[29] with total national trade union membership standing at 4 000 members (Harris 1991, 50). Thus, although the first general strike in South Africa did occur in 1907, its chaotic character was in keeping with grievance theory, not mobilisation theory. This is because, contrary to mobilisation theory, the strike was the result of weak and not strong mobilisation capacity

So far, we have seen that business cycle theory adequately explains the offensive and defensive character of the strikes in the pre-war period, but is only able to provide partial explanations for the 1907 strike wave. Grievance theory makes compelling arguments for structural insecurity and mounting grievances in the context of the 1907 depression; however, it is unable to explain the complete absence of strikes during the gold and financial crisis of 1889–1892, while contradictions in mobilisation theory fail to account for the 1907 strike wave. An additional lens is thus required, one through which all factors underlying the strike can be viewed holistically in order to explain its intensity and impact.

Such a perspective requires the short-term fluctuations in the South Africa economy to be viewed together with the long-term fluctuations (long waves), illustrating that the downswing of 1903–1909 in the context of a worldwide depression in 1907 was but a signal that the long

[28] See Katzen (1964, 18), "Table 1: Selected Operational Statistics 1886–1961" where total numbers of workers in terms of their racial composition is listed on a year-to-year basis.

[29] Due to the lack of data, the figure of 1 000 is an estimate as the Transvaal Miners' Association had reached 1860 by 1910 (SA Year Book No.1, 28).

wave of expansion (21 years at this point) was drawing to a close. This was foreshadowed by the stagnation of several years of the price of gold per fine ounce and the decline in operating profit per ton of ore from £0.84 per ton in 1902–1904 to £0.70 in 1905–1909 (Feinstein 2005, 105–106). Faced with these economic challenges, mining capital had to find a breakthrough in *radical* cost cutting measures within the labour process which occurred six years before the peak of the long wave in 1913.

The trigger causes of the 1907 strike, which ignited at Knights Deep, were changes to the rock drilling system[30] which combined with longstanding grievances of wage cuts,[31] increasing the ratio of African to white labour[32] and the health implications of the new system for white miners at other mines (Harris 1991, 43; Shear 1994, 5). These factors came to a head during the depression of 1907 and culminated in the initial turning point strike wave (ITP) of 1907. The turning point strike at Knights Deep ignited a wave of strikes in which spontaneity predominated, allowing for a general chaotic struggle that stretched 80 kilometers from the Rand. The suppression of the strike allowed mining capital, "to bring about a reorganisation of wages in a few months, which under normal circumstances would take years to achieve" (Shear 1994, 18).

However, the victory of mining capital was not as decisive as it had wanted to be because it was unable to implement uniformly the changes to the labour process that would entrench its grip on labour (Shear 1994, 18). The chief shortcomings that resulted from the dissolution of the strike included a failed attempt to incorporate Afrikaner workers (as they were dismissed after the strike ended) (Katz 1995, 470) as a new force to disrupt the workplace power of white artisans. In addition, a further indication that the victory of mining capital was somewhat shallow was that the 1907 turning point strike wave signalled the presence and power of the new tactic, the general strike, indicating that the class struggle was to intensify – the structural effects of which would be visible almost immediately. Furthermore, on the political level, the coercive arm of the state was severely challenged, and extensive mobilisation by labour marked a distinct change in capital-labour-state relations. At an organisational level, the strike wave had provided impetus to consolidate trade unions and to "organise on an industrial as opposed

[30] Mining capital planned to increase the intensity of work to operating three machine drills instead of two (Andrews 1940, 19).
[31] These caused the general profitability crisis expressed in the cyclical downturn, which in turn prompted an urgency by capital to introduce radical cost-cutting measures.
[32] This was mining capital's attempt to undermine the labour power of white miners.

to former artisan lines", which allowed for a departure from the moderate craft centred "British old unionism and a more militant indigenised South African trade unionism" (Harris 1991, 50–51). It is on this basis that Harris (1991) argued that 1907 was a turning point, a view that has been ignored in South African labour history. However, the structural effects were much more expansive than Harris envisaged. Almost immediately after the strike was quelled, a motion was passed in the Legislative Assembly to draft regulations dealing with labour disputes. In 1908 these resulted in the Industrial Disputes Prevention Bill and marked the first attempt at the institutionalisation of industrial conflict (Yudelman 1984, 85; Lever 1978, 84). Another significant piece of legislation that came to fruition because of the 1907 turning point strike was the 1911 Mines and Works Act – the first comprehensive codification of the colour bar and conditions of work which reserved 32 types of work for white workers (Wilson 1972, 8; Finnemore and Van der Merwe 1986, 3). While the Mines and Works Act legally established South Africa's employment "colour bar", the mechanism to achieve this was to radically alter the labour process and introduce cost-cutting technology. Black workers became rock drillers, using smaller drills, while white workers became supervisors of three black drilling teams instead of two (Davies 1979, 66-68). The small hand-held drills ensured that holes for blasting could be drilled more rapidly with less labour and reduced wastage in narrow stopes. Mining capital simultaneously introduced the more technologically advanced tube mills to increase the ore crushing rate to expand output which they hoped would restore investor confidence (Jeeves 1985, 60). These measures – the new technological innovations, changes to the labour process and the Mines and Works Act – did not however function effectively as a countertendency to strikes and failed to subdue strike action on the part of white workers as the long wave of expansion was ending.[33] Although strikes took the form of an ebb in the immediate years following the 1907 turning point strike, this was merely an interregnum fomenting greater upsurges that lay ahead in an attempt to impose the uniform changes to the labour process that mining capital was adamant to achieve.

6.2 The 1913–1914 Turning Point Strike Wave

In the immediate aftermath of 1907, the strikes in 1908–1909 took the form of an ebb until 1910–1911 which, owing to increases in strike frequency (F) of 5 and 4 strikes respectively, clearly registered as wave years. Similarly, the 1913–1914 strikes, with (F) of 5 and 12; (S) of 19 771 and 21 927; and (D) of 89 887 and 160 129 respectively, bear the hallmarks of wave

[33] I will explain reasons for this later.

years. While days lost in 1913–1914 is lower than in 1907, there was more than a threefold increase in the number of strikers despite the seriously flawed government statistics for 1913 that exclude the 9 000 black and 20 000 Indian strikers. The strikes between 1908–1912 generally appear to be procyclical, decreasing in the downswing of 1903–1909 (the exception being 1907) but increasing in the upswing of 1910–1912. However, business cycle theory cannot account for the spike in strikes and strikers in the downswing of mid-1912–October 1914.

In 1908, a three-month strike took place at the De Beers mine, Kimberley, in response to the extension of working hours to include Saturdays as a normal working day, while in 1909 a spontaneous strike by railway workers throughout the Natal railway system broke out against the generalised system of piecework. In 1911, the Typographical Union in Cape Town had a defensive strike over non-union employment which lasted eight weeks (Andrews 1940, 20–21). All three strikes, regardless of whether they occurred in an upswing of the business cycle, resulted in defeat. How is this persistent, defensive character of the strikes to be explained? It would seem, in keeping with the thesis undergirding this study, that the cyclical fluctuations of the business cycle must be understood within the long-term fluctuation of the economy, with the overall orientation being one of contraction of the economy. In this scenario, the upswing of the business cycle becomes weaker and the downswing deeper. This explains the consistency of mounting grievances related to radical cost-cutting measures which increased towards the peak of the long wave in 1913–1914.

The massive spikes in the 1913–1914 turning point strike waves occurred in the context of the high inflation caused by the worldwide recession and depression emanating from World War I (Katzen 1964, 71). During the depression, the Land Act of 1913 was promulgated to end competition between commercial agriculture and mining for African labour (Jeeves 1985, 122), thereby increasing the social numerical weight of the reserve army of migrant labour. With the expansion of productive capacity in mining and changes to the racialised labour process, the social weight of the white miners was diminishing as a proportion of the total workforce. Compared to 13 000 white miners and 80 000 black miners in 1903, there were 24 000 white miners and 195 000 African miners by 1913.[34] In line with business cycle explanations, white miners were on the defensive as their market power and workplace power had weakened once

[34] See Katzen (1964, 18), "Table 1: South African Gold Mines – Selected Operational Statistics".

more with few options available to strengthen their bargaining power, unless they united with black miners who now formed the backbone of the mining industry. The mining magnates, however, seized the opportunity of the racial imbalance in the mining labour force to impose further cost-cutting measures.

Given the consequent increased structural insecurity of white miners, combined with the impact of the depression, their grievances increased. A strike in 1913 at Kleinfontein Mine in Benoni started out defensively as white mineworkers protested against a change in working conditions that made it compulsory for them to work on Saturdays as a normal working day (Andrews 1940, 23). Once again, the economic downswing was at the root of the increased militancy of the strike, and as it developed into a general strike the police and army were called. In the quelling of the strike, over 20 miners were killed (Andrews 1940, 24). Contrary to business cycle explanations, during the 1913 Kleinfontein Mine strike, which occurred in the downswing, 9 000 black workers for the first time came out on strike in support of the white miners, thus demonstrating both their market and workplace power. Mining capital's systemic engineering of the labour process had inadvertently rendered black labour indispensable and central to the maintenance of profit rates. Thus, as a stabilised source of cheaper labour power that was in high demand and now employed on a wide scale, including in semi-skilled work, mining capital could not afford to incite the disruptive power of black mass desertion. While the strike of black workers was not an outright victory, it led to some gains in wages, food and medical provision, accommodation and working conditions (Bonner 1978, 4).

Furthermore, in 1913 a significant, offensive, largely spontaneous strike by 4 000–5 000 indentured Indian coal miners spread to 15 000 plantation workers and was widespread across industries, even including domestic servants (Swan 1984, 239–242). The grievances of the workers were related to a long-standing grievance of a £3 tax imposed after 1895 by the government to re-indenture free Indian labour across various industries. Since 1907, wage cuts were generalised and "savage cost cutting was used in an attempt to compensate for a long-term decline in soil productivity and prices" on plantations (Richardson 1980 quoted in Swan 1984, 242). Furthermore, there was strong resentment by the Indian elite towards the introduction of pass laws in 1907 in the Transvaal which would cripple their own reproduction (Richardson 1980 quoted in Swan 1984, 247). In contrast to the white miners, the Indian workers were victorious, and the £3 tax and pass laws were abolished (Richardson 1980 quoted in Swan 1984, 257). The strike wave did not end and carried on into the following year, this

time another poorly organised general strike was planned on an upswing of the business cycle against the threat of widespread retrenchments in railways.[35] General Jan Smuts was swift to act, imposing Marshall Law and calling into action some 70 000 police and armed forces. The strike was crushed, and hundreds of unionists and others were imprisoned (Andrews 1940, 27). As strikes were banned in the railways – an essential service – workers encountered substantive losses which included pensions, sick funds and holidays (O'Quigley 1978, 14). Business cycle theory is thus unable to account for the contradictory effect and results the downturn had upon the strike actions of white and black workers, while grievance theory appears to hold.

How does mobilisation theory account for the scale of mass mobilisation of around 48 000 workers in 1913 and how does it account for gains and victories by the most socially controlled and exploited sections of the labour force? At this time mining union membership was 2 800 (Republic of South Africa 1961) and black workers were completely unorganised.

The 1913/1914 turning point strike wave for the first time saw the entry of workers on a mass scale and mobilisation took a mixed form of limited organisation and spontaneity, while overall a chaotic character predominated once again. Despite the Transvaal Miners' Association organising on an industrial basis, its role was still one of moderation, confining the strike to a single workplace, and there was reluctance to organise a general strike (Andrews 1940, 23). The process was similar to the 1907 general strike with informally organised sympathy strikes first taking place and finally, after a month, a general strike was organised. The distinction however was that union leaders (who were divided on the strike) kept in contact with workers in mass meetings to ensure unity of the workers. For the first time an absolute majority of white mineworkers (19 000 men) on all mines participated in the general strike including non-mining unions working on the mines. A further distinction from 1907 was that a sizable section of workers took part in spontaneous, militant acts (against the wishes of the trade union), riots and looting, and direct action against the police, which resembled a civil war (O'Quigley 1978, 5). The most telling failure of mobilisation theory is to be found in the 1914 railway general strike. Despite the Amalgamated Society of Railway and Harbour Servants (ASRHS) membership constituting 50% of the 15 000-strong railway workforce, the co-ordination of the general

[35] The strike data indicates only 5 strikes for 1913. This is because a general strike, while occurring on 63 mines, is counted as a single strike. There is insufficient evidence of the national character of the railway general strike in 1914, except that it took place on at least 14 workplaces.

strike was poorly managed, a prime factor leading to the defeat of the strike. Mobilisation theory neglects the role of institutionalisation in its analysis of trade unions and strike action. The ASRHS was involved in "*external* relationships of control" (Hyman 1975, 64) and subjected to influences and pressure from employers and the state. As a moderate trade union, it was committed to arbitration and appeal boards to resolve grievances rather than strikes (O' Quigley 1978, 6). Furthermore, the strikes of Indian workers took place in the absence of trade unions, while the strikes of coal miners were instigated by organisers of Gandhi's defiance campaign, itself a chaotic process, and the strike of plantation workers was a purely spontaneous affair (Swan 1984, 239).

The leap in strikes and strikers on the peak of the long wave was undoubtably a climax of the class struggle. How is this climax to be explained? Why did the Mines and Works Act of 1911, which codified the "colour bar" not work as a countertendency to strike on the part of white workers? What explains the temporality of generalised discontent of workers across industrial sectors and the entry of black workers' use of the strike weapon?

The contraction of the economy in 1907 led to a clustering of radical cost-cutting measures across industrial sectors which become generalised by the time the 1913/1914 strike waves commenced. While not all the cost-cutting measures of the various industries have been documented, as in the case of mining, the extent of defensive demands of workers as highlighted earlier provides sufficient evidence of the kinds of changes within the labour process. The radical cost cutting of wages, increasing piecework at lower rates, taking away Saturday as a holiday, large scale retrenchments and introducing cost-cutting technologies are some examples. While the Mines Act reserved specific types of work for white workers, it did not slow down the extent of cost saving on the part of mining capital. The reorganisation of the division of labour on the mines led to rapid increases in the intensity of work, which over a period of five years led to an increase in the number of rock drilling machines operated from two to five, which pushed white miners away from productive work into supervisory responsibilities. An unintended consequence of the Mines Act was that by increasing the number of rock drill machines per white worker, there was not sufficient time for white workers to perform all their productive tasks, which consequently were performed on a voluntary basis by semi-skilled black workers (O'Quigley 1978, 20). But why would black miners perform unpaid skilled work on top of their other responsibilities?

I argue that the only plausible explanation for this phenomenon is that semi-skilled black workers had since 1907 developed a growing worker consciousness. Worker consciousness defined as a "concern to maximise wages" (Phimister 1978, 48) was foregrounded by black workers voluntarily displaying their capacity to do skilled work. With both productive and supervisory functions, the white miners increasingly became unable to satisfactorily perform both functions, with black workers increasingly filling the gap in areas of work in which they were legally barred. The Mines Act, while legally enforcing a colour bar and reorganising the labour process, had the contradictory effect of increasing the workplace power of black miners while undermining the workplace power of white miners. These changes in the labour process explain the participation of the 9 000 black workers in the 1913 general strike in contrast to 1907 where they continued production. While the black strikers may have been induced by white miners to strike (O'Quigley 1978, 3), their participation was informed by their own occupational aspirations and for the recognition of the value of their labour power on equal terms with whites. The marginal success of black workers in improving their social reproduction without trade union organisation in this instance, in contrast to white miners, can only be explained by the changes in the labour process.

Mechanisation in coal mining was more advanced in South Africa than the rest of the world, since the industry had become mechanised at an early stage in its history (Alexander 2007, 211). Furthermore, coal production was tied to fluctuations in production in the gold mining industry, which had a monopoly on demand and bought coal prices fixed in long-term contracts (Katzen 1964, 55). The radical cost-cutting measures since 1907 in mining had to be synchronised by coal companies, providing the readymade ingredients for the strike by Indian miners. While it has been established that radical cost cutting took place in the sugar plantations, the strikes of Indian mineworkers had extended to factories in Durban and Pietermaritzburg. Indian workers struck at Hulett's Refinery, Chemical Works, Wright Cement and Pottery Works and African Boating, and, amongst others, railways, hospitals, laundries and bakeries also joined the strike (Bhana and Vadeh 2005, 122–123). The extensive nature of the strike wave can thus only be explained by the clustering of the radical cost-cutting measures across industries from 1907, which took about five years to become generalised, leading to mounting grievances of workers culminating in the first mass strike in South African history.

The turning point strike wave of 1913/1914 bore all the key characteristic of mass strikes:

- A sudden upsurge and increase in the magnitude of class conflict, which surprises the state, employers and the trade unions.
- Mainly plant and industry based, but also involve an increased number of establishments.
- Increased frequency and duration, and dramatically increased levels in the number of strikers.
- A greater number of different occupations are involved.
- A close interrelationship between economic and political demands (the £3 tax and pass laws).
- The strike tactics become more radical in character.
- The strikes are largely outside the control of the trade unions and parties and are largely spontaneous.
- Increased unionisation (there were 4 000 and 11 941 trade union members in 1907 and 1914 respectively).
- Increased organisational capacity and confidence of the working class.
- The strikes bring about legislative and institutional reforms. The structural effects of the 1913/1914 turning point strike wave was the recognition of the miners' union (Horrell 1961, 4–5) and the upholding of the colour bar (Arkin 1960, 311).

The long wave of expansion of South Africa's industrial revolution lasted from 1886–1913 and was thus 27 years in length. Towards the end of the long wave, capital needed to intensify the rate of surplus value, and introduced cost-cutting technologies and changes to the labour process which resulted in intense labour conflict. At this point, the introduction of countertendencies to strike, such as the Industrial Disputes Prevention Act of 1909, the Mines and Works Act of 1911, the recognition of the Mine Workers' Association and repression, had failed to subdue strike action. In the main the contradiction was that upholding of the colour bar did not alleviate white worker insecurity, on the contrary, in practice it increased competitive pressures between white and black workers. With no amicable resolution to white and black workers' grievances, the class struggle was to intensify further with the commencement of the depressive long wave.

6.3 The 1916–1920 Turning Point Strike Wave

After the two-year wave of 1913–1914, an ebb occurred in 1915 followed by a four-year wave from 1916–1920. The strike waves are illuminated by (F) of 10 strikes in 1916, 22 in 1917, 23 in 1918 and 47 in 1919, indicating increases in levels of organisational capacity. The strike wave in 1920 is illuminated by (F) of 66 or 450% higher than 1914; (S) of 105 658 or 120% higher than 1913; and (D) of 839 415 or 424% higher than 1914. Overall, F, S and D place 1920 under the glare of the spotlight as the most intense strike wave year between 1916–1920. This means that although most strikes were quelled in 1913/1914, the workers were not routed and, with unresolved grievances, the class struggle intensified further as the economy entered a long wave of contraction.

It is important to note that cyclical fluctuations of business cycles continue to operate in long waves of contraction, except that the effect of booms are not as pronounced, while slumps are felt more acutely. Owing to the exogenic effect of World War I, which created difficulties with importing goods, there was a boom in agriculture and industry between 1915 and mid-1920 (Katzen 1964, 73). In agriculture, 433 000 black workers were employed, with the manufacturing proletariat increasing to 78 000 and black workers constituting 63% of the workforce (Feinstein 2005, 122, 60, 65).

At this point, about 20% of white mineworkers left for military service, thereby increasing the market power of remaining white workers (including recently proletarianised Afrikaner workers) with black workers now increasingly employed in semi-skilled positions (Johnstone 1976, 104, 107). In line with business cycle explanations, offensive strikes started to increase substantively on the upswing of the business cycle between 1916–1920. The trigger cause of the strike wave was inflation, which eroded the real wages of white and black workers. In the aftermath of the 1907 crisis, coupled with the depression of 1913/1914, capital could not allow the interruption of profits made during the boom and was on the defensive in the context of its decreased bargaining power. In tandem with business cycle explanations, the high number of days lost can be attributed to the magnitude in the number of strikes and not "contests of power", which had been characteristic of the prior strike waves. As the value of gold output was 30% more in 1920 than in 1918 (Katzen 1964, 74), mining capital could afford to make some concessions to white miners in terms of wages, war bonuses and cost of living allowances, but not to black workers (Davies 1979, 146). Business cycle explanations for these concessions appear plausible but seem unable to account for the resistance by mining capital

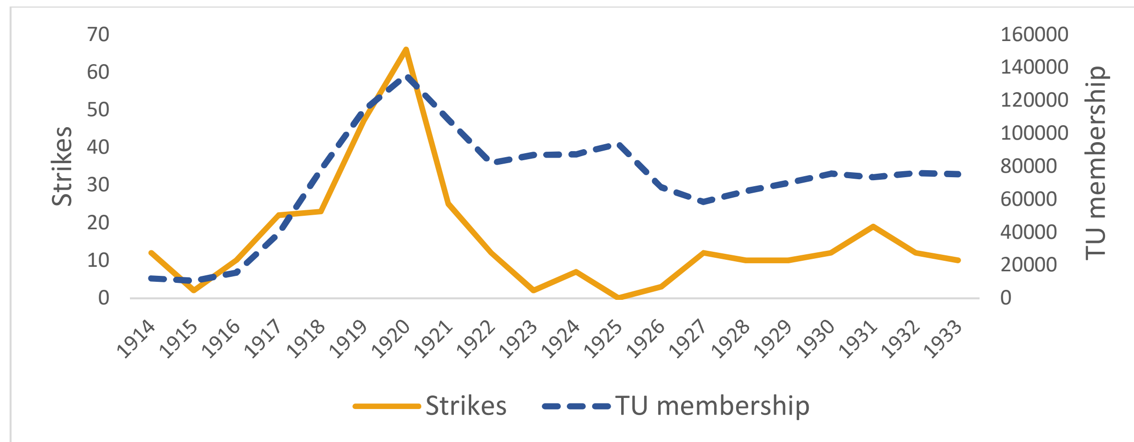
to make concessions to black workers. This shortcoming is unpacked in the remainder of this chapter.

By 1918, drought and the collapse of the reserve agriculture pushed 58% of African labour voluntarily onto the mines, thereby creating conditions for a permanent urbanised labour force (Bonner 1978, 16-17). Unlike the case of the remaining white miners, whose market power increased due to the war, black labour was now plentiful leading to a decline in its market power. This factor had offset competition from other sectors for cheap labour (Katzen 1964, 73). In other words, the voluntary migration of the reserve army of labour to the mines had the contradictory effect of weakening its market power despite a boom. Except for 1920, the boom in the long wave of contraction was not deep and was largely dependent upon fluctuations of the price of gold on the world market, rather than rapid increases in production and employment. Working costs remained high and by 1921 employment and profits fell once more (Katzen 1964, 74). To maintain profit levels, major concessions had thus to be limited to white workers. Black workers predictably resisted, but this was met with prosecution or brutal suppression, such as in the case of the 1920 black miners' strike.

The magnitude of the 1916–1920 strike wave, which occurred in a boom, was larger than that of the 1913/1914 strike wave, which occurred in a period of crisis. Grievance theory is thus confronted with a challenge since it is unable to adequately account for this disparity. There was expansion in employment which absorbed both white and black workers, and for the first time most black workers migrated to the mines on a voluntary basis. Worker grievances thus lay elsewhere, such as in the racial division of labour that had raised "worker consciousness" among black workers and in which black workers were seeking to equalise the terms of their exploitation with those of their white counterparts. These were fuelled by the inflationary pressures of the boom on wages and the general reproduction of workers and their families in both the reserves and urban areas. The shortage of white skilled labour caused by World War I and the employment of black workers in semi-skilled positions greatly enhanced their workplace power, which coincided with the boom and created the conditions for black workers to exercise the strike weapon effectively. Since black workers were excluded from major concessions granted to white workers, their grievances mounted and they consequently embarked upon strike action, despite it being a boom period.

Figure 7 demonstrates an apparent correlation between union membership numbers and the strike waves of 1913–1914 and 1916–1922, after which there is a break in the correlation until 1927 and again between 1931–1933.

Figure 7: Strike frequency and trade union membership (1914–1933).



Source: Union of South Africa (1924); South Africa (1960).

As indicated earlier, the increases in trade union membership had come at the end of each strike wave since 1907 and not vice versa and were the result of weak and not strong organisational capacity, as purported by mobilisation theory. The heightened level of class struggle between 1907–1914 and the disruptive power of workers at the point of production finally pressured hostile employers to recognise the white miners' union in 1915. By 1917 there were 32 new unions in the country with 39 152 members (Horrell 1961, 1). Similarly, it was the widespread strikes across industries in 1919 that gave rise to the structural effects which saw the recognition of all white trade unions, skyrocketing union membership to 135 140 (90 unions) (Horrell 1961, 5).

The most pressing challenge for mobilisation theory is that it cannot account for the phenomenal increases in the number of unorganised strikers who participated in the strikes. For one, the first black trade union, the Industrial and Commercial Union (ICU), which was only formed in 1919 with a membership of 24, called a strike of 3 000 unorganised dockworkers in Cape Town, and with sympathy strikes spreading to the railways, public works

and factories, a total workforce of 8 000 unorganised black workers went on strike.[36] These strikers constituted just under half of the 23 799 strikers in that year. In 1920, out of a total of 105 658 strikers for that year, 71 000 were unorganised African miners. The general strike by African workers lasted 11 days, affecting 21 out of 35 mines (Bonner 1978, 3). In suppressing the strike, 11 African miners were killed and 50 workers injured, including several on the side of government forces (Yudelman 1984, 150).

The inevitable question that arises is how was it possible that with 90 white trade unions in place, unorganised black workers were able to organise the most intense strike wave since 1907? In attempting to answer this question, it must be recalled that there were only 6 400 strikers in 1907, and 19 771 and 21 927 white strikers in 1913/1914 respectively. Furthermore, days lost in 1907 was 288 000, while amounting to 89 887 and 160 129 in 1913 and 1914 respectively, compared with 839 415 in 1920, most of which can be attributed to African workers.

To account for this astronomical increase in days lost, it must be remembered that the most consistent factor in explaining the widespread nature of the strike, since the long wave contracted in 1907, was the radical cost-cutting measures within a racialised labour process which facilitated the entry of black miners into semi-skilled jobs and who, at times, carried out voluntary skilled work. Despite these changes in skillsets, wages of black workers stagnated and had no direct bearing on the cyclical fluctuations of the business cycle, thus giving rise to longstanding grievances among African workers. These were further compounded by the needs of family in the declining reserve economy and their new lives as semi-proletarians. However, what ultimately brought matters to a head for African labour were the substantive concessions by mining capital to all white workers, amounting to almost one million pounds[37] and made possible by the extent of the boom in 1919. This factor, together with various others culminated in the explosive African miner's strike of 1920. First, there was the organisation of production and reproduction on compounds that had provided African workers with a readymade form of collective organisation, which had already been used effectively on a number of occasions. Second, their entry in the 1913 strike had no doubt provided them with some lessons in valuing

[36] See *South African History Online*, "Industrial and Commercial Union Timeline 1919–1989" https://www.sahistory.org.za/topic/industrial-and-commercial-union-timeline-1919-1989 [accessed 6 April 2019].
[37] See Katzen (1964, 18), Selected Operational Statistics 1888–1961.

their increased workplace power and how to utilise the strike weapon more effectively. The brutal defeat of the African miners, the immediate concerns of reproduction in recovering from the drought of 1912–1913, and the end of the boom weighed heavily on the miners and it would take another 26 years for them to recover and once more demonstrate their power.

The nature of the structural effects of the 1916–1920 turning point strike wave signalled a distinct change in capital-labour-state relations since, for the first time, mining capital and the state were significantly challenged by black workers. The strike wave also gave birth to the first black trade union, the ICU and laid the foundations for a generalised attempt at the unionisation of black workers across industries, manifesting in the Labour Convention of Native African Workers that was held in Bloemfontein. The discriminatory treatment of black workers spurred early mass mobilisation of the black population, led by the nascent nationalist South African Native National Congress (later called the African National Congress) which had been founded in January 1912 on the peak of the long wave. Overall, these structural effects saw the emergence of new forms of labour and political opposition to a social system based upon racial discrimination, oppression and exploitation.

For white workers, conversely, the structural effects secured the recognition of all-white trade unions and the concessions made to white worker during the boom of 1914–1920 to some extent quelled their discontent across industries, resulting in a decline in the number of strikes and strikers. However, the unsuccessful attempt by miners to extend the colour bar to include informally agreed on areas of work would lead to another "contest of power", culminating in the Rand Miners' Revolt of 1922.

6.4 The 1922 Turning Point Strike Wave

There were 1 339 508 days lost in the turning point strike wave of 1922, an historical record in the long wave of strikes. However, the number of strikes declined from the peak of 66 strikes in 1920 to 25 in 1921, with only 12 strikes in 1922. Similarly, the number of strikers declined from a peak of 105 658 strikers in 1920, to 9 892 in 1921 and 29 001 in 1922. How is this generalised withdrawal of most white workers from strike action to be explained after a successful wave of offensive strikes?

Consistent with business cycle theory, the large decline in the number of workers in strike action was related to the worldwide depression of 1920–1922. Mining capital was alarmed by

the sharp drop in the gold price, which threatened large-scale closure of mines, and thus undertook further cost-cutting measures to maintain profitability levels (Wilson 1972, 10). Fearing the effects of the depression, workers were hesitant to strike for fear of being retrenched in large numbers. Furthermore, the effects of the recession saw a much more determined struggle by all factions of capital to reduce costs, principally those of labour. Retrenchments occurred in both manufacturing and agriculture, the latter resulting in another wave of migration of "poor whites" from farms to the cities (Davies 1979, 149). At this time the market power of white workers had declined significantly as a large pool of unemployed white workers – those returning from World War I and the recently proletarianised Afrikaner workers – was seeking employment (Davies 1979, 126). This shifted the balance of power in favour of mining capital, thereby increasing its bargaining power. However, employers were cautious as experience had taught them that defensive struggles can result in explosive industrial action. They thus tried to negotiate further radical cost-cutting measures with white miners, but failed to convince them of the need. A showdown was looming with several protests in 1921 on the Rand by white workers against unemployment and the reorganisation of the labour process, which ultimately resulted in the Rand Revolt in 1922 (Davies 1979, 153, 156), a bloody rebellion in which 250 people were killed (Wilson 1972, 10).

However, the "depression was relatively short-lived and by 1922 income and employment began to rise again" (Katzen 1964, 73). While the 1922 Rand Revolt had taken place on the upswing between 1922–1929, it was against the backdrop of the long wave that was still in a period of contraction, leading to the defensive "contest of power". More precisely, the character of the 1922 strike wave was ambiguous. White workers, although on the defensive, had at this point also taken an offensive stance by demanding a formal extension of the colour bar to reserve areas of work for whites only, whereas previously it had only been informally enforced. For this reason, business cycle explanations offer great value in understanding the offensive and defensive character of strike movements, but only if short-term cycles are understood within long-term fluctuations (long waves) of the capitalist economy.

A pattern now began to emerge in which it become apparent that long-standing grievances that remain unresolved can play an important role in strike explosions, even on the upswing of business cycles, such as in 1914–1920 and 1922–1929, and not only in periods of intense economic crisis. Grievance theory, however, is not able to locate grievances over both the short-term and long-term fluctuations of the capitalist economy in which key grievances remain

unresolved and intensify along with a long-term decline in rates of profitability. Along the continuum of long-term economic contraction, mining capital could only maintain acceptable profit rates by undermining the colour bar and allowing a reorganisation of the labour process in which cheaper black workers could substitute white workers in semi-skilled occupations (Johnstone 1976, 121–123). Mining capital, fearing mining closures during the economic depression, sought not only to undo the colour bar and allow cheaper black labour to perform all semi-skilled work, but also to improve productivity with the introduction of new pneumatic rock drills in 1920 (Pogue and Ferraz 2016, 286). The continuous drive by mining capital to increase radical cost cutting had the consequence of completely eroding the workplace power of white workers. Thus, despite the relief of the boom in 1914–1920, the structural insecurity of white mining workers had persisted over a period of 15 years (since 1907), giving rise to long-standing grievances. The material basis of the antagonism between mining capital and white miners, expressed as the colour bar, had reached a tipping point in 1922, resulting in the most intense class warfare since the long wave of contraction had begun in 1913.

With 15 years of industrial action experience behind them, the trade unions were now in a stronger organisational position to give effect to a well-organised general strike. The general strike was called by the Industrial Federation and later led by an Augmented Executive, combining the struggle of gold, coal, energy and engineering workers. On the ground, leadership was provided by shop steward committees and a new form of organisation initiated by Afrikaner workers, the commandoes – a semi-military formation consisting of between 50 and 500 workers (Johnstone 1976, 131). Due to the moderate political nature of the leadership, the commandoes acted autonomously, and were established in every district, subdistrict and town on the Witwatersrand (Johnstone 1976, 77). In other words, the predominant form of collective action was undertaken informally by the commandos and the struggle once more, in contrast to mobilisation theory, took on the chaotic character of a revolt.

The defeat of the Rand Revolt of 1922 signalled the end, at least temporally, of white militant trade unionism. As shown, the most constant factor in triggering resistance by workers was attempts by mining capital to impose radical cost-cutting measures and undermine a racialised labour process in order to weaken the workplace power of white workers and, in so doing, increase profit rates in a context of an economic contraction that had begun seven years before the long wave peaked, giving rise to long-standing grievances. It is thus clear that cyclical fluctuations in business cycles had a marked influence on strike activity since they impacted

on the market power of workers, determining its oscillation between strong and weak bargaining power independently of the will of mining capital.

The immediate structural effects of the 1922 turning point strike wave were economic, with far reaching setbacks in terms of severe wage cuts and retrenchments, a radical reorganisation of the labour process and a rollout of cost-cutting technologies to increase labour productivity (Johnstone 1976, 138). These measures were codified in the annulment of the colour bar regulation in the Mines and Works Act in 1923, and in order to prevent strike action, the Industrial Conciliation Act, which suspended an automatic right to strike in favour of a conciliation procedure, was passed in 1924 (Horrell 1961, 9; Davies 1979, 169).[38] However, the structural effects of 1922 did not end here as white workers moved their grievances from the point of production to the point of reproduction. They used their associational power with two opposition parties who were in alliance – the Labour Party and Nationalist Party – and won the general election of 1924. The new government introduced an act, the Colour Bar Act of 1926, to protect white workers (Johnstone, 1976, 150). This turn of events led Webster (2017, 141) to argue that 1922 was a turning point because this "alliance laid the foundations for modern South Africa's white protectionist labour regime". While I support Webster's argument, Davies (1979, 182–190) contends that the impact of the Colour Bar Act reversed the advances white mineworkers had made prior to 1922 but nonetheless secured the protection of their supervisory role, a division of labour more or less in line with the interests of mining capital.

In my view, the primary reason 1922 can be regarded as a historical turning point (HST) is because, for the first time, capital in general was able to secure the broad conditions required to ensure long-term increases in profit, a precondition for the long wave of contraction to trough and allow for a long wave of expansion. This factor fundamentally distinguishes the structural effects of 1922 from previous waves.

The marked changes in the industrial relations system, which included those introduced through the Industrial Conciliation Act of 1924 and the wage determinations resulting from the Wage Act of 1925, for the first time acted as a countertendency to strike action. While strikes

[38] The act provided for conciliation boards and industrial councils, and strikes could only take place after failed negotiations with such bodies. This legislation also set the trend for centralised bargaining (Bendix 1989, 290).

still occurred, the number of white workers who went on strike declined dramatically, averaging 3 946 between 1926–1933. Furthermore, the incorporation of white labour into the "civilised labour policy" (a political exchange) in government programmes for resolving the poor white problem further reinforced, at least temporarily, a decline in white working-class militancy. For the next 10 years (1923–1933), a period of relative industrial peace on the side of white workers set in.

This was despite the fact that the wage of white workers in mining dropped by 50% in 1922 and was only partially restored to 1920 levels years later, in 1934, even with an expansion of white employment.[39] While white employment in general industry increased with the government's policy of "preferential employment" from 192 000 (1924/25) to 218 000 (1929/30), the wage share declined from 49% in 1919/20 to 44% in 1932/33 (Feinstein 2005, 122; Davies 1979, 191). These measures assisted the economy in coping with the Great Depression of 1930–1933. While agriculture and diamond mining were severely hit, manufacturing was only slightly affected while gold mining in fact expanded. Unlike most other countries, the depression was not severe in South Africa which, according to Katzen (1964, 79), "must be largely attributed to the stabilising effect of the gold mining industry". After the great depression of 1930–1933, "the gold-mining boom which followed devaluation of the South African pound rapidly lifted the country out of the depression, and manufacturing industry made great forward strides between 1933–1939" (Houghton 1969, 118).

By the mid-1920s, fuelled by growth in the urban proletariat that created demand for consumer products, the manufacturing industry became increasingly mechanised, requiring additional semi-skilled labour. Consequently, the traditional division of labour in the labour process began to break down (Lewis 1984, 48). In the Cape and Orange Free State, there were no pass laws and thus many Africans were considered "employees" and could legally join a trade union. Several trade unions in Cape Town, Port Elizabeth and Johannesburg admitted Africans. (Horrell 1961, 61). By 1925 the ICU had lost its industrial character and resembled a mass movement. However, its attempt to affiliate with the white South African Trades Union Congress did not materialise, while its efforts to expand on a national level were severely curtailed by political and organisational deficiencies, resulting in a short-lived existence (Horrell 1961, 66). Another short-lived union was the Non-European Trade Union Federation

[39] See Katzen (1964, 18–19), Selected Operational Statistics 1888–1961.

which had claimed a membership of 10 000 (Horrell, 1961, 67). Established in 1928, it was one of a number of new black industrial trade unions formed on the wave of stimulation emanating from changes in the manufacturing labour process. At this time, black and white workers increasingly employed militant "non-racial" trade unionism to improve conditions, with manufacturing accounting for most of the strikes in this period of "new" unionism. The breakdown of the craft system, with rapid de-skilling in manufacturing, resulted in decreased differentiation between white and black workers in terms of skill. This period also witnessed more black than white workers participating in strikes (Lewis 1984, 56, 64).

Despite the upswing of the business cycle of March 1922–August 1929, most wildcat strikes in this period were both offensive and defensive and were related to the victimisation of trade unionists (defensive) and to the enforcement of minimum wage rates (offensive) as determined by wage boards (Lewis 1984, 63). In line with business cycle theory, the strikes were short, in no way comparable to the period prior to 1922. This can be attributed to the willingness of business to compromise since the market power of black workers had increased owing to the favourable economic conditions and the short supply of workers in a rapidly expanding manufacturing industry (Lewis 1984, 63).

6.5 The 1934 and 1937 Turning Point Strike Waves

The strike waves that occurred during the long wave of expansion took place during the upswing of the business cycle of July 1932–April 1937. While strikes still occurred in mining, the number of white workers on strike had declined to an annual average of 2 362 between 1923–1929 from an average of 21 736 between 1913–1922. This huge drop in striker numbers was the result of an effective "conciliation" system which had bureaucratised the trade unions (Davies 1979, 194). There was also a steep decline in militancy, related to the advances made by government to implement its "civilised labour policy" to absorb "poor whites" into government employment programmes, with special schemes in rural areas and apprenticeship training for the manufacturing industry. The displacement of an estimated 10 000 African workers from farms, who were replaced by white workers, led to increased migration to urban areas, especially Johannesburg, in the search for work, resulting in greater levels of African unemployment in urban areas (Davies 1979, 251–252, 256). The role of Wage Boards, which had been set up as a result of the class struggle to subdue the white proletariat, at the same time no longer played an effective role, owing to competition between manufacturers who were increasingly employing black workers. This was, however, offset by the "civilised labour

policy" which provided skills training in manufacturing for "poor whites", increasing significantly the numbers employed and their remuneration (Davies 1979, 265–266). Thus, in this period of rapid growth, the "poor white problem" was largely resolved and with this the problem of white working-class opposition (O'Meara 1975, 150).

My results (Table 5) for the 1930s show a strike wave in 1934 with 52 132 days lost and a peak of 5 906 strikers in 1937. While there is very little documentation on the strikes, the strike wave in 1934 may in part be attributed to a seven-week strike in all the factories in the furniture industry in the Transvaal (Lewis 1984, 56) in a period of rapid expansion of African trade unionism and within the context of the war economy. Membership of black workers in unregistered trade unions grew from 31 000 in 1933 to 36 600 in 1939 (Davies 1979, 262). In my view, the turning point strike wave occurred in 1937, probably primarily owing to a series of strikes in Durban where employers had made several piecemeal concessions to African workers. The impact of this wave was significant and prompted a meeting of employers to request the government "to go into the general question of native wages and betterment of labour conditions on a national basis with the minimum of delay" (Davies 1979, 263). Consequently, the Industrial Conciliation Act of 1937 was introduced, which entitled industrial councils to introduce wage determinations covering all workers regardless of race – the structural effect. This legislative change was a weak countertendency to strike, as not only were black workers still excluded from the definition of an "employee"; they were denied trade union recognition and ousted from skilled work (Davies 1979, 266–267).

The strikes of black workers in manufacturing in the 1930s were in no way comparable to the explosive strikes between 1907–1922 and are marked by low rates of production days lost. This is evidenced in the fact that overall the value of manufacturing production more than doubled from R115m in 1925 to R281m by 1939.[40] As a long wave of expansion is only possible through rapid rates of increased profitability (Mandel 1995, 11), a "major cycle began towards the end of 1939" (Katzen 1964, 90). Considering these facts, we can safely estimate that the long wave of contraction troughed *circa* 1939. In total, South Africa's third long wave lasted 53 years, with an expansionary wave of 27 years and a depressive wave of 26 years.

[40] See Houghton (1969, 253) Table 16: Growth of the private manufacturing industry.

At this point, with a newly established urbanised black semi-proletariat, the necessary ingredients for an offensive had not yet come into being. By the end of the depressive long wave, the social weight of the black proletariat had begun to expand further in a new labour process, breaking down the historic craft unionism, which would in the future shift the axis of class conflict from white labour to black labour, capital and the state. The conditions for the next surge in strike activity would be the stimulus produced by World War II in which manufacturing would outstrip both agriculture and mining as the lead sector of the South African economy.

Chapter 7: Strike Waves of the 4th Long Wave (1939–1990): The Advent of Apartheid Capitalism

By 1938 the contribution of manufacturing to South Africa's GDP was greater than that of agriculture, although it was slightly lower than mining's (Feinstein 2005, 126,129). With the advent of World War II (1939–1945), conditions were created in South Africa that stimulated the country's systems of innovation. In addition, the expansive war budget derived from substantive increases in social capital (taxes) allowed South Africa to expand production in mining and textiles, with an emphasis on manufacturing (Scerri 2016, 172). By 1940, the state had established the Industrial Development Corporation (IDC), providing increased support for industrial expansion and facilitating an additional means to deal with remaining aspects of the "poor white" problem (Feinstein 2005, 123–125). By 1943, manufacturing outstripped mining's contribution to GDP. The subsequent substantive increase in profits enabled *radical* technological innovation in engineering, machine tools, electrical motors, radio, ship repair, and construction using high grade steel from the state parastatal, the Iron and Steel Corporation (ISCOR), which had been established in 1928. This period also saw employment trends swing massively towards urbanisation, with 28% of the population – comprising 68.2% white, 19% African, 58% coloured and 69% Indian – migrating from rural areas to towns and cities. (Houghton 1969, 239). This too stimulated demand for manufactured goods. Consequently, national income grew by an average of 8.3% between 1939–1962 (Katzen 1964, 90) with an average rate of profit of 23.4% between 1939–1948 in manufacturing.[41]

South Africa made great strides in the modernisation of its economy, "from small-scale craft workshops to large-scale factory production" during these years (Lewis 1984, 45) and it is within this context that the strike waves of 1941–1947, mark black workers overtaking white workers as the predominant working class sector and the advent of their generalised use of the strike weapon.

7.1 The 1941–1945 Turning Point Strike Wave

The expansion of manufacturing saw a concomitant increase in competition between manufacturers for labour, thus increasing the market power of workers, including women, across the racial divide. Consequently, on the back of the upswing of the business cycle between 1939–1946, there was an increase in strike frequency in the 1940s and, quantitatively,

[41] See Alexander (2000, 121), Table 10.1: Rates of exploitation and profit in South African industry.

these were numerically vastly superior to those in the 1930s, with an average difference of (F) 22 and 49 strikes, (S) 3 845 and 19 404 strikers and (D) 21 164 and 123 109 days lost across the two decades. It is important to note, however, that the majority of increases in F, S and D are attributed to the offensive strikes by African miners in 1946 and white builders in 1947. Further, cognisance must be taken of the fact that a general agitation over price inflation resulting from World War II formed the trigger cause of the offensive strike wave in this period (Alexander 2000, 128).

In 1941, there was a spontaneous offensive strike by 330 workers at the H. Jones & Co canning factory in Paarl. It lasted approximately four weeks and comprised mainly coloured female and African male workers who made up the bulk of the semi-skilled and unskilled workforce. The employer failed to employ successfully white scab labour and was later forced to accede to workers' wage demands and to recognise the trade union. This strike was followed shortly by another successful strike of 150 women at a second Paarl factory. The resulting agreement between workers and employers was extended throughout the Western Cape (Alexander 2000, 41).

The major strikes in 1942 included another Jones strike at a branch in Port Elizabeth and later a four-week strike by African, Asian and Coloured workers at Morton's food canning factory in Durban. There was also a week-long strike by African dock workers and the Dunlop strike by African, Indian and white workers in Durban which lasted for three months, as well as a five-week sweet worker strike by African male and white Afrikaner female workers (Padayachee, Vawda and Tichmann 1985, 107, 122; Alexander 2000, 44, 128). The economic upswing combined with the upshot of reduced bargaining power of employers finally, by 1942, resulted in a crucial structural effect, the "administrative" recognition of black trade unions (Lewis 1984, 159–160). Simultaneously, however, as a countermeasure, War Measure[42] No. 145 of 1942 – itself another structural effect – outlawing strikes and imposing huge fines and imprisonment on Africans, was extended to cover all industries (Horrell 1961, 60).

This measure, however, did not impede the use of the strike weapon and in 1943 there were major strikes. In the Transvaal, there was a three-day strike at clothing factories at which 70% of the 7 000 strikers were white women, as well as two three-week strikes, the first a 3 000-

[42] The War Measure, No. 9, banned strikes in essential services linked to the war industry (Horrell 1961, 60).

strong shop workers' strike also comprising predominantly white women and a 900-strong white building workers' strike. In 1945, in Durban, 1 400 white engineers went on strike for five days and 700 Africans and Indians in the laundry industry went on a strike that lasted approximately three months. There was also a strike in the dried fruit industry that lasted for about 30 days, while Witbank collieries had six strikes sparked by a demand for changes in working hours and wages (Alexander 2000, 128, 75; Padayachee et al. 1985, 122). Between 1939–1945, 81% and 78% of all strikers and days lost are attributable to black workers and the average wage of black workers increased by 96%, resulting in a reduction in wage disparity between black and white workers (Alexander 2000, 129, 39). Of great interest is that many of these strikes were "contests of power" that occurred during a boom and not a crisis, with workers invariably emerging as victors.

While business cycle theory can most certainly account for the offensive character and high frequency of these strikes, it is unable to provide an explanation for their lengthy duration, since the theory assumes that with reduced employer bargaining power in a boom quicker resolution of disputes should occur. Similarly, contrary to the logic of grievance theorists, the positive economic situation had provided the impetus for successful mobilisation at the beginning of the long wave of expansion. Grievance theory would consequently most certainly be at a loss in explaining the "contests of power" in a period of a boom, since grievances are persistent whatever the economic conditions. The question, thus, in this context of shortcomings in both business cycle and grievance theory, is whether mobilisation theory can account for the "contests of power" in a period of a boom.

The strike by 330 workers at the H. Jones & Co canning factory in Paarl in August 1941 was spontaneous, triggered by the dismissal of the leader of the non-racial Food and Canning Workers' Union (FCWU) which had been formed in 1941 in the Cape. The dismissal was the company's reaction to a list of demands the union had sent. The strike committee was union-dominated and provided sufficient organisational infrastructure to collect strike funds and gain the solidarity of seasonal workers who refused to scab, unlike white workers who were nonetheless eventually forced out by the workers in the factory (Alexander 2000, 41). There is little doubt that the level of organisation achieved among workers, facilitated by the union, enabled the prolonged nature of the strike, forcing the employer finally to succumb. The duration of the strike was not related to lack of resources on the part of the employer but to its intransigence in acknowledging the right of the trade union to organise, which led to the spread

of the strike to another factory later in the same month. The consequent victory of these strikes resulted in a wave of unionisation in the Western Cape and Port Elizabeth as well as an extension of unionisation in the dried fruit industry (Alexander 2000, 41). Thus, while the H. Jones & Co started spontaneously, the trade union played an important role in sustaining it, providing the impetus necessary for it to evolve into a turning point strike.

The majority of strikes in 1942 were spontaneous and short, with victories in one industry giving rise to a "cycle of disputes" in others, which encouraged trade union growth (Padayachee et al. 1985, 42). In this context, three longer strikes stand out. The first two were successful – a month-long Morten strike led by FCAWU after it had established a branch in Durban and a six-week strike led the Sweet Workers' Union (SWU). The third, the three-month Dunlop strike organised by the Natal Rubber Workers' Union (NRWU), however, ran up against new employer tactics, such as the formation of inter-industry and inter-sector co-ordination to crush strikes (Padayachee et al. 1985, 107–108). Thus, despite being considered the most "racially mixed" at the time, the Dunlop strike was crushed by employer repression and the new scheme of establishing a yellow union, involving the recruitment of migrant workers from the Eastern Cape to scab.

The 1943 successful three-week shop workers' strike was initiated by shop stewards of the "non-racial" National Union of Distributive Workers (NUDW) and supported by the African Dairy Workers' Union (ADWU) in which broader solidarity and public donations added to sustaining the strike (Alexander 2000, 66–67). The 1945 laundry workers strike for increased wages and recognition of their trade union was organised by the National Union of Laundering, Cleaning and Dyeing Workers (NULCDW). As with the 1942 NRWU strike, employers refused to recognise the union and ensured that picketers were arrested. Scuffles also broke out between workers and scab labour. Thus, despite enormous solidarity from other unions, the Communist Party and the community, the strike was defeated, and most workers dismissed (Alexander 2000, 66–67).

Three key factors determined employers' responses and the tactics they employed during this period. First, resistance of employers to workers' demands can in part be explained by the unexpected nature of the groundswell of discontent, coupled with the high levels of self-organisation primarily in the form of worker/strike committees and the leadership provided by trade unions. Second, although manufacturers could afford concessions to workers, the boom

and expansion in manufacturing were both inextricably linked to World War II. This created uncertainty among employers, particularly those that were more dependent than others on the War for income generation, dampening their expectations of maintaining their current profit levels and informing their responses to threats of strike action. For example, Dunlop was involved in making tyres for vehicles used in the War and its offensive against the union was undoubtedly informed by this factor (Alexander 2000, 49). Third, manufacturing had expanded phenomenally between 1925 – with 6 009 establishments – and 1949 – with 12 060 establishments. Consequently, a case can be made that some employers, especially in newer industries, were inexperienced in industrial relations and had not yet developed strong employer organisations to co-ordinate their response to the increased levels of worker mobilisation.[43]

Mobilisation theory can certainly account for a new level of organisational capacity reached in the 1940s as well as the "contests of power" which were of longer duration. However, it falls short in explaining the fact that most strikes were spontaneous in character with increased levels of self-activity providing the basis for the development of trade union consciousness and growth in trade union membership. In 1941, the Council of Non-European Trade Unions (CNETU) was formed as an umbrella body of trade unions and by 1945 had 158 000 members in 119 affiliates, becoming the largest trade union federation at the time.[44] This was a significant achievement because unregistered trade union membership had stood at 36 000 only six years earlier (Davies 1979, 262). Clearly, the growth of trade unionism in the 1940s was yet again an outcome of strike waves. However, how can the most successful waves of mobilisation by black workers in the first half of the 20th century, which occurred in this decade, be explained?

Long wave theorists would argue that the answer lies in the structural changes that occurred in the long wave of expansion and in the context of the war economy. The labour shortages created by the war saw the relaxation of influx control measures to facilitate the flow of African labour to urban areas, and combined with manufacturing's simultaneous need for a stable, urbanised proletariat, this had the unintended effect of increasing the structural power of black workers. Black workers covered by the Wage Act of 1925 made up the majority of the semi-

[43] See Houghton (1969, 253), Statistical Appendix, Table 16: Growth of private manufacturing industry.
[44] South African History Online, https://www.sahistory.org.za/topic/timeline-labour-and-trade-union-movement-south-africa-1940-1959 [accessed 26 April 2019].

skilled (African 31%, coloured 20% and Indian 11%) and unskilled (80% African, 13% coloured and 5% Indian) workforce, while white workers made up 85% of skilled labour.[45] Although this sample may not be representative of the entire manufacturing sector in terms of changes to the labour process, it does indicate that at least half the manufacturing workforce was in semi-skilled employ.

The relative stability of the workforce during the 1940s compared with the 1920s and 30s can be largely attributed to the abundance of employment opportunities that created a situation in which the positions of skilled and semi-skilled white workers were not threatened. In addition, competition between black and white workers for jobs was low, enabling them to cooperate in the labour process. Combined, these factors explain the "multi-racial" character of many of the strikes that focused on airing their common wartime grievance – high inflation. However, for black workers, this was not their only grievance; they had others that were longstanding ones related to the "civilised labour policy" that still functioned in manufacturing through skill levels and remuneration, the denial of trade union recognition and their general ousting from skilled work (Davies, 1979, 266–67). Nonetheless, the overall structural position of black workers had strengthened with the changes in the labour process and the convergence of the conditions outlined above resulted in a situation that was conducive to the proliferation of industrial trade unions. While strikes in manufacturing continued throughout 1946, it was now the mining industry that bore the brunt of the most intense battles between labour and capital.

7.2 The 1946 Turning Point Strike Wave

The nature of the 1946 strike wave is illuminated by the numbers: (F) 53 strikes, (S) 95 574 strikers and (D) 209 289 days lost. Most of the strikes and days lost can, however, be attributed to the first general strike in 26 years by African miners who were now buoyed by the extensive successes of black workers in other industries and the escalation in trade unionism. The reaction of the 600 policemen to the strike was swift and brutal, resulting in 1 000 arrests, 1 248 injuries and the death of 9 mineworkers (Moodie 1994, 231), raising a crucial question: What was the basis of the distinctive response of the state and mining employers to black mineworkers compared with responses of manufacturing employers?

[45] Own calculations based on Alexander (2000), Table 1.4: Profile of 209 318 workers, covered by wage determinations, 1937–1946.

Business cycle theory is unable to account for the exogenic effect the war economy had on the mining industry's industrial cycle, which had contracted, unlike manufacturing, which grew rapidly, providing impetus for the boom. Broadly speaking, by 1946, the upswing of the business cycle was ending, and the volume of gold output had fallen. In effect, the large volume in imports leading to spiralling inflation was not offset by commensurate increases in the value and volume of gold production or employment, which had been in decline since 1942.[46] Thus, in contrast to manufacturing workers, the market power of African mineworkers had weakened during the war economy, while the bargaining position of mining employers had hardened.

Numerous factors that contributed to the overarching context of the 1946 general strike by African mineworkers must also be considered. Foremost is the fact that although manufacturing had overtaken mining as the lead industry, the mining sector played a central role in foreign exchange earnings and the balance of payments position on which all sectors of the economy[47] were reliant (Fine and Rustomjee 1996, 72). The stakes for government were therefore huge as mining contributed significantly to its social capital contributions. Furthermore, the commissioning of the new Free State mines, required to raise profits and keep the state's coffers filled, was threatened by the 1946 general strike (Katzen 1964, 58, 93; Houghton 1969, 103). Second, while a substantial portion of black manufacturing workers were urbanised, the black mining workforce remained largely migrant. Third, there were a number of crucial structural differences between mining and manufacturing that resulted in strategic differences in the way they related to labour. Gold mining had a fixed international market, independent of local conditions, while for manufacturing the domestic market was critical and permitted economies of scale. Another difference was that mining could exist on an oscillating, coerced migrant labour system with on-the-job training, whereas manufacturing required a stable, urbanised, skilled and semi-skilled proletariat (Feinstein 2005, 128–129). Fourth, the grievances of black miners were longstanding and related to a deepening crisis of reproduction in the reserves and on the mines. In addition, the War had caused increasing food shortages, that resulted in food riots, strikes and protests, igniting an escalation of tensions and strife on the mines. In this context, mineworkers' demands were offensive, focused on increased wages, better food,

[46] See Katzen (1964, 18) Selected operational statistics 1888–1961.

[47] It is important to note that the war economy had greatly impacted on the economic structure of South Africa and, by 1948, the lead sectors in terms of share of real GDP contribution were manufacturing (23.3%), followed by agriculture (16.4%) and mining (10%) (Feinstein 2005, 144).

improved living conditions and an end to the migrant labour system (O'Meara 1975, 159), triggering a general strike that once again took on a chaotic character.

Although grievance theory is unable to account for the extent of worker mobilisation in manufacturing, it does appear to provide a plausible explanation for the 1946 African mineworkers strike, as it took place during a contraction in mining that allowed cumulative grievances to spark the strike explosion. The strike was led by the African Mine Workers' Union (AMWU) which had been instigated by the Communist Party and the African National Congress (ANC) in 1941. In the broader context of urbanisation and trade union mobilisation, the African miners' associational power increased and allowed for greater levels of organisation, resulting in AMWU increasing its trade union membership to 25 000 by 1944 (O'Meara 1975, 155) out of a workforce of 320 000 black miners. But as Moodie (1986, 17) points out, the core support of the union came from mainly "proletarianised" urban miners, whereas most migrant workers were largely unorganised at the time of the general strike.

In 1944, the attempt by 1 700 ordinary members to strike was prevented on the grounds that the union did not want to disrupt the War effort (Alexander 2000, 103). In the background of growing discontent on the mines, AMWU decided to call a general strike which eventually affected 21 out of 47 mines (Moodie 1986, 28). This 1946 general strike was crushed within four days; the tenuous AMWU organisation failed to sustain the strike in the face of massive state repression and was forced to retreat in disarray (O'Meara 1975, 161). While the AMWU led the general strike, most of the organisation of the strike depended on the informal organisation of networks of migrant workers and was a "culmination of a very high level of worker mobilisation on the mines during the 1940s" (Moodie 1986, 2, 5, 35). Moodie, however, fails to recognise that the "moral economy" which resulted in specific non-union networks of solidarity was itself embedded in the social structure of the labour process, the migrant labour system and the immediate reproduction of the worker, where "compound existence was subordinated to the overriding needs of production" (Moodie 1986, 3).

The 1946 general strike, however, was not the largest in South African history at that point as Alexander (2000, 102) and O'Meara (1975, 161) have claimed. In terms of the number of

strikers, there were 71 000 African miners in 1920 and between 60 000–73 000 in 1946,[48] while in terms of days lost the wave years of 1920 and 1946 numbered 839 415 and 209 289 respectively. In fact, the days lost in 1946 was at the level of 1907 which had 288 000 days lost in a period when the effective use of the strike weapon had just begun to be used in earnest.

While both the 1920 and the 1946 strikes experienced severe repression, the former lasted two weeks while the latter was over in just four days, seeming to indicate that the persistence levels of African miners were much higher in the 1920s than the 1940s. A crucial distinction between the two incidents is that the general strike of 1920 was a wholly spontaneous affair, without the associational power of miners in the 1940s, and yet its reach to 35 mines far outweighed that of workers during the 1946 general strike. The assessment of Moodie (1986, 28) of a "very high level of worker mobilisation" is thus questionable and is in fact contradicted by his own facts. Although he questions the reliability of the count of 75 428 strikers, the police report Moodie cites indicates that the number of workers on strike after two days numbered only 21 296. The report by the Native Affairs Department which Moodie prefers, stated that of the 47 mines, workers came out in full on 11 and partially on 10, amounting to 73 557 workers. While the tally in the two reports is not dissimilar, the lower turnout on day 3 and partial turnout on 10 mines suggests quite convincingly that the level of worker organisation was not as strong as Moodie asserts, and that not only were workers quite divided on the strike, but also that their overall persistence levels were low. In this sense, the 1946 African miners general strike was the product of overall weak mobilisation capacity in both formal and informal organisation.

The obvious concern that requires interrogation is why the mobilisation of the miners in 1946 was weaker than that of 1920, some 26 year later. There are several possible reasons that played into one another. First, the workers in 1920 struck in prosperous times, which increased their market power, while in 1946 the strike occurred during a contraction of the mining cycle, when unemployment was increasing. Second, the conditions of reproduction in the reserves had deteriorated substantively between 1920 and 1946 and is likely to have atomised and fragmented the efforts of a more unified response by workers on the mines. Third, after the Colour Bar Act of 1926, power relations between white and African miners remained

[48] O'Meara (1975, 146) and Moodie (1986, 28) provide different estimates based upon their interpretation of mining employer and Native Affairs Department reports.

essentially the same. Finally, overall, the material conditions outlined above were not as conducive in 1946 as they had been in 1920 for a general strike.

Nonetheless, as most of those before it, the 1946 black miners' general strike, though quickly quelled, had structural effects. For O'Meara (1975, 146), this was a turning point as it would "profoundly affect...the direction and thrust of Africa opposition" from elite action to mass political action as well as function as a catalyst for the realignment of white politics, resulting in the National Party winning the 1948 elections. While I agree with his assessment, I argue that O'Meara (1975, 161) overstated the structural effect of the 1946 black miners' general strike because he considered it "the largest strike in South African history", one that accentuated the debate about a future South Africa. While O'Meara (1975, 165) acknowledges the 1947 white builders' strike as significant, he nevertheless does not accord it any structural effects. This is an erroneous stance since, as is shown in the next section, this strike played a direct role in the realignment of white politics.

7.3 The 1947 Turning Point Strike Wave

The strike wave of 1947, driven primarily by the nine-week long white building workers' strike, represents a peak in (F) 64, with (S) 28 848[49] and a sharp spike in (D) 716 105, far greater than the 209 289 days lost in the wave year of the 1946 African miners' strike. The scale of the days lost, the third highest since the 1920 and 1922 general strikes, indicates that the persistence level of white builders was very high.

This offensive strike took place in the upswing of the 1947–1948 business cycle. The boom in the building industry was directly related to the expansion of housing and infrastructure in urban areas and the new Free State mines, with new towns, railways and powerlines being constructed with state assistance (Wilkinson 1981, 10; Bell 2001, 32). In 1946, the Smuts government had set up centralised skills training schemes to cater for the skills shortage created by the building boom, which included the training of ex-servicemen and African artisans. The latter were viewed as a cheap source of labour to provide the much-needed savings in building social infrastructure for the "native housing" crisis resulting from rapid urbanisation in the 1940s. Despite the specific purpose for the training of African builders, the Building Workers'

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[49] White strikers numbered 22 268 and exceeded the number of black strikers for the first time since the commencement of the 1941–1947 strike wave.

Industrial Union (BWIU) perceived this as threatening the general position of white artisans and in 1946 had threatened a general strike (Wilkinson 1981, 24). This factor, combined with the upswing in the business cycle, provided much of the impetus for the second-largest white worker strike since 1922. What is unclear, however, and requires explanation, is the nature of the temporality of the "contest of power" that played out in the 1947 white building workers' strike.

In line with the short supply of skilled labour, the market power of the mostly Afrikaner artisans increased, while the influx of unemployed Africans to urban areas substantively weakened the market power of unskilled African building workers. The white building workers' strike, a "contest of power", took place in protest against a government training scheme for African building workers, the outcome of which was the dismissal of thousands of African workers (O'Meara 1975, 165; Lewis 1984, 162). While Lewis (1984) acknowledges the dismissal of the black workers, Alexander's (2000, 108–109) contribution omits it, with both failing to mention the Building Workers' Industrial Union's 1946 threat of a general strike in protest of the black builders' skills training programme. Owing to the support for the strike by the unions in the South African Trades and Labour Council (SATLC),[50] both Lewis and Alexander drew the erroneous conclusion that the success of the strike was in the interest of all workers, as black workers had benefited from a 40-hour week negotiated as part of the deal that ended the strike.

Against this backdrop, it needs to be understood that the grievances of white building workers were longstanding, as real wages had declined during the War and they had long demanded a 40-hour week (Alexander 2000, 108). The white builders, as part of the SATLC, felt threatened as they were aware of the advances black workers had made in manufacturing during the War. This, coupled with the influx of Africans to urban areas, resulting in waves of squatter movements over land access and state housing (Wilkinson 1981, 1) and culminating in the black building skills programme, most certainly raised the spectre of black workers dramatically eroding the marketplace and workplace power of white builders. But the insecurity of white builders was not limited to their perceived threat by black workers. The Smuts government had sponsored the large-scale immigration of 20 922 skilled white workers

[50] The SATLC composition ranged from conservative craft unions, white racist industrial unions and white dominated racially mixed industrial unions to non-racial industrial unions.

from overseas and was also planning the incorporation of 250 000 servicemen back into the economy (O'Meara 1975, 164). The skills training programme had not been open equally to all whites and the training of the ex-servicemen was prioritised (Davies 1979, 310). The Afrikaners at this point made up 60% of the white population and constituted 88% of unskilled white labour (Davies 1979, 165).

The temporality of the 1947 white builders' strike can thus be explained by the immediate post-War situation where the structural insecurity of white builders increased as a result of the combination of large-scale skilled white immigration, the planned incorporation of ex-servicemen into the economy and the training schemes for black workers in the context of planned expansion of social and economic infrastructure. This combination of factors would, in the minds of Afrikaners, sustain their subordinate occupational position in relation to English-speaking whites, while the skilling of black labour would substantively weaken their structural power and consequently their social status in South African society. Grievance theory in this context most certainly provides valuable insight into how the structural conditions facing white builders contributed to their strike action. However, since the theory assumes that grievances heighten during periods of crisis when worsening economic conditions are expressed in higher levels of industrial conflict, it cannot adequately account for the fact that the grievances of white builders in 1947 intensified during a boom and not a crisis. This is because the theory incorrectly assumes that grievances are lower in boom periods, as it does not take account of unresolved, longstanding grievances and the "opportunity cost" calculations workers make in utilising a boom to remedy their grievances.

An additional layer to the underlying explanation for the 1947 white building workers' strike is that several white builder craft unions were in existence at the time and had managed to coordinate their associational power through a joint job stewards' committee, which proved pivotal in mobilising efforts during the "contest of power" with the Smuts' government (Lewis 1984, 162). The government had intervened and pressurised employers not to make substantive concessions to the builders, but this backfired as the political overtones prompted widespread support from other trade unions (Lewis 1984, 162). The political intervention by the Smuts government explains the lengthy duration of the strike which, under normal circumstances, should have been resolved relatively quickly. In this instance, after nine-weeks, the white builders won a four-year wage agreement and a forty-hour week (Alexander 2000, 109).

Undoubtably, the trade unions in the 1940s were at a much stronger position at the beginning of a long wave of expansion, which can account for the lengthy duration of the strikes. We should recall here that booms are longer and recessions shorter within long waves of expansion, typically affording employers and the government greater room for concessions. However, the exogenic effect of the War had rapidly increased inflation and resulted in wartime shortages, which created uncertainty regarding expectations of future growth for both employers and the government. The offensive 1946 black miners' strike and the 1947 white builders' strikes both took place in the immediate post-War period when profitability was declining. In both cases, the Smuts government had taken a keen interest as these strikes had a direct impact on the economic plans for the roll-out of much-needed economic and social infrastructure as a stimulus for future development. Both strikes were a culmination of ruptures within a racialised social formation in which the future direction of South Africa's development was being contested. In this sense, the combined structural effects of the 1946 and 1947 turning point strike waves gave way to the political turning point of the National Party victory of 1948.

Seen in historical perspective, the political turning point in 1948 should be viewed as the intensification of the process that was unleashed by the historical turning point of 1922 in which the colour bar in mining would become more firmly entrenched in the structure of the South African labour market. This is supported by Webster's assertion that the structural effect of 1922 "laid the foundations for modern South Africa's white protectionist labour regime" (2017, 141) and that it marked the official incorporation of white labour in maintaining and perpetuating apartheid in South Africa.

The patterning of South Africa's strike waves and political turning point is consistent with the international long wave ruptures that took place between 1933–1948 (Silver 1992; Mandel 1995). In all countries, the post-War period marked political turning points with the advent of social democracy in Europe, and the communist revolutions and anti-colonial movements in the South.

7.4 The 1954–1957 Turning Point Strike Waves

Although the strike waves from 1954–1957 displays an increasing trend with the frequency of strikes on average 169% higher than in the 1940s, the fact that there were 65% fewer strikers and 90% fewer days lost indicates a significant loss in persistence levels of workers. Strike

statistics indicate that the number of strikes peaked in 1957 with 119[51] strikes, compared with the peak of 64 strikes in 1947, suggesting that organisational capacity of the unions had grown. What requires investigation is determining the factors that can account for this increased organisational capacity on the one hand, and lower persistence levels of workers on the other.

The post-War period between 1950–1971 saw increasing growth and profitability, with a peak in profitability reached in 1964 (as I will show later). The parity of the South African pound with pound sterling dramatically increased revenue to the mines and created a positive balance of payments position, which resulted in a low inflation rate allowing for increased investments in productive capacity (Bell 2001, 33–34). The general movement of strikes correlates with the trend of increasing growth, even in downswings of the business cycle, as an increase in strike frequency is consistent with the overall orientation of growth in a long wave of expansion. Thus, in the period under discussion, with the downswings of the business cycle being weak, the general thrust was one of economic growth in South Africa. In normalised conditions the lower levels of strikers and days lost would be consistent with this economic orientation, but with the advent of legalised, structural apartheid these reductions were more overtly *politically* determined.

The National Party introduced a range of racially discriminatory legislation to strengthen segregation, break non-racial unionism and create new measures to entrench job reservation more deeply than before. The Group Areas Act of 1950 was one piece of such legislation. It had far-reaching consequences, affecting black social classes harshly and depriving black trade unions of central office space in major cities (Horrell 1961, 65). The amended Suppression of Communism Act of 1951 was another, which targeted trade unionists with arrests. From this point on, strikes by black labour changed in character from being primarily economically driven (as in the 1940s) to being increasingly both economic and political. Furthermore, the legislative outcome of the 1946 strike wave was the Native Labour (Settlements of Disputes Act) of 1953, which imposed harsher conditions on illegal strikes (Arkin 1960, 313). However, despite the discrimination, the increased mechanisation of artisan functions saw the employment of Africans in industry rise from 308 000 in 1948 to 548 000 in 1960, a 78% increase. This was owing to the fact that once again the labour process in industry was

[51] South African labour history is found to be wanting in terms of analysis of the strikes in the 1950s and 60s and the records, where they do exist, are rather thin.

reorganised, much along the lines in mining, to increase the number of black machine operators, while simultaneously creating a white petty bourgeoisie comprising workers who filled skilled positions and supervisory posts (Davies 1979, 340). In contrast to the 1940s, the increase in the market power of semi-skilled black workers in this period was circumvented by increased control over the supply of labour and increased repressive measures. While the Council of Non-European Trade Unions (CNETU) had 50 unions with a joint membership of 80 000 by 1945, its affiliates experienced a high turnover of membership. In addition, in the aftermath of the defeat of the African Mine Workers' Union 1946 strike, the federation was struck with major political divisions that substantively weakened its capacity to respond to increased levels of repression. Despite these factors, there was a positive response to three general strikes for higher wages and the vote called by CNETU in 1950 and 1951, both occurring on the upswing of the business cycle between March 1950–December 1951. The overall upshot however was negative: with mass arrests of trade union leaders and with a weak organisational base, the federation faced a complete collapse.[52]

In 1955 the South African Congress of Trade Unions was formed (SACTU) from the remaining CNETU affiliates combined with affiliates that had left the more conservative, white-controlled Trade Union Council of South Africa (TUCSA). At the time of its launch, SACTU had only 19 trade unions with 20 000 workers.[53]

By 1957, a peak in strike activity for the 1950s had been reached, marked by the highly successful, offensive PUTCO bus boycott which involved about 60 000 township workers and residents (First 1957, 56). The unaffordability of bus fare that underpinned the PUTCO strike became linked to inadequate wages and was expressed in SACTU's demand for a general minimum wage of £1 a day. While SACTU organised the stayaway, which had a 70–80% success rate, repression hindered its capacity to build a factory base, which gradually resulted in its becoming the trade union wing of the ANC (Friedman 1987, 30).

Of significance in the nature of the strike waves of the period was the strike of the SACTU-affiliated African Textile Workers' Union at the Amato Textile factory in Benoni in 1958. The labour force, consisting of 3 700 mainly semi-skilled workers, was drawn from black,

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[52] https://www.sahistory.org.za/topic/council-non-european-trade-unions-cnetu [accessed 30 May 2019].

[53] https://www.sahistory.org.za/organisations/south-african-congress-trade-unions-sactu [accessed 30 May 2019].

permanently urbanised communities. The factory itself was large, with a highly capitalised production system utilising the most advanced technology, which required continuous production to maintain profitability (Bonner and Lambert 1983, 4, 14–15). Interruptions to production in industries employing advanced technological production processes are costly and this factor added significant leverage to the workers' workplace power. However, the underlying context of the strike mitigated against this advantage. In the downswing of February 1958–March 1959, Amato Textile was facing financial constraints owing to its rapid capitalisation and the Suez crisis which delayed material shipments. These constraints underpinned workers' grievances, which were related to the extension of the workday, greater intensity of work, despotic supervision, stagnation of wages and soaring rent and transport costs (Bonner and Lambert 1983, 18, 21). Thus, despite the increased workplace power of textile workers and a strong level of trade unionism, about 1 000 workers were dismissed. The repression of the strike was severe, and the defeats of textile strikes between 1957–1958 saw a collapse of the union (Bonner and Lambert 1983, 23).

The retreat of the unions in the 1950s marked the entry of the ANC as a mass organisation. The swing of the struggle to the reproductive sphere was a response to the general assault on African people in the form of rising transport costs, the introduction of passes for women and the institutionalisation of "Bantu Authorities" in the reserves. This period is considered the beginning of a decade of organisation and struggle, of the coming together of the economic and political in the form of mass demonstrations, boycotts, defiance campaigns, and strikes. This mobilisation was in part driven by the adoption of the Freedom Charter and the formation of South African Congress of Trade Unions (SACTU)[54] (MWT 1984). Shortly thereafter, in 1955, an alliance between the ANC and the newly formed SACTU was forged (Webster 2017, 5).

In 1955 SACTU had 19 affiliated unions with a total membership of only 20 000, comprised primarily of workers in the Food and Canning, Textiles and Laundry and Dry-Cleaning industries (MWT 1984). With this level of trade union organisation coupled with repression, strikes cannot be attributed directly to trade union mobilisation capacity but rather to responses by informal organisation in a context of political calls for defiance. This implies that offensive

[54] CNETU merged with 14 registered trade unions to form SACTU, the first non-racial federation (Friedman 1987, 27).

strikes during the upswing of the business cycle of October 1956–January 1958, at the point of production, were directly related to mass action in the reproductive sphere – a broad unified response by the working class. Trade union mobilisation had most certainly suffered a serious defeat and, unlike in the 1940s, there were no "contests of power", which, in part, explains the significant decline in the number of strikers and days lost. The brevity of the strikes and low participation of workers were therefore not linked to the "normal" cyclical aspects of the business cycle, but rather the result of political suppression. The outcome of the class struggle in this period saw a considerable increase in the racial wage gap and a general deterioration in the material conditions of Africans. The apartheid government responded to the heightened mass mobilisation in the 1950s with increased repression, resulting in the banning of African political parties such as the ANC, PAC and Communist Party in 1960 (Friedman 1987, 32).

In many respects, the struggles of black workers in the 1950s represent a reversal of the gains made in wages and the development of black trade unionism of the 1940s. However, the decline in or even absence of trade unionism was not synonymous with low levels of worker combativity, as my assessment of mobilisation theory since 1886 has shown, evident in the high frequency of strikes. Thus, contrary to popular perception, the 1960s was not a period of acquiescence, as shown in Section 7.5.

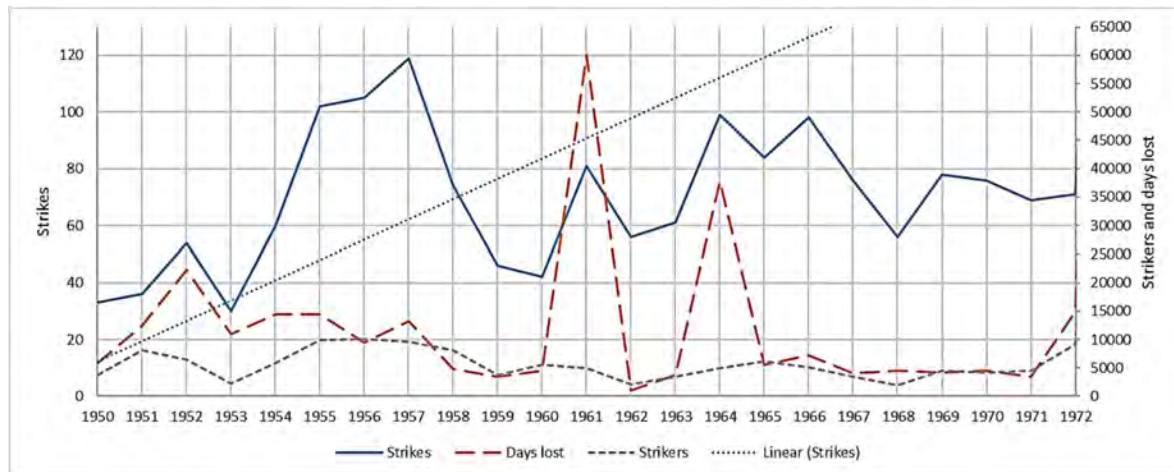
The structural effects of the strike waves of the 1950s were in the economic sphere. The success of the repressive measures of the apartheid government restored investor confidence "making for economic expansion [which was] sufficiently strong to force a break-through" and gathered momentum resulting in the "great boom" (Houghton 1969, 198–199). The repressive measures had managed to stem the outflow of capital, with huge foreign investments pouring in for the 22 new Anglo-American gold mines in the Orange Free State, Far West Rand and the Far East Rand that had started producing in 1951 (Bell 2001, 34; Feinstein 2005, 166). Another important development was the processing of uranium from gold residue and, owing to the Cold War, massive investments for the development of atomic energy flowed in from the United States and the United Kingdom (Feinstein 2005, 170). In this context, despite the growth of mining, manufacturing became the leading economic sector, registering an increase of 70% in the value of output within five years (Houghton, 1969, 201). South Africa, by acquiring equipment, machinery, and scientific and technological expertise was able to make rapid advances on the technological frontier (Feinstein, 2005, 173). It was only commercial

agriculture – in which there had been significant investment – that lagged, being subjected to the drought of 1964–1965.

7.5 The 1961 and 1964 Strike Waves

Despite the conventional characterisation of the 1960s as a period of worker acquiescence (see, for example IIE 1977; Hirson 1979; Friedman 1987; Maree 1987; Bonner 1987; Baskin 1991), the average number of strikes actually increased from 66 in the 1950s to 73 in the 1960s. Furthermore, average days lost across the two decades increased from 11 160 in the former to 13 299 in the latter, indicating continuity in the workers' struggle. However, strike data (see Annexure 1) reveals that the average number of strikers per year decreased from 6 788 in the 1950s to 4 235 in the 1960s. Strikes in the 1960s, as illustrated in Figure 8, peaked at 99 in 1964, while days lost hit two highs: 60 115 in 1961 and 37 849 in 1964.

Figure 8: Strikes, strikers and days lost (1950–1972).



Source: Annexure 1.

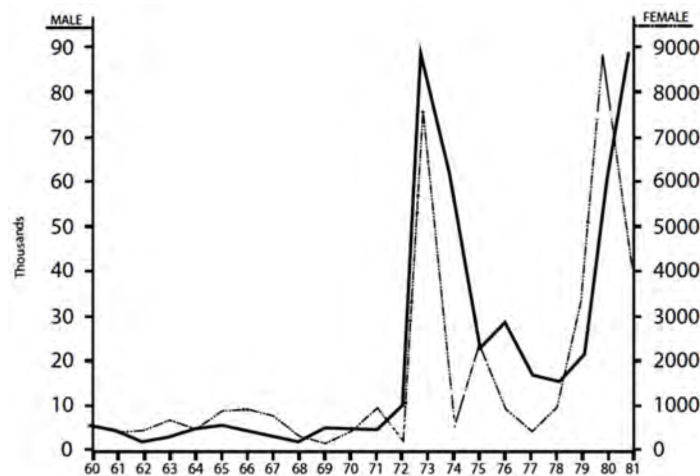
It is thus clear that the period was anything but one of acquiescence, highlighting the fact that those scholars who espoused it as such had not thoroughly investigated strike activity in this decade. Consequently, their notion of acquiescence was a perception based upon the effects of the banning of political opposition which saw a withdrawal of overt political mobilisation in the reproductive sphere in the 1960s and not a withdrawal of labour protest at the point of production.

It is instructive to employ Cohen's (1980) differentiation between "overt" and "covert" responses[55] in the workplace to illuminate different ways in which workers resist the imperative of capital to impose its will on the production-valorisation process. In the absence of studies of strikes in the 1960s and early 1970s it is not possible to examine covert responses in any detail. There are however short descriptions of strikes, which will be used to highlight both overt and covert actions of workers. The proponents of acquiescence failed to consider these more accessible "overt" indices of labour protest, i.e. strike statistics. Strike statistics, which are detailed, are a valuable, factual source of information from which to gauge strike dynamics. Strike statistics for the 1960s not only provide aggregate measures of F, S and D, but also the geographic spread of strikes, the industries involved and gender breakdown of those who participated in the strikes. Each of these indices helps to piece together what occurred in the 1960s, and an analysis of the strike data together with the fragmented descriptive accounts of strikes, shows beyond any doubt that the 1960s was not a period of acquiescence.

Figure 8 (above) shows that there was an upward trend in strike action between 1950–1972, illustrating that workers at the point of production were still combative despite the increased levels of repression. Furthermore, there were two peaks in days lost (1961 and 1964), both greater than any year in the 1950s. Although persistence levels dropped after 1964, the indices indicate that workers continued to resist the downward spiral in wages and working conditions inherited from the 1950s. While the number of strikers declined steadily after the peak in 1955–1958, it is nonetheless comparable with the 1950–1954 level. Most telling is that there were no marked breaks in F, S or D, which one would expect had it been a period of acquiescence, and by 1972 all the indices signal an upward movement prior to the outbreak of the Durban strikes of 1973. Furthermore, most strikes occurred in the major industrial areas of Pretoria–Witwatersrand–Vereeniging (PWV), followed by Durban–Pinetown and Port Elizabeth–Uitenhage. This indicates that strikes in the 1960s had a national character. Another feature that marked these strikes is the peaks of strike activity by females for 1963, 1965–1967 and 1971. These peaks consistently occurred before those of male strikers (Figure 9), illustrating that industries with significant levels of female employment were directly involved in strike action and were ahead of male-dominated industries.

[55] The former comprises actions such as strikes and protests, whereas the latter employs desertion, target working, task efficiency, time bargaining, sabotage of production, accidents and sicknesses, drug use and theft.

Figure 9: Male and female strikers (1960–1981).



Source: Author superimposition of Shane and Farnham (1985), graph 16 and 17).

Most strikes occurred in the consumer goods industries, followed by distributive, construction, mining and municipalities.[56] Consumer goods industries (clothing, food production, packaged goods, beverages, automobiles and electronics) are capital-intensive while construction, distributive, mining and municipal work are labour-intensive industries. The peaks of female strike activity are linked to consumer goods industries where women are employed in large numbers. Although the statistics do not provide a breakdown of strikes in the consumer goods industry, they establish that this industry accounts for higher frequencies in strike action.

According to a statistical report by Shane and Farnham (1985), the trigger causes of most of the strikes between 1960–1971 ranked from highest to lowest were working conditions, wages, payments and dismissals. Where days lost increased with peaks in 1964 and 1967, the main factor was, once again, working conditions.[57] While grievances related to wages are a constant feature of labour relations disputes, it is significant that most strikes were attributed to working conditions. This indicates that employers were engaging in changes to the labour process that workers were resisting. The strike indices further indicate that strikes were on an upward trajectory and days lost spiked in 1961 and 1964, and by 1972 there was an upward trend in all the strike indices, providing empirical evidence that the 1960s was not a period of acquiescence, despite the number of strikers showing a steady decline from the 1950s (i.e.

[56] See Shane and Farnham (1985), graph 41. The authors did not provide the actual data for their graphs, which limits the possibility of calculating actual percentage shares, per strike indices.
[57] See Shane and Farnham (1985), graph 29 and 30.

fewer workers were involved in strike action in the 1960s). What explains the lower participation of workers in strike action? The reason for this lower frequency of strikers during the 1960s can be illuminated through the lens of the various strike theories to highlight the combination of factors at play: changes in the economic situation, political events and industrial action that influenced a change in government reaction to strikes, including repressive measures, and employer approaches to strikes and wage determinations.

The strikes in the 1960s correlated with the great economic upswing of 1961–1964 and the general positive economic environment that prevailed until the early 1970s. In line with business cycle theory, the frequency of strikes increased, and while there were two spikes in days lost, the strikes were generally short. Further, amidst a situation of near full employment, the market power of black workers strengthened. It was further reinforced by the alarm of employers and the government at the high level of strikes in the late 1950s as well as, by 1960, the dramatic turn of events resulting in the Sharpeville Massacre and civil unrest spreading nationally. The government consequently declared a state of emergency and banned black political opposition. The immediate effect of these events caused massive capital flight from the country (Posel 1991, 237–238; Bell 2001, 34;) contributing to the weakening of the bargaining power of employers and the state.

In 1960, in Port Elizabeth, there was an offensive, two-month busmen's strike over pay, overtime and a change in the labour process in which passengers no longer acquired tickets from conductors but at a terminal building. This finally resulted in a wage settlement and a modification of the one-man bus system. Another notable strike by 4 500 Indian and African leather workers in Natal for higher pay (IRR 1961, 210–212) was unsuccessful. In 1961, the Congress Alliance organised what would – owing to political suppression – be its final stayaway – a three-day protest, in which SACTU played a central role, against the declaration of the South African Republic (Bonnin 1987, 164). The call for the stayaway was heeded by all the 1 500 workers at the BTR Sarmcol factor in Howick, which led to the banning of Harry Gwala's Rubber and Cable Workers Union and its leaders. The strike was thus crushed and the employers reasserted control "through restructuring the labour process" (Buhlungu 2010, 33; Bonnin 1987, 164–166). In 1961 there was an unsuccessful eight-hour walk-out by 300 nurses in Durban for the firing of 11 nursing students. However, the same year saw a successful strike by 360 match factory workers for higher pay, followed by another strike against the dismissal of a trade unionist and, later, 136 workers. The last notable strike of 1961 was by women toy-

factory workers who, with the assistance of SACTU, were granted pay increases. Although only 58 strikes are recorded for 1962, the intervention of Native Labour Officers, who ensured that grievances were settled, prevented 88 strikes (Horrell 1963, 215). The evidence thus indicates that the immediate effects of the state of emergency and the banning of political opposition did not deter strike action and that strikes were spread across industries.

In 1963, in sympathy with 50 dismissed workers at the Bata shoe factory in Pinetown, including executive members of the National Union of Leather Workers, Durban branch, 750 mainly Indian workers went on strike. Significantly, all the dismissed workers were reinstated. Two months later, 16 machines were damaged. Management and police suspected sabotage. Workers and management viewed reasons for the incident rather differently, with the latter regarding the dismissal of 100 workers and the temporary laying off of a further 600 somewhat euphemistically as "being a re-organisation...in progress" (Horrell 1964, 215). Another strike by 668 coloured and African workers broke out at a factory in Paarl after the dismissal of two workers. After negotiations, the workers were reinstated (Horrell 1964, 215).

There were two major offensive strikes in textiles in 1964. The first was by workers at the Consolidated Lancashire Cotton Corporation in New Germany, where 416 workers were initially dismissed, though all but 43 were subsequently reinstated. A simultaneous strike occurred in Benoni where 436 workers were dismissed, again over wages and working hours, although most were later re-employed (Horrell 1965, 266). Several disputes were settled amicably in 1965 without strike action (Horrell 1966, 139), while 31 strikes involving 1 800 African workers occurred in 1966, each quickly settled within approximately five hours (Horrell 1967, 230).

Twenty labour disputes involving 860 African workers occurred in 1968 but were settled without strikes. Another 33 strikes, arising from misunderstandings between labour and management, were also resolved quickly. A further 17 strikes comprising 665 African workers took place with two lockouts involving 30 workers. Strike action in 1969 turned against strikers and 59 workers were arrested for striking (Horrell 1971, 125). In addition, a strike for higher wages by approximately 2 000 dockworkers in the same year was quelled, with recruits from rural KwaZulu-Natal replacing the dismissed workers (Hemson 1977, 123; Cole 2013, 18).

In 1970 a strike involving 400 African coal workers at McPhail's Coal Yards in Johannesburg took place, after the dismissal of two workers; 84 strikers were arrested. In support, another 100 workers staged a sit-in, finally resulting in the release and re-instatement of the workers (Horrell 1971, 125). About 150 workers who embarked on a strike at a Benoni textile factory were dismissed in 1971. Their grievance related to the introduction of two 11-hour shifts that replaced the three regular shifts (Horrell 1972, 342).[58]

It is thus evident that workers were combative throughout the 1960s, engaging in primarily overt forms of industrial action, with a few incidents of covert forms, including sabotage of industrial equipment. A distinctive feature of strikes in the 1960s, however – namely the high rate of intervention of Native Labour Officers and employers in preventing strike action by reaching immediate settlements[59] – can, in part, account for the relatively low numbers of strikers in this decade. This, together with the short duration of strikes, reflects business cycle explanations of weakening bargaining power of employers and government in the context of a boom. However, it does not account for the distinctive feature of settlements without strike action. A possible explanation is that by 1960–1961 the great boom, combined with the explosive effects of increasing civil unrest against the backdrop of the Sharpeville Massacre, as well as the mounting levels of strikes, had a profound impact on employer and government policy on wages. Pursell's (1968, 95) study of Wage Board determinations during 1957–1966 indicates that real wages for labourers on average increased between 10–30%, sometimes reaching as high as 40% or more. On average workers' wages increased by 20% on the Witwatersrand and in 1961 workers' wages in commercial distributive trade increased on average by 30% (Pursell 1968 92, 98). Except in bag-making, there was no wage determination for textiles or for semi-skilled work across industries, indicating that in these cases the government felt wages were adequate. This explains the intensity of strikes in textiles.

Lipton (1986) and Crankshaw (1997) argue that market forces requiring a larger proportion of African workers in manufacturing and changes in occupational structure explain the significant wage increases that occurred in the great boom of the 1960s. However, in 1960, some 84% of African workers in manufacturing were in unskilled employ and had inherited wages below

[58] While the number of regular hours is not stated, it can be assumed to have been 8 hours per shift.

[59] According to records (Horrell 1960–1971), as many as 193 strikes (my calculation) were prevented this way. This excludes the unknown number of strikes in 1965 where settlements were reached without industrial action.

recommended subsistence levels. While substantive increases in wages are made possible by conditions of a boom, there is no automatic correlation between a boom and high wage increases. Average economic growth in the 1950s was 4.7% while in the 1960s it was 5.5%.[60] In both the 1950s and 1960s there was a shortage of unskilled and semi-skilled labour (Posel 1991, 154; Lipton 1986, 36). Despite the tremendous economic growth in the 1950s and the positive change in the economic position in the country, African wages declined in real terms. Clearly, multiple factors were at work. Although Pursell (1968, 93) acknowledges the expansion of the economy mainly contributing to higher earnings of African workers, he nevertheless suggests that, "political disturbance may have induced some firms to reconsider their wage structure."

Scrutiny of the wage determination process shows that the shift in policy of both employers and government towards increasing wages of unskilled black workers started in 1957, the year in which strike activity for the 1950s peaked (see Figure 8). It is important to note, however, that in the main, wage determination took place in the reproductive sphere and not at the point of production. This highlights the interventionist nature of the apartheid government as the manager of social discontent:

> The current policy of emphasizing and augmenting Bantu earnings is unique when compared with the Board's previous policies and is in sharp contrast with other South African labour policies. Wage determinations potentially could affect White workers' earnings but in reality, the Board's minimum rates have had a much greater effect on Bantu earnings. (Pursell 1968, 87)

Thus, the shift in policy toward wage augmentation cannot be reduced purely to economic factors since, although important, this process of wage augmentation should have already occurred in the 1950s. To understand the shift in policy we need to take a step back and understand what occurred in the 1950s in terms of wage determination:

> …the criterion of the "ability of an industry to pay" has for too long been a convenient excuse for sheltering the Wage Board. "Ability to pay" is not a constant factor – it is what management makes it. (Professor Horwood, *Financial Mail*, September 9, 1960; quoted in Horrell 1961, 202)

[60] See Statistics South Africa, KBP6006Z, Gross Domestic Products at market prices (1946–2016).

Horwood (1960) criticised the Wage Board's ineptitude in actions regarding remuneration levels that had increased poverty amongst black communities during the 1950s despite the positive economic position of the country. Horwood blamed employers' intransigence for not increasing unskilled wage levels on the tacit support they received from the Wage Board who did nothing in the face of a steep downward spiral in wages for an entire decade:

> Calls for increases in the wages of black wages became more urgent and vociferous after 1957, when the three-month bus boycott in Alexandra Township alarmed organised industry and commerce of the dangers of poverty wages. The Johannesburg Chamber of Commerce hastily established a Wage and Productivity Association, to persuade employers of the need to increase unskilled wages. The Wage Board then agreed to reassess wage levels in several unskilled occupations, but by 1959 few had been instituted. Many employers, too, were largely unmoved. (Posel 1991, 168)

Many employers remained obdurate in their intransigence as they had benefited from cheaper migrant labour, which they perceived as more passive and ignorant of trade unions and industrial relations compared to urban African workers who largely refused low-paid unskilled and semi-skilled work. This covert action asserted their market power and pushed up the entry level and wages in the urban labour market (Posel 1991, 168–169). However, the important point is that the initial determinations were made *post facto* in light of labour protest and not due to changing economic conditions of industry. The intransigence of employers would finally be broken and their illusions of the passivity of unskilled workers shattered as the immediate effect of the Sharpeville Massacre saw a sharp rise in industrial action. The disruptive action of the Sharpville three-day stayaway increased days lost to production from 13 208 in 1957 to 60 115 in 1961, a 355% increase. In April 1961, in the immediate aftermath of the Sharpeville Massacre, the House of Assembly urged the government "to continue the policy of gradually increasing minimum wages" (Horrell 1962, 201). The implementation of wage determinations was rapid and large scale; with 18 determinations[61] made from 1961–1965 covering unskilled workers across a wide range of industries, real wage increases (as discussed above) were by no means gradual. Overall, the extent of wage gains of workers in the 1960s constituted a general reversal of the wage losses in the 1950s and revealed the weakened bargaining position of both the state and employers.

[61] See Pursell (1968, 97), Table 1.

The statistical evidence, descriptions of notable strikes and the decisive change in the approach of government and employers on wage determination policy clearly demonstrate that the class struggle in the 1960s was not a period of acquiescence. What protagonists of the notion that the 1960s was characterised by worker acquiescence observed in the 1960s in actual fact reflected the movement of the working class, essentially withdrawing from working-class protest in the reproductive sphere in the 1950s to the productive sphere in the 1960s. More precisely, the struggles in the productive sphere show consistency from the 1950s to the 1960s as a long, drawn-out process of rebuilding organisational capacity that had been lost after the upsurge in the 1940s. In this context, business cycle explanations hold broadly for increases in strike frequency and strikes of brief duration in the 1960s but fall short conjecturally as to the political effects in the aftermath of the Sharpeville Massacre.

The grievances in this period increased not because of an economic crisis but because of the opportunity represented by the great boom, combined with political events, the conjunctural effects of which spurred workers to seek remedy for their longstanding grievances. Besides the lost wages and deterioration in working conditions inherited from the 1950s, workers were struggling for the right to representation through trade unions, as well as against the extremely adverse effects of apartheid on their social life. The oscillations between the productive and reproductive spheres of the class struggle between the 1950s and 1960s also signal that an urban black proletariat had now become a permanently settled social force. These oscillations, which have been overlooked in the literature, can be misleading, evidenced in the myopic view of the proponents of acquiescence. Instead, they must be understood for what they represent: partial retreats marking ebbs and flows in the course of the class struggle.

Just as business cycle explanations are unable to account for the political effects in the aftermath of the Sharpeville Massacre, so trade union mobilisation most certainly cannot account for the peak of 99 strikes reached by 1964, as most of the black trade unions had collapsed by then. It must, however, be remembered that SACTU still had organisational capacity in the 1960s and its few remaining affiliates continued to be combative and were involved in a number of notable strikes. A case in point is that although the African Textile Workers' Union had collapsed in 1958, most of the offensive strikes of the 1960s were in the textile sector, with the two most offensive textile strikes taking place in 1964. SACTU's

consistent commitment to setting up semi-clandestine workers' committees[62] in Natal (Lambert and Robert 1998, 129, 171–174) was instrumental in organising these strikes. Buhlungu (2010, 33), in addition, argued that democratic unionism existed and was revitalised by coloured unions in the 1960s, and would later contribute to the revival of trade unionism in the 1970s.

A significant feature of the notable strikes that occurred in the 1960s was their simultaneous response to the clustering of new cost-cutting technological advances that had occurred in the late 1950s and were rolled out in the 1960s amidst the great boom, five years before the peak of the long wave of expansion. For instance, the strikes in textiles, since the Amato Textile strike in 1958, were responses to continuous flow production, the extension of the working day and increases in the intensity of work. Similarly, the luddite moment at the Bata factory and the Sarmcol strike were related to the re-organisation of production. The introduction of cost-cutting technologies and their effects were more advanced in textiles than other industries, accounting for the temporality of the clustering of textile strikes that correlate with the peak of growth in the long wave of expansion. However, the strike wave of 1964 did not result in visible structural effects and can, at best, be described as a "revival upheaval" and not a turning point in the level of class struggle. The context of extensive state repression, the relative newness of changes in the labour process and strong management control over production explains why the turning point effect was muted within the immediate general level of class struggle.

Between 1963–1965, real economic growth rates increased to 7.7% per annum (Smit and Van der Walt 1972, 44) and "by 1964 the growth in real terms was beginning to decline" (Houghton 1969, 201) and "after 1965, the rate of growth slowed down somewhat...until the onset of the recessionary trend in 1975" (Crankshaw 1997, 95). Price inflation had set in and created bottlenecks for several industries owing to increases in the bank rate (Houghton 1969, 205). Houghton's (1969) and Crankshaw's (1997) analyses corroborate this study's finding that the peak of the long wave (see Figure 18) was reached in 1964. South Africa's long wave of expansion had lasted 25 years, from 1939–1964.

[62] This form of organisation and mobilisation was crucial; as I argue later, its legacy played a role in the Durban strike wave of 1973.

The rapid growth of the South African economy and its demand for labour led to a phenomenal increase in the social and numerical weight of the urban African proletariat from 19% in 1936 to 32% in 1960 (Houghton 1969, 239). The total labour force had also expanded from 4.8 million in 1950, to 6.5 million in 1965 and 7.4 million in 1970 (Feinstein 2005, 274–275). In 1966, there were 616 000 workers employed in mining, 1.8 million in agriculture, 1.2m in manufacturing and construction and 2.5m in other sectors of the economy (Houghton and Dagut 1973, 201–202). While job reservation had been formally maintained, it was carefully determined and included exemptions to ensure that no large-scale disruption of production took place that would impede capital accumulation. The rate of exemptions increased after 1967, parallel with white mobility into white collar employment. In this sense, the concessions to white workers were increasingly given within the bounds of the dictates of capital accumulation (Davies 1979, 350–51).

7.6 The 1972–1974 Turning Point Strike Waves

Major growth in output occurred in the economic upswing of September 1972–August 1974, which ushered in the early part of the depressive long wave. This spurt of economic expansion had two interrelated results. First, it saw manufacturing employment outstrip mining and agriculture (Hindson 1991, 228), with the concentration of African manufacturing labour in large-scale enterprises higher in Durban than Johannesburg at 165 000 and 159 000 workers respectively (Henson 1978, 20). Second, it formed the context of the reawakening of the black proletariat. This was the outcome of both the black proletariat's absolute majority in semi-skilled and unskilled positions in large factories and its structural power (market and workplace power) in a relatively tight labour market. Combined, these gave the black proletariat immense capacity to disrupt production in the 1970s, reflected in the upward curve in strikes, with an annual average (F) 179 strikes or 145% more, (S) 27 947 strikers or 600% more and (D) 54 456 days lost or 309% more than in the 1960s.

The strikes of 1972 involved more workers than the average of all strikes combined for the previous five years: 9 224 workers compared with an average of 3 078, a 148% increase. In addition, the disruption to production owning to days lost was 262% higher than the average of the past five years. The initial rupture, the turning point strike, was the offensive PUTCO strike in Johannesburg on 2 June by 318 busmen. It was the first strike in the bus industry and had a major economic impact, since some 120 000 workers were unable to get to work. The busmen were skilled workers, with heavy duty drivers' licences (Friedman 1987, 45). They

thus had strong market power and could not easily be replaced. Further, they had significant logistical power, strategically located as they were, providing the critical service of transporting workers to various locations of production. The withdrawal of their labour power consequently had a two-pronged effect. It not only threatened their employer's profit margin but simultaneously impacted other industries. In this context, PUTCO conceded to a 30% wage increase (Hlatshwayo 2003, 21) and dropped charges against workers who had been arrested. An important outcome of this transport strike was that it was the first in the 1970s to give birth to a trade union, the Transport and Allied Workers Union (Friedman 1987, 44–45).

An unsuccessful strike for higher wages and a shorter working week by stevedores in Durban occurred four months later, followed a day later by a more successful informal wage strike at the Cape Town harbour. The stevedores were employed by stevedore companies that had increased working hours from 60 to 70 hours per week (Horrell 1972, 327). The 2 000 stevedores at Cape Town harbour introduced a new tactic and "applied an overtime ban, which requires more discipline than a strike, for a month" (Friedman 1987, 45). This successful strike was significant as not only was it the longest strike (31 days) for the 1970s; but it had also been actioned without trade union assistance.

The Sover Diamond Mine was the next strike location, where on 25 October 142 miners embarked on an unsuccessful strike in which 20 leaders were arrested and imprisoned for 80 days (Biko 1973, 119). A day later, on 26 October, 50 workers at a textile factory in Benoni were fired for refusing to accept a 12-hour per day shift. It was introduced after workers had demanded a wage increase. In December two unsuccessful separate strikes in Johannesburg by 200 and 150 bus drivers occurred in the bus industry. The drivers demanded the dismissal of bus inspectors who were involved in physical altercations with them.

There were 35 strikes in total involving Africans in 1972 (Biko 1973, 118–120). The initial ruptures that occurred in the transport industry (bus and stevedore workers) spread from one location to the next, reinforcing ruptures in these other locations. The strike wave continued and a few weeks after the bus worker strikes, the strike dynamic shifted to Durban where the 1973 strike wave commenced.

The 1973 strike wave was characterised by a massive spike in frequency (370), or 598% more, number of workers (98 378) or 3% more and days lost (229 281) or 10% more than the 1946

turning point strike wave. It was also unprecedented in its spread. Ironically, the locational configuration of large-scale industry abetted this escalation. The clustering of industries in industrial areas provided the conditions for the pre-organisation of workers and the rapid spread of the strikes. In addition, with strikers visible, a strike in one industry rapidly ignited strikes in another and fanned out from one industrial complex to the next (IEE 1977, 99). For example, the initial strike on 9 January 1973 at Coronation Brick and Tile Company in Durban, involving both migrant and contract workers, triggered neighbouring factories to strike and, once the strikes had spread throughout the industrial area, they widened to other industrial areas in Natal (IIE 1997, 99–100). The strike wave in Durban itself comprised 160 strikes, unified 61 410 strikers in 146 factories with an average strike duration of 2–3 days, and achieved a 74% success rate in wage demands (South African Institute of Race Relations 1974, 2). The short duration of the strikes was in line with the economic upswing in "which most companies said that the increases had not damaged profits" (Friedman 1987, 49).

Strikes in 1974 were more widespread than the previous year. First, autoworkers came out on a great scale in East London, their strike triggering a wave of strikes similar to those of 1973, spreading from factory to factory and across industrial areas. The strikes took place at 21 firms, involved 8 500 workers and lasted longer (up to a week) than the Durban strikes (Turner (Mare)[63] 1974, 26). Then, textile workers in Durban struck twice. Strikes also took place in the dairy industry and on several mines in the Witwatersrand.

Business cycle theory offers the most plausible explanation for all the strike waves assessed in this four-year period, since they occurred on an upswing, were offensive in character and were overwhelmingly of short duration. However, business cycle theory cannot explain the sudden spike in strikes or strikers in the 1970s because, by limiting itself to economic fluctuations, it excludes the impact of changes in social structure and technology. In addition, the increase in the social (numerical) weight of the proletariat[64] is an insufficient condition for an explanation of the temporality of the initial turning point strike wave (ITP) occurring in 1972 rather than 1964. Similarly, since skills levels across various industries did not differ much between 1965–1973 (Table 3 below), this aspect cannot explain the strikes in this period. Furthermore, both the 1964 and 1972 waves occurred on the business cycle upswing and in similar political

[63] Rick Turner wrote the article under the pseudonym of Gerry Mare.

[64] The urban labour force had increased by a million between 1965–1970.

circumstances. What, then, can account for the initial turning point occurring in 1972 and not 1964?

The only explanation is that radical cost-cutting measures, driven by advances in technology, had only become generalised across various industries by 1972. This explains the marginal increases in the composition of semi-skilled and skilled workers and the reduction in unskilled labour between 1964–1972. Textiles account for the lowest and highest proportion of unskilled and skilled labour at 11% and 45%, respectively, indicating that the industry was highly mechanised. Between 1951–1961 textile growth quadrupled, with average employment increasing by 88% (spinning, weaving and finishing by 142%; knitting mills 121% and clothing 23%) compared to 11% in general manufacturing.[65]

Table 3: Comparison of percentage changes in composition of African unskilled, semi-skilled and skilled work in various industries, 1965 & 1973

	1965			1973		
	Unskilled	Semi-skilled	Skilled	Unskilled	Semi-skilled	Skilled
Mining	68%	24%	8%	64%	29%	7%
Manufacturing	39%	51%	9%	34%	57%	9%
*Textile	-	-	-	11%	30%	45%
Construction	70%	22%	8%	67%	20%	12%

Source 1: Selected data from Crankshaw (1997, 155–157)

* The figures for textiles are derived from the Institute for Industrial Education (1977, 37) exclusively for Durban.

We recall here that the rate of growth had started to decline in 1965 and that within the industrial cycle of various industries there is a lead-lag structure in profit rates due to competition which can never be completely synchronised. Textiles was the leader in introducing radical cost-cutting measures that increased after 1964, which explains the prominence of textiles in the turning point strike wave. A news report in 1967 on the profitability of the Edblo Group, a monopoly in textiles, stated that the:

> [r]ising costs of labour and materials have not yet been arrested, and in order to combat this position, greater attention was paid to the increase of productivity of labour and machinery and by installing of labour-saving devices…the reorganisation of some factories and offices [will

[65] See Barker (1963, 293), Table II: Comparative growth of the Cotton and Wool textile, and the Knitting industries, the Clothing industry and Manufacturing industries as a whole, from 1951–52 to 196061.

> ensure that] efficiency and profitability of the group will be maintained. (*Rand Daily Mail*, 11 November 1967)

In other words, by the late 1960s, textile manufacturers had intensified their efforts to cut costs in order to maintain profitability in the sector. Similarly, in 1970, the mining company Northern Lime stated that, "A certain amount of reorganisation has been necessary at the works, but this should pay off in the long term" (*Rand Daily Mail* June 10, 1970). Likewise, the Coronation Brick and Tile Company in Durban, which started operations in Durban in 1972, introduced automation and was the site of the first strike in 1973.[66] Further supporting the argument that technology-driven cost-cutting measures provide the most logical rationale for the initial turning point strikes occurring in 1972 and not 1964, Freund (1991, 116–117) asserts that research and development increased rapidly in the mining, manufacturing and agriculture sectors in the mid-1960s. Thus, the extent of reorganisation and the implementation of labour-saving technologies at the beginning of the depressive long wave become generalised throughout economic sectors by 1972 which, in turn, set off resistance on the shop floor and explains the magnitude of the strike waves. A seeming anomaly was the initial turning point (ITP) strike wave in 1972 that took place in the transport sector (busmen and stevedores) where there was no significant technological change. However, in these cases, ignition of the strikes resulted from grievances related to radical cost cutting involving wages, increased hours and intensification of work. For example, in March 1972, PUTCO had doubled its fleet between Johannesburg and Soweto to cater for the burgeoning workforce that needed to travel to the city every day to work. This resulted in the reorganisation of the busmen's working hours and an intensification of their workload without any increase in renumeration. They consequently went on strike in June 1972 (Horrell 1973, 148; 331–332). The strike by stevedores was related to grievances regarding increased working hours from 60 to 70 hours per week (Horrell 1972, 327). These examples are important because they highlight that turning point strike waves are not solely dependent on technologically advanced industries because strike explosions are the combined effect of "static and expanding industries, technically inert and dynamic ones" (Hobsbawm 1968, 145).

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[66] See Corobrick heritage, https://www.corobrik.co.za/heritage [accessed 9 July 2017].

However, if we consider the magnitude of the 1973 wave which had 98 378 strikers compared to 1946 and 1920 which had 95 574 and 105 658 strikers respectively, then 1973 does not appear to be more explosive than earlier waves even though there had been a significant increase in the permanently settled, black urban working class. The two basic explanations for this contradiction can be found in the structural differences between mining and manufacturing. The first difference is that mining, unlike manufacturing that is capital-intensive, is a labour-intensive industry. The second is that mining is a mega-, monopolistic operation, whereas manufacturing is divided into thousands of industries. For example, in 1972 there were 12 671 manufacturing establishments of which only 1.1% employed over 1 000 employees (Feinstein 2005, 175). In contrast, in 1969 there were 45 gold mines, the largest of which employed 13 980 workers (Wilson 1972, 157). In view of these distinctions, the number of strikers in mining is determined by the sheer size of the operations themselves, whereas in manufacturing the number of strikers is determined by a far higher number of establishments on strike. The high number of strikers in manufacturing is thus dependent upon significantly higher levels of mobilisation capacity compared to mining. This raises the question of what accounted for the high mobilisation capacity in manufacturing in the 1972–1974 turning point strike wave.

While there were 13 black trade unions recorded in 1969 with a combined membership of 16 040 (IIE 1977, 3), there is no evidence of direct involvement of trade unions in the 1972–1974 turning point strike wave. Although I support the view of scholars (Maree 1976, 98; IIE 1977, 99; Du Toit 1981, 244; Friedman 1987, 47; Webster 2017, 143) that the 1973 Durban strikes were "spontaneous", none regarded the strike waves of 1972–1974 as a clustering of strike waves but sought rather to treat 1973 in isolation as a significant event. The exception was Freidman (1987, 40–42) who relayed the events of 1972 but did not investigate the strikes in depth since his focus was on trade unions. The Durban strikes thus became "shrouded in mystery" (IEE 1977, 38), with no attempts made to uncover the organisational dimension of the strike wave because the direct connection with the struggles of the 1960s as a means to unravel the mystery of Durban 1973 was overlooked, as these scholars believed that it was a period of acquiescence. This is revealed in the authoritative work of the Institute for Industrial Education (1997, 3) where "unions disappeared"; for Maree (1987, 2) "strikes receded almost totally", while for Friedman (1987, 44) it was a period of "silence" and Bonner (1987, 55) viewed it as "a long period of acquiescence".

The failure to examine the increasing strike frequency of the 1960s and the prominent role of textile strikes, which laid the organisational basis for textiles to re-emerge as a leader in the Durban 1973 wave, was therefore overlooked in the literature. Furthermore, the decline of SACTU and the formation of a semi-clandestine organisation, which was strongest in Natal, sheds light on the kind of worker structures that were present, and that informal workers' committees were at the helm of organising strikes in Durban. According to a statement released by the Minister of Labour in 1973, there was a change in the pattern of resolving grievances, with "a tendency not to give employers advance notice of discontent but simply to take strike action and refuse thereafter to participate in proposed discussions. Everything indicates that this is a planned action" (Horrell 1974, 282). The pattern which the Minister refers to as having changed was one of strike avoidance (as outlined earlier) in the 1960s where Native Labour Officers and employers would try to settle grievances without workers embarking on strike action. The change in strike tactics in the early 1970s was sophisticated and indeed indicated that informal organisation was involved in orchestrating the strikes. Bonnin's (1987, 125, 263) interview with BTR Sarmcol workers is instructive in this regard, as she found that 31% of strikers had "experienced the power of strikes" between 1950–1960 and "SACTU's legacy remains in popular memory". Noting this experience, it is plausible that some workers involved in the 1972–1974 wave had been union members or had some experience of strikes and so played a leading role in the informal organisation of the strikes. In this context, the mobilisation of workers primarily took the form of spontaneous self-organisation, which would later provide fertile ground for the foundation of the modern labour movement.

It is important to note that none of the early theorisation regarding the Durban 1973 strike wave referred to it as a turning point. Instead, it was viewed "as events of major significance" (Hyman 1976, 59), a "major event" (IEE 1974, 6) and a "strike wave" (Maree 1976, 99; Du Toit 1981, 244). Friedman (2013), however, forty years later asserts that "the Durban strikes [may] have been the turning point". The Black Consciousness Movement, in the early 1970s, was the first to comprehend the significance of the strikes as a turning point and concluded that,

> As this country moves deep into the I970's, it is important to recognise that history will record the era of the past few years as one in which the tempo of change has been more rapid than ever before. Of even greater importance for everyone however is the recognition of the fact that the pace will continue and intensify in the 70's. (Biko 1973, 1)

Webster (2016, 143) argues that the Durban strikes were the turning point as "strikes led to the reconfiguration of the industrial relations system and the emergence of an independent workers' movement for the first time". However, Webster reduces the structural effects solely to the 1973 wave which discounts the impact of the immediacy of the 1972 and 1974 strike waves in affecting the structural change. Those in the former year were crucial and by applying Sewell's (1996) theory of political events to labour history, I argue that the turning point strike wave actually began in 1972 and not 1973. The approach I employ introduces the concept of a *turning point strike* and *turning point strike wave*: the former is the "initial rupture", while the latter comprises the "chain of occurrences" that produce structural change. Thus, the PUTCO strike in 1972 was the initial rupture, not the Coronation Brick and Tile strike of 1973 which took place a few weeks after the bus driver strikes. In other words, the strikes of 1972–1974 were part of a chain of events, initiated by the initial turning point (ITP) PUTCO strike. While initial ruptures are indeed significant, often functioning as a catalyst, it is the combined ruptures of the turning point strike waves that produce variations in the size of the wave (as in 1972–1974), the extent of the spread across industries and the scale of the structural effects.

The structural effects of 1972–1974 turning point strikes waves were unprecedented. The Minister of Labour ordered a review of minimum wages and government amended the 1953 Settlement of Disputes Act to give African workers a limited right to strike. Employers began to ignore job reservation and colour bars in line with changes in the labour process requiring larger sources of semi-skilled labour (Friedman 1987, 46-51). The struggle for trade union recognition continued and was finally won in 1979, resulting in the rapid development of the trade union movement (Maree 1987, 1).

However, the structural effect also went beyond industrial relations and trade unionism. While they were economic, the context of apartheid gave them an overtly political character which "affected a far wider section of the population" and assisted in creating an "atmosphere of revolt and showed that blacks were not powerless…and…the example of resistance was taken into the townships" resulting in the Soweto Revolt of 1976 (Hirson 1979, 156). In other words, the turning point strike wave exerted a societal power, effectively delegitimising apartheid and igniting a wider struggle against the system. The events of 1972 also saw the first systematic review of strikes in the Black Consciousness Movement publication, *Black Review*. The hegemonic effect reverberated into universities, creating a renewed interest in labour history

and the publication of the *South African Labour Bulletin* from 1974, which provided for the views of trade unions and their struggles (Webster 1983, 1; 1987, xii).

The turning point strike waves of 1972–1974 thus had all the hallmarks of mass strikes – spontaneity, increases in the magnitude of class struggle, involving workers in a wide range of industries and occupations, a close relationship between the economic and political, and structural effects in the industrial relations system as well as trade union and political mobilisation.

The patterning of South Africa's strike wave ruptures in this period is consistent with international long wave ruptures. Mandel (1995, 126) found that the most intense ruptures in Europe took place in 1968 while Screpanti (1987, 100) and Kelly (1999, 89) both periodised 1968–1974. The strikes and political events in South Africa were increasingly shaped by the strike wave rupture, social unrest and armed revolt in 1971 in Namibia, the establishment of socialist states in Mozambique and Angola in 1975, the emergence of the Black Consciousness Movement, and the independence of Zimbabwe in 1981 (Hirson 1979, 86, 89, 167).

By 1975 a world recession had set in which deepened with the exogenic shock of the OPEC oil crisis. In this context, and in response to the increased unemployment of blacks, estimated to have increased from 1 million in 1970 to 1,5 million in 1974, strikes became cyclical (with lower strike frequency) (Hirson 1979, 123). However, the economic crisis in South Africa was also, in part, an expression of the structural problems in the productive sectors of the economy, viz. industry, agriculture and mining (Gelb 1991, 19). Gelb regarded South Africa's capitalist crisis as a "turning point", as the economy could no longer evolve in the same fashion and began to decay as "a resumption of sustained accumulation requires the emergence of a new model" of growth (Gelb 1991, 2). Gelb characterised the growth model that emerged after the post-War period as racial Fordism, as both mass production and mass consumption were racially structured. This model focused on extending industrialisation in favour of sophisticated industrial goods for a small white consumer market, thus stifling the effective demand of most black consumers (Gelb 1991, 13–14). Thus, South Africa was faced with a major structural crisis compounded by its internal political events that deepened the class struggle along the depressive long wave that reflected the global economic situation.

Unlike the 1960s, the mid-1970s saw diminishing profitability and political instability, prompting capital to seek a modification of the racial division of labour and, ultimately, the removal of the job colour bar. In 1977 the government appointed the Wiehahn Commission, an enquiry into labour, which led to the scrapping of job reservation laws, followed in 1979 by the legalisation of black trade unions (Friedman 1987, 150). The aim of the reforms was to overcome the limits of apartheid social relations in the labour process and to boost effective demand by black consumers (Gelb 1991, 25). To counter trade union militancy, employers reduced their workforce (thus increasing unemployment) by shedding unskilled black workers and upgrading and promoting black workers with higher pay (Hindson, 1991, 233). By 1985, and in line with restructuring policies, the ratio among unskilled, semi-skilled and skilled changed to 13%, 76% and 11% in manufacturing; 51%, 42% and 7% in mining; and 19%, 65% and 16% in construction.[67] The emergent black trade unions thus drew their membership mainly from semi-skilled and skilled workers. This was the underlying intention of government and business restructuring policies that aimed at creating class differentiation among black labour, but it failed at quelling labour militancy (Gelb 1991, 28).

Despite a context of increasing unemployment, these reform and restructuring measures, combined with repression, failed to quell trade union mobilisation. Trade unions had used the 1970s strategically to build stronger workplace organisation, with shop stewards given a key role. Furthermore, by 1979 the non-racial Federation of South African Trade Unions (FOSATU) and the Council of Unions of South Africa (CUSA), both catering primarily for African workers, had been established. The emerging unions rapidly increased their membership from 70 000 in 1979 to 300 000 in 1983 (Maree 1987, 7). With the legislative victory recognising black trade unions, an offensive seven-year strike wave took place, starting in 1980 and only ending in 1987 with the defeat of the National Union of Mineworkers' strike.

7.7 The 1980–1986 Turning Strike Waves

The average frequency of strikes in the 1980s was (F = 596) 233%, number of workers (S = 214 432) 667% and (D = 1 135 709) days lost was 1 986% higher respectively than the 1970s with a peak of 1 148 strikes in 1987. The significantly high combinations of F, S and D reflect the growing confidence of the working class. I argue that strike dynamics in this period were shaped overall by the relatively autonomous political struggle, which overwhelmed cyclical

[67] See Crankshaw (1997, 155-157), Appendix to Chapter 3.

factors and immediate economic considerations. For example, neither the general upward mobility of black workers commensurate with higher incomes,[68] nor the simultaneous increase in unemployment, a factor that in prior periods had weakened worker combativity, held any sway in abating the strike waves in this period. The latter factor is remarkable, given that the economic crisis in the depressive long wave kept on worsening. What is clear, then, is that strikes in this period were overwhelmingly related to political issues, driven by political trade unionism. These I term tsunami or revolutionary turning point strike waves as they do not resemble "normal" strike waves or turning point strike waves in that the length of their waves was far longer than that of typical strike waves, reflecting that a deeper social process of resistance was taking place. During this period, while workers and unions continued to pursue the secondary issue of wages and working conditions, their primary focus was a direct challenge to the current control of the labour process and the overthrow of the apartheid capitalist system. Thus, it was not what workers struggled over but *how* they struggled that differentiated the 1980s from earlier strike wave periods.

The start of the wave of strikes saw the spike in the gold price in 1979 undoing much of the damage of the oil shock, resulting in accelerated growth with new investments, particularly capital, in the public and private sectors. However, the financialisaton of the South African economy created instability in the gold price after 1982, which lasted until 1986 and saw investments contract again (Gelb 1991, 24–28; Bell 2001, 37). The upsurge in GDP growth, nonetheless, was by no means small, despite the long-term downward trajectory of the depressive long wave. Real GDP growth in 1980 and 1981 was 6.6% and 5.4% respectively. Other upsurges in GDP occurred in 1984 (5.1%), 1987 (2.1%) and 1988 (4.2%).[69]

The short upswing in the business cycle between 1978–1981 provided a favourable climate for the resumption of the strike movement which, once set in motion, its dynamic continued unabatedly despite the trend of increasing unemployment among unskilled workers. Consequently, the market power of semi-skilled and skilled workers increased with a phenomenal escalation in strike frequency between 1979–1986. These were consistent with business cycle explanations. It is curious, though, that in a period of heightened political

[68] It is important to recall here that issues relating to the scrapping of job reservation and the reorganisation of the labour process had been settled by 1979.

[69] South African Reserve Bank, historical macroeconomic timeseries information, KBP6006Z, https://www.resbank.co.za/Research/Statistics/Pages/OnlineDownloadFacility.aspx [accessed 8 June 2018].

mobilisation they were of short duration, with two thirds over by the second day, most ending in negotiated settlements and not outright victories (Levy and Associates 1986, 9–10, 17). Just as curious is that employers appear to have taken a defensive stance by quickly settling grievances in a period of higher unemployment which typically increases their bargaining power. The obvious explanation for these anomalies would be that employers prioritised short-term profitability within the short spurts of growth in the depressive long wave. However, the high level of negotiated agreements, rather than outright victories, indicates that workers structural power was not that strong either. Yet, the achievement of an average annual real wage increases of 2.9% from 1975–1990 (Hofmeyr 1994, 199) was no easy feat in a period of spiralling inflation.

A distinctive feature of the strike waves in the 1980s is the change in the nature of grievances from the 1970s. While those in the earlier decade had predominantly been about wages, the waves in the 1980s centred on challenging the current control of discipline in the labour process. About 50% of strikes were challenges to management's prerogative to discipline, the arbitrary actions of foremen, dismissals, removal of compromised worker representatives and changes in workload. Other grievances included wages (about one third) and trade union recognition (about 10%) (Baskin 1987, 88). Workers challenging the prerogative of management to control aspects of the labour process created the perception that they wanted to institute "workers' control". According to Christoph Kopke, chairperson of Mercedes Benz South Africa (MBSA), "Worker control is nothing new to us, we had a factory with worker control since 1987…where supervisors…didn't dare go on the assembly lines. This is the result of worker control." As a result, the plant that used to produce 70 Hondas a day only produced 40 a day "as workers said they were working too hard" (Von Holdt 1990, 38–39). Research is yet to reveal the extent of these kinds of "workers' control" but the perception by employers that workers wanted to achieve workers' control was nonetheless widespread. Levy and Associates (1986, 17), a prominent mainstream industrial relations firm, noted that while a significant proportion of managerial attitude towards strikes changed, regarding them as legitimate actions, the political mobilisation of trade unions led to levels of strike violence increasing dramatically:

> There seems to be agreement amongst observers that this is a function of a daily violence in the townships, as well as the stronger emphasis that union leadership is putting on the revolutionary role of labour in the achievement of the socialist state. (Andrew Levy and Associates 1986, 17)

The dramatic increase in wildcat strike violence in the sphere of production caught employers by surprise as the strikes in the 1970s had largely been non-violent (IEE 1977, 6) and the fear of major disruptions to profit rates in a context of irregular spurts of growth prompted a quick resolution to many of the strikes. However, as the economic crisis in the depressive long wave deepened, there was a renewed effort at implementing further cost-cutting measures. For example, the 1956 Labour Relations Act was amended in 1983 to allow for labour brokers – agencies that supply unskilled and semi-skilled workers to industry (Theron, Godfrey, and Lewis 2005, 1). Steadily, the use of labour brokers and outsourcing became a common measure that industry employed to cut costs, with at least 20% of strikes (Andrew Levy and Associates 1986, 5) in this period being against dismissals to accommodate the cheaper labour. The shift of grievances from wages to management's prerogatives in decision-making in the labour process accords with both grievance and long wave theory as workers chose to bear the economic cost of the immediate effects of the strikes, focusing their energy and tactics on challenging the structural inequities created by apartheid capitalism. In this sense, workers had made the link between economic exploitation and political oppression (Andrew Levy and Associates 1986, 17), realising how the point of production is in fact the site of struggle for change. However, in 1986, there were serious tensions in COSATU between the "populists" who wanted a two-stage revolution and the "workerists" who wanted a worker-led socialist struggle. By mid-1987, COSATU had adopted the populist Freedom Charter, but without unanimous affiliate support (Bennett 1987, 77–78).

Key in influencing the economic and political nature of worker struggles had been the merging of the independent unions whose membership grew from 70 000 to 300 000 between 1979–1983. While the growth in union membership only represented 7% of the total black labour force, the proportion of unionisation of African workers was 16% (Maree 1987, 8–9). However, the social power of the trade unions that ignited in the post-1972–1974 turning point strike wave continued in the reproductive sphere, leading to the consolidation of township-based, working-class civic and student organisations. This resulted in the establishment of a labour–community–student alliance or, in other words, the coming together of struggles at the point of production and reproduction.

This convergence became evident during the successful seven-month Fatti's and Moni's (F&M) strike in 1979 when unions requested communities to support a national boycott of F&M's products, which garnered support of university and school students, black trade

association and several trade unions (McGregor, 1980, 127). The success of this action led to similar labour–community–student alliances in the Colgate boycott in 1981 and the Rowntree boycott in 1982 (Hindson 1987, 211). Similarly, trade unions were also requested by community organisations to participate in community struggles around housing, rent and the boycott of local apartheid political elections, but this occurred only to an unsatisfactory level at this point (Hindson 1987, 211). Nonetheless, the overall trend reflected unity between the two struggles: that of production and of reproduction. A further distinguishing feature of strikes in this period is that many were led by migrant industrial workers who faced harsh influx control measures in which those deemed "illegal" by the authorities were increasingly being forced out of urban areas to endure progressively unsustainable livelihood in the homelands (Baskin 1987, 87).

In 1980, the one-week strike at the Johannesburg Municipality organised by the Black Municipal Workers' Union, in which 10 000 migrant workers participated, was the largest strike at the time ever faced by a single employer in South Africa. Its significance lies in the fact that it demonstrated that a highly controlled, hostel-based workforce could be organised. Its rudimentary organisation, however, allowed the strike to be smashed (Bonner 1987, 59; Keenan 1987, 70–84).

From July to November 1981 in the downswing, more than 50 offensive (recorded) strikes by contract and migrant workers took place in the metal, chemical, food, textile, construction and transport industries on the East Rand. The strikes were anti-cyclical in character. They spread in a similar manner to prior strike waves, factory to factory, and were first organised by workers themselves and then by the trade unions. In this strike wave, the short strikes were more successful than those of longer duration (Baskin 1987, 86–98). A significant organisational development from the strikes was the establishment of a new worker organ – the Germiston Shop Steward Council of FOSATU, which consisted of shop stewards from all its affiliates in the area. The council aimed to bolster workplace organisation and recruitment across industries and to ensure sustained support for all strikes in the area (Baskin 1987, 44–54). In this way, the structure of workers' collective organisation, discipline, strategy and education around strikes arose objectively from the spatial organisation of production in industrial areas. The worker organ of the shop steward council took the responsibility of dealing with the practical questions of a long-term class struggle and assisted in building a class identity and consciousness (Baskin 1987d, 53–54).

By 1982, trade unions were firmly entrenched and organised nationally, albeit unevenly. The atmosphere was explicitly political and symbolised by a two-day stayaway organised to mourn the death of Neil Aggett, an organiser for the Food and Canning Workers Union, who had died as a result of brutal police torture. State repression no longer held the same sway as in the 1960s and failed to halt the forward movement of the working-class struggle. The economic weapon of mass dismissals of workers by the state and capital was increasingly utilised to break the power of the new unions. There were 20 strikes in the textile sector and the Wadeville area "soon became a war zone"; strikes then extended into the auto industry (Friedman 1987, 295). While initially substantive wage gains were made by workers, the tempo was halted with most strikes making no wage gains and instead resulting in retrenchments. This occurred because trade unions' human resources were outstripped, and employers became better at handling disputes. The state played its part too, enforcing the pass laws and not renewing contract worker permits in urban areas in order to weaken the labour movement. The trade unions were on the backfoot and, once again, had to develop a new tactic, this time of building the shop floor base before commencement of strikes (Friedman 1987, 297). The tougher stand of employers was directly connected to the downswing of the business cycle during which "it was harder to hold plants and win strikes" (Friedman 1987, 298–299).

The United Democratic Front (UDF) was launched in the upswing of 1983–1984, further escalating insurrectionary struggles across the country. As a non-racial coalition, it consisted of about 400 national, religious, civic, student and labour groups. Its goal was to establish a non-racial democratic dispensation. The apartheid government considered the UDF a revolutionary organisation that sought the overthrow of the state (Houston 1988, 26) and responded with general repression. The UDF nonetheless gained momentum politically as community and trade unions campaigned against the racially based Tricameral parliament[70] general election (Houston 1988, 119). Social unrest spread nationally, with union members involved in militant action, stayaways and consumer boycotts and the unions consequently gained widespread recognition for their leading role as the uprising grew (Houston 1988, 15). The unity of continuous class struggle, both in the productive and reproductive spheres, presented significant challenges to both capital and the state, whose response was swift.

[70] The Tricameral Parliament, a racially based, three-tiered assembly, was inaugurated in 1984 to allow for parliamentary representation for coloureds and Indians in one of three separate chambers, a reform of the apartheid-era whites-only representation.

For workers, the Tricameral system represented a further attack on their already precarious condition within a racialised social system. The strike wave continued into 1984, described as "the worst strike year since the Second World War" (Friedman 1984). The most significant offensive strike was the month-long, "contest of power", the Dunlop strike against the dismissal of all unskilled and semi-skilled workers for unlawful strike action. The unconditional reinstatement of all 1 200 workers was yet another milestone in trade union mobilisation. The Metal and Allied Workers' Union had been able to sustain and organise solidarity strikes nationally, which indicated a sophisticated level of workplace organisation and signalled an upsurge in organisational capacity (Sitas 1987, 100–115). Workers' confidence and persistence levels grew with each strike wave, registering an incremental increase in the number of days lost in production. The Congress of South African Trade Unions (COSATU) was launched on the strike wave of 1985, amid a state of emergency, uniting 460 000 workers. By 1986 its membership had soared to 650 000, adding further confidence to the labour movement as a major socialist force (Baskin 1991, 53, 73, 86). The total figure reported by the National Manpower Commission was 2 067 157 for both registered and unregistered trade unions, which had a presence in most industries (Markham & Matiko 1987, 102).

Over the course of the first six months of the 1985 state of emergency, 575 people were killed and approximately 26 000 people were imprisoned between June 1986 and June 1987. Included in this figure were over 2 700 unionists, most of them from COSATU. Amid such brutal state repression, trade unions struggled to maintain their organisations and may well have disintegrated had it not been for the organised strength of the working class (Markham & Matiko 1987, 90).

Henceforth, the strike waves became larger with a 77% (424 390) increase in the number of strikers in 1986 over 1985. The first ten weeks saw over 100 000 miners on strike. Starting on the platinum mines in Bophuthatswana (a former homeland), the strike spread rapidly to collieries in the Witbank/Middleburg area and the Consolidated Modderfontein gold mine and finally to the De Beers diamond mine in Namaqualand (Baskin 1991, 80–81). The strikes were often linked to political events in townships and the use of the new sit-in approach became a tactic of choice. Mining security reprisals were brutal, resulting in the death of ten miners and two white policemen. Manufacturing was not spared and was hard hit by workers employing the "siyalala la" (sleep-in) tactic in which workers did not strike during working hours but

instead occupied the factories. This new tactic improved links between community and workers' struggles and allowed for intensive education to take place (Baskin 1991, 82–84).

Strikes continued between 1979 and 1986, with metal workers' share of strikes at 18.4%, followed by retail at 12%, then food at 10% and auto at 9%. Mining led in terms of days lost with a 43% share in this period, and overtook metal workers' number of strikes in 1986 (Levy 1986). According to the National Union of Mine Workers, there were 113 strikes in 1986 involving over 250 000 workers (Baskin 1991, 224). However, in addition to strikes, trade union movement employed the effective political tactic of the stayaway, with one in 1982, four in 1984, 22 in 1985 and 25 in 1986 (Markham and Matiko 1987, 109). Thus, although most strikes in the 1980s were wildcat in nature,[71] the unprecedented mass mobilisation by trade unions laid their foundation. In addition, trade union growth led to continuous waves of industrial action, with each wave reinforcing the next. Thus, state reforms ending influx control and job reservation laws backfired and failed to act as a countertendency to strike.

With the call by COSATU for socialism and nationalisation as the backdrop of the 1986 wave, combined with ungovernability in black townships, the apartheid government believed that the existence of the racial capitalist social order faced a "revolutionary challenge" (Giliomee 2008, 5). Its sense of insecurity was compounded by Cuban and Soviet involvement in the war with Angola (Stemmet and Burger 2013, 99), resulting in brutal clampdowns in South Africa. However, unlike in the 1950s and the 1960s, increased repression and the state of emergency only propelled the wider mobilisation of the subjugated classes. At this historic juncture, all the necessary ingredients – the increased organisational capacity of trade unions and their strike experience, revisions to and the introduction of new strike tactics, stronger associational and societal power, longstanding economic and political grievances, and the general upswing of April 1986–February 1989 – would combine, culminating in the turning point strike wave of 1987.

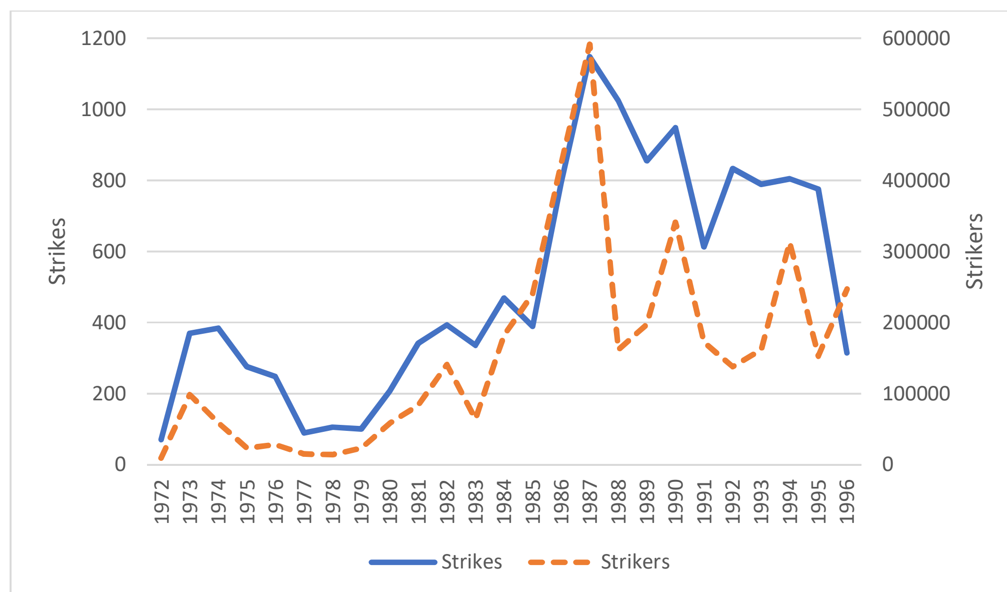
7.8 The 1987 Turning Point Strike Wave

Intense class warfare between workers on the one hand, and the ruling class and the apartheid capitalist state on the other, engulfed the entire labour movement in 1987 (Figure 10). The

[71] According to Andrew Levy and Associates (1986, 13–14), diagram 15, there was 410 strikes led by the top five trade unions leaders in strikes between 1979-1st quarter 1986. According to strike data (Annexure 1) there was a total of 3 031 strikes between 1979–1986.

trend, despite high levels of unemployment and intense state repression, was lengthy, intense but ultimately successful strikes (Baskin 1991,168–181). Not even the state of emergency could crush the resistance of workers, instead spurring them into attrition warfare. There were 1 148 strikes, 591 421 strikers, and 5 825 000 days lost. The number of strikes, strikers and days lost were 210%, 501% and 2 240% higher, respectively, than the 1973 strike wave. Every strike was met with severe repression, detention and arrest of workers and the year was one in which workers' self-sacrifice (as will be shown below) was viewed as a necessary condition to alter the balance of power in favour of the working class.

Figure 10: Strikes and strikers (1972–1996).



Source: Historical Strike Data Series, Annexure 1.

The OK Bazaars 10 000-strong strike lasted 77 days and resulted in the doubling of wages, the return of repossessed goods, increases in staff discounts and the reinstatement of most dismissed. The impact of the OK Bazaars was so great that disputes at other retailers in subsequent months were settled quickly to avoid similar disruption (Baskin 1991, 171). The South African Transport Services strike by 20 000 black railway workers, which ignited because of the unfair dismissal of an employee, was also a major strike. As a bastion of white supremacy, the public-sector enterprise blatantly discriminated against black migrant workers who were housed in single-sex compounds. The state's reprisal was severe – six workers and four scabs were killed, 23 000 workers dismissed, and 400 unionists detained – but failed to

break the strike. After three months, all workers – including those who had been detained – were unconditionally reinstated and there was partial recognition of the union. The workers had won a major round of struggle against both capital and the state, but it is the crushing defeat of the National Union of Mine Workers' strike that would alter the balance of power once more. To understand the determination of mining capital to subdue the mineworkers, the economic environment of the mining sector must be understood.

In line with the upswing, gold exports increased from a weaker rand while the rest of the private sector held back investment in the face of the huge cost of imports and a contracting international market. This was compounded by political developments which impacted negatively on investor confidence, resulting in capital outflows (Gelb 1991, 28). The new growth model of de-racialisation and reform was a dismal failure. The volatility of the gold price in the context of financialisation increasingly challenged the maintenance of the colour bar which at this stage was operational only in the mines. In addition, there was a re-composition in the workforce,[72] largely the result of improvements in existing emulsion hydraulic technologies, the aim of which was to "decrease labour intensity in gold mining" (Pogue 2006, 180). While the wage share in mining was 50% relative to profits, the largely black migrant workforce only earned two-thirds of the total wage bill, up from the one-third in 1972, itself a major achievement (Freund 1991, 120). For the mining industry, the increase in the wage share reached a pinnacle, as international competition had reduced the industry's share of gold production from 75% in 1975 to 56% in 1985 (Freund 1991, 123).

Even though mining's share of GDP contracted, it nonetheless continued to play an important role in the broader economy as it provided forward and backward linkages to the energy and manufacturing sectors and the foreign exchange to pay for capital imports required by the country (Fine and Rustomjee 1996, 75). The multiplier effect of mining on manufacturing and energy was almost double the value of all direct expenditure on mining inputs. Furthermore, the corporate structure in South African was such that six conglomerates had controlling shares within the mining, manufacturing and financial sectors. Any increase in mining costs would thus cause a ripple effect throughout the cost structure of the broader economy and hence impact overall profitability of general industry. This context, combined with escalating

[72] In 1980, the ratio among workers had been unskilled workers 58%, semi-skilled 35% and skilled workers 7%. By 1990, the proportion of unskilled workers was 51%, semi-skilled 42% and skilled workers 7%. See Crankshaw (1997, 156), Appendix to Chapter 3.

international competition, created immense pressure to mechanise mining further and to set an immutable limit to wage increases. Inevitably, a major "contest of power" between capital and labour in the mining industry loomed. To restore investor confidence, mining capital had to demonstrate that it could break the strike and diminish the power of the National Union of Mineworkers (NUM).

The NUM had had its 5th national congress in February, at which it declared 1987 as "The Year Mine Workers Take Control" and adopted a policy for "a democratic socialist society controlled by the working class" (Baskin 1991, 214). The slogans reflected the general mood of its 262 000-strong membership who were bent on challenging the colour bar, the coercive compound system and low wages. In particular, workers wanted to break down the supervisory control and disciplinary procedures in mining – the essence of the mining labour process (Freund 1991, 123; Baskin 1991, 225). In the context of the insurrectionary 1985/86 wave of social unrest, the stakes were high for labour as COSATU's largest affiliate prepared for battle with mining capital which symbolised the interests of capital in general. For capital in general, a victory for NUM would effectively undermine control of the labour process and would spur workers on in the rest of the economy and tilt the balance of forces irreversibly in favour of a class-conscious working class. As put by the Chamber of Mines Economics Department, "[a]n evident underlying aim of the strike was to demonstrate wide worker support for an agenda ranging from sanctions to seizure of control of the national economy" (1994, 63). In other words, the strike was viewed from both sides as a political strike against the capitalist system.

As it was the first legal strike, the mining companies were prepared and had been stockpiling coal and gold before its commencement (*Weekly Mail* reporters, August 7, 1987). Furthermore, capital was prepared to use mass dismissals as they "could replace striking mineworkers from the thousands of unemployed former mineworkers in the homelands who want to come back to work" (Colin Fenton, head of gold operations, quoted in *Rand Daily Mail* August, 15 1984). As the strike began on 9 August, NUM was aware of the tactics of choice of the mining employers, including pending repression of the strike. As the strike swiftly grew, it drew in both organised and unorganised workers. Although the police detained NUM's regional leadership (Markham and Mothibeli 1987, 63), the strike continued.

Both NUM and the mine management were surprised at the strike turnout. Based on experience, they had thought the strike would last for only a few days. While NUM claimed

that there were 340 000 strikers (70% of the total workforce), the Chamber of Mines (1994, 63) asserted that the strike affected only 40% of the gold and coal employees on 18 (out of 27) gold mines and 15 (out of 18) coal mines. Mineworkers themselves turned security measures on its head. For example, when they were forced to go underground, they staged sit-ins or sleep-ins. Management in turn threatened to cut water and food supplies and started dismissing workers *en masse*. The battles thus became intensified and centred on the control of the compounds and food supplies. According to Bobby Godsell, "[w]hen the 1987 strike happened, it was as much a battle for physical control of the workplace as it was about wages" (quoted in Baskin 1991, 225). Anglo American treated the "strike like a war" and, with the assistance of the state, cut off international donations for the strike and ensured that workers were unable to access funds saved in commercial banks (Baskin 1991, 226–229; Markham and Mothibeli 1987, 64). As the strike entered its third week, 50 000 workers were dismissed, which was achieved through combining repression with lockouts. Eight miners were killed, 500 were wounded and more than 400 were arrested in clashes with mine guards during the strike (Markham and Mothibeli 1987, 69). On the 28 August 1987, NUM conceded defeat and failed to achieve any of its demands (*New York Times* August 3, 1987). This was a colossal defeat as the 1988 negotiations the following year with NUM "progressed on conventional lines and there was virtual non-participation of the mining industry's work-force in the June 1988 stayaways" (Chamber of Mines Economics Department 1994, 64).

NUM's central weakness had been its failure to capitalise on its substantive associational power within COSATU. This was necessary to circumvent *en masse* dismissals, the weapon of choice of mining capital. NUM's consultations with COSATU on the eve of the strike came too late to prepare solidarity strike action within the conglomerates' industries. In assessing the defeat of the strike, NUM had clearly underestimated the political stakes, the unified power of capital and the centrality of mining to its general interests.

The defeat of the 1987 miners' strike was so intense "that the following 12 months were to be some of the darkest for COSATU, and a year in which it almost fell apart" because the weak support from COSATU had created a general atmosphere of political mistrust (Baskin 1991, 239). After 1987, the impact of the defeat is quite visible (Figure 10 above) with the overall momentum of strike action in steep decline.

The defeat of the 1987 miners' strike was a historic turning point, affecting structural change in industrial relations as well as in the economic and political systems. The Mines and Works Amendment Act was passed in July 1987, and it brought an end to job reservation on the mines one year later when it was implemented. According to Webster, it was "a watershed event in industrial relations" and marked the beginning of an attempt at "normalising" industrial relations in the country (*New York Times* August 31, 1987). On an economic level, the NUM defeat of 1987 resulted in higher levels of investor confidence, with the gold price recovering from a low of $299.47 an ounce in 1985 to $486.60 an ounce in December 1987, followed by a bear trend until 1989 (Chamber of Mines Economics Department 1994, 55).

On a political level, the state understood that although labour had suffered a huge defeat, workers were nonetheless combative and could bounce back, possibly stronger than before. It was perhaps thus no complete surprise that a mere three years later, in a period of both economic and political turmoil, the ruling classes were forced to review the cost to the country of maintaining the apartheid system. Consequently, in February 1990, the president of the apartheid state, De Klerk, lifted bans on the African National Congress (ANC) and the Communist Party of South Africa, and released Nelson Mandela and other political prisoners, thereby enabling a negotiated, gradual end to apartheid in 1994 – a political turning point.

The historic turning point strike wave was a product on the one hand of the contradiction between the model of racial Fordism, which required the formation of a stable black working class to sustain capital accumulation, and on the other hand of the expansion of an urban proletariat, which succumbed to a significant increase in the structural, associational and societal power of the working class, which objectively provided the material basis for a close nexus between the economic and political struggle. The tsunami or revolutionary wave of the 1980s was both quantitatively and qualitatively distinct from other strike waves as it challenged the very existence of the racialised capitalist system. Mobilisation theory most certainly had its greatest success in this period. The depressive long wave lasted 26 years, from 1964 to 1990 (see Figure 18).

The historic turning point strike waves in South Africa aligned with those in Korea, Brazil and Poland, each in turn giving way to political turning points during 1987–1990. Furthermore, this period saw the independence of Namibia in 1990 and the collapse in 1991 of both the Berlin Wall and the Soviet Union.

The end of apartheid ushered in a non-racial social structure, a new labour relations architecture and the attempt at the normalisation of industrial relations. However, the advent of a non-racial South Africa coincided with the emergence of neoliberalism, the digital technological revolution and changes in the labour process, with capital making concerted efforts to increase its rate of profit. This resulted in labour challenging the neoliberal growth model in the 5th long wave of 1990–2019, to which we turn next, in Chapter 8.

Chapter 8: Strike Waves of the 5th Long Wave (1990–2019): Neoliberalism and Post-apartheid South Africa

Until South Africa's first democratic elections in April 1994, which ushered into power the African National Congress (ANC), the early 1990s saw the militant working class – despite high levels of resistance – gradually retreating (see Chapter 7, Figure 10). This was the result of a combination of policy reform, concessions from employers and increased state repression. Nonetheless, the class struggle that had started in 1972 and lasted just over twenty years – in a similar fashion to Russia's ten-year wave – had been successful in combining both economic and political strikes into a genuinely national mass movement. Its impact was so significant that the ruling class sought a compromise solution that, while amounting to a political revolution, would maintain the capitalist system and restore profitability in a new model of accumulation: a neoliberal, democratic capitalist dispensation.

This outcome of the long wave of class struggle saw the best organised and strongest opponent of the apartheid state, COSATU, reap huge dividends. A new industrial relations regime was established that encompassed almost all labour's demands and resulted in an array of new industrial relations institutions (Buhlungu 2010, 164; Webster 2017, 143–144). At the end of the 20th century, the achievements of South Africa's labour movement had no parallel globally, as labour movements elsewhere in the world were in retreat, their gains being rolled back. While they were losing membership, unions in South Africa were growing. For example, COSATU's membership of 400 000 in 1985, grew to 1.3 million in 1994 (Buhlungu 2010, 59, 90), escalating to 2.2 million in 2012 (COSATU 2015, 13).

South Africa's Reconstruction and Development Programme (RDP), implemented in 1994, was underpinned by a social democratic approach to economic development and became the economic programme of the newly elected democratic government. It was thus the basis for a political exchange and labour's contestation moved over into the reproductive sphere, i.e. wealth redistribution where the RDP symbolised its social power. However, this elevated position and function of labour was threatened by the battle to reorganise the labour process that had begun in the 1980s and the subsequent amendments to the Labour Relations Act of 1995, which saw the legalisation of a two-tier labour market that divided the workforce between standard and non-standard forms of employment (Theron, Godfrey and Lewis 2005, 1). This change in legislation opened the door to a proliferation of sub-contracting, outsourcing

and labour-broking companies which created a simultaneous crisis of representation of non-standard workers (Kenney and Webster 1998, 221) and the general weakening of the workplace power of labour. This had the effect of weakening labour on the shop floor and deepening the ideological struggle between the ANC and South African Communist Party (SACP) on the one hand and COSATU on the other over the future of economic policy. In 1995, exchange controls were dropped and white monopoly capital – once constrained by sanctions and a militant labour movement – was liberated, resulting in massive capital flight and the initiation of the internationalisation of South African capitalism (Saul and Bond 2014, 151). For the next 15 years, South Africa's real growth in GDP averaged 4.3%.[73] The democratic dispensation was thus a pre-condition for an expansive long wave and a resumption of capital accumulation in a new non-racial, growth model.

In 1996 the ANC abandoned the RDP in favour of the neoliberal growth model, the Growth, Employment and Redistribution Programme (GEAR) (Jones and Inggs 2003, 5–6). GEAR was a competitive, export-led macro-economic strategy that promoted labour flexibility, increased productivity and increased training of the unskilled (Hoogeveen & Ozler 2006, 60). However, it retained a central component of the RDP for labour-intensive production and the delivery of social infrastructure and was thus able to maintain the political exchange with labour. In the final analysis, however, the shift to GEAR, the legalisation of a two-tier labour market and the liberalisation of capital controls saw capital victorious over working-class forces.

Against this backdrop, COSATU faced something of a conundrum. While it believed that the concession from employers to labour intensive employment as a trade-off for higher productivity was a successful outcome as it fulfilled the employment creation aspects of the RDP, it also saw the disintegration of working-class cohesion. The latter concern was made evident in its 1997 report of the September Commission on "The Future of the Unions" tabled at its Congress. The report contended that labour market flexibility generates increased differentiation and fragmentation of the organised labour movement. The results are an increase in non-standard forms of employment such as "a large mass of temporary, part-time, subcontracted, outsourced workers who are vulnerable and difficult to organise" (COSATU 1997). In other words, a significant section of unskilled and semi-skilled workers was

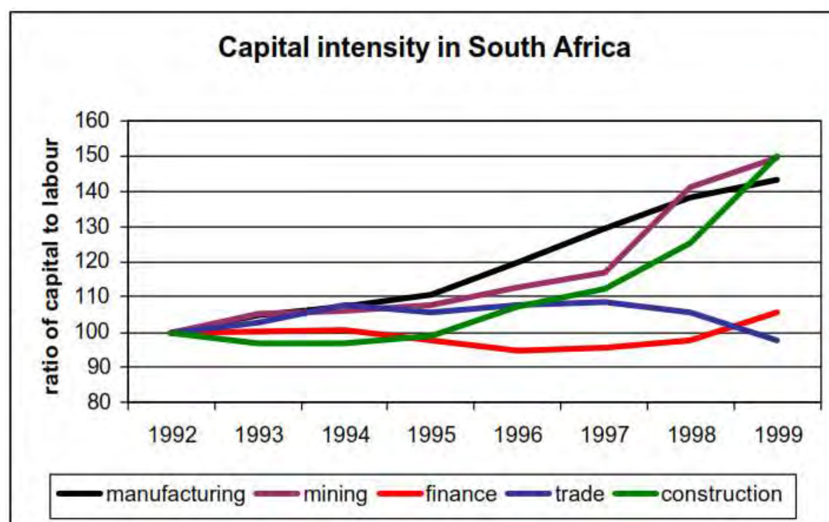
[73] South African Reserve Bank, KBP6012Z. Historical GDP at constant prices (1946-2016).

increasingly employed on fixed and temporary term contracts (Bhorat and Khan 2018, 37) and effectively became incorporated into an expanding reserve army of labour.

In addition, the September Commission made the startling revelation that the "Framework Agreement on labour intensive construction also tends to marginalise the trade unions" (COSATU 1997). This was underscored in the report by the revelation that in terms of the RDP, the public sector encouraged the awarding of construction contracts to small and new black businesses in which most workers were in precarious employ. Thus, ironically, while labour had the good intention of reducing the high level of unemployment, the labour-intensive RDP had led to its own marginalisation.

In line with the long wave of expansion, an increasing trend of capital-intensity of production occurred because of the belated and abrupt liberalisation of the South African economy within which the private sector was required to adapt to global competition with *radical* technological innovations. The exogenic impact of the class struggle had delayed South Africa's economic revival by at least 10 years and its late entry in the international boom of the 1980s was marked by intense and rapid capitalisation. Thus, quite contrary to labour's expectation, a 2001 report of the Economic Policy and Research Institute (EPRI) found substantial heterogeneity in sectoral trends in rising capital intensity in the mining, manufacturing and construction sectors from 1992–1999 (Figure 11).

Figure 11: Capital intensity (1992–1999).



Source: Samson et al. (2001).

Computer Integrated Manufacturing (CIM) or information technology systems was introduced to integrate the different functions of production and ensure increased efficiency and cost-effectiveness in manufacturing (Jafta 2005, 24). This encouraged changes in the labour process, which saw increased levels of subcontracting and outsourcing and the rapid expansion of labour brokers (Theron, Godfrey and Lewis 2005, 18), thus structurally circumventing the potential threat black unionism had towards this cheap-labour edifice. For example, mining had started to subcontract core operations from the mid-1980s. Similarly, the construction sector increasingly used subcontracting and labour broking with approximately 70% of building and 30% of civil engineering projects subcontracted out (CIBD 2013, 1).

In addition to accelerating the shift towards flexible labour arrangements, the technological focus demanded skilled labour. For instance, commercial agriculture adopted an agro-industrial model of farming that resulted in increasing technological innovation and mechanisation in capitalist agriculture. The mining sector too introduced innovation, such as hydro-hydraulic technologies, at a few gold and platinum mines.[74] Thus, between 1970–1995 the

> …increasing capital intensity and the shift to microelectronics in all sectors has resulted in growing demand for highly skilled professionals, technicians and managers to develop, implement, operate and maintain new technology…[and a]…rising demand for skilled and semi-skilled workers and a shedding of workers at the bottom-end of the occupational ladder. (Bhorat and Hodge 1999, 359)

The consequences of change in a capital-intense, de-racialised labour process was dramatic. African, white-collar employment increased from 26% in 1970 to 51% in 1995 while white, white-collar employment decreased from 64% in 1970 to 38% in 1995. In addition, the African share of semi-skilled and skilled employment decreased from 63.4% in 1970 to 56% in 1995, while white labour increased slightly from 21% to 23% (Bhorat and Hodge 1999, 373). What is reflected here is the proportional decrease in the amount of employment required in the capital-intensive labour process, with a reciprocal expansion in the reserve army of labour and a simultaneous decrease in the market power of labour. Unemployment levels thus soared concomitantly with rapid increases in capital intensity from 16% in 1990 to 24% in 1995 and 30% by 2000 (Statistics South Africa). This is in line with the view of Marx who stated that

[74] Only a few were introduced due to their complexity and high cost. Further, labour resisted the technology as it would shed employment (Pogue 2006, 13).

"with the growth of the total capital, its variable constituent, the labour incorporated in it, does admittedly decrease, but in a constantly diminishing proportion" (Marx 1982, 781).

The ever-increasing constraints on labour were exacerbated owing to the introduction of sectoral determinations in 1999 eventually covering 46% of the workforce wages and working conditions (Bhorat and Khan 2018, 31) and the preference for three-year centralised collective bargaining agreements to set the market price of labour power over longer periods with the aim of securing a lower strike frequency. This arrangement arose from the pressure of capital since increases in capital intensive production indicates a rapid turnover-time of fixed capital and the imperative of capital to plan all costs, including the long-term planning of labour costs in the reproductive sphere. Thus, the new industrial relations system in South Africa served as an important instrument to protect the rate of profit, a countertendency to its drop. South Africa's recovery in the expansive long wave resembled the international neoliberal recovery with ever-cheaper labour and finance.

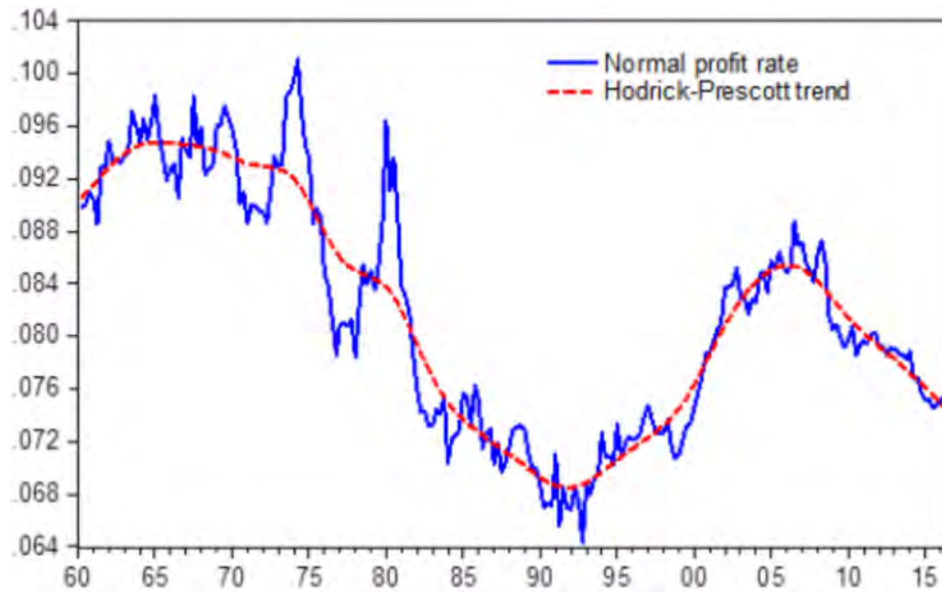
> For the period 1994 to 2000, the average annual rate of increase in labour productivity in the formal non-agricultural sectors amounted to 4,5 per cent, which was 1,4 percentage points higher than the growth in real remuneration per worker. The growth in output per worker in the formal non-agricultural sectors of the economy amounted to 6,0 per cent in 2000 – the highest rate of increase in the past thirty years. (South African Reserve Bank 2001, 28)

Increased productivity implies an increase in number and value of commodities produced at a reduced cost of output per unit of labour. Conversely, labour productivity is also a measure of the level of exploitation, another important countertendency for the rate of profit to fall, and is expressed in the wage share ratio. When productivity growth outstrips growth in wages then the wage share drops. This economic principle is reflected in the wages share drop in South Africa from 57% in 1993 to 51% by 2010 (Reddy 2015, 25).

Conversely, South Africa's rate of profit (Figure 12) increased during the transition period with the steepest increases from 1993–2005. The neoliberal recovery was led through financialisation of the economy and was not without contradiction. The rapid rate of capital intensity in the long wave of expansion deepened the problem of structural unemployment and with a declining wage share was unable to sustain affective demand which was achieved mainly through expanding consumer debt. In other words, South Africa's neoliberal model of growth "has moved from its dependence on the non-renewable sector – historically a key contributor

to employment and growth generation – to an economy now very much defined by a globally competitive and highly sophisticated financial and business services sector" (Bhorat, Ncube and Kanbur et. al. 2014, 3). By 2001 the lead sector in terms of employment creation was trade (24%), followed by community (19%), manufacturing (16%), domestic work (10%), agriculture (8%), utilities and construction (6%) and mining (4%) (Presidency, R.S.A. 2014, 93).

Figure 12: South African rate of profit (1960–2016).



Source: (Source: Malikane 2017).

The structural changes in the economy and changes in the labour process itself objectively impacted the composition of trade unions and the way they function. In terms of the former, systemic complexities of organising subcontracted, outsourced and workers employed by labour brokers meant that membership of COSATU increasingly drew on workers in permanent employ who, by 2004, would constitute 88% of its membership (Bischoff 2015, 228). Regarding the latter, the overall effect of the political exchange and a new industrial relations system had the immediate effect of increased bureaucratisation of the trade unions and a radical change in the approach to strikes. In 1997, three years after the first democratic election, Fred Gona, the outgoing president of the Construction and Allied Workers Union stated:

> …we were not proactive in our dealings with the spontaneous eruption of strikes…We were managing crisis after crisis. Looking back, I think we have improved a lot. Today we plan

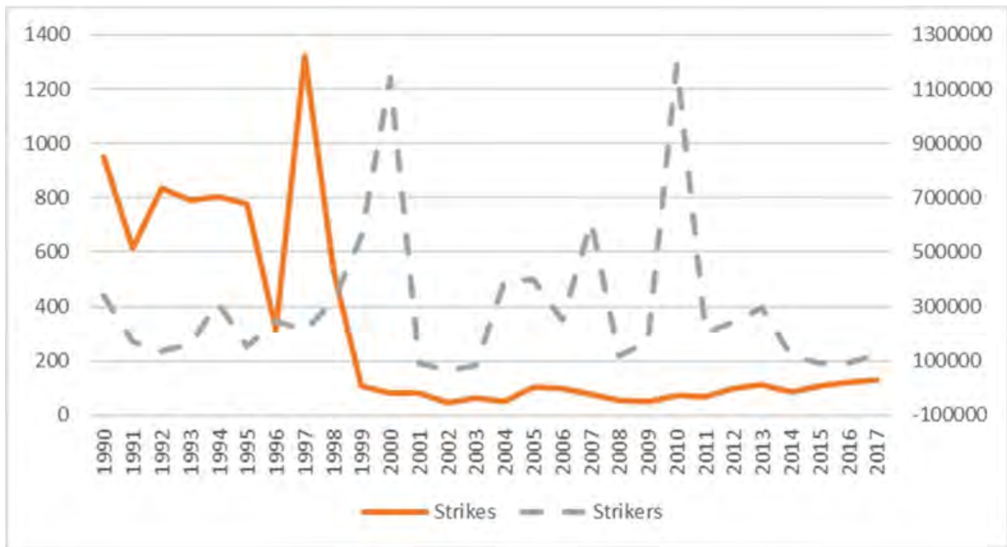
> before we embark on industrial action and the shop stewards consult us before embarking on industrial action. (COSATU, *The Shopsteward*, June/July 1997)

This *modus operandi* that prevented wildcat strike action had already taken root in 1992 when 52% of shop stewards in a COSATU survey indicated that their role in the industrial relations system was to avert strike action in a context of industry-wide agreements (Bischoff 2015, 241). The irony, however, is that while the labour movement of today emerged on the foundation laid by the wildcat strikes of the 1970s and the 1980s, a significant of leadership in the labour movement of the 1990s began to see 'spontaneous' actions by workers as an unruly practice. Thus, the effect of the political reforms of 1990 had clearly resonated, with trade unions increasingly attempting to reform their own role from the lead disruptor of the apartheid capitalist economy to one in which they were preparing to govern the country with the ANC. The Tripartite Alliance between COSATU, ANC and SACP also created improved social and political interaction between union leaders and the political elite, which provided for a moderating influence on the labour leadership (Buhlungu and Tshoaedi, 2013, 12). A key indicator of this was the glaring contradiction between the discussion and adoption of socialism as the central aim of labour at the 1997 COSATU Congress (Sikwebu 1997, 7) and the simultaneous discussions trade unions began on the development of trade union investment companies (Copelyn 1997, 78–79), signalling a shift from militant trade unionism to one increasingly seeking an accommodation with capital.

8.1 The 1997–2000 Strike Waves

In the immediate post-apartheid period, there was a decline in the trend of strike frequency. While sectors with established labour relations negotiated relatively peacefully, major strikes occurred in the health, police and municipal services sectors as well as in the fishing and transport industries (Bendix 2010, 92). By 1997, the honeymoon was over and strikes peaked at 1 324 strikes, the highest number of strikes in South African history. That the labour context remained turbulent is evidenced in the fact that while strikes plummeted after 1998, the number of strikers increased with 323 093 strikers in 1998, 555 435 in 1999 and 1 142 428 strikers in 2000 – another historic record (Figure 13).

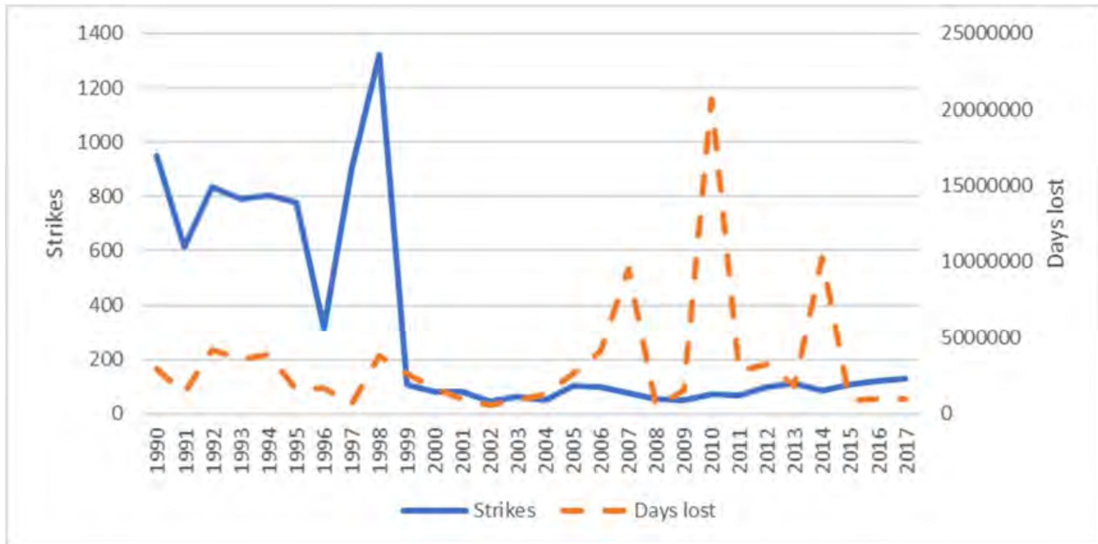
Figure 13: Strikes and strikers (1990–2017).



Source: Historical Strike Data Series, Appendix 1.

Days lost also increased with 3 833 095 and 2 625 535 days lost in 1998–1999 respectively, followed by a downward trend until 2004 (Figure 14). What accounts for this peak in strikes, strikers and an upsurge in days lost?

Figure 14: Strikes and days lost (1990–2017).



Source: Historical Strike Data Series, Appendix 1.

Except for 1997, the strike wave of 1997–2000[75] was cyclical, occurring on the upswing of September 1999–November 2007. Not much is known about the 1997 strikes except that the strike wave marked the entry of strikes by public sector workers in health, the police and municipal services over wages (Van der Velden and Visser 2006, 63).

The social weight of public sector workers had dramatically increased in the context of social service delivery and expansion of welfare to the working class after 1994. This explains the dramatic increases in strikes and strikers. Further, because of the sheer size of public enterprises and the collective organisation of workers within them, any strikes would produce massive increases in days lost without necessarily being "contests of power". The strike waves of 1997–2000 did not, however, represent a continuation of the prior tsunami wave of the 1980s, but rather the exercise of the new collective bargaining rights accorded to public sector workers within the new industrial relations system. Consequently, they did not produce noticeable structural effects, but showed that strike waves do occur along long waves of expansion and do not only commence around the peaks of long waves as long wave theorists have argued.

Between 2000 and 2004, strike frequency was largely countercyclical and averaged 71 per annum, which was even lower than the 1960s. They were largely defensive in character as workers resisted retrenchments. There were a few major strikes in 2003, notably at Shoprite-Checkers, Impala Platinum Refinery, a national strike in the clothing and textile sector, a strike at Iscor, and the national construction strike at platinum mines (Department of Labour 2003, 4). There was also a one-day general strike called by COSATU against job losses and the government's privatisation plan. The trend over the five-year period was one of a decline in strike frequency and days lost with most strikes being of short duration. The decline in strikes between 1999–2004 was significant as this was a period of "industrial restructuring" (Department of Labour 2003, 3) six years before the peak of the long wave of expansion. How is the countercyclical nature of the strikes to be explained in a context of an upswing in the business cycle?

This decline in the number of strikes is attributed to the amendment of the Labour Relations Act in 1995, which played a significant role as the "attendant improvement in dispute resolution

[75] An analysis of strikes in this period is constrained by the fact that the Department of Labour reporting on strike action only commenced in 2003 and the South African Labour Bulletin had shifted away from a detailed analysis of strikes by the mid-1990s.

procedures has led to a greater predictability around the bargaining process and a sustained reduction in the incidence of strike activity" (Department of Labour 2003, 2). Most strikes were procedural with a rate of 62% in 1999; 79% in 2000; 59% in 2001; 46.8% in 2002, 76.8% in 2003 and 66% in 2004 (Department of Labour 2005). Thus, the new trend of centralised bargaining, which encompassed three-year agreements and the sectoral determination of minimum wages, had the effect of subduing trade unions and pushed them to conform to legislative victories. The belated rooting of the new industrial relations system acted as a countertendency to strikes, which decreased trade union contact time with the workplace, thus increasing social distance between trade unions and its membership and increasing bureaucratisation of the trade unions.

While strikes receded in the productive sphere, the class struggle oscillated to the sphere of reproduction. A range of social movements in land, anti-privatisation and service delivery, and health were formed between 1998–2001 in a general response to neoliberalism (Benjamin 2004, 76–77). There were 930 275 farmworkers evicted during 1994–2004, with 138 308 towards the end of the long wave (Parliament Research Unit 2007, 3). Further, the implementation of pre-paid water technology towards the end of the long wave of expansion in rural areas led, in 2000–2002, to the biggest cholera outbreak in South African history, and its roll out in urban areas led to significant but localised forms of protest (Cottle and Deedat 2002, 1). The HIV/AIDS pandemic also led to significant protests, finally leading to a mass roll out of anti-retroviral drugs from 2002 (Powers 2017, 39). The contradiction was one in which an economy which achieved sustained growth could not ameliorate deepening unemployment, poverty, social illness and inequality. In the context of sustained growth in production, the crisis of the neoliberal growth model registered an acute crisis in the sphere of reproduction. It is within this context that the success of the industrial relations system was to be short-lived and trade unions pushed to respond to members' concerns.

8.2 The 2005–2007 Turning Point Strike Wave

The turning point strike wave between 2005–2007 shows an escalation in days lost of 2.6 million in 2005, 4.1 million in 2006 and 9.5 million in 2007 (Figure 14 above), with the main grievance being wages and working conditions (Department of Labour 2005–2007). While the number of strikers (399 291) did not register as a wave year, it was far higher than the average of 261 627 strikers for the 1990s. The economic context of the strike wave was one in which "South Africa recorded a real growth rate of almost 5 per cent...the strongest since 1984" (South

African Reserve Bank, 2006, 1). The turning point strike wave was quantitatively and qualitatively distinct from surrounding years and took place within the general upswing of the business cycle of September 1999–November 2007.

The strike wave was unexpected as the department of labour in its 2004 report indicated that, because of three-year agreements in the public and auto sector concluded in that year, "one can only expect a lower level of industrial actions in 2005". Days lost in 2005 was 141% higher than the mean of the preceding five years. Mining was the leader in terms of days lost (932 711), followed by transport (551 286), community (382 010) and trade (332 697). The drop in the rate of procedural strikes from 66% in 2004 to 57% in 2005 can be attributed to an increase in wildcat strikes (Department of Labour 2005, vi–vii). The strike wave was offensive in character with trade unions demanding wage rates double the rate of inflation of 3.4%, with an average settlement of 6.3%, and with workers fighting against an overall deterioration of working conditions (Department of Labour 2005, 3–7).

The turning point strike occurred on 3 January when 2 200 FAWU members embarked on an offensive national strike at Nestle demanding an 8% wage increase (*Fin24* January 14, 2005). This was shortly followed by a strike at Delmonte on 19 January where permanent and casual workers demanded a 6% increase and were unhappy about pay disparities between seasonal and permanent workers (*Fin24* January 26, 2005). Except for construction, the strike wave was widespread, affecting all industries with strikes in every month until November 2005. Workers in mining (gold, coal, chrome and platinum); manufacturing (auto, metal, textiles, glass, wood, and agro-processing); community (municipal, metro police, CCMA and academics); transport (air, bus, road and railway); trade (varied retail and wholesale); Finance and business services (estate regulatory, security, cleaning and gardening); and agricultural workers (packaging and farm) were on strike (Department of Labour 2005, 3–7).

The strikes were qualitatively distinct from prior years. The national strike of 90 000 workers in gold mining was the first in 18 years since the 1987 miners' strike. The strike in South African Airways was also a first. Several of the strikes were challenging changes to the labour process. The strike at VW was against planned outsourcing; at chrome mines it concerned job grading, at Fidelity Supercare workers were protesting flexible employment contracts, and Zimbabwean workers at Maswiri Boerdery were protesting changes in pay for piecework. Other distinct features of the strike wave are the entry of seasonal and casual workers in agro-

processing at Nestle, Delmonte, Unifruitti citrus packaging, and eight strikes at the Western Cape fishing factories. At several of the strikes, unions were attempting to unify workers through fighting disparities in pay between seasonal, casual and permanent workers, and demanding higher increases for workers at the lower end of the wage spectrum. Strikers at Solid Doors, a steel company in Mpumalanga, embarked on the longest strike (177 days) in the history of South African labour relations. Another unique aspect of 2005 was the emergence of multi-union strike tactic, such as the municipal wage strike jointly supported and co-ordinated by SAMWU and IMATU; X-Strata Alloys Lydenburg Works and Electrical Cable strike jointly organised and coordinated by NUMSA and Solidarity Union; and the national strike in gold by National Union of Mineworkers and Solidarity ((Department of Labour 2005, vii). These developments were the first indications of attempts at unifying the unionised workforce in South Africa. Furthermore, there was a one-day national strike called by COSATU against job losses and poverty (Department of Labour 2005, 5).

Overall, the year 2005 is marked by the entry of precarious workers, wildcat strikes, attempts to unify standard and non-standard workers, an increase in the associational power of trade unions, widespread strike action across industries, general increases in persistence levels of workers, and importantly, the recovery of mineworkers from the 1987 defeat. The turning point strike wave of 2005 came amidst favourable macroeconomic conditions and allowed for the resumption of strike action on a large scale. The structural effects of the initial turning point strike wave (ITP) of 2005 signalled a revival of militant trade unionism and the beginning of the challenge to the neoliberal growth model. The long wave of expansion lasted 15 years (1990–2005) and is the shortest in South Africa's history.

Favourable growth in the economy continued, "having persisted for approximately 8 years, the upswing is twice the length of the previous longest expansionary phase of the business cycle. It has also contributed to a favourable reassessment of the country's potential growth rate" (SARB 2006, 2). The 2006 strike wave built on the favourable economic climate and successful strike action of 2005. Within a situation of revival and confidence, workers persistence increased, with the business services taking the lead in days lost (1 302 592), followed by trade (1 273 414), community (1 033 124) and manufacturing (199 029).

> The major strikes in 2006 (i.e. security, Shoprite/Checkers, contract national cleaners and Karan Beef strikes) were characterised by violence, and clashes between police and workers. Ree Grawitzky (Pretoria News: Thursday, 12 October 2006) stated that "This year's security strike

> was reminiscent of some of the most violent strikes of the 1980s, such as the railway and miners' strikes of 1987. Comparisons extend beyond the violence to the relationships, which reflect elements of the old 1980s style of labour relations. The same could well be argued in the case of the Shoprite Checkers and contract cleaning strikes". Ree went further to say that "The strike also reflects new struggles emerging due to the changing nature of the labour market, where work is increasingly casualised and outsourced…" (Department of Labour 2010, 4)

The National Contract Cleaners strike lasted for 49 working days and the security guard strike alone accounted for 31.2% of the total working days lost. Multi-union strike incidents persisted, and more working days were lost in 2006 in strike incidents initiated by SATAWU and SACCAWU than by NUM and Solidarity in 2005 (Department of Labour 2006, 1–2, 31). Once again, COSATU (18 May 2006) called for protest action against job losses and privatisation. Significant aspects of the year were the phenomenal worker-violence against non-strikers, "scab" labour increased, and deaths doubled from 30 in 1999 to 69 in 2006, mainly due to the national security workers strike (South African Institute of Race Relations 2013). While most strikes were related to pay, workers were also protesting against substandard working conditions that emanated from flexible employment relations (Department of Labour 2006, 19). Overall, the strikes were "reminiscent of some of the most violent strikes of the 1980s" and a contest over "the changing nature of work" (Department of Labour 2006, 4).

The economy sustained high growth for the first six months in 2007, largely due to state expenditure in infrastructure ahead of the 2010 FIFA World Cup, which acted as a catalyst for private sector investment and accumulation. As mega-sporting events are once-off large-scale events with huge economic impact and concentration of capital and labour in construction, hospitality and service sectors (Cottle 2011, 3), the economic context was once again favourable for strike action. Despite the global economic crisis of 2007-2009, the World Cup helped cushion the effects of the crisis (South African Reserve Bank 2010). The expectation was that South Africa's favourable growth rate would be sustained, and this accelerated debt driven domestic spending and higher levels of imports, leading to increased levels of inflation. Government "expanded its staff complement and stepped up service delivery" and there was a general increase in employment levels (South African Reserve Bank 2007, 3). The construction sector recorded a 13,3% and 14,2% growth in 2006 and 2007 respectively, the highest level of growth of all sectors of the economy (Statistics South Africa P5002, 2008). The context was

one in which there was "increasing shortages of skilled and semiskilled workers, and strong growth in company profits" (South African Reserve Bank 2007, 4). The market power and workplace bargaining power of workers was particularly strengthened through the exogenic stimulus of the state in preparations for the 2010 FIFA World Cup. Exogenic because the mega-sporting event was not part of the regular operations of the South African economy and was a once off large-scale event.

Despite the lower frequency of strike action, the year 2007 was illuminated by 608 919 strikers and 9, 5 million days lost, both amounts the highest in a decade (Figures 13 and 14). The high level of days lost are largely attributed to the wage demands of the offensive Public Service strike, a "contest of power" lasting 25 days, involving 10 trade unions and 332 074 workers (Department of Labour 2007, 2, 30). While this strike ended in defeat it was but a prelude to future strikes in the sector. The Public Service strike was closely followed by the more successful wave of short offensive strikes, mainly led by workers' committees at the governments FIFA 2010 World Cup related construction sites. The large-scale expansion of production required an increasing pool of the reserve army of labour, who provided the backbone of the strikes. Construction workers had both weak market and workplace power and could easily be replaced, but the unique, critically time-bound nature of the World Cup had provided workers with significant leverage, a strategic power to push for their demands. Between 2007–2009 about 20 of the 26 strikes which took place were wildcat in nature and led by workers' committees, indicating an autonomous new militancy among construction workers, and leading to gains such as project bonuses, wage increases, transport allowances, no downward variation in working conditions and improvement in health and safety conditions (Cottle 2011, 101-102). There were also other large strikes, which included the national rubber sector strike, the steel and engineering sector strike, the glass sector strike, and the retail motor sector strike. Workers at Autopax, a prominent bus company, went on strike due to a change in the pay system whereby drivers and their assistants who alternate driving tasks would only be paid for hours worked (Department of Labour 2007, 4–9, 6–7). Mining was struck by several wildcat strikes at gold mines, with drill operators demanding a 40% increase in wages. In platinum, "The key sticking point has been the NUM's resistance to continuous operations (conops) and the company's unwillingness to compromise on the system, which results in the mine operating 353 days a year" (*IOL* February 19, 2007). The main causes of the strikes were wage related, followed by disputes over conditions of work. Finally, the groundswell of militancy of the 2005–2007 turning point strike wave culminated in COSATU using its

associational power to oust President Thabo Mbeki, who was viewed as the architect of neoliberalism and replaced with Jacob Zuma, who was considered labour friendly – a political structural effect.

Business cycle theory can explain the offensive character of the strikes and worker mobilisation correlating with a significant growth in the economy occurring around the peak of the long wave expansion, but is unable to explain the 'contest of power' of the public sector strike, since the bargaining power of employers are supposed to have weakened during a boom. How is the intransigence of government in acceding to public sector wage demands to be explained? Grant Thornton, an accounting and consulting firm used by the government, had greatly underestimated the costs of South Africa hosting the World Cup, resulting in the projected costs increasing from R2,3bn in 2003 to R17,4bn by 2007, with the total cost escalating to R40bn by 2010 (Bond and Cottle 2011, 44–45). The escalation of costs was not attributed to wages, but rather an underestimation of the costs associated with the tax-free bubble granted to FIFA and the formation of cartels in the construction and building industry (Bond and Cottle 2011, 48–53). Workers were aware of the large-scale state expenditure and the increases in profits through reporting in the media concerning the positive returns for the economy. However, the inflationary pressure of the boom had eroded the value of existing wages and the rapid escalation of state expenditure had created the conditions for the "contest of power".

Contrary to grievance theorists, who posit the idea that the workers' struggle intensifies during bad times, the boom once again provided the context for an upsurge in worker mobilisation in the 2005–2007 turning point strike wave. The grievances of workers were primarily concerned with wages and conditions of work. Grievances were long-standing and related to the clustering of industrial restructuring that commenced in 2000, increases in flexible employment relations and outsourcing, changes in job grading and increases in the intensity of work. The widespread nature across industries indicates a general uniformity of the effects of the restructuring and cost cutting allowing for the widespread nature of the industrial action. These changes in the labour process were reflections of broader structural changes in the economy. The share of GDP for financial and business services; transport, storage, communication and personnel services; and wholesale and retail trade – collectively constituted 48.4 % of GDP in 2006, clearly indicating a shift to a service sector dominated economy (Statistics South Africa P044, 4th quarter 2009) that made extensive use of casualisation, outsourcing and labour broking. The latter sectors, and including the public sector, maintained much of the employment growth

during the upswing, while increases in capital intensity in manufacturing accounted for the higher levels of job shedding in the sector.

Procedural strikes by trade unions accounted for 56.9 % of strikes in 2005 and 60.1% in 2006. While there are no figures available for the number of procedural strikes in 2007, days lost due to unprotected strike action was lower in 2006 (26 576) than 2007 (21 053), indicating that formal trade union mobilisation predominated once more. It is further important to note that days lost in 2005 was 14 390. Overall, unprocedural strike action was of short duration, accounting for 0.54% days lost in 2005, 0.63% in 2006 and 3.45% in 2007. The percentage difference between protected and unprotected strikes can therefore be misleading as to the extent of the disruptive power of the nature of the strike action embarked upon. The percentage difference between protected and unprotected strikes should be read bearing in mind the extent of disruption to production which otherwise could lead to exaggerated claims of the impact of "spontaneous" strike action. Trade union led mobilisation accounts for almost 100% of the days lost between 2005–2007. Mobilisation theory, which posits the idea that strong organisation leads to greater levels of strike action, most certainly holds in its explanatory power of the 2005-2007 turning point strike wave. Noting that trade union mobilisation was at the helm of the initial turning points strike waves (ITP) of the early 21st century, South Africa at the same time stands accused of representing the interests of a labour aristocracy.

The claim that organised labour in South Africa is a labour aristocracy (Lehulere 2005, 12) is because in the 80s COSATU members were blue collar and militant and today they are skilled, supervisory and clerical workers and reformist. The thesis of a labour aristocracy does not hold as the turning point strike waves of 2005–2007 were led by organised labour, who at the same time were attempting to improve the wages and working conditions of non-standard workers, which contradicts the essence of a labour aristocracy. Lehulere (2005) made no attempt at an analysis of the strikes nor did he investigate the structural changes of the economy that altered the labour process and the skills composition of the workforce, which in turn directly affected the composition of the trade unions. For Bischoff (2015, 233) the transformation of COSATU's composition led to a change from one that was blue collar and working class to one that increasingly represents lower middle-class professionals.

I argue that there is no labour aristocracy, but rather a trade union bureaucracy, and that the full incorporation of organised labour is not possible as the material basis for a labour

aristocracy does not exist within South Africa's neoliberal model of growth. The average wage differential between blue collar and white collar is surprisingly comparable. For example, in 2006 there was not a huge difference in the average monthly earnings between mining (R7 388) with 74% blue collar workers[76] and finance and business services (R8 486), the lead sector, with almost 100% white collar employment (Archer 2008). Even if we consider the higher average gross monthly earnings of R9 137 for public sector workers, this excludes the deductions for tax, medical aid or pension. Furthermore, civil servants were reported to be deeply in debt and paying R1 billion through garnishee orders by 2006/07 (Ssebagala R. 2014 in Seekings 2016, 13). A benchmark of white-collar earnings is home ownership, which places middle segment housing at R818 333 for 2006[77] with a qualifying gross income of R28 000. However, the average public sector worker earning R9 137 per month only qualifies for a bond of R284 000 in the segment of working-class housing which averages at R362 000.[78] If one breaks down the skills level for the public sector, as opposed to just looking at occupational levels, then the picture alters substantively. In 2002 the skills composition for public sector was classified as unskilled (13%), semi-skilled (71%) and skilled (15%) (Bhorat 2004, 11). Most public sector workers are therefore semi-skilled, white-collar workers and are not lower middle class as Bischoff (2015) suggests, but proletarian and disposable since they can easily be replaced. Except for agriculture, in all other industrial sectors, semi-skilled workers make up between 60–77% of the workforce. With the changes in the labour process and the occupational divisions, and with the widespread dilution of skills under neoliberalism, occupational categories no longer hold the same status and remuneration as in prior long waves.

Lehulere (2005) assumes that the permanent status of most of COSATU membership implied security and non-precarious forms of employment. Quite on the contrary, the public sector in its entirety has been subject to restructuring, with non-core activities being partially or fully outsourced to private entities (Badenhorst-Weiss and Nel 2008, 622), with a constant threat of further privatisation (read retrenchments) and fiscal restraint leading to industrial action by public sector workers. In this context and contrary to popular belief, the average "relatively privileged" permanently employed COSATU member, of which public sector workers constitute one third (Buhlungu and Tshoaedi 2012, 50), finds itself in precarious employment.

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[76] https://www.mqa.org.za/sites/default/files/SSP%20Update%2017%20November%202006.pdf [accessed 18 June 2019].
[77] https://www.fin24.com/Economy/House-price-data-whos-right-20061102 [accessed 18 June 2019].
[78] https://businesstech.co.za/news/property/263893/the-cost-of-living-in-a-luxury-vs-middle-class-vs-low-income-area-in-south-africa-right-now/ [accessed 30 June 2019].

Without *guaranteed* long-term employment and social welfare, which requires a high wage economy, the material basis for a labour aristocracy simply did not exist and was even more unlikely as the depressive long wave deepened after 2007.

The predictions of long wave theory of a clustering of radical cost cutting measures and strike waves commencing around the peak of a long wave has once more been vindicated. The combination of a general uniformity of industrial restructuring and changes to the labour process, long standing grievances, and the favourable economic climate created the conditions for the widespread nature of the industrial action, culminating in the initial turning point strike wave (ITP) in 2005 on the peak of the long wave. The distinctive feature of the turning point strike waves of 2005–2007 was that it was trade union led while the 1972–1974 wave was led by informally-organised spontaneity. While spontaneity has historically been a key characteristic of mass strikes, I argue that the form is not static and under the conditions of 21st century labour, the turning point strike wave of 2005–2007 were mass strikes. The unexpected nature of the strike explosion; the widespread nature of the strikes across industries; the involvement of workers across different occupations; the new attempts at unity between permanent, casual and seasonal; the militancy and new tactics of multi-union collective bargaining; and the political strikes organised by trade unions are all characteristic of mass strikes. Furthermore, under conditions of neoliberal financialisation and a relative permanence of rising capital intensity, structural unemployment and a declining wage share led to a stifling of effective demand, which in turn manifested in a shorter long wave of expansion. The expansionary long wave lasted 15 years (1990–2005) compared to the 25 years of the prior expansionary wave (1939–1964).

After the 2007 turning point strike wave there was a two-year ebb with a decline in the number of strikes, but with strikes still widespread across industries. However, the residue of the strike waves of 2005–2007 had come to question quite starkly the neoliberal labour process and the predominant role of labour brokers and subcontracting arrangements. In 2009 COSATU organised provincial demonstrations demanding the banning of labour brokers in all sectors of the economy, but without much success (COSATU website). It was the construction trade unions who united in the Building and Wood Workers' International (BWI) campaign for the

preparations of the FIFA World Cup who had led the call for the banning of labour brokers and spent two years preparing for the 2009, 70 000-strong national strike.[79]

> Upon the call for a strike in the civil engineering sector, thousands of building workers responded and came out on illegal strike action with a 100% participation rate on the first day of action. This was a decisive show of force for a sector riddled by fragmentation through an artificial division of the workforce between civil engineering and building sectors…Despite this fragmentation of workers collective bargaining power, the strike action was widespread and took effect on 35 construction sites across South Africa… (Cottle 2011, 103)

Once again standard and non-standard construction workers unified on a set of common demands led by the trade unions who harnessed the strategic power of workers on the critically time-bound World Cup. The strike had significant public support as BWI's campaign had effectively used the mainstream media to expose the low wages and poor working conditions of workers in contrast to the mega-profits and executive remuneration of executive directors (Cottle 2011, 113). The trade unions had won a real increase of 4% in wages and just short of the 13% they had demanded, an increase of annual bonus from 17 to 20 days, and a reduction of the working week from 43 hours to a 40-hour week. However, the trade union leadership compromised with a "peace clause" preventing future strike action and thereby not shielding the thousands of workers who would be retrenched and who wanted a special bonus on completion of their contracts The construction trade unions had set the pace for making "unreasonable" wage demands and was soon followed by the national municipal strike which achieved a 13% wage increase (Cottle 2011, 110–112; Annual Industrial Action Report 2009, 15). The pace had now been set for a resumption of more persistent struggles to come.

8.3. The 2010 Turning Point Strike Wave

While centralised bargaining and sectoral determinations continued to exert a downward pressure on strike frequency, there was a trend of increased days lost due to industrial action. The 9.5 million days lost (figure 15) in 2007 more than doubled to 20.6 million in 2010 on the upswing of September 2009–November 2013. Furthermore, the number of strikers peaked with 1 191 813 workers participating in the strikes.

> …the 2010 strikes took place in a volatile political climate. After a short lull in protest, the Zuma government has had its hands full putting out fires. There has been a resurgence of

[79] I was employed as the coordinator of BWI's World Cup campaign and was the facilitator of the plan to organise a national strike.

> delivery protests…Cosatu has been more assertive towards government, which had thumbed its nose at Cosatu over demands to ban labour broking… (Ceruti 2011, 151)

The work stoppage involving 2 000 workers at Dis-chem (a chemist retail chain) and South African Commercial Catering and Allied Workers Union (SACCAWU) dragged on for about 75 working days (Department of Labour, 2011, 8). However, most days lost was in the public sector where some 1.3 million came out on another militant strike. South African public-sector workers suspended their strike after nearly three weeks on strike that saw some of the fiercest police attacks on labour in the post-apartheid period. While COSATU also put its solidarity general strike on hold, what was significant about this strike was that the ruling elite for the first time felt that they could not control their major alliance partner who leads the labour movement – COSATU (Ceruti 2010). According to Ceruti (2010, 154):

> At a march in Johannesburg 12 days into the strike, on 26 August, Vavi echoed strikers' anger, declaring that 'the alliance is once again dysfunctional'. He also lambasted 'predatory elites' in the ANC and – crucial to the strikers' confidence – announced that the federation had filed notice for a one day general strike in solidarity with the public workers…On August 27 a government spokesperson, Themba Maseko, was quoted in the Business Day newspaper saying: 'We are beginning to see and hear too many statements that are taking the strike beyond labour relations. It worries us.'

While the trade unions eventually buckled under pressure of the arguments of fiscal restraint of government in the aftermath of the World Cup spend, there was widespread dissatisfaction from COSATU rank and file members who felt they were not the beneficiaries of the government stimulus, which was ultimately aimed at private accumulation[80]. Despite the compromise, tension continued around economic policy and the banning of labour brokers. While most attention was paid to the public sector strike, other strikes occurred in almost all industries. There were strikes in transport, mining, higher education, health, chemical, transport, municipal, metal, auto, energy, hospitality, retail, and farmworkers. In many of these strikes the demand to end casual labour and labour broking featured prominently (Department of Labour 2010, 3–17).

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[80] See Bond P and Cottle E (2011). The Promises and Pitfalls of South Africa's World Cup. In: E Cottle (ed). 2011. *South Africa's World Cup: A Legacy for Whom*? UKZN Press.

Despite the downturn in the global economy South African companies are among the most profitable in the world (Steyn, *M&G* June, 14 2013). Since 1994, the economy-wide profit rate in the non-financial corporate sector almost doubled, from 7.4% to 13.5% in 2012 (Reddy 2015). The capitalist class has thus been extremely successful in developing a new model of accumulation through the consolidation of neoliberalism and the generalised reorganisation of work in post-apartheid South Africa. This has resulted in a sustained struggle for the working class to reproduce itself. About 54% of full-time employees – 5.5 million workers – earn below the working-poor line of R4 125 month (Isaacs 2016) and the official unemployment rate averaged 23% between 2008–2014 (Statistics South Africa 2016). In this situation the burden of unemployment falls on the employed workers, including the better off public-sector workers who must support large networks of dependency through a "black tax"[81] regardless of the extent of precariousness they find themselves in. It is thus in the generalised deteriorating conditions of reproduction of the working class and their long-standing grievances that we should now situate the intensification of class struggle towards the end of the depressive long wave.

> The upward phase in the business cycle was characterised by a marked deterioration in the labour relations environment as the incidence of protracted and disruptive labour strikes increased notably, often accompanied by intimidation and violence. Although the mining sector bore the brunt of these disruptions, a number of other economic sectors were also unsettled by industrial action between 2011 and 2014. (South African Reserve Bank 2016)

While real domestic growth improved in 2011, accompanied by increases in cyclical employment, this was not strong enough to tackle the problem of structural unemployment. Overall, workers had learnt that whether there is a boom or slump they had to continuously challenge the dictates of capital. They thus began to question the viability of the industrial relations system in which trade unions were often hamstrung in overcoming the legal obstacles to challenging the structural conditions of work, and thus workers had to use creative measures to fight back even if this meant moving outside the parameters of unionism and the legal boundaries of industrial relations.

[81] See Ndinga-Kanga M 2016. "Towards an understanding of 'black tax' and the black missing middle". *Daily Maverick.* 7 May. https://www.dailymaverick.co.za/article/2019-05-07-towards-an-understanding-of-black-tax-and-the-black-missing-middle/ [accessed 20 June 2019].

The offensive wildcat strikes of December 2011–April 2012, led by post office workers' committees, while against labour brokering, exposed the lack of will of unions to take up a cause of non-standard workers and implement an effective struggle on their behalf. After six years of union-led, legal procedural strikes that all ended in failure, the workers decided to employ an alternative form of protest, namely sabotaging mail delivery at the point of distribution, which involved underground organisation, and "house visits" (protests) to key people involved in labour broking and the senior post office manager. Thus, it was outside the structural confines of the industrial relations system that they finally ended the labour brokering system, in the post office. This ensured permanent employment of 5 000 workers and the doubling of the salaries of workers to R4 000. The post office workers became the first group of workers in South African history to reverse labour brokering in full and win a 100% increase in wages (Dickinson 2015, 12). The strike achieved what COSATU could not achieve with its 2009 campaign to ban labour brokering, despite its strong associational power with the ANC. The struggle of the post office workers did not, however, create ruptures beyond their own workplace.

8.4 The 2012 Turning Point Strike Wave

The turning point strike wave of 2012 had (F) 99 strikes, (D) 3 309 884 days lost and (S) 203 138 strikers. While this wave was not as large as that of 2010, its structural effects were far reaching. Both the offensive Marikana strike and the Western Cape Farm Workers' Strike started in August 2012 within the upswing of the business cycle of September 2009–November 2013.

Some 28 000 rock drillers embarked on a wildcat strike at Lonmin, a platinum mine, in pursuance of a pay raise to R12 500 per month, an amount which amounted to a tripling of their monthly salaries. Most of the miners were unskilled or semi-skilled workers with 83% being migrants (Chinguno 2013, 8). The turning point strike was led by an independent strike committee even though most of the workers were members of the majority union, the National Union of Mineworkers (NUM) that actively opposed and sabotaged the strike by siding with Lonmin management (Alexander 2013, 605–608). On 16 August, the sixth day of the strike, a peaceful assembly of workers was forcefully broken up by a special paramilitary task team armed with automatic weapons. Thirty-four mineworkers were killed in what became known as the Marikana Massacre. While massacres of this kind overwhelmingly result in defeat, the Marikana strikers carried on striking until 18 August in what "was one of the most remarkable

acts of courage in labour history" (Alexander 2013, 609), securing a victory with a 22% increase (from R9 000 to R11 000) in wages (Reuters 2012). The Marikana turning point strike triggered a wave of wildcat strikes in mining and the auto industry and among truck drivers and farmworkers (Alexander 2013, 609).

The historic Western Cape Farm Workers' strike took place one week after the Marikana strike and lasted from 27 August 2012–22 January 2013. The strike was "unprecedented in the sense that commercial farms have never before seen struggles of this nature and on this scale" (Ntsebeza 2013, 131). According to the *Mail & Guardian* online, "the fact that the protests spread so fast after decades of quiescence shocked the country" (16 November 2012). Indeed, the strike and community uprising spread to 25 rural towns and, led mostly by casual and seasonal workers including the unemployed, youth and poor people living in rural areas, Wilderman (2015, 13) describes it as coordinated by "locally based organisations or vanguard groups". COSATU played a divisive role in the strike by calling it off without a mandate. Most striking workers continued to strike, with the smaller socialist-orientated CSAAWU (Commercial Stevedoring, Agricultural and Allies Workers' Union) also continuing the strike (Ntsebeza 2013, 132). The farmworkers' strike which developed into an uprising in the Western Cape province was historic as it was the first post-apartheid strike wave to unite workers and communities – a unity of struggle in production and reproduction – finally forcing the hand of government to announce a 52% increase in the official daily minimum wage. Workers gained tremendously, with an increase in wages of R1.5 billion in 2013 and a further R1.6 billion in 2014.[82]

The source of this unprecedented strike wave can be located in the transformation of the labour process over the previous 20 years, from a largely permanent and seasonal workforce to a mainly casual, seasonal, off-farm and migrant labour force. Ironically, the effects of globalisation in creating a more "flexible" off-farm labour force at the same time provided a more favourable spatial dimension for organising farmworkers as they were out of the paternalist reach of farmers and, instead, embedded in communities (Wilderman 2015, 49). In other words, the contradiction of neoliberalism in rural farming was that its expulsion of farmworkers resulted in a unique locational capacity to strike and struggle in which the

[82] See Department of Agriculture, Forestry and Fisheries. "Quarterly Economic Overview of Agriculture, Forestry and Fisheries 2014". Pretoria.

associational power of rural workers increased. A structural consequence of these strikes is the trend toward stabilisation of employment along with a significant shift from casual and seasonal to permanent employment (Hall 2016). This is a reversal of previous trends marking the beginning to changes in the labour process brought about through the agency of farmworkers and communities in their struggle against capital.

While some academics have asserted that the Marikana strike wave is not a turning point, they have limited their analysis to a restricted view of the events as a specific "labour dispute" gone wrong (Bhorat and Oosthuizen 2012) and cite that "our labour relations system remains intact" (Friedman 2012). Other mainstream economists (e.g. Singh 2014; Schussler 2013) focus on the irrationality of the workers' actions in terms of loss of income. In respect of understanding the dynamic of strikes, Marx (1853)[83] had this to say:

> In order to rightly appreciate the value of strikes and combinations, we must not allow ourselves to be blinded by the apparent insignificance of their economical results, but hold, above all things, in view their moral and political consequences.

In this light, the fact that Marikana workers lost 12% of their annual wages does not seem to relegate their strike wave as an irrational and defensive incident. Instead, as Marx noted, strikes should not be viewed by their immediate impact, as most strikes would then be viewed as lost; instead, cognisance should be taken that without the economic war waged between capital and labour, the working class would become "an unresisting mass" which would hinder its capacity for socio-political mobilisation (Marx 1853). The Marikana strike wave was a historic turning point as it affected several structural dimensions, the effects of which were not all immediately visible. Economically, direct challenges and changes to the labour process became visible, as did the enormous costs to the economy associated with the strikes. On the industrial relations front, the Labour Relations Amendment Act (No.6 of 2014) took effect to ensure that vulnerable groups of employees received adequate protection, especially employees employed through a temporary employment service (also known as labour brokers) and fixed term employees (Patel 2014). The Marikana strike wave further "triggered the South African government to strengthen social dialogue and collective bargaining", which gave effect to discussions around a national minimum wage (Department of Labour 2012). On the political level, a new opposition to the ANC, the Economic Freedom Fighters (EFF) was formed in 2013

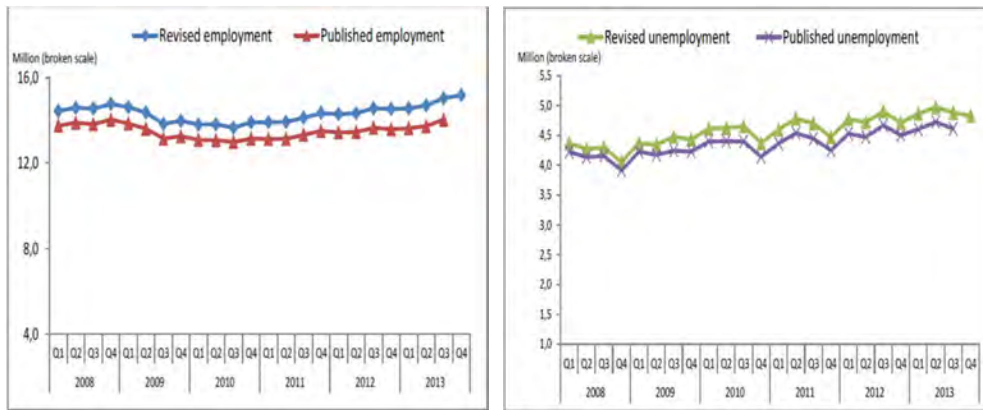
[83] https://www.marxists.org/archive/marx/works/1853/07/14.htm [accessed 20 June 2019].

and the militant National Union of Metal Workers of South Africa (NUMSA) was expelled from COSATU in 2015. An alternative federation outside of the Tripartite Alliance, the South African Federation of Trade Unions (SAFTU), led by NUMSA, was formed by 52 trade unions. The fracturing of organised labour in COSATU in the aftermath of Marikana was also an indicator that the hegemony of the ANC was on the decline. Marikana further reverberated throughout the country, triggering the "Rhodes Must Fall" movement, and the "Fees Must Fall" struggle by university students, and the "Outsourcing Must Fall" movement through an alliance of students, workers and academics. The eventual effect of the combined impacts of the Marikana turning point strike wave would give way to a political turning point in which the ANC-led government would initiate new reforms and economic policies. More on this later.

Business cycle explanations of strike dynamics have provided a useful lens for evaluating the offensive and defensive character of strikes. They have shown that consecutive booms, even in a depressive long wave, provided the strike trigger, with each boom adding to the confidence of workers as the bargaining power of employers declined. The offensive character of the Marikana strike wave saw the median wage settlement varying between 6.9% and 10% (Department of Labour 2012, 12), far above the inflation rate of 4.3%, with the farmworkers' wage increase of 52% setting a national record (Statistics South Africa, 2016). However, while the number of strikes were procyclical, the days lost reached an unprecedented 20.6 million, sustaining high levels in the upswing of 2009–2013. A complication arises when we consider that the strike waves took place in a context of structural unemployment, a distinct feature of the current long wave. How then is business cycle theory able to explain procyclical strike activity when unemployment is supposed to decline during a boom and thereby increase the market power of workers employed?

It is important to note that cyclical and structural unemployment in South Africa are combined (Figure 15). Thus, despite persistent high rates of unemployment, unemployment is still related to fluctuations in the business cycle (Marinkov and Geldenhuys 2007, 373). This is clearly evidenced in the increased employment in the booms of 2005–2007 and 2009–2013, within which the turning strike waves occurred. Overall, while business cycle theory can account for increased strike action that is offensive in character, it cannot account for increases in days lost.

Figure 15: Employment and unemployment (2008–2013).



Source: Statistics South Africa, Quarterly Labour Force Survey 2014.

Grievance theory once again proves to be of little value in explaining the turning point strike waves, as the upswings in the business cycle provided the impetus for labour mobilisation and not a downturn. The grievances of workers expressed as demands became bolder as the depressive long wave deepened. Wage demands had no relation to inflation levels, but rather reflected the desires of what workers felt was necessary for their own subsistence. The wage demands were also linked to an understanding that they were structurally bound to an employment system that kept workers in a perpetual state of insecurity and poverty – hence a concurrent theme of the strikes was the demand to end casual labour and labour brokering. At this stage, some progress has been made to end labour brokering in the post office and there was a movement from casual to more permanent forms of employment in farming. The trend in permanent employment across industries has been growing with a movement from contract to permanent averaging 17% from 2010–2017 (Statistics South Africa, Labour Market Dynamics 2008–2017). Thus, in the context of huge structural constraints, labour mobilisation has done much to ameliorate workers' wages and working conditions.

Despite the fragmentation of trade unions and their transformation in composition from blue-collar to more skilled and semi-skilled white-collar employees, trade union mobilisation at the beginning of the depressive long wave provided leadership in fighting for the interests of both casual and permanent workers, using its associational power to unify different unions in industrial action. However, as strikes that were led informally by workers' committees showed, a central weakness of trade unions was that they were unable to represent effectively the interests of workers in non-standard forms of employment.

Overall, the pattern of strikes in this period, from the initial turning point strike wave (ITP) rupture were not spontaneous in character. Instead, the change in the rate of procedural and non-procedural strikes can be attributed to strikes initiated informally by union members or members of a workers' committee who were union members. This is evident in the workers' committees in the run-up to the 2010 FIFA World Cup in South Africa. They comprised former members of construction unions who received direct support from construction unions for the strikes.[84] The unions provided legal support when strikers were interdicted from striking, enforced health and safety and ensured compliance by contractors. The Marikana strikes were predominantly members of NUM while the post office workers had been liaising with unions for six years. Even the Western Cape Farm Workers' strike was led by 'vanguard groups' of mostly casual and seasonal workers, although as that strike progressed it turned into a revolt where "spontaneity" predominated.

Only 54% of strikes in 2012 were protected while 45% were unprotected. Although the Department of Labour's *Annual Industrial Action Report* (2012) does not break down the nature of organisations involved in non-procedural strikes, it does cite several instances where members of trade unions had embarked on strike action without official sanction from the trade unions. This indicates that numerous strikes were led by informal organisation with workers striking outside the parameters of the trade unions and the industrial relations system. Many of these involved high levels of strike violence (Department of labour 2012, 91). Mobilisation theory, which posits the idea that strong organisation leads to high incidences of strikes, presents a plausible explanation of the 2012 turning point strike wave.

The increase in the intensity of the class struggle towards the end of the depressive phase is consistent with long wave explanations. This is even more so as the structure of economy had moved over into one dominated by finance and business services, while changes in the labour process saw an expansion in white-collar workers who are incorrectly regarded as more complacent than blue-collar workers. The fundamentals of the neoliberal capitalism did not alter the combinations of factors that produce crises: a decline in the rate of profit through competition, increases in capital intensity (read "labour saving technology"), changes to the labour process and a downward pressure on wages. The distinctive feature of this depressive

[84] As coordinator of the World Cup for construction trade unions, I visited most of the construction strikes to meet the strike leaders and, together with the trade unions, support was proactively provided.

long wave is that the historic turning point took place just seven years after the peak of the long wave was reached (2005–2012), the shortest in South African history. What factors allowed for this to take place?

First, in the specific circumstances the huge upswing on the peak of long wave, the cushioning of the South African economy during the 2008–2009 depression and the growth spurt from 2009–2013 provided a favourable economic climate for the offensive strikes. Second, trade union mobilisation was felt across all industries from the commencement of the depressive long wave in which a range of tactics were skilfully employed to unite standard and non-standard workers across occupations and trade union affiliation. The leading role of trade unions with resources to coordinate and sustain strikes of long duration caused major and continuous disruptions in the production process allowing for concessions from employers, some of which were significant. On the whole, both formal and informal labour mobilisation placed a brake on capital's ability to implement its plans to increase the rate of profit at will. Finally, workers' persistence levels increased as they pursued their longstanding grievances for higher wages and an end to casualisation, outsourcing and labour brokering, aspects that were deemed completely unrealistic in an expansionary long wave. Overall, the unique alignment of the above factors – the favourable economic circumstances, relatively strong organisation and longstanding grievances – combined to produce the 2012 historical turning point strike wave (HTP). The worker militancy that had increased since the initial turning point strike wave (ITP), created the conditions for trade unions to unite around the ousting of then President Mbeki, but as the level of class struggle intensified, tensions emerged in the Tripartite Alliance. These, in turn, increased divisions among more militant and conservative trade union leaderships. This was most starkly visible with the fallout over the Marikana Massacre and the role of the leadership of the National Union of Mineworkers in sabotaging the strike. With the breakdown of political trust and the divisions between militant and conservative leaderships, COSATU split at a time when so much more was possible in harnessing the momentum of workers to achieve more substantive gains. Like all previous labour historical turning points, the impact of defeat and betrayal and, in this case, a massacre of workers, created not only an atmosphere of political mistrust but also disbelief and demoralisation, resulting in a vacuum of leadership which was captured by the Economic Freedom Fighters. While strikes increased in 2013 (114), with worker participation rates maintained at 297 193, persistence levels (days lost) dropped by –44% from 2012.

8.5 The 2014 Turning Point Strike Wave and the End of the Depressive Long Wave

In 2014, strikes dropped even further. Frequency (F) was 88, worker participation rates (S) plunged to 118 566 or –60% against 2013 levels, although (D) days lost increased to 10 264 775. Overall, the trend illustrates a withdrawal of workers from industrial action, save for the notable platinum and metal workers' strikes which accounts for most of the days lost in 2014.

Two years after Marikana, the longest and most expensive strike in South African mining history broke out, renewing the Marikana demand of a living wage of R12 500 per month. The interesting fact here is that the offensive strikes and struggles from 2014–2015 occurred in the downturn of the business cycle. This is a strong indicator not just of the relative autonomy of the class struggle but that the back of the miners was not broken, despite the massacre of their comrades. We recall here that it took miners 18 years to recover from the defeat of the NUM-led strike of 1987. The 70 000-strong, five-month (22 January–24 June 2014) offensive platinum strike hit 40% of global production, dragged the economy into contraction and cost the companies almost R24bn in lost revenue – an economic structural effect. The final agreement between the Association of Mineworkers and Construction Union (AMCU) and the three platinum producers, Lonmin, Impala Platinum and Anglo Platinum included a R1 000 per month salary or 20% increase for lower earners (*Fin24* June 24, 2014). While the platinum miners did not achieve their wage goal, the wage increase was well above the inflation rate of 6.1%, itself thus a major achievement.

On 1 July, just over a week after the platinum strike, the 220 000 workers of the National Union of Metalworkers of South Africa (NUMSA) downed tools, demanding a salary increase of 12% and the banning of labour brokers. The strike without pay lasted one month and concluded with a nominal 10% or real 4% wage increase and the introduction of a number of regulatory instruments, such as compliance officers to act on complaints of alleged abuse and noncompliance (Reuters July 29, 2014).

The current levels of unemployment are far higher than the 1980s–1990s, yet the average annual strike frequency in the 2000s was 86 compared to 596 in the 1980s and in the 1990s. Thus, in the final analysis, for the grievance theory to hold, strike frequency should have been at least comparable or higher in the 2000s. As this is clearly not the case, contrary to grievance

theory, strikes do not increase in a downswing but within an upswing.[85] The persistence of the belief that strikes increase in the downturn of the business cycle lies in the fact that strikes that are "contests of power" (which are of long duration) attract public attention and have traditionally been associated with the downswing of the business cycle. This perception in turn has mistakenly reinforced the belief that strikes increase during periods of downswing. This misconception is further clarified by considering days lost. In the upswing of September 1999–November 2007, an average of 2.7 million days were lost, while a million were lost in the downswing of December 2007–August 2009. Further, there was an average of 7.1 million days lost in the upswing of September 2009–November 2013 followed by the average 4 million days lost in the downswing of December 2013–2016. Moreover, the historical peak in South African history of 20.6 million days lost occurred in 2010 during the upswing and not during the platinum "trial of strength" strike of 2014, which occurred in the downswing phase of the business cycle.

Grievance theory thus has major limitations in being able to explain the temporal dynamic of strikes. It assumes that grievances are few and small in good times and large and numerous in bad times. As this is not what the evidence indicates, grievances should be viewed as a continuum between past and present, and upswings and downswings, and not as isolated parts of a whole movement in strike dynamics. In a context of structural unemployment, where wages are consistently low, it appears that workers generally require a respite from "poor" labour market conditions to gain the energy to confront capital and, once a momentum is reached, the workers' struggle may intensify within a downswing – as was the case with the 2014 turning point strike wave. If grievances are not met in one phase of the struggle, it may take the form of an ebb, a restoring of energy, before it is carried over to the next phase with a chance of success.

At this point, with both the initial turning point strike (ITP) and historical turning point (HTP) having occurred, there is sufficient evidence to see in which industry the vanguard of the working class is located. In terms of strike action between 2000–2014 (see Annexure 6, Table 5) the leader is community (288), followed by manufacturing (241), mining (174), transport (144) and trade (99). Thus, despite the white-collar attributes of public sector workers, they

[85] The exception in this period is the increase in the frequency of strikes in the downswing from 2014–2016.

have been the most consistent fighters for changes in wages and working conditions over a 14-year period.

Noteworthy, however, is the fact that while white collar, public sector workers lead in strike activity, if the count for manufacturing, mining, transport and trade are combined, most strikes are undertaken by blue-collar workers. If the measure of days lost is used, then the leader is community (32.5 million) followed by mining (17.1 million), manufacturing (4.6 million), transport (2.8 million) and trade (2.5 million) (Annexure 7, Table 6). On both counts of strikes and days lost, community is the leader over the 14-year period. However, while important, these measures do not take into account employment numbers or the number of establishments per industry. Consequently, the real extent of workers' effort to disrupt production within specific industries is distorted. The employment share in 2014 was community (23.1%), trade (21.1), finance and business services (13.4%), manufacturing (11.6%), transport (6.2) and mining (2.8).

A more precise measure for a vanguard would be workers' strike persistence level – indicative of their willingness to make sacrifices to achieve their goals – which reflects workers' power to disrupt production, the essence of a strike. The precise measure of strike persistence is the time-loss ratio (see Annexure 8, Table 7 for details) which indicates days lost per 1 000 workers per industry. This is summarised for the five industries in Table 4 below.

Table 4: Top five industry leaders in terms of time-loss ratio (2000–2014)

Overall	2000	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Mining	Mining	Mining	Finance	Community	Mining	Mining	Community	Mining	Mining	Mining	Mining
Community	Community	Transport	Trade	Mining	Transport	Transport	Transport	Community	Transport	Transport	Manufacture
Transport	Transport	Manufacturing	Community	Manufacture	Community	Construction	Mining	Manufacture	Agriculture	Construction	Utilities
Manufacturing	Manufacture	Community	Transport	Construction	Manufacture	Manufacture	Manufacture	Transport	Manufacture	Manufacture	Agri/Trans
Trade	Trade	Trade	Mining	Transport	Construction	Community	Trade	Construction	Community	Agriculture	Community

Source: Williams (2017), Jacobs & Yu (2013), Department of Labour, Industrial Action Reports 2003–2014, own calculations

The leader in time-loss ratio is mining, followed by community, transport and manufacturing. Thus, mineworkers are the most persistent for the 14-year period, despite mining accounting for only 2.8% of employment in the country compared with 23.1% for community. Thus, it is established that the largely migrant, blue-collar mineworkers are the vanguard, closely followed by mainly semi-skilled, white-collar, public-sector workers.

Overall, the results are astonishing in that both mining and community are not regarded as the leading industries of the early 21st century and yet are the lead disrupters of the South African economy. Furthermore, manufacturing and retail as lead industries in the 20th century have been overtaken by mining, community and transport. Silver's (2014, 63) predictions of the possibility of the services, retail or auto sectors as leaders in their disruptive capacity of capitalist production has not been realised in the class struggle in South Africa. On the other hand, Silver's (2003, 15) argument that within the post-Fordist transformation of the labour process there is no "strict correspondence between workers' bargaining power and the actual use by workers of that power to struggle" is corroborated by the findings of this research, which shows that workers across industrial sectors engaged in industrial action regardless of their workplace bargaining power.

What then is the balance sheet of labour mobilisation in terms of wages? Between 1975–1990, the average real wage increased by 2.9% (Hofmeyr 1994, 199) and from 1994–2011 it was 2.2% (Seekings 2016, 15), excluding the leaps in wage increases after Marikana. This suggests that the real wage increase could either match or surpass the real wages increases achieved in the class struggle of the earlier depressive long wave – the period of the 1980s revolutionary waves. In the context of a work by Satgar and Southall (2015), a collected volume, *COSATU in Crisis*, which paints a picture of a working class and labour movement in perpetual crisis, highly fragmented with a downward spiral in organisational capacity, this is a startling result. Not a single chapter in this volume is devoted to assessing organisational capacity of the trade unions in relation to strike dynamics, which would have allowed for a more balanced assessment of the state of labour. A more accurate measure of the balance of power between workers and employers is the wage/profit share. At the height of trade union mobilisation, the wage/profit share for all categories of workers was 56%/44% in 1993, declining to 48%/52% by 2008 (Burger 2015, 161) before increasing to 49%/51% in 2010 and 53%/48% in 2017, indicating that labour-capital power relations have altered in favour of workers.[86] In line with long wave predictions, the trend in strikes is increasing around the trough, and reached a record of 132 strikes in 2017, the highest since 1999.

[86] Own calculations using Statistics South Africa, GDP historical series 2010–2017.

The strike movement of labour is by no means being left unchallenged. In the aftermath of Marikana, it was the pressure by business and the formal opposition party, the Democratic Alliance, that demanded changes in the law to undermine the right to strike (*News24*, 30 July 2014). Their argument was further strengthened in the context that there had been an unprecedented increase in unprotected strikes from 44% in 2012, 52% in 2013, 48% in 2014, 55% in 2015 and 59% in 2016 (Department of Labour 2017). Ramaphosa, who was implicated in the Marikana Massacre, made his debut at the Labour Relations Indaba, 4 November 2014, as Deputy President of South Africa. He was decisive, making it clear that the main challenges that must be confronted were labour instability and wage inequality (Presidency, R.S.A 2014). The negotiations at NEDLAC between businesses, labour and government were held behind closed doors far from the scrutiny of trade union members and the public. Ramaphosa had managed to convince COSATU and FEDUSA that the introduction of a national minimum wage and the amendments to the LRA were a victory for both capital and labour and were subsequently passed into law in 2018 – the structural effects. The strategic aim of the LRA amendments is to take away the tactical advantage a given strike may have and fundamentally reduce the capacity of workers to win their demands. In this sense, the new minimum wage was a political exchange for excessive prerequisites[87] to strike with the aim of business increasing its profit share to the detriment of workers and their families. The amendment to the LRA is a turning point in the post-apartheid labour relations architecture which had been successful in reducing strikes frequency but not the number of days lost to production. The new dispensation heralded by President Cyril Ramaphosa hopes to attain a reduction in both.

For the first time since the new industrial relations architecture was established in the early 1990s, the ANC and its ally COSATU have – through the current amendment to the LRA – openly attacked the right to strike. The implications of this are important for several reasons. On the economic front, the class struggle in the prior depressive long wave (1964–1990) had contributed to the delay by 10 years of South Africa's entry into the global information technology boom of the 1980s. The ruling class is thus anxious that its competitive position in an export market economy is not impeded by industrial action, particularly in the context of the so-called Fourth Industrial Revolution. For mining exploration, technology is essential for "reducing the time it takes to produce exploring results" which traditionally takes 15–19 years

[87] The introduction of measures that will delay and inhibit the rights of workers to embark on protected strike action through increasing the number of days for conciliation from 30 to 35 days, and the introduction of secret ballots and advisory arbitration.

before a decision is made. This is an expensive enterprise and the state has provided mining with a R20 billion subsidy for its exploration spend (*Mining Weekly* 2018, 5–11 October, 10–11). Further, the mining industry has found it difficult to move from its emulsion hydraulic technology of the late mid-1960s and late 1980s to hydro-hydraulic technologies that were commercially employed in the early 1980s and early 1990s, but on a limited scale due to high costs associated with overhauling mines with new technologies (Pogue and Ferraz 2016, 285). These platinum-containing hydraulic systems had already been rolled out in public trains in several European countries and while South Africa has developed forklifts and underground dozers, the high costs and significant infrastructure roll-out and limited market hinders its viability on a mass scale (*Mining Weekly* 2018, 5–11; October 14). In manufacturing, the technologically innovative IMOST (intelligent management and engineering system) has been developed and will "reduce environmental impact, lower operating costs, reduce labour resources and increase 'green' credentials" (*Mining Weekly* 2018, 5–11; October 28). A significant increase in the rate of profit combined with huge state subsidies in the general economy is thus a prerequisite for South Africa to participate in the expanding hydro-hydraulic market and increase capital investment in IMOST, both of which are touted as leading green technologies.

On a political level, the change in government from Zuma's nationalist faction to a more neoliberal black faction represented by Ramaphosa has resulted in a level of political uncertainty for the ruling class and international investors as factional battles continue. While Ramaphosa has been able to hold off the mining charter and radical land reform (thus pleasing business) and has not yet implemented public sector reform (business wants this privatised), new prospects of capital accumulation remain in the balance as the business cycle continues to contract from 2013 levels with a growth rate of a mere 0.8% in 2018. Shaikh's (2016, 749) prediction that he made in 2003 that the long wave would trough in 2018 in advanced countries has been confirmed with global growth peaking by 4% in 2017 and 3.6% in 2018, and likely to be 3.3% in 2019 (IMF 2019, xiii).

The results of the 2019 general elections reflect a number of issues. First is that South Africa has become increasingly polarised politically.[88] The ANC lost votes to the EFF while the

[88] See, *BusinessTech*. "South African 2019 election: the predictions vs the results". 12 May. https://businesstech.co.za/news/government/316018/south-african-2019-election-the-predictions-vs-the-results/

Democratic Alliance lost votes to the right-wing Freedom Front Plus with the NUMSA-led Revolutionary Socialist Revolutionary Workers' Party making a dismal showing. Second is that it signals a weakening of the hegemony of the ANC – a political structural effect of the events of Marikana – its support declining from 70% in 2004 to 58%. Third, it shows labour has failed in the political sphere, despite the progress made in altering capital-labour power relations in the economic sphere. The main reason for this failure is twofold: one, while a significant section of trade unions has severed ties with the Tripartite Alliance, a lack of ideological clarity has prevailed among them and, two, NUMSA has failed to consolidate its associational power within SAFTU.

Just before the 2019 general election the implementation of the new labour reforms was met with discontent by SAFTU who staged a significant general strike in which "major cities across the country were transformed into a sea of red that resembled marches by COSATU in its glory days" (*Business Day* April 24, 2018). The increased organisational capacity among organised labour (formal and informal) that has developed since 2005 has not been broken, making it unlikely that the new labour amendments will achieve their desired effect in the immediate future.

There has been a significant rise in social discontent in South Africa, with 144 service delivery protests in 2018, the highest in the post-apartheid era. They occurred virtually simultaneously in five provinces: Northern Cape, Eastern Cape, Western Cape, KwaZulu-Natal and Gauteng. According to the Municipal IQ protest monitor, "Service delivery protests have become a daily feature of South African life with an alarming increase in violent confrontations between protesters and police" (Makhafola 2018).

From the vantage point of long wave theory, the most intense class struggles occur around the trough of long waves. This is corroborated by the past trough in the late 1980s and early 1990s (Figure 18). Thus, it is likely that the longstanding grievances in the production and reproduction arenas will combine, since the ANC offered no tangible reforms in favour of the working class in the 2019 general election. Given this context and despite the tacit support by the COSATU leadership of the neoliberal labour reform, it has however been able to use its

associational power to halt the immediate calls for privatisation[89] but has not succeeded on the questions of retrenchments[90] in the public sector which will see another round of intensive strike action.

The Marikana historical turning point fundamentally realigned the South African political landscape at the end of the long wave, with fragmented working-class forces regaining greater organisational and fighting capacity. The ruling elite, conversely, is in disarray with no clear political programme to break the impasse between competing black factions and white capital over the transformation of the South African economy. The outcome of the long wave has not yet been achieved but the indicators show that the working class is still combative and will be a greater challenge than previously to the ruling class in the next upswing of the business cycle once the long wave troughs. An important indicator is that the platinum miners led by AMCU have finally won wage increases of R14 000, beyond the R12 500 benchmark of the Marikana strike[91], and will in turn trigger other strikes in mining.

In the prior depressive long wave, South Africa only reached a trough (1990) seven years after the leading economies of the US and UK (1983), part of which was caused by the intensity of the class struggle. Taking account of the average lead-lag structure of three–nine years (Gester 1992, 134) of long wave patterns for national economics, and lower levels of class struggle compared to the 1980s and greater integration into the world economy, the South African economy will trough *circa* 2019.

As South Africa's export-led economy is intractably bound to the global economy, it should be possible from the vantage point of a southern country to predict when the next round of global turning point strike waves will occur. While this thesis did not study European strike waves, a recent statistical report by the European Trade Union Institute (2019) noted that general strikes occurring after 1990 reached a peak in 2005 with an average of eight general strikes per annum increasing to 14 in 2010. This patterning is similar to strike waves in South Africa, suggesting

[89] Chabalala J 2019. "Eskom 'too big to fail' and won't be privatised, Ramaphosa tells investors". *Fin24*, 15 May. https://www.fin24.com/Economy/eskom-too-big-to-fail-and-wont-be-privatised-ramaphosa-tells-invetsors-20190515
[90] Mdeni L 2019. "Mboweni warns public service retrenchments could be on the cards". *SABCNEWS,* 20 February http://www.sabcnews.com/sabcnews/mboweni-warns-public-service-retrenchments-could-be-on-the-cards/
[91] Maeko T. 2019. 'Amcu inks R14 000 deal'. *M&GOnline*, 21 June. https://mg.co.za/article/2019-06-21-00-amcu-inks-r14000-deal [accessed 21 June 2019].

that neoliberalism has led to greater uniformity in the patterning of strike waves globally. However, since long waves are asymmetrical and last between 40–60 years, a prediction of when the next round of turning point strike waves will occur is extremely difficult. Nonetheless, the instability of the neoliberal path of capitalist development and the uncertainty of what the next round of revolutionary technological innovation will comprise, suggest that the next long wave will maintain current levels, which are of short duration, i.e. approximately 40 years. As such, only a tentative and rough prediction can be made that the next round of initial turning point strike waves (ITP) around the peak will occur in about 2033, while the historical turning point strike waves (HTP) will happen 10 years before the long wave troughs, in approximately 2059. A more accurate prediction will only become possible once the long wave of expansion commences and the first signs of long-term contraction are visible.

The temporality of the historical turning point strike waves (HTP) that clustered towards the end of the depressive long wave with major, general and mass strikes in Portugal, Spain, Greece, China, United States, the United Kingdom, Iceland, Turkey, Egypt, Tunisia, Germany, France, India, Cambodia, Brazil and South Africa between 2010 and 2018 (Gallas and Nowak, 2016) has proven the explanatory and predictive power of long wave theory. Finally, as I have argued, historical turning points (HTP) give way to political turning points (PTP) which mark changes not only in political representation but also in economic and social policy, the result of which has been a global shift to the right.[92] While these changes reflect that the global balance of forces is generally in favour of the ruling class, the working class has been able to mount effective challenges and has not lost its combativity.

[92] Patnaik P 2019. "The Global shift to the right". *Monthly Review Online*. 4 June. https://mronline.org/2019/06/04/the-global-shift-to-the-right/ [accessed 1 July 2019].

Chapter 9: Conclusion

The thesis set out to answer one specific question: What combination of factors underpins and produces turning point strikes and turning point strike waves? To answer this question, the temporal dynamics of strike waves and turning point strike waves in South Africa from 1886–2019 were examined. In the absence of either a general or a standardised method to study strike dynamics, this examination employed strike statistics and econometrics as well as economic and labour history to reveal a multiplicity of factors that combine to produce strikes and strike waves and their patterning over both the short and the long term within sustained periods of expansion and contraction in a capitalist economy. In order to account for this diverse range of micro and macro elements underlying strikes and strike waves, and their concomitant socio-economic changes at a structural level, a flexible theory was required. To this end, long wave theory, which incorporated aspects of the business cycle, grievance, mobilisation, institutional and political-exchange theories where applicable, was employed.

9.1 Summary of Findings

This thesis found that Beverly Silver's (2003) product cycle theory relies too heavily on an over determinism and that turning point strike waves are not mainly determined by lead industries. Apart from the turning point strike wave of 1973 (which was dominated by textiles), all the turning point strike waves of 1922, 1946 and 2012 occurred in mining despite the restructuring of the South African economy since 1886. A major finding of this thesis is that product cycle theory does not fit the South African experience. Furthermore, the inability of Silver (2003, 2014, 2018) to identify the lead industry in the early 21st century raises serious doubts as to the general applicability of the theory.

In this thesis, I argued that long wave theory can explain the temporal patterning of strike waves along the trajectory of South Africa's economic development from 1886–2019. This study found that in South Africa in the period under study the introduction of cost-cutting technological innovation, radical cost cutting in relation to wages, and increased work hours and intensity of work occurred between 5–7 years before the peak of long waves, resulting in a clustering of strikes across industries and a general intensification of the class struggle. This occurred around the peak of the 3rd long wave in 1913, the 4th long wave in 1964 and the 5th long wave in 2005. It has however been the contention of this thesis that long wave theorists

have neither explained nor examined the combined effect of the "escalation of the class struggle", the varying characteristics of the structural effects of strike waves or the types of labour turning points that assists in accounting for the general move towards the intensification of strikes and strike waves. The central contribution of this thesis is thus its attempt to overcome this shortcoming in long wave theory.

In this respect, the current study has argued, in contrast with long wave theorists, that while ruptures (structural effects) readily occur in the political and socioeconomic realms, their nature and extent enables a differentiation between two distinct labour turning points that provides a predictable patterning in the intensification of the underlying class struggle. In other words, this thesis submits that labour resistance to exploitation by capital takes a dual form. First, there is a general mobilisation among working classes from an initial turning point strike wave (ITP) that occurs around the peak of long waves which signals a deepening and broadening of the class struggle, the structural effects of which lead primarily to increased levels of labour mobilisation and changes in industrial relations. This is followed by a historical turning point strike wave (HTP) that ushers in political reforms, revolution, or defeat of the working class, leading to a political turning point (PTP). This then marks changes in political representation and in economic and social policy. The general movement in labour resistance and the working-class struggle can be schematically represented as follows:

ITP → HTP → PTP.

In exceptional circumstances, what I term a tsunami or revolutionary turning point strike wave occurs between the ITP and HTP. These do not resemble normal strike waves or turning point strike waves as – owing to their far longer wave length – they comprise a series of consecutive turning point strike waves, an indication of social processes of change occurring at a more profound and fundamental level. An example in the period under study occurred in South Africa in the 1980s, upending the apartheid edifice.

To elaborate, in an attempt to understand the general movement of strikes and strike waves, this thesis introduced the concept of a turning point strike and turning point strike wave where the "initial rupture" (turning point strike) and the "chain of occurrences" (turning point strike wave), combine to produce structural change. The thesis has shown that the general movement of "the escalation of the class struggle" from the ITP to the HTP and its fluctuations between

the two are bound by processes of culmination where preceding strikes and strike waves, those "sequences of occurrences", build up over the course of the depressive wave, providing greater clarity as to the nature of causation of the turning point strike waves. While the findings of this thesis confirm Mandel's theory that the trigger of an initial turning point strike waves is a clustering of cost-cutting technological innovations and other measures around the peak of the long wave, other factors such as business cycle fluctuations, long-standing grievances and levels of mobilisation capacity combine and culminate in strike waves that intensify the class struggle.

In determining the factors that produce each strike wave, this thesis is the first to have incorporated business cycle theory into long wave theory to examine the short-term fluctuations of strikes and strike waves and their offensive and defensive character. The related findings of this thesis confirm that in accounting for the fact that 36 (69%) of strike waves occurred in upswing phases of the business cycle while 16 (31%) strike waves occurred in its downswing phases, business cycle theory has significant explanatory power. Except for 1907, all initial turning point strike waves and historical turning point strike waves occurred on the upswing of the business cycle. This study found that there is a tendency for offensive and defensive strikes and strike waves to align with cyclical fluctuations of the business cycle in both expansionary and depressive long waves.

However, an individual analysis of strikes over the 133-year period reveals that business cycle theory only provides partial explanations for strike waves in that they frequently behaved conversely to the expected norm. For example, many were defensive during an upswing and offensive during a downswing, with days lost increasing during an upswing when workers' market power is supposed to be stronger, contrary to the expectation that their duration should shorten in such circumstances. The findings of this thesis thus show, first, that cyclical fluctuations of the business cycle and strike dynamics must be located within the long-term fluctuation of long waves, as booms are shorter in the depressive phase of long waves, accounting for the defensive nature of many of the strikes. Second, the findings posit – not as an absolute rule but as a general tendency – that workers are more likely to make gains on the upswing of the business cycle when their market power increases than on its downswing when their market power decreases. The evidence throughout this study illuminates that workers with weak market power such as unskilled or migrant workers have enormous capacity to disrupt production as shown in the turning point strike waves of 1920, 1946, 1987 and 2012.

Furthermore, the market power of workers does not always conform to business cycle explanations since, for example, poorly organised Indian workers with weak market power in the 1913 strike wave mounted successful offensive strikes in the upswing of the business cycle whereas white miners with strong market power were defeated. Third, this study shows that strong spurts of economic growth on either expansive or depressive phases of long waves provide an opportunity for a generalised entry of workers regardless of their market power. This is evidenced in the continuous waves of industrial action in the early 1970s, much of the 1980s–1990s, 2000s and 2012 strike waves. What is significant about these findings is that sudden spurts of economic growth in the depressive long wave assisted in sustaining the momentum of the class struggle in the 1980s and between 2005–2010. Most importantly, however, is the revelation that the conditions of structural unemployment – which are supposed to weaken continually workers' market power – are contradicted by the revolutionary wave in the 1980s where structural unemployment first emerged, and which deepened into the 21st century when widespread industrial action by migrant, casual, seasonal and permanent workers erupted in sustained waves across all industrial sectors. Thus, while business cycle fluctuations remain important triggers for industrial action, business cycle theory offers only partial explanations for this. Rather, this thesis finds that strike action expresses a tendency for procyclicality within which strike dynamics are relatively autonomous. This is borne out by identification of the fact that the intensification of the class struggle is not determined solely by the long-term movement of capitalist development in which a clustering of technological cost-cutting innovations and measures occur around the peak of the long wave giving rise to a clustering of strike action across industries, but also because of the short-term fluctuations of the business cycle. This contradiction of a short-term procyclical and long-term countercyclical patterning expresses a unity of movement within which the relative autonomy of the strikes fluctuates along the expansive and depressive long waves of economic development (Figure 18 and Annexure 4).

It is also the contention of this thesis that grievance theory has weak explanatory power as most strikes and strike waves in the period under study occurred on the upswing and not the downswing of the business cycle. Furthermore, "contests of power", which are associated with a crisis, occurred more often in boom periods when workers' bargaining power had increased. If grievance theory held, then strikes and strike waves should have been a common and regular feature in the patterning of strikes since, whether the economy or industrial relations are in boom or crisis, grievances are a constant factor. This thesis furthermore found that grievances

are not a cause of strikes but a manifestation of technological developments and changes in the labour process within all the long waves of economic development in South Africa which function as a trigger for industrial action. In this context, this thesis clearly illuminates that despite historic changes in the social structure of South Africa since 1886, technological innovation and changes in the labour process hold robust explanatory power as primary and constant causes of strike action. The radical cost-cutting measures which occurred around the peaks of long waves constituted the material basis for the consistency of broadly spread and mounting grievances that were carried over long periods, into upswings and downswings of the business cycle, creating ebbs and flows in the level of class struggle, until its resolution would result in a historical turning point (HTP). It is the outcome of the class struggle, an exogenic process, that shapes the extent to which new revolutionary technological innovations and labour processes are implemented and generalised within the expansionary phase of long waves.

This thesis further showed that despite the introduction of a permanent technological revolution within neoliberalism and changes in the social composition of the workforce, the most consistent trigger for long-standing grievances was change within the labour process that had negative economic consequences for workers. The reorganisation of the labour process in the 1990s with the amendments to the Labour Relations Act of 1995, allowed the legalisation of a two-tier labour market (Theron, Godfrey, and Lewis, 2005, 1) and eventually became the trigger for the trade union led 2005–2007 turning point strike waves and the consistent demand by workers in the depressive long wave to end labour broking, outsourcing and casualisation. However, it was identified that political mobilisation by trade unions and political parties are also a trigger and can play a significant role in intensifying the general levels of class struggle. This mobilisation in South Africa has usually taken the forms of stayaways or political strikes in which trade unions and political parties use their social power to call on workers to disrupt production to enforce political reforms. Political triggers, however, follow economic triggers and eventually combine as a unity of struggle at the point of production and reproduction. This is clearly demonstrated in the aftermath of industrial action in 1922 when white workers realigned white electoral politics, the entry of the African National Congress as a vehicle for mass political mobilisation in the wake of the turning point strike waves in the 1940s and the political mobilisations that occurred following the turning point strikes waves in the early 1970s. Notably, in the period under study, political opposition emerged around the peaks and along the depressive phases of long waves. For example, the ANC was established in 1913 on

the peak of the 3rd long wave, the black consciousness movement and the Pan Africanist Congress emerged around the peak of the 4th long wave, while the United Democratic Front and community organisations were formed along the depressive long wave. In the depressive phase of the 5th long wave, the Economic Freedom Fighters and the Socialist Revolutionary Workers' Party emerged. Similarly, social movements arose after the momentum of workers had gained traction at the points of production. This is illustrated in the 1976 student uprising and the 2015 student revolt which emerged only after the turning point strike waves of 1972–1974 and 2012. Turning points in labour history are thus not merely economic, but have immense social power as they expose and allow a connection to be made between racial and economic inequalities at the workplace against the backdrop of the broader problems of social inequality and deprivation. It is the successive combination of the economic and the political triggers and their fluctuations which are bound by processes of culmination that eventually lead to political turning points (PTP).

Mobilisation theory, this thesis concludes, has weak explanatory power as most strikes in the period under study occurred without the involvement of trade unions and because of weak organisation. Furthermore, where trade unions were involved in turning point strike waves, the bulk of the organisational capacity came from informal organisation or spontaneous self-organisation, the predominant form of which were workers' committees. It was the informal organisation or spontaneous self-organisation of strikes that provided the basis for member recruitment and growth of trade unions, which fluctuated within business cycles and over the long-term movement of capitalism, the re-composition of the labour process in turn reshaping trade union composition. In this way, the capacity of trade unions to sustain long-term growth was constantly disrupted. In all the long waves, unskilled black workers proved difficult to organise into trade unions because of labour migrancy, the limited duration of contracts, extensive casualisation and their weak workplace power which made them dispensable, thereby creating immense challenges for unionisation. Within these conditions, an ironic finding of this thesis is that while weak workplace power of workers and the lack of unionisation placed a restraint on workers capacity to enhance their livelihood, this was only in the short term; in the long term, these conditions provided workers the readymade material for great ruptures in depressive phases of long waves. This was clearly shown in the 1920 African miners' strike wave, the rupture in Durban in 1973 and the Marikana and farmworkers strike waves and protests in 2012, which were led by migrant, casual and seasonal workers.

This latter point regarding leadership in strike waves and protests illustrates a critical revelation of this thesis, that the crisis of representation of labour has been consistent throughout the development of capitalism in South Africa as trade unions have been unable to overcome the structural barriers placed upon the capitalist labour process. The great worker mobilisations, which create instability in capital to sustain adequate rates of profit, in turn forces change in the labour process such as the shift to employing permanent semi-skilled workers in the 1980s and the recent move to re-employ workers on a fulltime basis after the failure of outsourcing and casualisation. This oscillation in employment relations is indicative of the permanent nature of the class struggle as embedded in the labour process. The findings of this thesis therefore reject Eurocentric scholarship's assertion (Castells 1996; Standing 2015) that the working class is no longer an agent of social change.

This thesis found that a high trade union density is not a prerequisite for significant challenges to be posed by labour against capital and the state. In 1910, white trade union membership stood at 9 178 but was able to lead thousands of mineworkers in a struggle in an environment that was hostile to trade unionism, the after-effect of which was an increase in membership to 108 242 members in 1921. Thus, despite trade unions being weak, this limitation ironically enabled them to use their associational power to call thousands of workers into strike action. This is again exemplified in 1987 at the height of the anti-apartheid struggle, when registered trade union density was 33%, the same level as in 2016 (Annexure 9), yet the trade unions of the 1980s in contrast to those in the post-apartheid era, used both their associational and social power effectively to mobilise tens of thousands of workers and provided the hegemonic Reconstruction and Development Programme as a vison to transform South Africa.

Despite the above finding, this thesis showed that while self-organised spontaneous strikes tend to be of short duration, trade unions have immense power to unite organised and unorganised workers and then to sustain disruption to production over long periods. It is this potential for control that consistently compelled employers and the state to seek revisions to industrial relations systems, but successes were partial and episodic, and in the main failed to quell trade union led mobilisation. The institutionalisation of conflict was able to take root in South Africa between 1923–1933, when a period of "relative industrial peace" existed, only to be disrupted again by World War II, until a meaningful political exchange occurred between white workers and the apartheid state where white workers became the beneficiaries of racial welfarism. Similarly, the decline in strikes between 1999–2004 is attributed to the institutionalisation of

conflict within the new industrial relations system, only to be disrupted by the 2005–2007 turning point strike waves. The full institutionalisation and incorporation of black trade unionism has proved to be a continuous challenge for capital and the state in post-apartheid South Africa as days lost to production has soared across industrial sectors regardless of the structural power of workers (Annexure 7). This is consistent with a central line of argument in this thesis, that without a meaningful political exchange, the long-term counter tendential effect of institutionalisation of industrial conflict is limited.

An interesting and important revelation of this thesis is that the contemporary transformation of the South African economy from being blue-collar manufacturing dominated to one dominated by white-collar services and public sector workers has not meant a race to the bottom in labour militancy. In this respect, the findings of this thesis indicate that the re-composition of trade unions does not reflect the emergence of a labour aristocracy or one that is privileged and middle class (Lehulere 2005, Bischoff 2015, Buhlungu and Tshoaedi 2013). On the contrary, the thesis shows – as a new contribution to labour theory – that it is an error to use Fordist occupational categories to determine the class composition of workers; instead, skills categories should be employed, as neo-liberalism has diluted the skill, value and status of occupational categories. Against this backdrop, it is clear from the investigation undertaken in this thesis that public sector workers are primarily semi-skilled proletarians who make up the largest proportion of the social base of trade union federations today. As this thesis has illustrated, labour scholars have neglected the study of strike dynamics over the long-term and, in so doing, have overemphasised the internal organisational weakness of trade unions at the expense of informal and formal labour mobilisation capacities. Had they studied strikes in detail, as this study has done, they would have revealed that mining (blue-collar workers) and the public sector (white-collar workers) constitute the vanguard of the South African labour movement.

This thesis has argued that the main problem of the labour movement in contemporary South Africa today is not one of a crisis of representation or trade union density, which is not new, but a political and ideological crisis. This is reflected in its holding back the momentum of the initial turning point strike waves (ITP) it led, uniting organised and unorganised workers during the 2005–2007 wave, which it has curtailed in favour of a short-lived political exchange within the Tripartite Alliance for a more "labour-friendly" government. The consequences of the political exchange did not abate the economic and social problems of the working class; instead

they were exacerbated towards the end of the depressive long wave culminating in the historical turning point (HTP) of Marikana. The ramifications of the political exchange thus are the political split that weakened the ability of the labour movement to use its social power to unite the working class against the looting of the Zuma-led government and to wage an effective struggle against the draconian change in strike law led by the Ramaphosa government. However, despite the weaknesses of the labour movement, the working class has improved its mobilisation capacity and has been able to increase its wage share from 51% in 2010 to 53% in 2017, indicating a shift in the balance of power in favour of workers.

Overall, this thesis found that the predictive power of long wave theory – that an escalation of the class struggle unfolded around the peaks of strike waves, along the depressive phases and the troughs – holds throughout the period covered in this study, 1886–2019. It is, however, evident from the findings that neoliberalism has universally altered the patterning of strike waves, with European waves displaying a similar but less intense patterning than strike waves in South Africa and other southern countries. Thus, contrary to European long wave theorists' stance, this thesis confirms that it is indeed possible for a southern country, using long wave theory, to predict the next round of initial turning point strike waves on a global level.

9.2 Theoretical Contributions of the Thesis

This study makes a theoretical contribution to the literature on strikes and strike waves. It expands pre-existing research by going beyond the confines of illuminating the temporality of strike waves along long waves of capitalist development to explaining their causes, the combination of factors which produce an escalation of the class struggle, the distinctive types of turning points and the specific nature of their structural effects and their predictive patterning.

The thesis makes further contributions in terms of a typology of strikes by providing definitions for a turning point strike, a strike wave, and a turning point strike wave. It also clarifies the distinctions between an initial turning point strike wave and a historical turning point strike wave, as well as a tsunami or revolutionary wave and a political turning point, all of which assist in understanding the long-run dynamics of strikes.

9.3 Empirical Contributions of the Thesis

There are several empirical contributions that this study has made in understanding the temporality of strikes and strike waves. First, it contributes to the empirical literature on strikes and strike waves. It provides a systematic scholarly account of each of the strike waves, identifying their temporality over a period of 133 years (1886–2019). The completed dataset (Annexure 1) also enables international comparisons to be made between a southern country and northern countries on the long-run patterning of strikes and strike waves over the phases of capitalist development. To locate the temporality of the strike waves within long waves of capitalist development, the thesis employed a new method using a cross-spectral analysis of strikes and GDP data (Figure 18) and economic history (Table 2) to reveal the macro-historical patterning of strikes and strike waves over the long term. As a first application of long wave theory to a southern country, the findings of this thesis contradict long wave theorists' proposition that only countries that are "industrialised", with a large, wage earning-proletariat, have a long wave patterning. South Africa's long wave patterning, commencing in 1886, began almost a 100 years after European long waves, thus synchronising relatively with the 3rd long wave (1886–1939) of international economic development. Furthermore, the results of the cross-spectral analysis contradict Mandel's (1995) European class struggle curve (Figure 3) where the patterning of the class struggle displays a convex curve which mirrors the patterning of long waves of economic growth, much like a business cycle. Rather, the patterning of long waves of strikes displays a concave, countercyclical movement to the long wave of capitalist development. The significance of this finding is that for the first time it provides empirical evidence that the working-class struggle is conducted relatively autonomously from the path of capitalist development. Thus, while Mandel's (1995) long wave theory is correct in terms of the relative autonomy of the class struggle, his depiction of its macro-historical patterning is incorrect.

Secondly, the central disputes amongst long wave theorists (Mandel 1995, Screpanti 1987 and Kelly 1999) on the temporality of strike waves and their intensity in European countries was whether they took place around the peak or the trough of the long wave, with Mandel arguing they occurred around the peak and intensified along the depressive long wave and around the trough of long waves. The findings of this thesis, however, contradict long wave theorists' proposition that strike waves commence around the peak, showing that they readily occurred on both the expansive and depressive phases of long waves in South Africa. This illustrates that the conditions of resistance and patterns of accumulation in the national social system of

South Africa were not the same as in European countries where welfare states with democratic rule, the partial incorporation of trade unions and trade union rights, acted as a countertendency to strike during most of the expansive phases of the European 4th long wave (1943–1972). In South Africa, the apartheid capitalist system with high levels of racial inequality, repression and lack of political freedoms had weak countertendencies, allowing for high levels and continuous forms of resistance. During the 5th long wave (1990–2019) the advent of democracy and trade unions' rights failed to act as a countertendency to strike action as neoliberalism was unable to create the material conditions for a meaningful political exchange with the labour movement. In these circumstances, strike waves continued to occur on both the expansive and depressive phases of the long wave of economic development. However, in line with long wave theory, the most intense periods of strike action still took place in the depressive phase when the class struggle escalated around the peak, and towards and around the trough of long waves (Figure 18).

Thirdly, this thesis found the method of measuring the presence of strike waves (Shorter and Tilly, 1974; Bordogna and Provasi, 1979) in the European context useful, but inadequate in the South African context as it did not reveal all the strike waves in the 20-year period between 1980–2000, a period of intense strike action (Figures 5 and 6). After using several variations for mean years (5, 10, 15 and 20 years), I created a new measurement to identify the presence of strike waves: the number of strikes in a given year must be greater than the mean number of strikes over the previous 20-year period. Employing this measure enabled the identification of nine wave years between 1980–2000. The quantitative measurement for strike waves revealed that South Africa had 52 strike waves between 1886–2017, which formed the basis of this study (Table 1). There were 13 strike waves during the 3rd long wave (1886–1939); 26 strike waves during the 4th long wave (1939–1990) and 13 strike waves in the 5th long wave (1990–2019). At the time of writing, this depressive long wave is yet to conclude.

9.5 Methodological Contributions of the Thesis

This thesis made a methodological contribution to the standardisation of the study of strikes and strike waves. One of its major outcomes is the development of a methodological framework that combines strike statistics, econometrics, economic and labour history, a combination that has been beneficial to this study of long run strike dynamics. Furthermore, a measurement to account for revolutionary waves which otherwise would have been omitted from this study was developed. Finally, the approach in this thesis resulted in the development of a cross-spectral

analysis to capture the simultaneous movement of long waves of economic development and long waves of strikes – an entirely new method – which provided empirical proof of the relative autonomy of the class struggle.

9.6 Limitations of the Thesis

As this thesis provides a broad historical overview, its investigation into macro and micro factors that play a role in strike dynamics had several limitations. For example, it is limited in terms of its analysis of "spontaneity" and the extent of informal organisation involved in the type of strike action described in the thesis. Another limitation is the extent of its investigation of the impact of institutionalisation on strike frequency as an empirical measurement of institutionalisation and its effect on strikes. This is owing to the fact that there is no collective agreements database that captures the dates of collective agreements and their impact in relation to strike frequency. The thesis furthermore did not go into detail regarding the formal and informal aspects of trade union mobilisation, which had an important bearing on the level of bureaucratisation, and the extent to which this limited labour mobilisation. Finally, the debate on the notion of class struggle or how best to characterise the varied nature of worker mobilisation has only been partially dealt with in this thesis and is thus another limitation.

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Annexures

Annexure 1: Historical Timeline of Strikes in South Africa 1897–2017

Year	Strikes	Strikers	Days Lost	Year	Strikes	Strikers	Days Lost
1897	6			**1958**	74	8179	4780
1898	1			**1959**	46	3703	3495
1899	1			**1960**	42	5500	4585
1900	1			**1961**	81	4991	60115
1902	4	55		**1962**	56	2157	1112
1903	6	160		**1963**	61	3401	3782
1904				**1964**	99	5037	37849
1905	3			**1965**	84	6228	5628
1906	1	49	2646	**1966**	98	5115	7274
1907	1	6400	288000	**1967**	76	3531	3998
1908	1			**1968**	56	1953	4479
1909	1	400		**1969**	78	4439	4177
1910	5	421	10200	**1970**	76	4168	4527
1911	4	860	16785	**1971**	69	4451	3485
1912	1	884		**1972**	71	9224	14959
1913	5	19771	89887	**1973**	370	98378	229281
1914	12	21927	160129	**1974**	384	59114	102119
1915	2			**1975**	276	23488	19209
1916	10	1275	1420	**1976**	248	28098	73585
1917	22	3457	18417	**1977**	90	15335	16153
1918	23	2582	31786	**1978**	106	14153	10700
1919	47	23799	536538	**1979**	101	23064	70542
1920	66	105658	839415	**1980**	207	58213	168996
1921	25	9892	112357	**1981**	342	83887	232912
1922	12	29001	1339508	**1982**	394	140937	419768
1923	2	50	740	**1983**	336	64469	139041
1924	7	1856	10129	**1984**	469	181942	431305
1925	0			**1985**	389	239816	678000
1926	3	768	890	**1986**	793	424390	1309000
1927	12	5158	9126	**1987**	1148	591421	5825000
1928	10	5746	10535	**1988**	1025	161679	914380
1929	10	2962		**1989**	855	197564	1238686
1930	12	5050	2600	**1990**	948	341097	2973921
1931	19	6284	54575	**1991**	613	172096	1339333
1932	12	4011	26034	**1992**	833	137946	4200000
1933	10	1585	16081	**1993**	789	161504	3600000
1934	12	2379	52132	**1994**	804	312842	3900000
1935	17	2367	19564	**1995**	776	152956	1600000
1936	20	2198	5009	**1996**	315	247202	1700000
1937	33	5906	27329	**1997**	1324	212094	656556
1938	20	3798	4070	**1998**	527	323093	3833095
1939	20	4871	4246	**1999**	107	555435	2625535
1940	23	1849	6475	**2000**	80	1142428	1669966
1941	35	5450	23199	**2001**	83	90392	953610
1942	62	14051	49547	**2002**	47	66250	615723
1943	53	9162	47719	**2003**	62	83533	919780
1944	53	12222	62709	**2004**	49	395301	1286003
1945	63	16215	53991	**2005**	102	399291	2627953
1946	53	95574	209289	**2006**	99	250787	4152563
1947	64	28848	716105	**2007**	75	608919	9528945
1948	44	3656	24598	**2008**	57	118979	497436
1949	37	6988	37458	**2009**	51	172772	1526796
1950	33	3755	5871	**2010**	74	1191813	20674737
1951	36	8120	12555	**2011**	67	203138	2806656
1952	54	6485	22216	**2012**	99	241391	3309884
1953	30	2235	11000	**2013**	114	297193	1847006
1954	60	5838	14498	**2014**	88	118566	10264775
1955	102	9883	14480	**2015**	110	91072	903921
1956	105	10050	9501	**2016**	122	90228	946323
1957	119	9634	13208	**2017**	132	125125	960889

Source: Gitsham and Trembath (1926), Harris (1991), Backer and Oberholzer (1995), Van der Velden and Visser (2006), South African Institute of Race Relations (1954–1972), Department of Labour, Industrial Action Report (2003–2018).

Annexure 2: Business Cycle Phases in South Africa, 1910–2013

Upswings						Downswing				
	1886			1890			1890		1892	
	1892			1897			1897		1899	
	1899			1903			1903		1909	
Jan.	1910	–	May	1912		May	1912	–	Oct.	1914
Oct.	1914	–	June	1920		June	1920	–	Mar.	1922
Mar.	1922	–	Aug.	1929		Aug.	1929	–	Jul.	1932
Jul.	1932	–	Apr.	1937		Apr.	1937	–	Oct.	1939
Oct.	1939	–								
Post WW II		–	Jul.	1946		Aug.	1946	–	Apr.	1947
May	1947	–	Nov.	1948		Dec.	1948	–	Feb.	1950
Mar.	1950	–	Dec.	1951		Jan.	1952	–	Mar.	1953
Apr.	1953	–	Apr.	1955		May	1955	–	Sep.	1956
Oct.	1956	–	Jan	1958		Feb.	1958	–	Mar.	1959
Apr.	1959	–	Apr.	1960		May	1960	–	Aug.	1961
Sep.	1961	–	Apr.	1965		May	1965	–	Dec.	1965
Jan.	1966	–	May	1967		Jun.	1967	–	Dec.	1967
Jan.	1968	–	Dec.	1970		Jan.	1971	–	Aug.	1972
Sept	1972	–	Aug.	1974		Sept.	1974	–	Dec.	1977
Jan.	1978		Aug.	1981		Sept.	1981	–	Mar.	1983
Apr.	1983	–	Jun.	1984		Jul.	1984	–	Mar.	1986
Apr.	1986	–	Feb.	1989		Mar.	1989	–	May	1993
Jun	1993	–	Nov.	1996		Dec.	1996		Aug.	1999
Sept	1999	–	Nov.	2007		Dec.	2007		Aug.	2009
Sept	2009	–	Nov.	2013		Dec.	2013			

Source: Katzen (1964), South African Reserve Bank (2016). S-157. Business cycle phases since 1945.

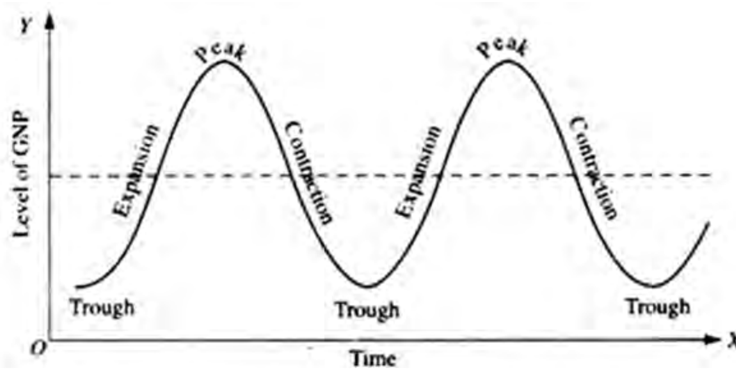
Annexure 3: Methods of Measuring Business Cycles and Long Waves

Business Cycles

The business cycle is a phenomenon that is specific to capitalism and is not a feature under other social systems. A business cycle is defined "as the pattern of expansion and contraction in economic aggregate economic activity" (Treasury 2012, 1). A business cycle is economy-wide and reflects the aggregate performance of all industries, public and private. Further, while different cycles are similar, they vary in many ways including their length, which last from one to twelve years (Sherman 2014, 3–8).

Business cycles have four elements. The lowest point is the trough, which is followed by a rapid upturn called recovery or revival, with a further expansion called prosperity. The cycle peak is where businesses reach the highest point of growth. Immediately following is a downturn, called a crisis, which becomes a contraction, called a depression. A mild contraction is called a recession. The standard form of measuring each business cycle (Figure 16) is from trough-to-trough (Sherman 2014, 3–8). For the purposes of this research, the terms upswing and downswing of the business cycle are used.

Figure 16: The Business Cycle.



Source: "Your Article Library." 2016. http://www.yourarticlelibrary.com/macro-economics/theories-macro-economics/business-cycles-meaning-phases-features-and-theories-of-business-cycle/38063/ [accessed 22 August 2017]

The reference cycles or reference turning points of business cycles involves measuring a series of dates when business cycles reach troughs and peaks. In other words, a reference cycle is the average business cycle for the entire economy (Du Plessis 1951; Sherman 2014, 10).

In terms of strikes, short-lived booms in a specific industry or sector can also explain strike movements such as the 2010 FIFA World Cup strike wave, which affected the construction and building sector. The approach of studying cycles in specific economic sectors/industries or product cycles can thus be important in understanding certain outlier economic booms and strikes in a generalised downturn of the business cycle. Here the important distinction would be whether such a boom is related to endogenic or exogenic factors, such as a state stimulus for infrastructure as occurred during the preparations for the 2010 FIFA World Cup.

The business cycle, which is the aggregate of the specific cycles for the whole economy, has an important role in the study of strike dynamics within the business cycle approach, as outlined in Chapter 2. The premise of this approach is that strikes are procyclical and that offensive and defensive strikes align with the business cycles. In other words, strike movements align with specific cycles of all economic sectors of the economy and thus manifest across industries (albeit unevenly) and can therefore be measured in aggregate form. In business cycle theory, aggregate strike frequency in an upswing of the business cycle is higher than in a downswing.

This research uses reference cycle turning points of the business cycle as published by Katzen (1964) from 1910–1939 and the South African Reserve Bank (2016), from 1946–2013 in order to establish whether the turning point strike waves align with upswings or downswings of business cycles.[93]

Further, to establish the general pattern of offensive and defensive strikes as argued by the business cycle approach, the empirical analysis in this study attempts to establish the relationship between strike frequency and economic cycles. Since a business cycle displays the pattern of expansion and contraction of aggregate economic activity of the GDP, and strike frequency the pattern for the aggregate number of strikes, it should be possible to develop a picture to visualise this alignment.

As South African GDP data were systematically collected from 1946, I use the econometric spectral analysis technique to analyse the business cycles from 1946–2017. This technique allows for the identification of the complex cyclical structure of the time series by determining

[93] The South African Reserve bank is able to provide a full history of business cycle phases due to a lack of standardisation of GDP data prior to 1946. I thus rely on the GDP calculations by Katzen (1964), an economic historian.

the dominant cycle patterns of multiple variables and their co-movement over time (Casutt 2012, 20). In this study, the technique reveals the cyclical structure of the strike series in interaction with the business cycle. While spectral analysis was developed in the 1960s in the application of the business cycle (Bátorová 2012) the application of econometric analysis of long waves is more recent. See Annexure 5 and 10 to view the results of the econometric test.

Long Waves

The Marxist historian Eric Hobsbawm (1996, 87) also wrote about the theory of long waves:

> That good predictions have proved possible on the basis of Kondratieff Long Waves—this is not very common in economics—has convinced many historians and even some economists that there is something in them, even if we don't know what.

Empirical economists and economic historians have voiced diverse views on long waves. While there is good evidence for business cycles, long wave cycles are more controversial as well as more difficult to verify empirically, primarily because data is inevitably more limited (Bernard et al., 2014, 121). Kondratieff's prices explanation of long waves no longer held after the 1930s due to financialisation and the formation of oligarchies, which introduced new countertendencies within the capitalist system. Hobsbawm cited the fact that although Kondratieff was not able to provide satisfactory scientific reasons for his long waves hypothesis, he nevertheless was able to correctly predict the timing of the next downturn in the world economy.

As both business cycle and long wave theory have their roots in Marxism – explained as the result of the contradictions inherent in the capitalist system and related primarily to the tendency of the rate of profit to fall – only Marxists have been able to predict the recurrence of general crises under capitalism. Using long wave theory, Ernest Mandel (1995) was able to predict the decline of American Imperialism in the mid-1960s; Anwar Shaikh in 2003 was the first to predict the 2008–2009 crises followed by Michael Roberts in 2005.[94]

Long wave research has a long history and has been contested by many sceptics. According to Kleinknecht (1992, 2) the major reason for this scepticism is that the econometric techniques

[94] Michael Roberts, "Capitalism and Anwar Shaikh," Michael Roberts Blog, April 4, 2016, https://thenextrecession.wordpress.com/2016/04/04/capitalism-and-anwar-shaikh/

used by some authors (e.g. Ewijk 1981; Van der Zwan 1980; Solomou 1986) have been developed to study short- to medium-term business cycles and not long waves, which has made the presence of long waves difficult to detect.

The breakthrough came with a conference organised in 1989 on long waves, which led to the publication of the book, *New Findings in Long Wave Research* published in 1992 in which long waves were rigorously subjected to testing with new methods in econometric techniques. The work of Metz and Reijnders provided convincing evidence countering the critique of Kondratieff waves in the earlier research (Kleinknecht 1992, 5).

Reijnders (1992, 15) argues that the introduction of a long-run approach to long waves was necessary because the short-run approach created a 'perspectivist distortion'. The starting point of spectral analysis is elimination of the trend[95] which has been found to be,

> …tricky because the selection of the basic trend function has a direct impact on the resulting cycles. A strong case against the direct use of trend elimination procedures was presented by E. Fricky, who demonstrated that the application of different trend-fitting procedures to the same data leads to different 'cycles' whose apparent length varies from 45 years down to 3.3 years (Fricky 1942, 46). Fricky suggested that the variation in results mainly derives from the selection of trend functions. However, scrutiny of his summary tables reveals that it is not so much the variation in trend specifications but rather the variation in the length of the time series considered which explains the variation in results (Fricky 1942, 46).

Thus, Reijnders argues that the perspectivist distortion in Fricky's model is plausible since the time interval is only between 45 years and down to 3.3 years, which excludes the possibility of the existence of long waves that are between 40–60 years. By increasing the length of the time series, and applying a new method in detrending and standardising data for the spectral analysis, Reijnders was able to show that long waves for Britain feature prominently in most spectra, particularly 'those spectra of indicators of aggregate activity such as Gross Domestic Product (GDP), Gross National Product (GNP), and employment' (Reijnders 1992, 37). In light of the evidence of the spectral analysis, Reijnders was able to prove the existence of the Kondratieff wave.

[95] The elimination of the trend allows for closer approximation of the cyclical elements in a time series. The series can be population, employment, government expenditure, manufacturing etc. All seasonal variations of series are eliminated otherwise it contributes to distorting the cycle (Du Plessis 1950).

Rainer Metz (1992, 80) focuses on the controversial aggregate production real series to test the existence of long waves. He uses a unique filter design approach to detect signals and extraction which is not compatible with traditions methods of time series analysis which are unable to detect long waves as traditional methods are used to detect business cycles (1992, 83).

Metz defines the trend as oscillations that are longer than long waves. A long wave is defined with a maximum duration of 65 years with those less than 65 years to 2 years defined as cyclical components. By applying the filtered trend to global industrial production, Metz was able to establish the oscillations according to the trend definition. The original series shows the trend, the detrended cyclical series and the smoothed detrended long wave. Based on these results, Metz raised the problem that according to different definitions of the cycle, the results can also vary. Then, using the long waves dating by Mandel of all the trend-free series, he conducted a spectral analysis of Belgium, Denmark, France, Germany, Italy, Sweden, the UK, and the USA to confirm the cyclical structure of the series (Metz 1992, 92).

Although the results for these countries varied somewhat, they all displayed Kondratieff waves. The exception was France where the upswing of the second and third Kondratieff starts sooner. In the second half of the 19th century, the countries displayed much more uniformity indicating a high international synchronisation of capitalist development. Even during the First and Second World Wars, the synchrony of the countries did not break off internationally. The average length of a long wave is 54 years (peak-to-peak) and 56 years (trough-to-trough) with the mean confirming the mean length of the Kondratieff waves. The finding was also important because although it revealed several deviations, showed general support for the Mandelian dating of long waves (Metz 1992, 110–118).

A key issue raised at the conference was that not all countries displayed a synchronisation of long waves, including a variation of the precise dating of long waves for individual countries. Ernest Mandel (1992, 319) argued that in the study of long waves it would be a serious methodological error to look for a basic synchronisation (i.e. uniformity) of all countries in long waves as some advanced countries such as Switzerland had a countercyclical role during the War period and neutral Sweden occupied a special place in 20th century capitalist development. So, too, he argued that less-industrialised countries would not have a pattern of capitalist development identical to that of industrialised countries. Thus, in long wave analysis, one could look at key capitalist economies or world output and world trade on a global level

and deviations from the trend could then be explained in relation to specific conditions in a country.

A key weakness emanating from the 1989 conference on long waves was that no less-industrialised country was included to test for the possibility of long wave synchronisation. A possible reason for this could be that the standardisation of economic data for less-industrialised countries were developed in more recent decades. For example, South African GDP data that comply with the internationally recognised method developed by the National Bureau of Economic Research (NBER) only starts in 1946. The spectral analysis is thus limited to the period 1946–2017 to detect and show the underlying cyclical structure of the GDP time series for long waves from 1946–2017.

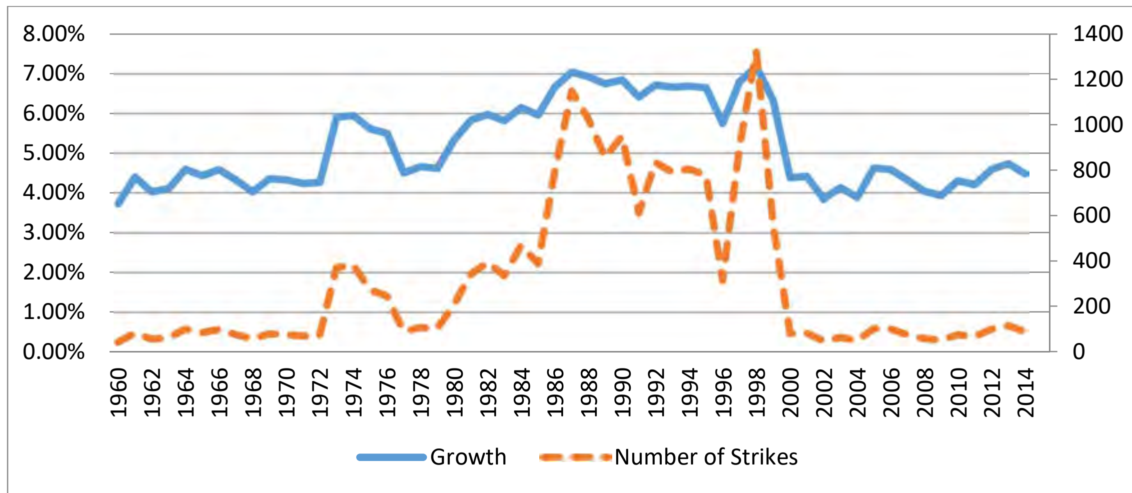
Annexure 4: Regression Analysis of Business Cycles and Strikes

The business cycle theory of strikes advances the idea that all strikes have their foundation in the economic sphere and are procyclical (see theory chapter). I will repeat the findings of my earlier empirical research (Cottle 2017, 153–154). It is important to note that Williams (2017, 62–68) and my study were conducted independently of each other, and constitute the first long run econometric tests to examine the relationship between strikes and business cycles, with both finding that strikes are procyclical in South Africa (Figure 17). The Williams' study is for the period 1970–2014 and my study is from 1960–2014.

In line with the question of interest, the empirical analysis in my 2017 study tries to establish the relationship between strike frequency and economic cycles through a simple linear correlation. The number of strikes is defined as the dependent variable and the rate of growth of GDP is the independent variable. The hypothesis is that the independent variable affect strike trends and can estimate the degree of impact from the years 1960–2014.

The correlation coefficient ranges from −1 to 1, where 1 is a total positive linear correlation, and 0 is no linear correlation. In this example, the r value (correlation co-coefficient) is 0.94, which is closer to 1, meaning that the finding is statistically significant. Thus, the result displays a significant correlation between the frequency of strikes and gross domestic product. To provide a visual representation of the results in the line graph (Figure 17), GDP is reflected as the percentage of growth per year and strikes as strike frequency for the period 1960–2014. It is clear that offensive strikes, such as those of 1973, 1987 and 2012, coincided with increases in the rate of GDP growth.

Figure 17: Real GDP growth rate and strike frequency 1960–2014.



Source: GDP data from the World Bank, strike data from Backer and Oberholzer (1995), Van der Velden and Visser (2006), South African Institute of Race Relations (1954-1972), Industrial Action Report (2003-2018).

Annexure 5: Spectral Analysis of Long Waves of Development and Long Waves of Strikes

Hodrick-Prescott Filter

The Hodrick-Prescott (HP) filter extracts the trend of a time series and outputs a new and filtered time series. Suppose that $(y_k)_{k=1}^{N}$ is a time series with N number of samples. If the HP filter is applied to a time series, $(y_k)_{k=1}^{N}$ then each of the y_i is decomposed into a long-term growth τ_i and into a term c_i that shows the deviation from the long-term growth. The latter is summarised mathematically as follows:

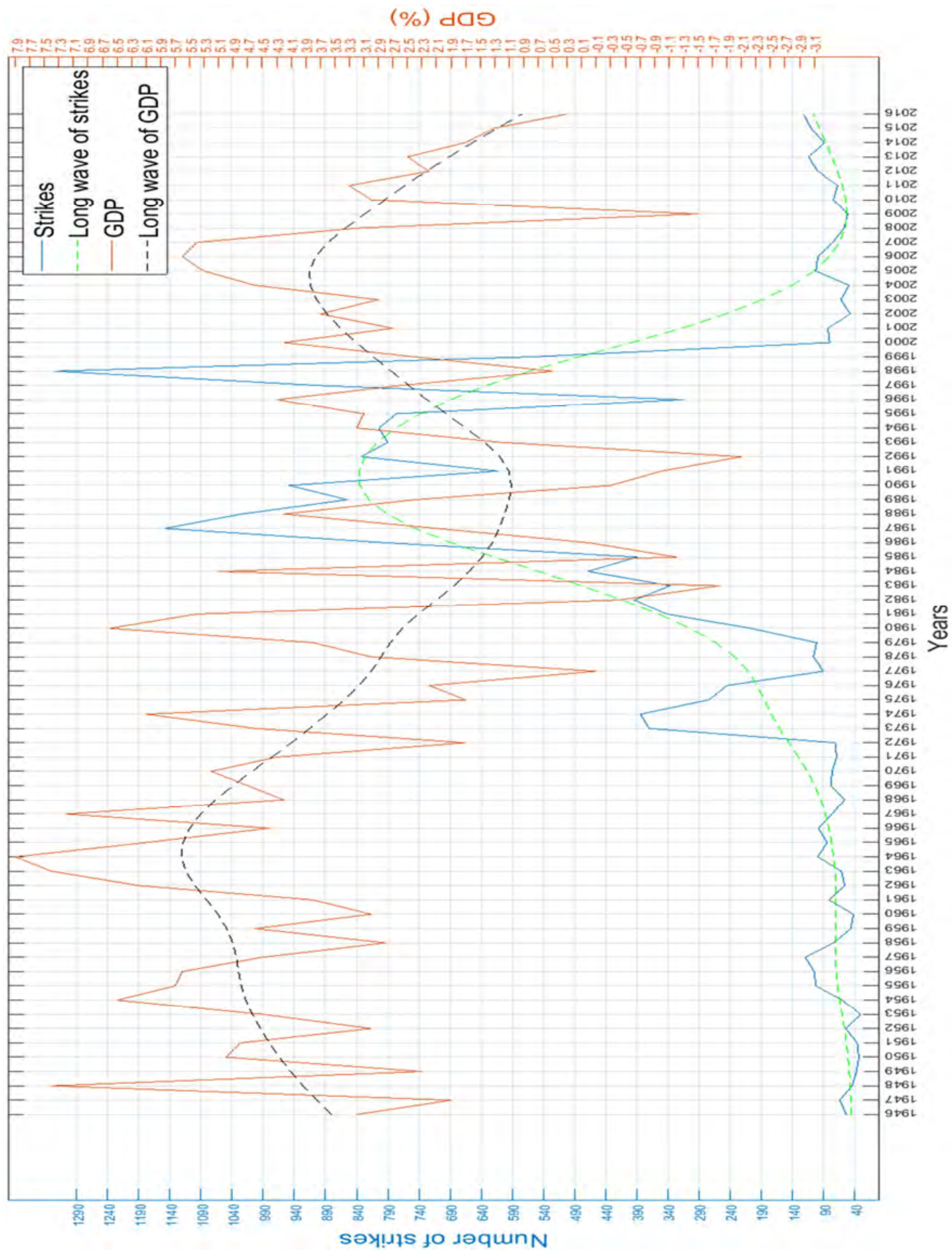
$$y_i = \tau_i + c_i \qquad (1)$$

where $i = 1 \cdot \cdot \cdot$ N. Given that all the y_i are known, to compute the HP filter the optimisation approach is to find an estimate for all the τ_i and then substitute into Equation 1 to derive the output of the filter. This is summarised is the following minimisation problem:

$$(\hat{\tau}_k)_{k=1}^{N} = \mathrm{argmin}_{\tau_i,\ldots,\tau_N} \sum_{i=1}^{N} (y_i - \tau_i)^2 + \omega \sum_{i=2}^{N-1} (\tau_{i+1} - 2\tau_i + \tau_{i-1})^2 \qquad (2)$$

where ω, the smoothing parameter, shows the variation of the output time series components. We see that the trend of the output time series can be adjusted with the parameter ω; the values of ω depend on the noise in the data, the sampling rate and the number of samples N. In practical situations, ω is usually chosen in the range [90, 20 000]. Also, note that Equation 2 converges to leaner regression parameters when w is too big. In this work, we applied Equation 2 using ω = 100 which outperforms the other values of ω**.** The smoothing via HP filter (parameter = 100) (Figure 18) is correct and accurately reflects the economic history of South Africa.

Figure 18: Spectral of long waves of growth and long waves of strikes (1946-2016).



Source: Source: Statistics South Africa, historical GDP. Smoothing via HP Filter (parameter = 100).[96]

[96] I would like to thank Marcel Atemkeng for conducting the spectral analysis of the long waves. The idea and the choice of the econometric method, data series and choice of parameters are my own. I take full responsibility for the results.

Annexure 6: Number of Strikes per Industrial Sector, 2000–2014

Table 5: Number of strikes per industrial sector 2000–2014

Industrial Sector	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Agriculture, Hunting, Forestry and Fishing	15	6	1	5	5	6	5	3	2	2	1	3	5	5	6	**70**
Mining and Quarrying	11	7	5	8	9	16	7	17	7	10	17	11	19	25	5	**174**
Manufacturing	16	22	9	14	13	27	9	16	10	8	16	14	18	23	26	**241**
Electricity, Gas and Water	3	1	1	3	1	2	1	1	0	1	2	2	3	1	2	**24**
Construction	3	5	3	2	0	2	2	3	2	1	2	2	5	3	6	**41**
Wholesale and Retail Trade and Restaurants and Hotels	6	2	11	8	4	11	7	4	4	4	9	12	6	9	2	**99**
Transport, Storage and Communication	6	14	4	12	4	14	15	9	7	11	11	5	14	12	6	**144**
Financing, Insurance, Real Estate and Business Services	3	0	0	1	2	3	5	3	5	4	4	3	1	2	30	**66**
Community Services	17	26	13	9	11	21	48	19	20	10	12	15	28	34	5	**288**
Total number of strikes per year	**80**	**83**	**47**	**62**	**49**	**102**	**99**	**75**	**57**	**51**	**74**	**67**	**99**	**114**	**88**	**1147**

Source: Department of Labour, Annual Industrial Action Reports 2003–2014. Author calculations.

Annexure 7: Number of Days Lost per Industrial Sector in South Africa, 2000–2014

Table 6: Number of Days Lost per Industrial Sector 2000–2014

Industrial Sector	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	Total
Agriculture, Hunting, Forestry and Fishing	10466	13073	4400	28833	597140	102000	43574	30728	9081	29760	108	16037	123369	64442	21187	**1,094,198**
Mining and Quarrying	364210	229042	94547	279176	544658	932711	115926	536740	82535	413402	361113	370473	2728359	515971	9611452	**17,180,315**
Manufacturing	127273	412745	41894	202534	105020	306291	199029	695156	72073	317174	384980	826123	188804	343222	467513	**4,689,831**
Electricity, Gas and Water	1282	5568	16	22196	200	379	19341	345	0	47	7681	70	1484	3232	14466	**76,307**
Construction	18075	5902	3111	71270	0	10190	934	50548	15415	264654	3787	28034	10124	250243	10776	**743,063**
Wholesale and Retail Trade and Restaurants and Hot	104537	108	15416	249099	3777	332697	1273414	8299	15817	24705	394584	50315	13210	47216	40120	**2,573,314**
Transport, Storage and Communication	121781	188597	4660	48717	72644	551286	164629	25881	106622	252783	640757	53505	135186	477355	25309	**2,869,712**
Financing, Insurance, Real Estate and Business Servic	20	0	0	180	35428	10389	1302592	9947	13082	9263	15196	976	964	20415	3062	**1,421,514**
Community, Social and Personal Services	922322	98575	451679	17775	464562	382010	1033124	8161301	182811	215008	18866531	1461123	108384	124910	70890	**32,561,005**
Total days lost per year	**1669966**	**953610**	**615723**	**919780**	**1823429**	**2627953**	**4152563**	**9518945**	**497436**	**1526796**	**20674737**	**2806656**	**3309884**	**1847006**	**10264775**	63,209,259

Source: Department of Labour. Annual Industrial Action Report 2003–2014. Author calculations.

Annexure 8: Time-loss Ratio in South Africa, 2000–2014

The time-loss ratio is the number of working days lost due to industrial action per 1 000 employees. It is the standard method to convert working days lost into a strike rate that takes account of the size of total employment and enables comparisons to be made across industries that differ in employment size. The formula for time-loss ratio is: (days lost/number of workers in industry) *1 000. (Department of Labour, Industrial Action Report 2016).

Table 7: Time-loss ratio in South Africa 2000–2014

	Agriculture	Mining	Manufacture	Utilities	Construction	Trade	Transport	Finance	Community	Total
2000	15	624	100	14	54	86	301	0	515	232
2001	19	418	308	60	20	0	480	0	56	132
2002	6	172	30	0	10	13	11	0	252	83
2003	38	509	157	251	201	187	132	0	9	121
2004	105	1350	73	2	0	3	180	36	239	167
2005	196	2290	220	4	19	20	1289	10	202	330
2006	81	294	140	168	2	736	389	1155	511	499
2007	50	1261	489	4	83	10	51	8	3614	1051
2008	15	266	45	0	21	8	211	10	82	53
2009	56	1396	212	1	364	15	504	7	95	170
2010	0	1212	265	79	6	224	1263	11	8127	2296
2011	32	1159	558	1	40	28	103	1	592	301
2012	204	7252	122	15	14	7	225	1	38	323
2013	111	1222	231	26	344	23	755	12	42	172
2014	36	22720	310	144	14	19	36	2	23	940
Mean	**53**	**2341**	**181**	**43**	**66**	**77**	**330**	**69**	**800**	**382**

Source 2: Williams (2017), Jacobs & Yu (2013), 2003–2016 Industrial Action Reports, own calculations

Annexure 9: Trade Unions and Union Membership and Density, 1958–2016

Year	No. of Trade Unions	Members	Density	Formal Employment
1958	183	420,101	27%	1,565,421
1959	172	429,669	26%	1,632,449
1960	168	440,473	19%	2,350,000
1961	172	442,437	12%	3,766,000
1962	171	449,940	12%	3,904,300
1963	172	446,686	11%	4,089,000
1964	171	489,392	12%	4,244,000
1965	168	512,618	12%	4,452,000
1966	168	523,383	15%	3,431,236
1967	172	484,111	10%	4,808,000
1968	180	533,405	11%	4,919,000
1969	181	569,748	11%	5,156,000
1970	182	587,242	16%	3,748,341
1971	181	625,855	16%	3,890,130
1972	178	637,480	16%	3,938,550
1973	177	624,863	15%	4,196,856
1974	174	646,863	15%	4,404,060
1975	172	660,712	14%	4,667,735
1976	173	685,287	14%	4,758,150
1977	174	678,158	14%	4,707,019
1978	174	692,102	15%	4,714,784
1979	167	726,722	15%	4,816,372
1980	188	808,053	16%	5,086,614
1981	200	1,054,405	20%	5,315,925
1982	199	1,226,454	23%	5,397,886
1983	194	1,288,748	24%	5,371,630
1984	193	1,406,302	26%	5,468,784
1985	196	2,695,050	49%	5,453,173
1986	195	1,516,853	27%	5,531,706
1987	205	1,870,000	33%	5,602,568
1988	209	2,080,000	36%	5,712,882
1989	212	2,100,000	37%	5,734,444
1990	198	2,400,000	42%	5,697,559
1991	196	2,652,997	48%	5,582,480
1992	194	2,905,993	53%	5,470,036
1993	201	2,890,174	54%	5,351,862
1994	213	2,470,481	39%	6,255,312
1995	248	2,690,727	43%	6,189,470
1996	334	3,216,933	47%	6,785,576
1997	417	3,412,645	51%	6,732,084
1998	463	3,801,388	60%	6,371,843
1999	499	3,359,497	51%	6,564,000
2000	464	3,552,113	44%	8,032,000
2001	485	3,939,075	49%	8,086,000
2002	365	3,600,000	43%	8,389,000
2003	504	4,069,000	48%	8,518,000
2004	369	3,134,865	36%	8,688,000
2005	341	3,134,865	35%	8,994,000
2006	335	3,049,860	32%	9,463,000
2007	261	3,220,245	32%	9,933,000
2008	216	3,298,559	30%	11,027,791
2009	205	3,238,519	31%	10,491,466
2010	196	3,057,772	29%	10,368,828
2011	194	3,392,149	31%	10,880,812
2012	191	3,028,400	28%	10,983,801
2013	191	3,715,659	32%	11,486,524
2014	181	3,556,365	31%	11,652,881
2015	187	3,556,914	30%	12,040,482
2016	191	3,954,064	33%	12,075,104

Source: Macun (2014); South African Institute of Race Relations (1957–1998); October Household Survey 1996–1999 (2000); Statistics South Africa Labour Force Survey 2000–2007; Own calculations.

Annexure 10: Cross-spectral Analysis of Long Waves and Strikes[97]

In real-world problems, two-time signals from the same distribution are generally correlated. In the time–space (or time domain), the signals' amplitudes are often very large which makes the correlation undetectable. Therefore, in order to detect them, these time signals must be multiplied and translated in the frequency space where the correlation and the corresponding time-lag can be observed in detail from the frequency components of the signals. This is called "cross-correlation" which can be simply defined as a technique that can provide the common relationship between two or more signals. To see the correlation between the signals, the signals are cross correlated which corresponds to the measure of the cross spectral density of these signals. To estimate the cross spectral density function (CSD), the power spectral density function (PSD) of each of the time signals – Fourier transform of the gross domestic product and strikes – must first be evaluated. Let $\hat{f}$ be the estimate of the spectrum of I tapered by N_1 distinct filters with N_2 data points. We have:

$$\hat{f}_{ii}^{k}(\omega) = \left| \sum_{t=1}^{N_2} I(t) T_K(t) e^{-j\omega t} \right|^2 ,$$

(See Figure 19 a) and b))

where $T_k(t)$ is the kth filter at t data point, ω is the frequency of the signal and the term $e^{-j\omega t}$ comes from the discrete Fourier transform. The PSD of the time signal I is then estimated by averaging the result of all the spectrum $\hat{f}_{ii}^{k}(\omega)$ with $k = 1, 2, \ldots, N_1$:

$$\hat{f}_{ii}(\omega) = \frac{1}{N_1} \sum_{k=1}^{N_1} \hat{f}_{ii}^{k}(\omega) .$$

(See Figure 19 c))

The cross-spectrum density (CSD) is the sum over all the N_2 sampled data points of the PSD of I multiplied by the complex conjuges of the PSD of another time domain signal J . This is resumed mathematically as follows:

[97] I would like to thank Marcel Atemkeng for conducting the cross-spectral analysis of the long waves and strikes. The idea and the choice of the econometric method, data series and choice of parameters is my own. I take full responsibility for the results.

$$\hat{f}_{ij}(\omega)= \frac{1}{N_2}\sum_{n=1}^{N_2} \hat{f}_{ii}(\omega)\hat{f}^{*}_{jj}(\omega)$$, (See figure 19 d))

where $*$ stands for the complex conjuges operator. The strength of the correlation between the two-time domain signals I and J is measured by:

$$R_{ij}= \frac{|\hat{f}_{ij}(\omega)|^2}{\hat{f}_{ii}(\omega)\hat{f}_{jj}(\omega)}$$, (See figure 19 e))

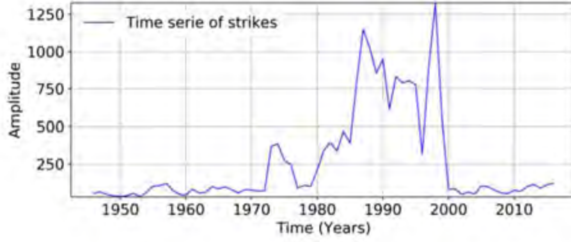
The quantity, R_{ij} is also known as the measure of the coherence which indicates how well I corresponds to J at each frequency.

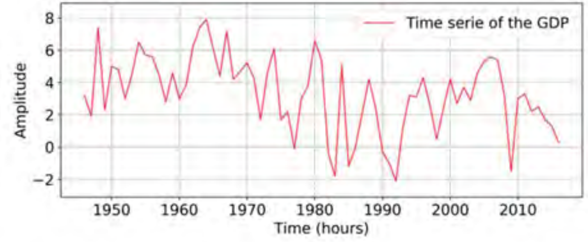
Results

The GDP and the strikes data (1946–2016) represent the two time-domain signals. We want to identify whether any correlation exists between them. A strong correlation has a coherence value between 0.6–0.8. Figure 19 e) (next page) shows that there is a strong correlation (shaded area) between GDP and the strike data between 1946–1951. Between 1952–1959 the strength of the correlation decreases and from 1960–2016 there is no correlation between GDP and strikes. Considering the results as a whole, the cross-spectral analysis reveals that there is no correlation between the patterning of long waves of GDP and strikes over a period of 70 years.

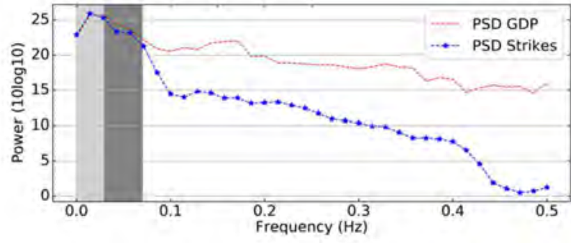
Figure 19: Cross-spectral analysis of long waves and strikes (1946–2016)

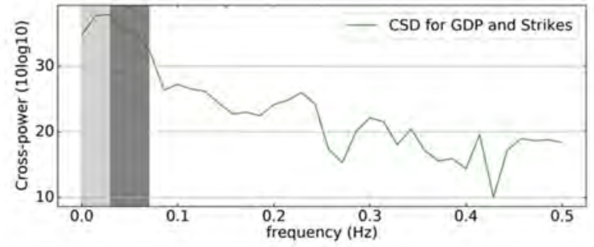
a) and b)





(c) and (d)





(e)