

# An analysis of the polarisation of the South African labour market

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Dissertation submitted in **partial** fulfillment of the requirements for the degree *Magister Commercii* in **Economics** at the Potchefstroom Campus of the North-West University

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May 2015



## **ABSTRACT**

The high level of inequality in South Africa remains one of the biggest problems facing the country. Inequality is not limited to income and can be found in infrastructure, health and education as part of the heritage of apartheid. Polarisation is related to inequality with increases in high- and low-earning jobs, while middle-earning jobs remain stagnant or even decline. This study will try to identify polarisation in the South African labour market since the end of apartheid by making use of the Post-Apartheid Labour Market Series that uses a compilation of Statistics South Africa data ranging from 1994 to 2012. The study finds some evidence of polarisation of employment and earnings in South Africa and the growth of the tertiary sector and the public sector in the country has meant gains in the middle of the distribution for people with a Grade 12 education. Relatively strong unions and the introduction of minimum wages have helped those at the bottom to catch up with the middle.

Keywords: polarisation, South Africa, labour market, inequality

## **PREFACE**

I would like to thank Professor W.F. Krugell for all his help, support, motivation and time. A word of thanks also to Dieter von Fintel for access to the dataset that was used in this study. Furthermore, just a quick thank you to my husband, family and friends for their interest and all their patience. Finally, I would also like to thank the South African Reserve Bank for according me the opportunity to further my studies.

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# CHAPTER 1 INTRODUCTION

## 1.1 INTRODUCTION

Over the past 20 years the South African economy has experienced many changes. Democracy and openness have driven structural and policy-related transformation and influenced the domestic labour market in more ways than one. However, the labour market was, and still remains, extremely segmented with elevated levels of unemployment. The high Gini coefficient is evidence of an extremely unequal income distribution. Inequality in the country is, however, not limited to income only. Access to quality education, health care and household services infrastructure is also noticeably skewed.

In the South African labour market the poverty-inequality relationship is not a straightforward one and poverty can decrease while inequality increases. However, rising inequality could overshadow any favourable impacts of economic growth on poverty (Van der Berg, 2010:19). Overall inequality in South Africa has not improved since the end of apartheid and remains extremely high. It has, however, changed in nature; inter-racial income distribution improved, while income distribution within groups worsened more recently. Furthermore, the decomposition of inequality by income source indicates that wage income is the overriding component in overall income inequality and wage inequality to a large extent derives from differences in educational levels and educational quality (Van der Berg, 2010:20). Various measures have been implemented to address these challenges. These include social transfers and policies for job creation, but so far these measures have met with limited success.

In the international literature, increasing inequality of labour market outcomes is referred to as polarisation. Numerous definitions of polarisation exist and are provided by various authors, with Autor *et al.* (2006) describing polarisation as high-growth in both low- and high-income jobs while middle-income jobs experience low-growth. A number of other definitions are mentioned in Chapter 2 but they all, in essence, make the same point: growth taking place at the end points of the distribution of wages or skills while at the same time there is no growth or even a decline in the middle. The importance of knowing whether polarisation has occurred in the labour market lies in the fact that inequalities in labour market outcomes already exist and polarisation can possibly deepen income and other inequalities.

A paper that receives substantial attention in this study was written by Autor *et al.* (2006) and which examines the polarisation of the labour market in the United States of America (USA) through the analysis of the evolution of the USA wage structure since the late 1970s. Other than the USA, attention will also be given to polarisation in other countries, namely the United Kingdom (UK), Germany and Italy. In the case of the UK Goos and Manning (2003:9) found a large increase in the share of employment of high quality / high initial median wage jobs, a decline in middling jobs and some growth in the share of jobs in the bottom decile of quality/wage. For the German case, a study by Spitz-Oener (2006) will be used. The main focus point is the relationship between polarisation and education. Spitz-Oener (2006:238-239) came to the conclusion that even though people may have identical levels of education they can still have differing skill levels as the individual skill level will be influenced by differing personalities and different experiences. Earnings can polarise by education levels, or by skills levels. In the case of Italy, the focus will be on the influence of technology on an economy where unions play an active role. A study by Nellas and Olivieri (2009) is the key paper here. Nellas and Olivieri (2009:7) found that Italy experienced a loss in union members starting in the 1980s as unions could not effectively protect low-skilled employees anymore and high-skilled employees were against employee equality. In the Italy case there was only polarisation between 1988 and 2004 with employment in low- and middle-earning jobs remaining relatively low, but increases had occurred in high-skill, high-earning jobs (Nellas & Olivieri, 2009:17-18).

This dissertation will bring the analysis of polarisation of the labour market to the South African context.

## **1.2 PROBLEM STATEMENT**

This dissertation examines the polarisation of labour market outcomes, specifically employment and earnings.

## **1.3 OBJECTIVES**

The general objective of this study is to examine changes in employment and earnings in the South African labour market to determine whether polarisation has taken place.



To achieve this general objective a number of specific objectives have to be reached. The first is a review of the international literature. This will serve to clarify the concept of polarisation, outline the methods used to identify or measure it, and to present evidence of this phenomenon. A strand of the international literature also examines possible drivers of polarisation. The following step is to provide an overview of the South African literature to show where the analysis of polarisation would fit into the South African discourse. The final step is to examine data to see whether there is evidence of the polarisation of employment and/or earnings in the case of South Africa.

#### **1.4 METHOD**

This dissertation undertakes both a literature review and empirical analysis. The empirical analysis employs data from the Post-Apartheid Labour Market Series (PALMS) dataset created by Data First at the University of Cape Town. PALMS covers the period 1994 to 2012 and is a compilation of data from 39 surveys conducted by Statistics South Africa. These include the October Household Surveys (OHS), Labour Force Surveys (LFS) and Quarterly Labour Force Surveys (QLFS). The data are at individual level, but individuals are not linked across waves.

The methods used for the analysis follow those used by Goos and Manning (2003) and Autor *et al.* (2006). It consists of descriptions of data, focusing on changes in the distributions of jobs and of earnings over time. This international literature contains no econometric attempts to identify the drivers of polarisation at the individual level. The limited availability of independent variables at this micro-level also limits the analysis that can be undertaken in the case of South Africa.

#### **1.5 CHAPTER OUTLINE**

The study starts with an overview of the international literature on polarisation in Chapter 2. This chapter focuses on the different descriptions, definitions and explanations of polarisation as described by various authors. There is also some focus on whether polarisation occurred in countries such as the USA, UK, Italy and Germany. Chapter 2 also focuses on an analysis of possible drivers of polarisation such as globalisation, skill-biased technical change (SBTC), unions and minimum wages.

Chapter 2 is followed by a review of the domestic labour market and the changes that have occurred since the end of apartheid. In Chapter 3 a distinction is made between the three core clusters of literature regarding the unemployment, poverty and inequality in South Africa (Fourie; 2011:9). This chapter further provides a brief overview of topics such as population growth and migration, labour legislation, the internationalisation of the economy and Black Economic Empowerment (BEE) initiatives.

Chapter 4 presents the description of the PALMS data and some tentative evidence of the polarisation of employment and earnings in South Africa.

The final chapter presents a short summary along with conclusions and recommendations for further research.

## CHAPTER 2 POLARISATION

### 2.1 INTRODUCTION

When one reads about the polarisation of the labour market there are many different definitions and measures of polarisation. Goos and Manning (2003:2) summarised it colloquially as a rise in demand for low-paying 'lousy' jobs and high-paying 'lovely' jobs, combined with a fall in demand for middling jobs. More technically, polarisation of the labour market is a change in the shape of the distribution of a labour market outcome with observations forming twin peaks at both ends of the distribution. The number of jobs, or the number of people in jobs, can polarise along a distribution of wages or earnings, or along a distribution of skills, or job tasks. Wages or earnings themselves can polarise, controlling for occupations, skills or job task content. Different studies use different definitions for and measures of polarisation.

Autor *et al.* (2006) stated that polarisation involves high growth in both low- and high-income jobs at the expense of middle-income jobs, which experience low growth. Nellas and Olivieri (2009:2) identified polarisation by a two-part change in wage structures, namely: (1) a decrease in the proportion of middle-income jobs, and (2) an increase in wages in both the top and bottom part of the income distribution, compared to the middle. The definition used by Levy and Murnane (1992:1338-1339) is slightly different and stated that polarisation means a vanishing in middle-class jobs irrespective of the value of real earnings. This is similar to Wolfson (1994:353-354) who identified it as the disappearance of the middle class or a decline in the population with mid-level incomes.

Acemoglu and Autor (2010) built on earlier papers by Autor and analysed polarisation in terms of wage patterns, but they extended their definition to control for skill levels. Formally they stated that polarisation is the coinciding growth in both high-skill, high-wage jobs and low-skill, low-wage jobs (Acemoglu & Autor, 2010:16). In earlier work Autor *et al.* (2005:33) also focussed on skill levels by stating that polarisation features a robust market for employees situated at the higher part of the skills distribution and a relatively steady market situation for employees closer to the base of the distribution, while employees in the middle of the skills distribution experience weakening market conditions.

Wolfson (1994) and Rodríguez (2004) both focussed on the difference between polarisation and wage inequality but while Wolfson's definition focused on income class, Rodríguez (2004:1) stated that polarisation concentrates the distribution of income on several focal or polar nodes.

These definitions indicate that there are differences in the way authors calculate and interpret "polarisation of the labour market". This chapter focuses on the evidence of polarisation and explanations thereof found in the international literature. It provides the background for closer analysis of the South African labour market in chapters three and four.

## **2.2 EVIDENCE OF POLARISATION**

A number of studies have found evidence of polarisation of the USA and UK labour markets. The key paper in this regard is *The polarisation of the US labour market* by Autor, Katz and Kearney in the *American Economic Review* in 2006 (Autor *et al.*, 2006). They examined the evolution of the wage structure since the late 1970s by plotting the 90-50 and 50-10 log hourly wage differentials. They observed that wage inequality in the top half of the distribution experienced an unconstrained and material rise since 1980 – the 90-10 wage differential expanded by 21 log points. Wage inequality in the bottom half of the distribution also displayed rapid growth between 1979 and 1987, but then stopped growing and declined from the end of that decade. Their model predicted that wage polarisation should be accompanied by employment polarisation. Employment growth by occupation was examined by measuring an occupation's share of total hours worked and this was plotted against the occupation's percentile in the 1980 education distribution. For the 1980s they found declining employment (in terms of share of hours worked) at the bottom end of the education distribution and an almost linear increase in employment moving up the education distribution. In the 1990s employment growth polarised with modest employment growth in low-education jobs, a decline in the middle and rapid increases in employment in high-education jobs.

In an earlier 2003 paper, Goos and Manning laid the groundwork for the analysis later followed by Autor *et al.* (2006) and examined the demand for 'lousy' and 'lovely' jobs in the UK. They examined long-term trends in the quality of jobs by using the median wage in the job at the beginning of their period of analysis as a "single-index model of skill" (Goos & Manning, 2003:9). They then plotted the proportional change in employment against the initial level of wages ordered by deciles. They found large growth in the share of employment of high quality / high

initial median wage jobs, a decline in middling jobs and some growth in the share of jobs in the bottom decile of quality/wage. They conclude that employment polarisation into low-paid and high-paid work is clear.

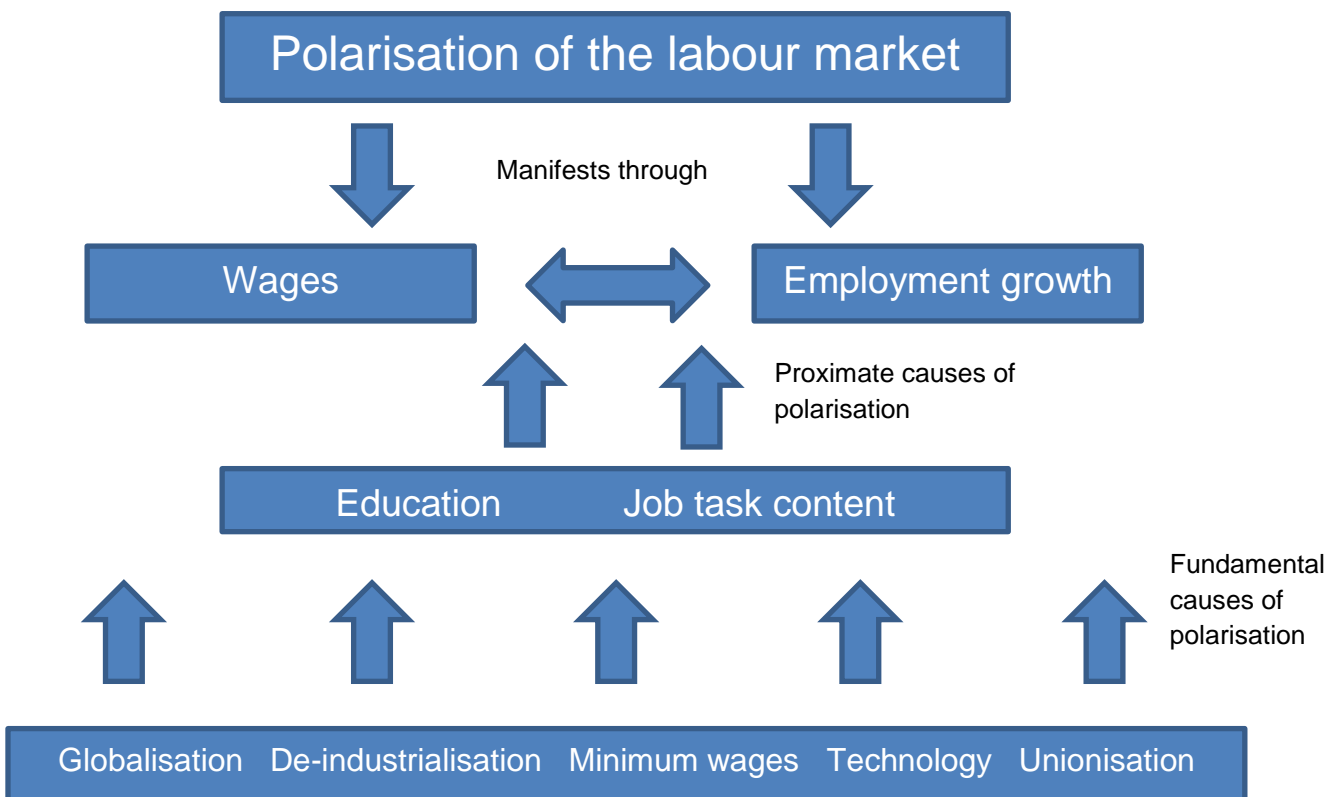
Goos and Manning (2003:10) also reported the results of a number of regression analyses of employment on wages, aimed to test the robustness of the results for different measures of employment, different definitions for jobs and for different surveys. The regression models showed mostly similar results: That there is a U-shaped relationship between employment growth and the original wage level (Goos & Manning, 2003:10). This also suggests that there is polarisation present in the quality of jobs, with the most employment growth recorded at the extreme ends of the distribution (Goos & Manning, 2003:11). A further disaggregation of the classification of the jobs did not seem to make a significant difference to the qualitative results (Goos & Manning, 2003:11).

Goos and Manning (2003:11) highlighted some issues that might be seen as challenges to their results. These include the reality that the results could be misleading as growth in part-time jobs might over-state the employment growth for the low paid jobs. This issue was addressed when Goos and Manning (2003:11) made use of total hours worked as a measure of employment (instead of median wages) and the results were quite similar. The feminisation of the labour force could also not be the explanation for the polarisation in the low-paid jobs, as both male and female jobs displayed similar patterns of change in employment (Goos & Manning, 2003:11). Sensitivity of the quality of jobs over time could also not be regarded as an issue as similar results were obtained when employment growth was plotted against median wages at the end of the period and not against initial wages (Goos & Manning, 2003:11).

A different, but related approach to polarisation can be found in the wage inequality literature. Polarisation of employment could lead to higher wage inequality. Levy and Murnane (1992:1334) gave an overview of earlier studies and showed that there was a hollowing-out of jobs that fell into the middle class from 1979 to 1987 (especially for male employees) and this is a form of polarisation. During this period average earnings growth was rather subdued and this led to the percentage of males earning above US\$40 000 and below US\$20 000 (with the median income being US\$31 862 at the time) to increase, in other words the middle income earners were moving to the outer tails of the income distribution. In now quite famous work, Piketty and Saez (2003) showed the divergence of earnings of the top 1 per cent relative to other workers since the 1970s.

The unequal distribution of income or wealth is, however, not the focus of this study, but rather it is the polarisation of the labour market. As argued in the introduction, the number of jobs, or the number of people in jobs, can polarise along a distribution of wages or earnings, or along a distribution of skills, or education, or job tasks. This dissertation argues that the explanations of polarisation can be divided into proximate and fundamental causes. Figure 1 presents a visual presentation of what it is that polarises and what the proximate and fundamental causes may be.

**Figure 1** Illustrating polarisation in the labour market



Source: Author's own illustration

The following sub-section presents the proximate causes of polarisation: changes in education and job task content.

### **2.3 PROXIMATE CAUSES OF POLARISATION**

Goos and Manning (2003:16) explained that education played a role in the shifts in the employment structure. In the UK there was high growth in the level of educational attainment within all jobs, coupled with an increase in returns to education. In addition, over time jobs also changed and the education level required increased. Goos and Manning (2003:19) concluded that there was a faster rate of increase in the skills supply in the bottom half of the income distribution than there was demand. Some workers attained more education and moved to higher earning 'lovely' jobs, whilst others were over-qualified for their 'lousy' jobs. The result was that middling jobs became less abundant.

In earlier work Acemoglu (1999:1271) described an educational mismatch in the labour market that is due to the expensive nature of searching for employees to occupy certain positions and the imperfect correlation between skills and education. He found that employees in the USA were less mismatched in terms of their education levels in the 1980s compared to the 1970s (Acemoglu, 1999:1272).

As mentioned earlier, Autor *et al.* (2006) accounted for education in their description of the polarisation of employment growth. They found declining employment at the bottom end of the education distribution during the 1980s and an almost linear increase in employment as the level of education increased. In the 1990s employment growth polarised with modest employment growth in low-education jobs, a decline in the middle and rapid increases in employment in high-education jobs.

Changes in the education levels required across all jobs have influenced the polarisation of the labour market. Possible drivers of changes in the demand for educated workers include changes in technology and globalisation and are discussed in subsequent sections.

In a similar way, changes in job task content can also be seen as a proximate cause of polarisation. Job task content refers to the type of skills that are required to do a certain job. Sometimes it also gives an indication of the quality of the job. Autor *et al.* (2006:8) examined job task content and classified the jobs as abstract, routine or manual. Abstract or high-skill tasks are completed in jobs that involve abstract reasoning like problem solving and other high management activities. Routine or medium skill tasks could involve jobs such as bookkeeping or monotonous production jobs whereas manual or low skill tasks characterise jobs performed by waiters, janitors or truck drivers (Autor *et al.*, 2006:7-8). Autor *et al.* (2006) used changes in job

task content as a measure of employment growth to determine whether polarisation took place in the USA. Through the use of detailed data on occupations it was established that in the 1990s jobs that focussed on non-routine cognitive tasks (high-wage) experienced the fastest employment growth. The declining trend of jobs with non-routine manual tasks (low-wage) stopped and jobs that relied on routine cognitive and manual tasks (medium-wage) started to decrease (Autor *et al.*, 2006:7)

According to Acemoglu (1999:1260), a change in the composition of jobs could be caused by an increase in the number of skilled employees relative to other employees or due to an increase in demand for skilled employees. He found that skills supply could increase until it reached a certain limit where the creation of work for skilled employees became more profitable. At this limit, the structure of wages and unemployment would change and thus an increase in the supply of skills could create its own demand (and even more than that) and inequality would become more pronounced. Acemoglu (1999:1260) continues by stating that the supply of skills is limited and if it is the case that there are few available skilled workers and a small gap between the productivity of the skilled and unskilled workers, a pooling equilibrium exists. If a pooling equilibrium exists there would be an increase in 'middling jobs' and skilled and unskilled employees would be hired to do the same job, thus there will be low unemployment and a possible decrease in polarisation. However, should the proportion of skilled workers increase or SBTC accelerate, a change in the composition of jobs would ensue: unskilled wages would decrease, skilled wages would increase and unemployment would also increase as the pooling equilibrium changes to a separating equilibrium. Under a separating equilibrium, separate jobs would be created for the skilled and unskilled, where the skilled employees would earn more and the unskilled less and polarisation could possibly increase. (Acemoglu, 1999:1259-1260).

Education could also be one of the driving forces behind changes in the composition or required skills of certain jobs. For different levels of education (which are employees with a high, medium or low education level) there has been an increase in analytical and interactive tasks and a decrease in routine cognitive and manual tasks over time (Spitz-Oener, 2006:244-245). Employees with high education levels experienced a greater decrease in routine cognitive task inputs and a lesser increase in interactive and analytical task inputs compared to employees with the other two (low and medium) education levels (Spitz-Oener, 2006:245). The most significant decrease in routine manual task input was experienced by the medium education level employees (Spitz-Oener, 2006:245). Spitz-Oener (2006:245) also mentioned that, at the end of the 1990s, the overall skill requirements for high education levels increased at a faster



rate compared to the other groups. Spitz-Oener (2006:249), moreover, found that where occupations experienced changes in the job composition toward more analytical and interactive actions this led to a higher demand for employees with higher levels of education. As the workforce then increased its education levels, different skill-sets were required. This increase in education levels was accompanied by an increase in the use and proficiency of information technology. This is an example of how the different aspects that have an impact on employment structure trends influence each other and cannot be separated entirely.

In summary, the nature of jobs has been changing. There is an increased demand for workers who can perform non-routine manual or cognitive tasks. Employment and earnings have polarised along the distribution of education and skills, with the middle falling away. But what has been driving this change? The literature on the fundamental drivers of polarisation is discussed in the following section and includes forces such as technological change and globalisation.

## **2.4 FUNDAMENTAL CAUSES OF POLARISATION**

Various factors influenced the demand for educated workers and job task content, which in turn caused polarisation of the labour market.

### **2.4.1 CHANGES IN TECHNOLOGY**

Changes in technology are the main drivers of so-called SBTC, which is a cause of changes in the labour market. There are a few key papers that discuss the link between technology and polarisation.

Acemoglu (1999:1259-1260) found that in an environment where there is only a minor difference between the productivity of skilled and unskilled employees, an increase in SBTC would lead to a change in the composition of jobs. This change would bring about a decrease in the wages of the unskilled and an increase in the wages of the skilled and polarisation would increase. Levy and Murnane (1992:1362) identified non-neutral technological change as a demand side shift in the labour market structure, as it increased the output of highly skilled employees more than that of less skilled employees.

Autor *et al.* (2003) linked computerisation to the tasks performed by employees in their different jobs, and thus to the demand for skills. The paper focused on the tasks that computers were most appropriate for and how these tasks could complement or substitute the skills of employees. Autor *et al.* (2003:1) based their analysis on two views, namely, (i) that employees who do routine cognitive and manual tasks could be substituted by computer capital, and (ii) that employees who were involved in problem-solving and intricate communication actions (non-routine tasks) were complemented by computer capital. In their model, routine and non-routine tasks could be imperfect substitutes in order to gauge the variations in the task composition of jobs (Autor *et al.*, 2003:1). Four main conclusions were drawn: (i) labour participation of routine cognitive and manual tasks in the USA economy decreased and labour participation of non-routine analytical and interactive tasks increased starting in the 1970s, (ii) industries that experienced rapid computerisation experienced the highest levels of increased demand for labour input for non-routine tasks, compared to routine tasks, (iii) the shift away from routine towards non-routine tasks was evident at all education levels, and (iv) industries that were exposed to high levels of computerisation also experienced a decrease in demand for labour inputs for routine tasks, compared to non-routine tasks.

Autor *et al.* (2003:3) were not ignorant of supply-side changes that could also lead to changes in the job task composition – such as, increasing the education levels of the workforce and the increase of women in the labour force – although these shifts did not provide the main explanation for the paper's outcomes. The paper concluded by stating that shifts in job-task content, as caused by SBTC, could be seen as an underlying cause contributing to increased demand for educated labour (Autor *et al.*, 2003:34). This, in turn, characterised the polarisation of the labour market.

#### **2.4.2 MINIMUM WAGES**

Another factor that can drive polarisation is the level of minimum wages. However, according to Autor *et al.* (2005), declining minimum wages do not usually foretell gradually increasing inequality in the upper tail combined with varying inequality in the lower tail of the earnings distribution.

Autor *et al.* (2006:193) mentioned that the hypothesis that the decline of minimum wage caused polarisation worked well with lower-tail inequality, but only until 1987 and it did not explain the

decrease in relative employment in low-wage jobs accompanied by a decrease in minimum wages. This view was supported by Autor *et al.* (2008:301) but the later paper did not support the statement that wage inequality was an episodic occurrence and found that growth in inequality was secular.

Lemieux (2006:486) also identified a decrease in the real minimum wage as a driver of an increase in earnings inequality in the 1980s in the USA. As already mentioned, polarisation and wage inequality are not the same thing, but employment polarisation could lead to higher wage inequality.

Autor *et al.* (2005) evaluated the shifting labour force composition and varying labour force prices' role, over the previous three decades, in the growth and divergence of upper- and lower-tail earnings inequality. As mentioned earlier, both the changing level of education and the changing job task content could lead to changes in the associated wage structure. This was supported by Autor *et al.* (2005:2) who mentioned that the education and experience of the USA labour force increased significantly over the 25 years preceding this particular paper and that these changes in the composition of the labour force could form part of the explanation for the divergent behaviour of the upper and lower tail wage inequality. Acemoglu (1999:1259) attributed the increased inequality in wages experienced during the period from 1979 to 1987 to the rising wages of high-paid workers, the falling wages of high school graduates with one to five years of experience and the increase in unemployment across all education levels.

Wage inequality for workers with the same education and experience could be caused by various factors, ranging from ability, effort, value of skills or even misreporting (Lemieux, 2006:461). According to Juhn *et al.* (1993:410), the increased wage inequality that was experienced in the USA during the 1970s and 1980s was due to an increase in demand for skill, not due to an increase in returns to education (years of schooling) and experience in the labour market. Juhn *et al.* (1993:411) further emphasised that the significant increase in wage inequality was a result of the big difference in earnings between the highest and least skilled employees. This within-group wage inequality was also provided as a reason by Lemieux (2006:461). Unlike Juhn *et al.* (1993:410), Lemieux (2006:461) did not only provide one main reason but added two further reasons for the increasing inequality. Firstly, the dispersion in unobserved<sup>1</sup> skills may be growing over time (older employees might possess a higher level of

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<sup>1</sup> Observed skills are education and experience (Autor *et al.*, 2005:2).

unobserved skills) and, secondly, the extent of measurement error might also increase over time.

Building on a 2005 version of the Lemieux (2006) Paper, Autor *et al.* (2005:2) stated that when market prices are held steady, shifts in the composition of the labour market can automatically increase or decrease residual earnings dispersion by shifting the employment share of employee groups that have more or less dispersed income. Also, shifts in the composition of the labour force could cause an increase or decrease in the dispersion of earnings as a whole by raising or lowering heterogeneity in observed skills (Autor *et al.*, 2005:2).

In the paper by Autor *et al.* (2005:3), the contribution of the composition of the labour force to shifts in the wage inequality above and below the distribution's median was analysed and the contribution of compositional changes in the overall and residual inequality was assessed. One of the main findings from the paper was that shifts in the composition of the labour force did not add to the explanation for the diverging path of inequality in the upper and lower tail (Autor *et al.*, 2005:4). Autor *et al.* (2005:4-5) further explain this by stating that the lower tail of the earnings distribution is usually home to the biggest part of the impact of shifts in the composition of the labour force and this means that the gradual growth experienced in upper-tail earnings inequality during both the 1980s and 1990s was caused by shifts in labour market prices. Further confusion was also added by finding that the increase in lower tail inequality during the 1980s seemed to be caused by shifts in prices in the labour market, however, in the 1990s, shifts in the labour market prices led to a decrease in lower tail inequality (Autor *et al.*, 2005:5). In conclusion, though, Autor *et al.* (2005:50) argued that since the early 1970s the continued growth experienced in inequality in earnings above the median of the distribution and the increase and consequent stagnation of lower-tail inequality were primarily due to price shifts in the labour market.

In a paper by Autor *et al.* (2008), most of the important studies on the subject of wage inequality in the USA were summarised and the different theories for changes in the wage structure were re-evaluated. Autor *et al.* (2008:301) found that from 1990 to 2005, wage inequality as a whole continued to rise, but at a slower pace than compared to growth in the 1980s. On the other hand, demand increases appeared to be slower during the 1990s and earlier parts of the 2000s than during the period starting from 1960 to the end of the 1980s and these demand increases favoured higher educated employees (Autor *et al.*, 2008:301). Although Autor *et al.* (2008:301) agreed with the theory that the decrease in minimum wage in the 1980s added to the rise in

lower-tail earnings inequality, they did not support the statement that wage inequality was an episodic occurrence and found that the growth was secular. This growth in inequality in the upper tail of the wage distribution contradicted the claim that the decline in minimum wages can provide a coherent explanation for the biggest part of the increase in inequality (Autor *et al.*, 2008:301). In the lower part of the income distribution inequality increased at a significant pace in the beginning of the 1980s but then started decreasing (Autor *et al.*, 2008:301).

### **2.4.3 UNIONISATION**

An aspect that is closely related to minimum wages is unionisation, as increased unionisation usually leads to an increase in minimum wages. In a study by Nellas and Olivieri (2009:2), emphasis was put on the influence of computerisation in an economy where union activity is present, in their case the Italian labour market. Unions negotiated with employers for the highest possible wage that ensured a certain employment objective (Nellas & Olivieri, 2009:2). Unions in Italy started losing members since the 1980s as unions struggled to protect employees with low skill levels and as high-earning employees opposed equality among employees. (Nellas & Olivieri, 2009:7). Unlike in the USA labour market, the Italian labour market only experienced polarisation in wages during the period from 1988 to 2004, while the employment shares remained relatively steady in low-and middle-earning jobs, but increased in high-earning jobs (Nellas & Olivieri, 2009:17-18). Nellas and Olivieri (2009:18) suggested that this divergence in behaviour was due to the difference in the institutional setting, specifically the role unions played in setting wages<sup>2</sup> that was greater in Italy than in the USA. The paper concluded by indicating that computerisation or SBTC was not enough to explain the changes in the Italian labour market and union activity did directly influence the low-earning Italian employees (Nellas & Olivieri, 2009:18).

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<sup>2</sup> Unions in Italy set a minimum level for contractual wages in each industry for employees at various skill levels. These contractual wages cover both employees who belong to unions and those that do not. At firm level, higher wages could be agreed on for individual employees or groups. Sectoral wage contracts are normally binding for more or less three years (Nellas & Olivieri, 2009:6).

#### **2.4.4 GLOBALISATION AND DE-INDUSTRIALISATION**

Globalisation has a pronounced effect on the labour market and Autor *et al.* (2006) concluded that international outsourcing or globalisation of production indirectly explains a significant part of polarisation. International trade could include trade in labour tasks or trade in technology and increased international trade leads to a higher marginal product for skilled workers than for unskilled workers (Acemoglu, 1999:1277). Globalisation also gave rise to increased import competition in labour markets and was accompanied by declining wages (Levy & Murnane, 1992:1352). Globalisation fuels the pace of technological change, depresses minimum wages and reduces union power.

This is also closely linked to de-industrialisation of advanced economies. Although de-industrialisation in the USA in the 1980s focused more on the manufacturing industry, it was still important as employees were forced to shift from the manufacturing industry to the service sector (Levy & Murnane, 1992:1347). While the manufacturing industry had an abundance of middle-class jobs, the service industry had only a few high-earning jobs and many low-earning jobs (Levy & Murnane, 1992:1347), which could have given rise to increased polarisation where middle-class jobs were vanishing. However, de-industrialisation alone could not explain the change in the structure of the labour market as inequality was also increasing within the manufacturing and service sectors (Levy & Murnane, 1992:1352).

#### **2.5 CONCLUSION**

In this chapter, polarisation as well as its causes and explanations were discussed and the measures are briefly summarised in Table 1, while the drivers are highlighted in Table 2 below. It is evident that no one reason or explanation for polarisation exists. It seems as if the change in wages, the level of education and the change in job task content are the main and most-researched elements to measuring changes in the employment structure trends and polarisation. These three are, however, driven by other factors that include minimum wages, labour unions, SBTC, globalisation, and de-industrialisation. Chapter 3 provides an overview of the South African labour market and how it has changed since 1994 or the end of apartheid by focusing on factors like population growth and migration, labour legislation, the internationalisation of the economy and BEE.

**Table 1 Wages and proximate causes of polarisation**

Wages	Job task content	Education level
<p>Autor <i>et al.</i> (2006) → since 1988 polarisation of wages in USA.</p> <p>Acemoglu (1999) → increase in wages of high-earning workers from 1979 – 1987 caused rising wage inequality.</p> <p>*Increased wage inequality caused by: ability, effort, value of skills, misreporting, decrease in real minimum wages, increase in unobserved skills dispersion, within-group wage inequality (Lemieux, 2006);</p> <p>*Increase in demand for skill, difference in earnings between highest and least skilled (Juhn <i>et al.</i>, 1993);</p> <p>*In upper-tail earnings (1980s &amp; 1990s) by shifts in prices in labour market and in lower-tail in 1980s shifts in prices, but 1990s shifts in prices caused decrease (Autor <i>et al.</i>, 2005).</p> <p>Goos and Manning (2003) → positive employment growth for workers at lower and higher end of wage distribution, with a decrease in middle of the distribution in the UK (1975 – 1995).</p>	<p>Autor <i>et al.</i> (2006) → SBTC displaces middle income routine tasks = polarisation. SBTC substitutes cognitive manual (routine) tasks and complements problem solving and communication (non-routine) tasks.</p> <p>Increase in demand for SBTC → increase in demand for high-skill jobs and low-skill jobs, decrease in demand for middle-skill jobs.</p> <p>Change in job composition occurs due to increase in supply or demand of skilled workers. An increase in inequality → increase in skill supply that could create own demand. Pooling equilibrium will increase middling jobs and skilled and unskilled will do these jobs → unemployment and polarisation will decrease. Pooling equilibrium + SBTC = separating equilibrium. Separating equilibrium will create separate jobs for skilled and less skilled → skilled will earn more and polarisation will increase.</p>	<p>Goos and Manning (2003) (UK) → increase in educational attainment in all jobs increased skill level, associated wages and polarisation. Educated workers were forced into lower skilled jobs (over-qualification). At bottom of income distribution over-qualification did not decrease and skill supply increased at greater pace than demand. SBTC increased demand for higher skilled workers.</p> <p>Acemoglu (1999) → Educational mismatch in labour market in the 1980s less severe than in the 1970s.</p> <p>Spitz-Oener (2006) (Germany) → Similar investment in education does not mean similar skill level. As education levels increased aggregate skill requirements changed. End of the 1990s skill requirements for higher educated workers increased at greater rate than other groups. Jobs that had changed in job composition toward more analytical and interactive actions had increased demand for higher educated workers.</p>

**Table 2 Fundamental causes of polarisation**

<b>SBTC</b>	<b>Minimum wages</b>	<b>Unionisation</b>	<b>Globalisation</b>	<b>De-industrialisation</b>
<p>Goos and Manning (2003) → SBTC → technology favoured skilled over unskilled workers and as technology increased polarisation will increase.</p> <p>Levy and Murnane (1992) → SBTC increases output of highly skilled more than that of less skilled.</p> <p>Acemoglu (1999) → Minor difference between productivity of skilled and unskilled, an increase in SBTC would change composition of jobs, decrease wages of unskilled and increase wages of skilled.</p> <p>SBTC complements high education, substitutes moderate education levels.</p>	<p>Autor <i>et al.</i> (2006) → minimum wages explains lower-tail inequality, but only until 1987 and does not explain decrease in relative employment in low-wage jobs accompanied by a decrease in minimum wages.</p>	<p>Nellas and Olivieri (2009) (Italy), → Unions started losing members in 1980s as they struggled to protect low-skilled and as high earners opposed equality among levels.</p> <p>Italian labour market only had polarisation from 1988-2004 due to difference (from USA) in the role unions played.</p>	<p>Acemoglu (1999) → as globalisation increased, international trade also increased (could be trade in labour or technology). International trade caused increased marginal product for skilled compared to unskilled. Globalisation caused increased import competition and decreasing wages.</p>	<p>Levy and Murnane (1992) → manufacturing industry experienced de-industrialisation in 1980s and workers moved to service industry. Manufacturing sector had many middle-class jobs, but service sector had few high-earning and many low-earning jobs. Therefore, polarisation increased.</p> <p>De-industrialisation alone cannot explain polarisation as inequality.</p>



# **CHAPTER 3 AN OVERVIEW OF THE SOUTH AFRICAN LABOUR MARKET SINCE 1994**

## **3.1 INTRODUCTION**

Since 1994, the South African economy has undergone various structural and policy changes influencing the labour market in an assortment of ways. The South African labour market was and still is characterised by sharp segmentation, high unemployment and apparently limited informal sector employment. Or, as Hoogeveen and Özler (2006:59) stated, poverty, inequality and high wages, accompanied by high unemployment remain important socio-economic issues facing South Africa in the aftermath of apartheid.

South Africa has also long been known as being a country with a highly unequal income distribution, which could be partly attributed to racial discrimination. After the official end of apartheid South Africa was left with enormous inequalities across different racial groups and, in 1995, the Gini coefficient of expenditure was 0.56, proving that South Africa was one of the most unequal countries in the world (Hoogeveen & Özler, 2006:59). The Gini coefficient went up to 0.58 in 2000, but this is not really surprising because most changes in the South African expenditure distribution occurred at the tails, while the Gini index is mostly sensitive to differences towards the middle of the distribution (Hoogenveen & Özler, 2006:72). The latest available Gini coefficient for South Africa is for 2011 and lies at a level of 0,65 (World Bank, 2014) where it confirms that inequality has increased since 1995.

Hoogeveen and Özler (2006:59) further stated that South Africa experienced inequalities in education, health and basic infrastructure. Government introduced various programmes in an attempt to deal with poverty and the associated inequality, which included the Reconstruction and Development Programme (RDP) in 1994 and the Growth, Employment and Redistribution (GEAR) in 1996. Both these programmes, however, failed to generate the projected growth and sufficient jobs and, as a consequence, inequality did not decrease, as mentioned earlier, it actually increased.

According to Van der Berg (2010:3), South Africa's imbalanced distribution of resources and opportunities is evident in the fact that South Africa is an upper-middle income country with

lower-middle income or even low-income country social indicators such as life expectancy and infant mortality. The average income level was increased substantially by the gains of a small group of high-income earners, but this had little effect on average social indicators (Van der Berg, 2010:3). Van der Berg (2010:19) continued that the poverty-inequality relationship is not a straightforward one and that poverty can decrease while inequality does not decrease or even increases. Rising inequality could also outweigh any favourable impacts of economic growth on poverty.

Overall inequality in South Africa has not improved since the end of apartheid and remains extremely high, according to Van der Berg (2010), but it has changed in nature; inter-racial income distribution improved, while income distribution within groups worsened (see Table 3). Furthermore, the dismantling of inequality by income source indicates that wage income is the overriding component in overall income inequality and wage inequality to a large extent originates from differences in educational levels and educational quality (Van der Berg, 2010:20). The education system that was in place for black scholars and students during the years of apartheid, caused inequalities that are still prevalent today and the system led to low levels of education and the prominent skills gap in income differentials and employment (Fourie, 2011:23).

**Table 3 Trends in income distribution in South Africa**

	<b>1994-2000</b>	<b>2000-2006</b>
<b>Aggregate inequality</b>	Increasing significantly	Relatively unchanged
<b>Inequality between groups</b>	Decreasing	Decreasing
<b>Inequality within groups</b>	Increasing significantly	Increasing
<b>Poverty headcount</b>	Increasing moderately	Decreasing significantly

Source: Van der Berg (2010:15)

According to Pollin *et al.* (2006:27) inequalities, especially racial wage inequalities, could be seen from the fact that the increases since 1970 in real wages of the semi- and unskilled employees came from an exceptionally low base. At the start of the 1970s this base was termed a poverty-level wage by Pollin *et al.* (2006:27) and by the 1990s wages were only about double the poverty-level wage.

Policies such as social transfers and those aimed at job creation can, however, not do much to remove or decrease inequality: The overall magnitude of transfers is too small and workers that

are currently unemployed will probably earn low wages if they were to be employed, keeping aggregate inequality high (Van der Berg, 2010:20). Van der Berg (2010:20) concluded that the labour market is central to inequality and that the quality of education is central to labour market inequality. The only way to reduce income inequality significantly is through a wage pattern based on better human capital for the biggest part of the population. Should inequality in the labour market continue, it will have certain implications for all the policies that are in place to reduce inequalities. Without an improvement in education and vocational training, direct intervention aimed at artificially altering the labour market will not do much to eradicate poverty and improve income distribution. In fact, the efficient functioning of the labour market may decrease (Van der Berg, 2010:20).

Polarisation, as mentioned in Chapter 2, refers to an increase in high- and low income jobs, while middle-income jobs remain stagnant or decrease. This could be due to changes in education or job task content. Wage inequality is thus also connected to polarisation and should polarisation occur, inequality will become more pronounced with issues such as low economic growth, poverty, a low skills base and a weakly functioning labour market all remaining prevalent.

Fourie (2011:9) distinguished among three core clusters of research regarding the unemployment debate in South Africa and they (namely, the labour market cluster, the poverty and development cluster and the macro/macro-sectoral cluster) cannot always be separated from each other and do overlap in certain instances. This chapter will deal with some of the clusters of literature. The aim of this study is to establish whether polarisation, as identified by high growth in low- and high-income jobs, while middle-income jobs experience low growth, has occurred in the South African labour market.

There is a single working paper that has examined the issue of skills-biased labour demand in South Africa. In an October 2014 WIDER (World Institute of Development Economics Research) working paper Borat *et al.* examined changes in occupational labour market trends. Though they did not use the term polarisation, they examined within- and between-sector shifts in employment as well as changes in earnings for workers involved in certain tasks. Borat *et al.* (2014:2) used data pooled from the LFS and QLFS over the period 2001 to 2011. Their description of the data showed that changes in employment mirrored changes in the sectoral contributions to gross value added: the primary sector did well, the secondary sectors did not and the primary sector declined. More specifically, agriculture and mining declined and

manufacturing showed relatively poor employment results. Financial services, transport and trade achieved relatively high output growth and some employment growth. When within-sector shifts in employment between high-skilled, medium-skilled and unskilled workers were considered, they found evidence of polarisation in the secondary sector: high-skilled and unskilled employment rose significantly with no significant change in medium-skilled employment. They found that both the primary and secondary sectors saw smaller shares of medium-skilled workers being employed (Bhorat *et al.*, 2014:5). In their analysis they also examined changes in wages by five task-based measures. Detailed occupations were matched to five categories of tasks, namely Information and communication technology, Automation, Face-to-face, On-site and Decision-making. They found that all categories saw wage increases over the period, but that the low-earning categories and the highest earning jobs saw relatively large increases in wages (Bhorat *et al.*, 2014:17). This result is ascribed to competition from globalisation and SBTC, as explained in Chapter 2.

Building on this foundation, this chapter provides an overview of the South African labour literature. The main aim is to put the polarisation view of the labour market in the context of existing approaches to explain employment and unemployment in South Africa. This chapter will provide an overview of population growth and migration, labour legislation, internationalisation of the economy and BEE as important factors that influenced the South African labour market since the end of apartheid.

### **3.2 POPULATION GROWTH AND MIGRATION**

Although a variety of estimations for the population in South Africa exist and the various estimations tend to differ significantly, according to the mid-year population estimates from Statistics South Africa (1998 & 2011) the South African population increased from 38.63 million people in 1994 to 50.59 million people in mid-2011. This means that the population grew by 30.96 per cent during the aforementioned period. According to Statistics South Africa (2011) the average estimated annual population growth rate slowed down from 1.33 per cent in 2001 to 1.10 per cent in 2011. Increased population growth is usually accompanied by a larger labour force and, in South Africa's case, unfortunately also elevated unemployment. According to Hodge (2009:3), South Africa's labour force has been growing at a pace that is higher than the growth experienced in employment, leading to higher unemployment. Poverty and also inequality within the labour market cannot be reduced without employment creation and,

according to the Centre for Development and Enterprise (2010:35), without elevated and continued economic growth.

In 1994, unemployment was 20.0 per cent according to the narrow definition, and 31.5 per cent according to the broad definition, which includes discouraged work-seekers as measured by the OHS at the time (Statistics South Africa, 1996). The inclusion of discouraged work-seekers might lead to a better indication of the unemployment figure as the non-searching unemployed are an integral part of the South African labour market that cannot be ignored (Kingdon & Knight, 2006:310). The QLFS (Statistics South Africa, 2014) stated that the unemployment rate in the second quarter of 2014 was 25.5 per cent and 35.6 per cent for the narrow and broad definitions respectively. This serves as confirmation that the unemployment level in South Africa has increased since the end of apartheid.

The population growth rate is influenced, by among other things, the fertility rate, the death rate and migration. Various studies have done estimations of fertility and mortality rates. Data are available from among others, the South African Demographic and Health Surveys from the Department of Health, the South African census from Statistics South Africa, the civil register of deaths and the Population Reference Bureau and their publications cover various periods. For the sake of consistency, however, and also due to concerns regarding completeness, data from the DataBank tool of the World Bank (2012) are utilised here.

The fertility rate, defined by the World Bank (2012) as the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with current age-specific fertility rates, in South Africa in 1994 was 3 196 children, but came down to 2 505 children in 2009. This compares favourably with sub-Saharan Africa figures of 6 006 children and 5 050 children for 1994 and 2009 respectively, but it is high compared to high-income countries with rates of 1 735 children and 1 748 children for 1994 and 2009 respectively. The level of fertility could be influenced by a number of factors and, according to Palamuleni *et al.* (2007:114), the factors could be divided into direct and indirect determinants, with direct factors referring to socio-economic and cultural systems such as education, religion, housing, health and rural-urban residence. Indirect or intermediate fertility variables include factors such as the percentage of women of the total population that marry, use contraception effectively and encourage abortion (Palamuleni *et al.*, 2007:114).

According to Swartz (2002:539), fertility started to decline prior to the abolition of apartheid, while Caldwell and Caldwell (2002) specified that this decline took place from 1985 onwards.

Fertility in South Africa declined across all major population groups, but the decline was not uniform between the different population groups, Asians and Whites experienced a much sharper decline than African and Coloured populations (Swartz, 2002:539). The direct and indirect factors that influence fertility, as mentioned above, serve to support the skewed decline as these factors differ among various races. Furthermore, Swartz (2002:539) stated that this happened amidst impoverishment, inequality and the disempowerment of women and although much has changed since then, many of the distortions and dynamics introduced by apartheid remain and contribute to current skewed population growth.

Palamuleni *et al.* (2007:129) concluded that the single factor responsible for the biggest reduction in fertility in South Africa is the marriage indicator; marriage in the country is characterised by marrying at an advanced age, an elevated rate of divorce and remarriage and a soaring rate of single parenting. The second most influential factor according to Palamuleni *et al.* (2007:129) is the high prevalence of contraceptive use. Contraception use, especially among African women, was widely encouraged by the previous apartheid regime and significant consideration was given to the availability and utilisation of contraception (Palamuleni *et al.*, 2007:129). According to Caldwell and Caldwell (1993), a part of the decline in African fertility can be attributed to Asian-type population planning policies instituted by the apartheid government to curb growth rates of the local black population. This programme provided free family-planning services and caused the prevalence of contraceptive use among black women to be around 50 per cent and South African women overall at over 60 per cent in the early 1990s (Caldwell & Caldwell, 1993).

The future of fertility depends on a number of issues and the continuation of the fertility decline is not set in stone. HIV/AIDS is expected to exert some influence on future fertility movements. The United Nations (UN) (2002:14) concluded that the fertility of people infected with HIV is markedly lower than the fertility of those who are uninfected. To be more precise it is suggested that being HIV-positive might decrease fertility from 40.0 to 25.0 per cent relative to being HIV-negative. This differential could further impact on the total fertility rate of the population in its entirety in that, in general, it does not surpass 10.0 per cent. While the UN (2002:14) explained that the differential between the infected and the uninfected was mostly due to biological factors, in particular the depressing effect of sexually transmitted infections on the ability to reproduce, they also mentioned that behavioural responses by uninfected residents have a more significant potential impact on fertility levels and trends. Anderson (2003:30) stated that behavioural

adjustments among people who are HIV-positive could lead to either lower or higher fertility, not necessarily just one or the other.

As fertility decreases the population growth rate should also decrease and this should have a positive effect on the unemployment rate, meaning the unemployment rate should decrease.

The crude death rate, defined as the number of deaths occurring during the year, per 1 000 population estimated at mid-year by the World Bank, on the other hand, was 8 598 deaths in 1994 and increased to 15 264 deaths in 2009. Sub-Saharan Africa figures for 1994 were significantly higher, recording 15 926 deaths, but were lower than South African figures in 2009 at 13 509 deaths. Relative to high-income countries, figures for 1994 were basically on a par at 8 673 deaths; however, for 2009 this rate remained at about the same level at 8 421 deaths while South Africa's crude death rate increased significantly.

As the crude death rate increases, the population growth rate should decrease. Roughly speaking, with a decreasing fertility rate and an increasing death rate, the population growth rate should be on the decrease and, as mentioned before, this should cause a decrease in unemployment. These two factors are, however, not the only ones that influence the population growth rate.

A related aspect to be taken into consideration when focusing on the South African labour market is migration, as restrictions were placed on Africans regarding where, how long and with whom they could migrate before the end of the apartheid era. Migration falls into the labour market cluster (the first cluster) identified by Fourie (2011:15, 27). The attractiveness of migration is enhanced by the fact that rural unemployment tends to be higher than urban unemployment (Fourie, 2011:14). Labour migration within South Africa was closely regulated, with black South Africans not being allowed to settle on a permanent basis at places of employment, nor could they migrate with spouses and members of their families. This remained the case until the lifting of formal restrictions that applied to African urbanisation in the late 1980s. These restrictions led to circular migration, where employees would be based in a household (their permanent home) from which they migrated to work and to which they would go back to after each year or migration period. (Posel & Casale, 2006:351.) Due to public services, specifically education, that were greatly unequal, geographically isolated communities with low levels of education and limited means for self-generated economic expansion, were created (Faulkner & Loewald, 2008:3).

Migration for the purpose of finding work had a number of effects, both positive and negative, on both the migrants and the households from which the migrants originally came. Some of the positive aspects are: increased investment and development (through, for example, the building of better housing) in rural communities from which the migrants originate (Adams, 1991:722), a tendency for the migrant workers to have a superior education compared to the non-migrants (Posel & Casale, 2006:359) and that rural families or households can use income received through remittances from the migrants to increase production inputs and for the adoption of new technologies which, in turn, could lead to increased productivity (Stark & Lucas, 1988:465; Morapedi, 1999:198). On the other hand, it is widely believed that migrant labour led to agricultural decline in the rural areas (Posel & Casale, 2006:355), with Wolpe (1972) believing that rural households were robbed of the labour required for agricultural production, that the migrants' wages were below-subsistence levels and costs associated with the reproduction of labour had to be subsidised by the households that were left behind. Further negative aspects include increased labour supply cost, insufficient public transport, roads and housing to absorb the migrants and increased dependency ratios (Faulkner & Loewald, 2008:3).

The removal of formal restrictions on migration made it possible for families rather than individuals to migrate and the labour migrants could move while being accompanied by their whole family and permanently settle at their places of employment (Posel, 2003; Posel & Casale, 2006:351). Migration patterns in South Africa might not have changed in ways that were expected and Posel (2003) found that migrant labour was still an important trait of the domestic labour market and that behaviour which was often seen as immigration might only be the extension of circular (cross-border) migration. This fact was further supported by Posel and Casale (2006:361) who concluded that the temporary pattern of migration from rural areas in search of jobs, which was a characteristic of the apartheid era, seemed to have remained a main feature of the decade following the end of apartheid. Contrary to an expected decline in temporary labour migration, it seemed as if temporary labour migration in South Africa had increased since the abolishment of restrictions (Posel, 2003:1, 6). Reasons for this phenomenon might include the following: (i) an increase in women becoming labour migrants, (ii) a feeling of safety, which might be provided by a rural household in insecure labour market conditions (Posel & Casale, 2006:352), (iii) insufficient levels of employment, which could cause labour migration to become riskier (Bhorat, 2004:6), and (iv) living costs in rural areas are lower and an inclination exists to spend retirement there and be buried in the rural area (James, 2001).



The link between population, migration and polarisation lies therein that polarisation can take on a spatial perspective. When the skilled and educated migrate to the cities the polarisation of employment and earnings also has a rural-urban character.

### **3.3 LABOUR LEGISLATION**

Labour legislation has an influence on aspects such as centralised bargaining and minimum wages. These aspects could also influence wages in the labour market and in turn this could strengthen or weaken processes of polarisation in the labour market. Coming from a history of apartheid, labour legislation in South Africa has changed since 1994 in an effort to award certain rights to the general public and achieve economic efficiency that was limited due to discrimination.

The main laws regulating the domestic labour market in the mid-1990s were the *Basic Conditions of Employment Act* (BCEA) of 1997, the *Labour Relations Act* (LRA) of 1994 and the *Wage Act* of 1957. Although these have been reformed, they have a continued impact on the development of the domestic labour market, according to Standing *et al.* (1996:133). Arora and Ricci (2005:27) meanwhile stated that South Africa's labour legislation following democracy in 1994 consisted of two main statutes, the LRA and BCEA.

The LRA was one of the initial statutes passed by the post-apartheid government (Arora & Ricci, 2005:27) and retained many provisions of the preceding labour act, but also introduced new provisions in order to increase the strength of worker rights by prescribing various procedures that should be followed in effecting employment and dismissals. On the other hand, while the LRA is practical in nature, the BCEA is substantive in nature, providing workers' rights with a minimum protective floor. Minimum standards and conditions of employment are covered by the BCEA and include aspects such as minimum wages, hours of work and leave (Arora & Ricci, 2005:27.) According to Barker (2007:77), the BCEA (Act No. 75 of 1997), which reduced the number of working hours per week in South Africa, increased the unit cost of labour and production costs in general. The LRA further provides for bargaining councils and the expansion of bargaining council agreements to all parties in a certain sector and promotes unionisation, which could in turn lead to higher wages for unionised labourers compared to non-unionised labourers (Barker, 2007:80) specifically at the lower part of the income distribution.

In South Africa, the government is striving to implement a system of regulated flexibility through labour legislation, but labour legislation will also attempt to minimise unfair competition and offer direction for labour standards (Standing *et al.*, 1996:130). Different authors have different views on the rigidity of the South African labour market. For example, Kingdon and Knight (2006:471) claimed that the domestic labour market was unusually rigid due to the strength of labour unions and the system of centralised collective bargaining. Magruder (2010:7 & 2012:139) reported that the domestic labour market was exceedingly regulated, with an assortment of legislated labour standards and privately-bargained arbitration decisions. Borat and Cheadle (2007:35), however, stated that the labour market was neither overly regulated nor under-regulated. Regardless of the measure or extent to which a labour market is rigid and regulated, the implementation of labour legislation not only has an impact on the cost of labour, but also on the productivity and flexibility of the labour market itself. The more rigid and thus, less flexible the labour market becomes, the more inflated the cost of labour and the lower the level of employment becomes (Arora & Ricci, 2005:25; Barker, 2007:77). Labour legislation and regulation can depress labour demand as a result of the cost imposed on firms (Arora & Ricci, 2005:27). Low labour demand, in turn, will do nothing to lighten the burden of high unemployment in the country.

Three broad categories of employee protection and labour regulation were identified by Borat and Cheadle (2007:5), namely: (i) legislative provisions to deal with and supervise the individual employment relationships that focus on dismissals, leave, working time, etc., (ii) legislative structures that govern collective and industrial relations within society that relates to strike action, recognition of trade unions, etc., and (iii) social protection which accounts for non-wage benefits. Botero *et al.* (2003:2) also identified three bodies of law that protect the interests of workers and provides a minimum standard of living for the population. These three bodies broadly join in with the three categories mentioned above and can also be identified as employment law, industrial and collective relations law and social security law. Borat and Cheadle (2007:11) found that labour union power was very high and drew the following conclusions regarding the abovementioned categories in the South African labour situation in 1997: (i) that there were comparatively low regulatory levels relating to individual employment relations, (ii) that the collective rights regulation levels were relatively high, and (iii) that social protection was also relatively high. By 2006, this situation was reversed and Borat and Cheadle (2007:18) suggested that while hiring and firing costs, and hiring and firing rigidity,

were relatively rigid and flexible respectively in the late 1990s, by 2006 South Africa had a less flexible labour market.

The study by Borat and Cheadle (2007:8) found that in the late 1990s the highest level of labour regulation was found among middle-income countries and South Africa was considered an upper-middle income country. The country's measures of labour regulation compared favourably with the regulation found in the remainder of the world. SA yielded a level of regulation that was lower than the mean for the upper-middle income countries and the sample of countries as a whole. The exceptions to the fairly stable levels of regulation experienced were the cost of firing, labour union power and unemployment insurance provision. Thus, South Africa had comparatively low levels of regulation regarding individual employment relations, but in respect of collective rights and employee protection, the levels of regulation were higher.

Unions are quite powerful in South Africa and Faulkner and Loewald (2008:9) stated that the expansion of unionisation that took place after the lifting of restrictions in 1979 was accompanied by diminishing employment growth which, in turn, reflected the brisk growth in real wages. According to Arora and Ricci (2005:25) the labour unions originated to balance out the bargaining power of large firms against the bargaining power of employees during labour negotiations.

Although at first it seems as if there should be a large gap between the wages earned by employees who are members of an union and those who are not (with the wages of union members expected to be higher than the wages of non-union employees), after controlling for various factors only about 10 per cent of the difference in wages is ascribed to union membership (Arora & Ricci, 2005:25-26). Borat *et al.* (2014:10, 17) also found evidence that minimum wages have a negative effect on employment and that belonging to bargaining councils or an union is related to a clear wage benefit or premia.

Different skills levels also experience a different impact resulting from unionisation, with unskilled and high-skilled employees experiencing an insignificant impact on employment and medium-skilled employees bear the most substantive component of the impact on employment. According to Arora and Ricci (2005:25-26) the negative effect of unions on employment has been declining and was considered almost irrelevant by 2001. Thus, they did not consider unions as responsible for increases in unemployment experienced in the South African labour market, but did concede that they could still be responsible for an increase or decrease in the income gap between high-skilled and unskilled employees. However, more recent work by

Magruder (2012:164) found that the presence of centralised bargaining councils caused between an 8-13 per cent increase in unemployment in a specific industry.

Unions in South Africa can bargain centrally or unilaterally with employers. If a union bargains centrally, all workers within that specific geographical district will have to adhere to the agreed-upon labour standards (Magruder, 2010:8-9). The Constitution of South Africa and labour legislation, more specifically the LRA, acknowledge the fact that employees, and thus unions, in this country possess the right to bargain collectively (Barker, 2007:80, 86). Bargaining councils can determine wages and other conditions of employment, but in sectors that lack collective bargaining the Employment Conditions Commission can investigate matters (Barker, 2007:111).

It follows intuitively that the labour market was and still is influenced by labour legislation, and Rospabé (2001:13) affirmed this by concluding that unions played a role in the filling in of the racial wage gap. Stringent labour legislation, such as high minimum wages, could mean that fewer workers are employed, but if they are employed they are employed at a higher wage level. This, in turn, means that the income gap and polarisation would not be as pronounced. On the other hand, if there were fewer unions or if unions had less influence, meaning that minimum wages were not as high, more people would be employed, albeit at a lower wage level. This would mean the income gap and polarisation of the labour market would become more pronounced or at least that the number of low income jobs would grow, while the number of middle-income jobs would not simultaneously increase. As seen in Chapter 2, Autor *et al.* (2006:189) described unions as one of the factors that explained more pronounced inequality of the 1980s while Card and DiNardo (2002:38-39) identified declining unionisation as a contributor to the rising inequality in the early 1980s. As South Africa has a high level of unionisation and the number of unions are not declining and unions have a significant impact on the labour market, labour conditions and wages, it would seem as if the unions in this country are not really drivers of higher inequality or rising polarisation.

### **3.4 INTERNATIONALISATION OF THE ECONOMY**

The South African economy was burdened by protectionist trade policies with import substitution trade policies of the 1970s and 1980s, discouraging imports and with sanctions blocking exports, resulting in a relatively isolated domestic economy reliant on global commodity prices.

Edwards (2006) provided a comprehensive summary of the history of trade liberalisation in South Africa. Trade liberalisation has been a continuous process over the past few decades.

South Africa's trade and industrial policies before the 1980s were mainly focused on encouraging import substitution industrialisation (Edwards, 2006:2). The trade regime was mainly characterised by various quantitative restrictions, numerous tariff lines, dispersion and various forms of protection (duties and surcharges) (Tsikata, 1999:3). According to Edwards and Lawrence (2006:1), trade protection in South Africa hampered exports and imports and the economy depended on favourable global commodity prices. Edwards and Lawrence (2006) further mentioned that the late 1980s brought about weak global commodity markets and a decline in gold exports, which led to constrained aggregate growth specifically when compared to other middle-income countries. Imports, on the other hand, were underperforming due to high surcharges and tariffs.

Constrained aggregate growth and some of the other reactions to weak global commodity markets, as mentioned above, could cause low wage growth and overall company or institutional growth and this, in turn, would not aid a reduction in unemployment levels. Overall growth or lack of growth in wages in this case should, however, not cause increased levels of polarisation in the domestic labour market. If the middle income jobs segment experience a lack of growth it could indicate a hollowing out of the labour market (or polarisation), but the lack of growth that is then also experienced in both the low and the high income segment would be contra-indicative of polarisation.

The relaxing of quantitative restrictions, which served as a means of protection during the import substitution phase that began in 1972 and the introduction of an export incentive system in 1980 were the initial moves to get the South African economy to shift away from import substitution industrialisation (Edwards, 2006:2). This view was supported by Tsikata (1999:3) who noted that quantitative restrictions were gradually reduced during the early 1980s, but, on the whole, trade policy remained fairly unchanged due to financial sanctions imposed on the country, the 1985 debt standstill and various political factors.

Following the political shift and change in government in South Africa in 1994, the Uruguay Round was concluded (WTO, 1998:7) and South Africa signed the Marrakech Agreement of the General Agreement on Tariffs and Trade (GATT) (Tsikata, 1999:4). A tariff offer that would be phased in over five years was made by South Africa during the Uruguay Round, which took effect on January 1, 1995 (Subramanian, 2000:54). The government also started to focus on

new trade reforms and reintegration of the economy into the multilateral system and trade liberalisation started to pick up pace. During September 1994, the RDP was introduced, as well as a five-year trade liberalisation programme. This programme was introduced in an effort to improve the investment climate and realign resources (WTO, 1998:7). However, even after these changes protection remained elevated in various sectors and tariff structures were seen as complex compared to other developing countries (Edwards *et al.*, 2008:3).

Since the European Union (EU)-South Africa trade agreement was implemented on January 1, 2000, South Africa has undertaken further reductions in average trade protection (Edwards *et al.*, 2008:5 and Subramanian, 2000:56). The agreement focused on the asymmetry and coverage of trade liberalisation, with South Africa being assigned twelve years to comply compared to three years for the EU. With regards to the Southern African Development Community (SADC) Free Trade Area (FTA), South Africa endorsed the Trade Protocol of the SADC in 1996 and according to the Protocol South Africa would liberalise at a more rapid pace than the other SADC countries (Mbola, 2008 and Subramanian, 2000:57). During January 2000, the SADC FTA came into force and during September 2000 it was implemented (Mbola, 2008).

Assessing all the above, it is obvious that South Africa had come a long way in liberalising trade since the 1970s, Subramanian (2000:58) had, however, identified three aspects regarding South Africa's trade policy and tariff system that still needed attention in 2000, namely, (i) the South African trade regime remained too complex, (ii) various key sectors remained extremely protected, and (iii) South Africa has become a frequent user of anti-dumping actions.

Regarding the continued debate surrounding the topic of trade liberalisation, Edwards (2006:4) noted that although nominal trade protection had decreased during the 1990s, the effect on effective protection<sup>3</sup> was uncertain. Edwards (2006:4) attributed the lack of consensus to a number of data and methodological limitations, namely (i) the choice of protection measures influenced estimates of nominal and effective rates of protection, (ii) the use of scheduled tariff rates had an impact on the level and change in protection, and (iii) studies did not take into account the protection provided by surcharges applied during various stages since the 1970s. Edwards (2006:21) further found that tariff liberalisation led to reductions in the levels of both nominal and effective protection during the 1990s.

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3 "Effective protection measures the net effect on protection after taking account of protection on output and the cost of raising effects of protection on intermediate inputs." (Edwards, 2006:4)

According to Edwards *et al.* (2008:5) from 2000 onwards South Africa experienced further decreases in average protection (as a response to the implementation of the EU-South Africa and SADC free trade agreements in 2000). By 2006, average protection had dropped and trade volumes increased.

Trade liberalisation in the 1990s served to increase both imports and exports (Edwards & Lawrence, 2006:1), output growth increased and trade as a percentage of production and consumption rose (Edwards & Behar, 2006:1). Between 1994 and 2003, tariff liberalisation led to a decrease in all factor returns (that is capital, labour and technology) (Edwards & Behar, 2006:15). Unfortunately, employment growth did not increase simultaneously and unemployment remained a problem. Most importantly, Edwards (2001:40) stated that amplified trade flows in developing countries caused the manufacturing sector to de-industrialise, lowered employment amid lower-skilled employees and/or increased wage inequality between employees with different skills levels. In other words, it led to increased polarisation between employees with different skills and their associated income levels.

Edwards and Behar (2006:1-3, 12) also supported the statement that trade liberalisation had an impact on the skill structure of employment and stated that tariff liberalisation encouraged “defensive innovation” and thus elevated firms’ skills structure through the identification of factors that are responsible for changes in the employment skills structure. Higher skills intensity was associated with firms that import more of their raw materials and lower skills intensity was associated with firms that experienced higher tariff protection (Edwards & Behar, 2006:12). In order for South Africa to compete with developed and developing countries’ increased levels of imports due to trade liberalisation, an upgrading in capital was required (Edwards, 2001:41).

Variations in economy-wide factor returns that were due to trade liberalisation between 1994 and 2003 were calculated through the use of firm level surveys by Edwards and Behar (2006:2-3) and, as tariff data were used in these calculations, trade liberalisation could be directly connected to deviations in factor demand. Edwards and Behar (2006:2, 6, 8) also made use of factor payments from household survey data and calculated economy-wide factor payments which were in line with deviations in product rates and technology. This, in turn, made it possible to recognise the input of product price fluctuations and technological fluctuations towards the gross deviations in factor prices by comparing deviations in product rates and technology with actual wages (Edwards & Behar, 2006:8). From 1994 to 2003, tariff liberalisation led to a deterioration in all factor returns, although this also coincided with lower product prices, which

could mean that real factor returns did not automatically drop, according to Edwards and Behar (2006:15). The skilled, artisanal and semi-skilled employees' decrease in wages due to tariff liberalisation was more than the decrease in the price of products, thus a decrease in real wages was experienced (Edwards & Behar, 2006:15). The biggest decline in wages was recorded for semi-skilled employees, and a deterioration in real wages for skilled, artisanal and semi-skilled employees as the drop in wages was higher than the decline in product rates (Edwards & Behar, 2006:15). In the paper by Edwards and Behar (2006:15), the least influenced group of all the employees seemed to be the unskilled employees who also experienced a decline, but a much less significant one. In conclusion, Edwards and Behar (2006:3, 16) found that tariff liberalisation caused the return on capital to increase relative to labour, but semi-skilled workers carried the brunt of the negative impact on labour while unskilled workers experienced a real rise in factor returns.

It can safely be assumed that the unskilled employees are low earners, the semi-skilled middle earners and the skilled are high earners, and it could mean that the biggest decline in real wages was for semi-skilled workers. Furthermore, a decline in the middle earnings group is one of the characteristics of polarisation. Skilled and unskilled workers, however, did not experience an increase (but rather also experienced a decline) in real wages, therefore not pointing to polarisation in the labour market.

### **3.5 BLACK ECONOMIC EMPOWERMENT**

Traditionally the black segment of the South African population was employed in unskilled and semi-skilled jobs. The purpose of BEE is to correct these imbalances caused by discrimination in the South African labour market in the past. A concept that goes hand in hand with BEE is Broad Based Black Economic Empowerment (BBBEE) which is based on the *Broad Based Black Economic Empowerment Act No.53 of 2003*. This act focuses on correcting the racial imbalances stemming from the past in South Africa, but also endeavours to promote social investment and the empowerment of communities (this means it is not only focussed on race but also on aspects such as gender) (Esser & Dekker, 2008:157). Should this be the case (and one assumes that the unskilled represents the low income group and the semi-skilled the middle income group) it would be expected that polarisation may not be present within the black group as the unskilled and semi-skilled received empowerment opportunities. Earlier discrimination



and the resultant BEE could also cause the gap between high-wage jobs and middle-wage jobs to increase as some people are pushed into high-end jobs to conform to BEE requirements.

Discrimination in the South African labour market started as far back as 1924, according to Rospabé (2001:2) with the refusal of the right to use official collective bargaining. It was followed by an influx control policy in the 1940s that restricted African workers' geographical mobility and in 1956 'job reservation' was implemented with certain jobs being exclusively set aside for employees from certain races (Rospabé, 2001:2-3).

According to Mariotti (2012:1100-1101) the supply of white semi-skilled employees dwindled during the apartheid era as the white part of the population improved their skills acquisition and moved up to higher skilled (and better paid) jobs. This caused an increase in the appointment of black employees in semi-skilled jobs, despite the existence of restrictions on hiring them and, as a result of this, the reservation of skilled and semi-skilled jobs for only white employees was removed (Mariotti, 2012:1100). Thus, as soon as the economic cost of the reservation of jobs became too elevated for the original white followers it disappeared, indicating that the transformation made strong economic sense and that it was not due to a desire for less racial segregation (Mariotti, 2012:1101).

A breakdown analysis in the paper by Mariotti (2012:1101) further corroborated that the substantial discrepancy between white and black employees' education was responsible for the gap in occupational realisation between the two respective population groups for the period between 1970 and 1980. It basically came down to providing only enough education to the black population to ensure that they could not be taken into consideration or compete for higher-skilled jobs that the white population could access due to elevated levels of education (Mariotti, 2012:1101). Furthermore, Mariotti (2012:1108) elaborated that semi-skilled employees wanted to remain more highly paid than their unskilled counterparts and thus they wanted to keep the number of semi-skilled employees limited, while skilled employees, on the other hand, sought an increase in the number of semi-skilled employees so that their pay could remain elevated. In other words, the skill-group (unskilled, semi-skilled or skilled employees) that had the main command of the labour market was the group that had the biggest number of employees (Mariotti, 2012:1108). Originally, through the restriction of black employees to unskilled positions, white employees controlled semi-skilled jobs and therefore the pay of semi-skilled jobs was increased, but, as the education levels of black employees increased and the demand

for more educated employees increased simultaneously, control over the labour market moved to skilled employees (Mariotti, 2012:1108).

Further measures against discrimination in the labour market after the end of apartheid included government passing the *Employment Equity Act 1998*, a law that propagated affirmative action for the previously disadvantaged, and the *Promotion of Equality and Prevention of Unfair Discrimination Act 2000* (Rospabé, 2002:198, 211). According to Rospabé (2002:194, 210), there was a decrease in the employment racial gap (as measured by earnings and access to skilled occupations) from 1993 to 1999, which could be regarded as the earliest effects of the affirmative action policy that was aimed at providing jobs to previously disadvantaged groups. The decrease in the gap is partly due to decreases in employment for the white population while there was an increase in employment for the black population as the previously disadvantaged groups' experienced increased access to highly-skilled occupations and the associated wages (Rospabé, 2002:210). Rospabé (2000:210) further concluded that although discrimination seems to have decreased during the 1993 to 1999 period, discrimination in occupation and wage seemed to have increased. The Commission for Employment Equity (2010:33) stated that the number of African and Indian employees in top management increased from 8.0 per cent and 3.9 per cent in 2001 to 17.9 per cent and 5.6 per cent respectively in 2009 compared to Coloured and White employees which decreased from 13.2 per cent and 74.9 per cent in 2001 to 3.7 per cent and 72.6 per cent in 2009. Thus, some improvement has been evident, but there is still a long way to go before these figures are more representative of the labour force as a whole. It is also interesting to note that the number of professionally qualified black and white employees have both decreased since 2001, from 39.7 per cent and 49.9 per cent to 32.8 per cent and 43.7 per cent respectively in 2009.

### **3.6 CONCLUSION**

Job creation in the South African labour market has been all but stagnant over the years since 1994 and has been greatly negatively influenced by changes in both the local and global economy. Although some progress has been made in correcting past imbalances, many challenges and imbalances still remain. The inequalities are extensive and evident in, among others, income and education. Throughout this chapter the focus was on population growth and migration, labour legislation (including labour unions and minimum wages), the internationalisation of the economy and BEE after the collapse of apartheid and how these

aspects may have influenced polarisation of the labour market. Population growth and migration as well as the opening up of the economy to international competition would have strengthened the forces of polarisation, but active labour unions and BEE may have acted as countervailing forces. In Chapter 4 the focus turns to the analysis of employment and earnings data to determine whether South Africa has seen polarisation similar to the cases of the USA and UK.

## **CHAPTER 4    EMPIRICAL ANALYSIS**

### **4.1    INTRODUCTION**

Chapter 2 showed that in the USA and UK there is evidence of the polarisation of the labour market. There has been a rise in demand for low-paying 'lousy' jobs and high-paying 'lovely' jobs, combined with a fall in demand for middling jobs. The proximate cause has been described as an increased demand for workers that can perform non-routine manual or cognitive tasks. This has translated into changes in the education and skills levels required to do most jobs. The fundamental drivers of these changes were identified as forces like technology, globalisation and de-industrialisation of advanced economies, weaker unions and lower minimum wages.

Chapter 3 showed that the South African labour market is interesting for its high levels of unemployment, poverty and inequality. There have been numerous studies of different aspects of the labour market, but none that have considered polarisation, or the evolution of the nature/structure of employment. Forces that have influenced the South African labour market and that can be linked to possible polarisation were discussed. Population growth and migration as well as the opening up of the economy to international competition may have strengthened the forces of polarisation, but active labour unions and BEE may have acted as countervailing forces.

This chapter presents a description of the data that are available for analysis of polarisation in South Africa following the examples of Goos and Manning (2003) and Autor *et al.* (2006). Section 4.2 provides an overview of the PALMS dataset, the empirical methods used in this chapter and the limitations of the analysis. Section 4.3 examines the aggregate evidence of the polarisation of the labour market. In section 4.4 a closer look is taken at the changes in the distribution of earnings by gender, level of education and by occupation. Section 4.5 presents the conclusions drawn from the analysis.

### **4.2    PALMS DATA, THE METHOD AND LIMITATIONS**

This chapter aims to repeat some of the analysis presented by Goos and Manning (2003) and Autor *et al.* (2006) for the case of South Africa. Their analysis consisted mainly of descriptions of changes in the distribution of jobs or of earnings and is not statistically

onerous. However, they had access to detailed labour market data ranging from the mid-1970s to the early 2000s. Data of earnings, hours worked, education and detailed occupation classifications are very limited in South Africa and it is within the constraints of available data that the results of the empirical analysis are presented.

The chapter employs data from the PALMS dataset created by Data First at the University of Cape Town for the analysis. PALMS covers the period 1994 to 2012 and is a compilation of data from 39 surveys conducted by Statistics South Africa. These include the OHSs, LFSs and QLFSs. The data are at the individual level, but individuals are not linked across waves. This chapter uses a subset of data from the main palmsv2 data file. This subset is limited to employed individuals for whom there were positive earnings data available. Analysis of polarisation is about changes in the distribution of employment and earnings and consequently unemployed individuals and those for which no earnings data were collected, are excluded for the analysis.

The methods of analysis are those found in Goos and Manning (2003) and Autor *et al.* (2006). Their analysis consisted of descriptions of data, focusing on changes in the distributions of jobs and of earnings over time. This international literature contains no econometric attempts to identify the drivers of polarisation and instead focussed on describing changes in micro-data. The limited availability of independent variables at this micro-level in the South African labour data limits the analysis that can be undertaken.

### **4.3 CHANGES IN THE DISTRIBUTION OF EMPLOYMENT AND EARNINGS**

The first step is to look for polarisation in employment following Goos and Manning (2003:9). Figure 2 shows the proportional change in employment from 1994 to 2009 and how it is related to the initial level of earnings in 1994. Note that employed people (Goos and Manning refer to jobs or occupations) are grouped into the lowest 10 per cent, second-lowest 10 per cent, through to the top 10 per cent by their median wage in 1994. Consistent real monthly earnings are used. If SBTC was driving polarisation, one would expect a positive relationship between employment growth and earnings.

**Figure 2** Percentage change in employment share by initial earnings decile

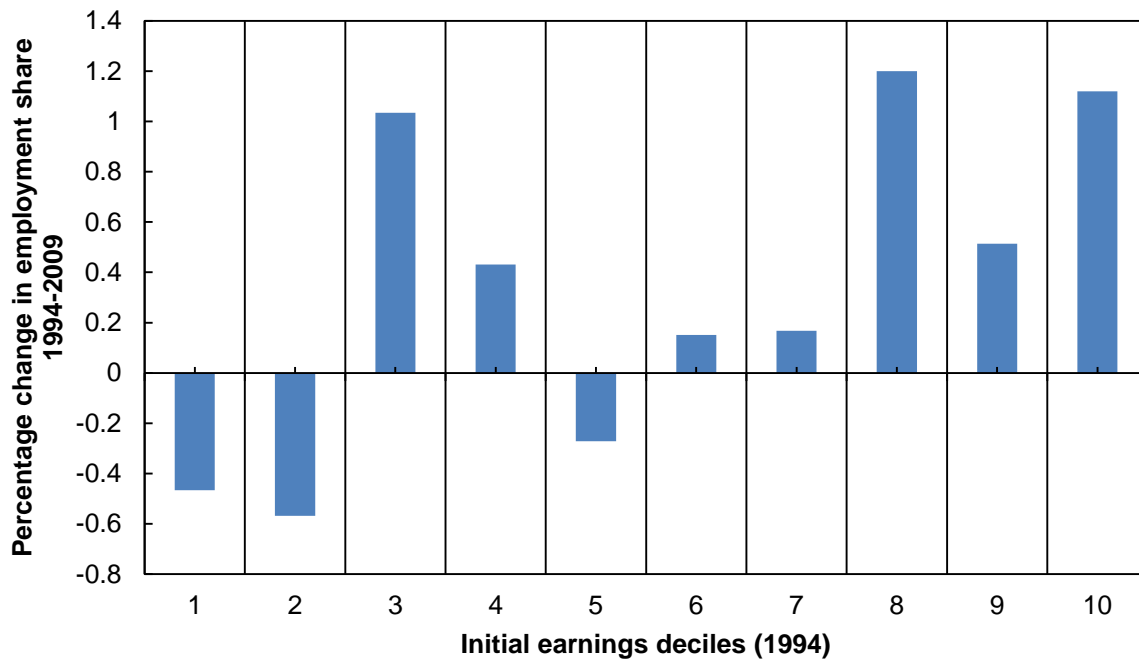
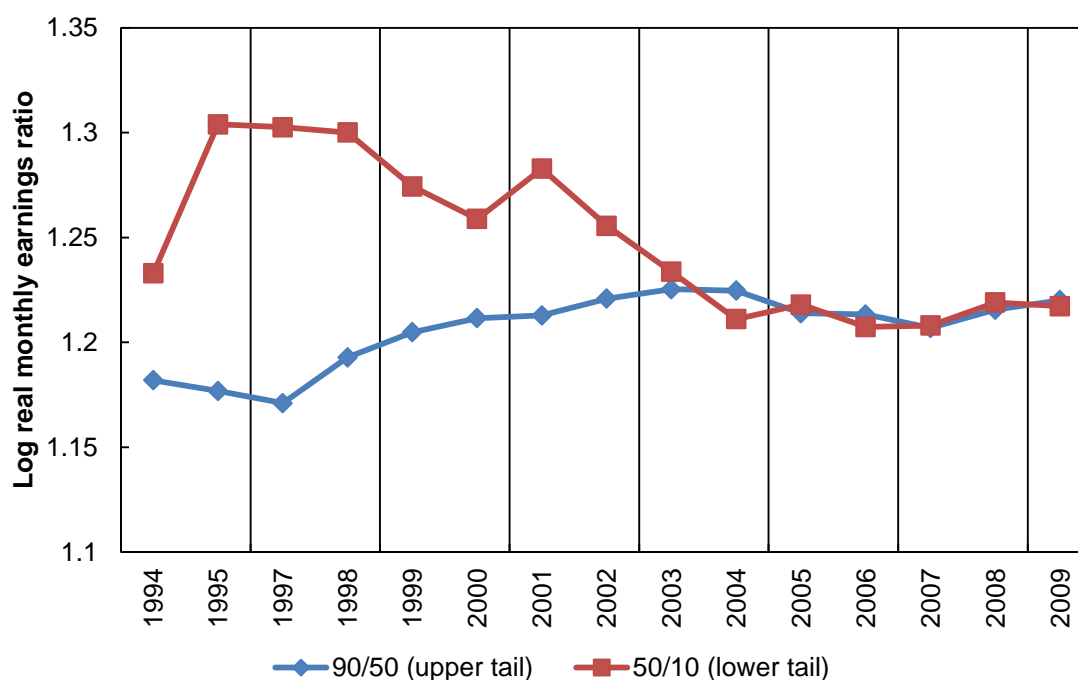


Figure 2 does not quite show the peaks at the ends of the distribution found in the UK data (Goos & Manning, 2003:43). It shows large growth in the share of employment in the top three deciles and some growth in the third and fourth deciles as well. There was a decline in the share of employment of the bottom two deciles. One might argue that there is an indication of slow growth and some decline in the ‘middling jobs’.

The second step is to look for evidence of polarisation in the distribution of earnings following Autor *et al.* (2006:189). Figure 3 shows the evolution of the 90-50 and 50-10 log real monthly earnings from 1994 to 2009 for all workers. Evidence of polarisation would constitute substantial increases in the upper half and lower half wage inequality, but this does not seem to be the case.

**Figure 3 Log of real 90-50 and 50-10 earnings ratios**



There has been an increase in inequality in the top half of the distribution. Initially there was a small decrease in the ratio but from 1998 the 90<sup>th</sup> percentile's share of real monthly earnings increased. This increase was, however, only 0.038 log points, compared to the USA case where the 90-10 wage differential increased by 21 log points (Autor *et al.*, 2006:190). In the bottom half of the distribution there was at first an increase in inequality but this declined after 2001 to a level slightly lower than in 1994.

Combined with the evidence of the changes in employment share, this might constitute some evidence of polarisation – with some gains at the top and bottom and some decline in the middle.

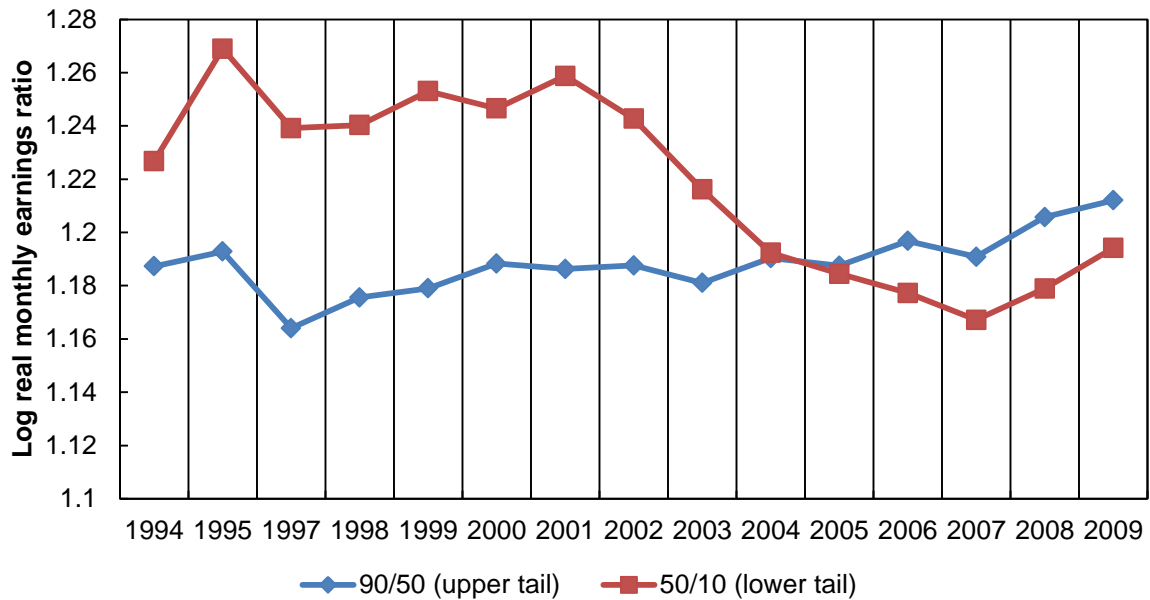
#### **4.4 POLARISATION BY GENDER, EDUCATION AND OCCUPATION**

It is possible to have a closer look at the changes described above by disaggregating them by gender, years of education and occupation. Throughout, changes in the distribution of earnings are considered by looking at the evolution of the 90-50 and 50-10 log real monthly earnings.

Figure 4 shows the evolution of the 90-50 and 50-10 log real monthly earnings from 1994 to 2009 for males only. Here the pattern is similar to the aggregate picture with some increase in inequality at the top end of the distribution and an initial increase and then decrease in

inequality at the bottom end of the distribution. Here there is a more clear increase in the 50<sup>th</sup> percentile's share of earnings compared to the 10<sup>th</sup> percentile following the global financial crisis in 2008.

**Figure 4 Earnings inequality by gender: Males**



**Figure 5 Earnings inequality by gender: Females**

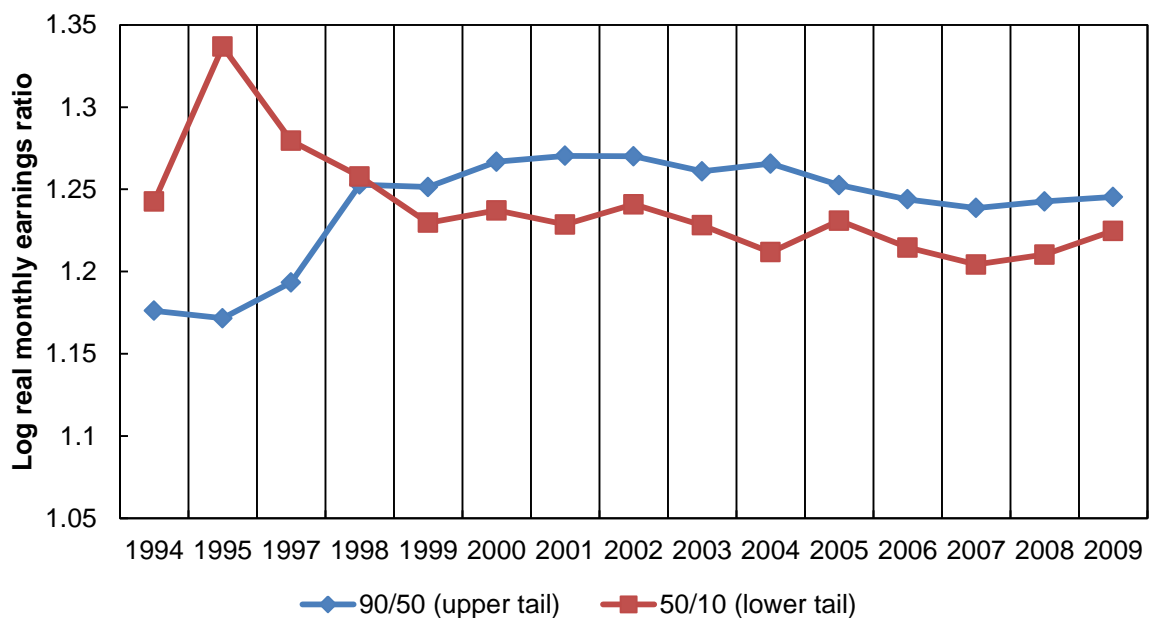


Figure 5 above shows the evolution of the 90-50 and 50-10 log real monthly earnings from 1994 to 2009 for females only. Here the changes are more pronounced. There is a clear increase in inequality at the top end of the distribution and an initial increase and then sharper decrease in inequality at the bottom end of the distribution. This may reflect the



dynamics of women entering into the labour force from 1994. At the top end of the distribution of earnings they benefitted from employment equity initiatives. At the bottom end they were taking on the low-skill non-routine manual tasks. Unfortunately the data do not allow one to investigate this in much further detail.

It is also possible to disaggregate the trends by years of education. Here the data are split by categorical variables representing years of education. The following four figures show changes in inequality of earnings for people who completed grades 1 through 7, grades 8 through 11, those that completed high school (grade 12) and those that have post-school qualifications of some kind.

Figure 6 shows the changes in the distribution of real monthly earnings of people who had some primary education or completed primary school. Here the top-end of the distribution lost ground to the middle and over all the years, the middle also gained relative to the bottom-end of the distribution (though this was in decline over most of the period).

**Figure 6 Earnings inequality by years of education: Grades 1-7**

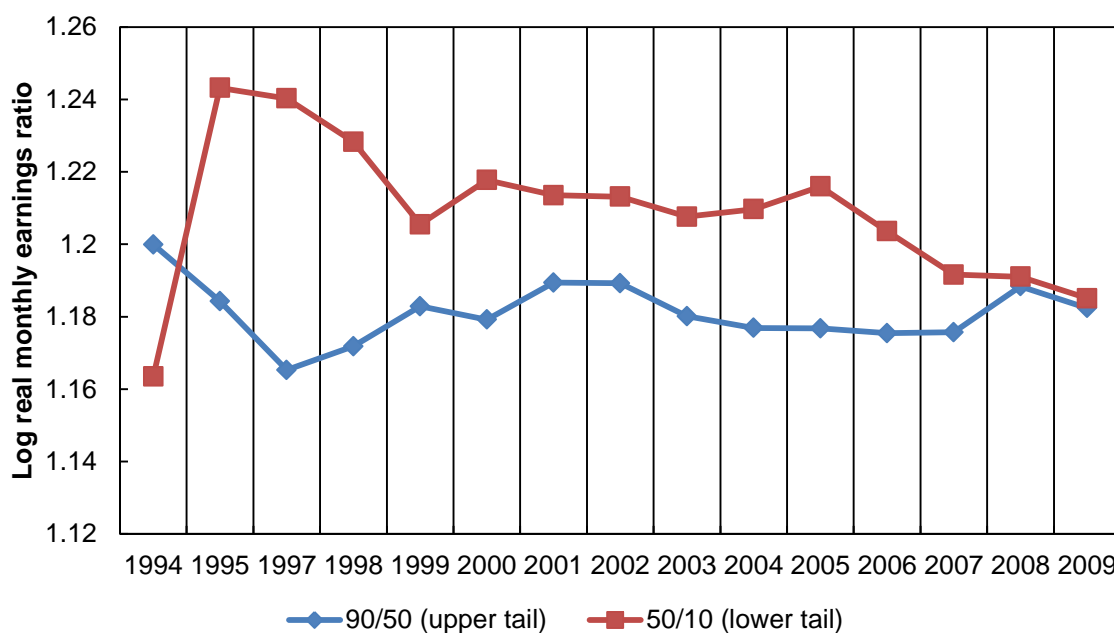


Figure 7 shows a trend that is closer to the aggregate picture depicted in Figure 3: For people who completed primary school and some secondary education inequality at the top end of the distribution increased. Those in the 50<sup>th</sup> percentile initially gained compared to the 10<sup>th</sup> percentile but after 2001 inequality at the bottom of the distribution actually decreased.

**Figure 7 Earnings inequality by years of education: Grades 8-11**

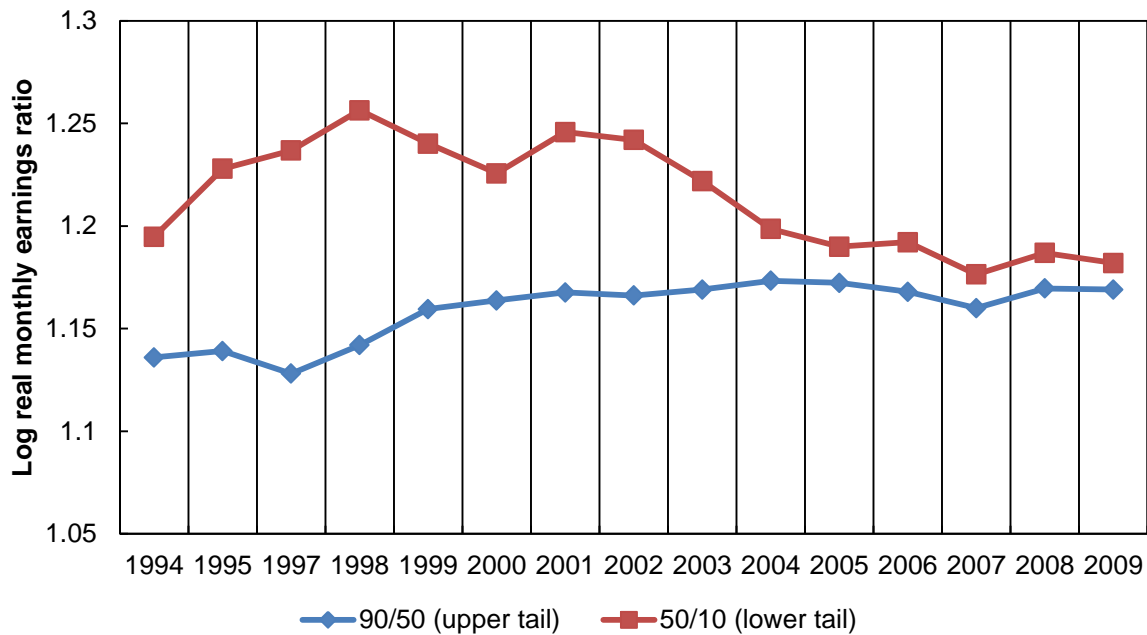
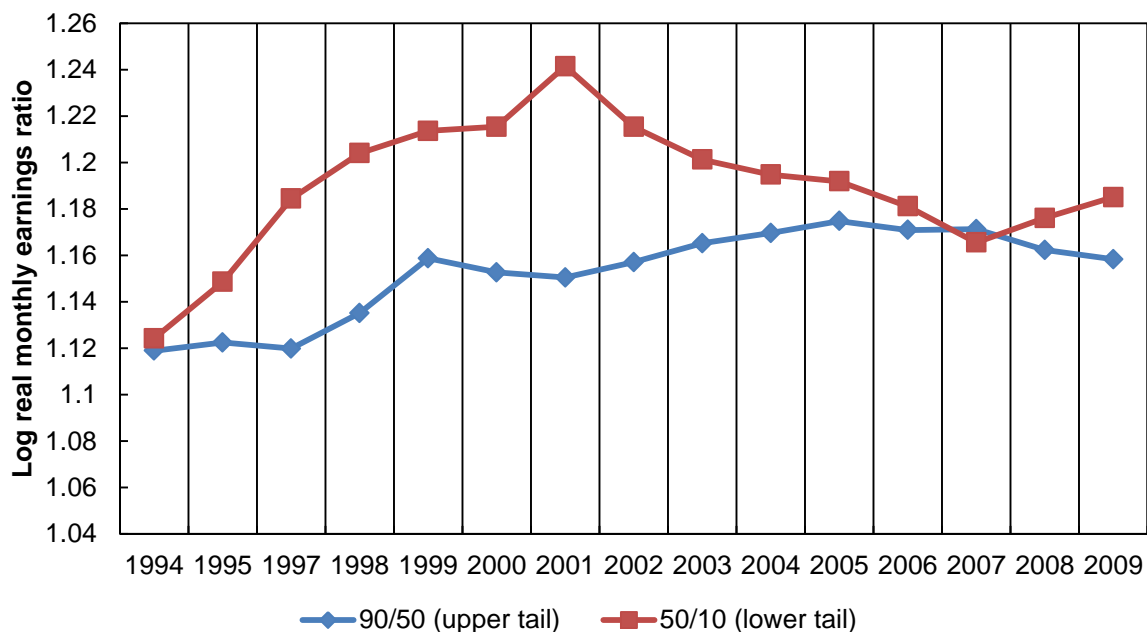


Figure 8 shows the increasing returns to education once someone has completed secondary school.

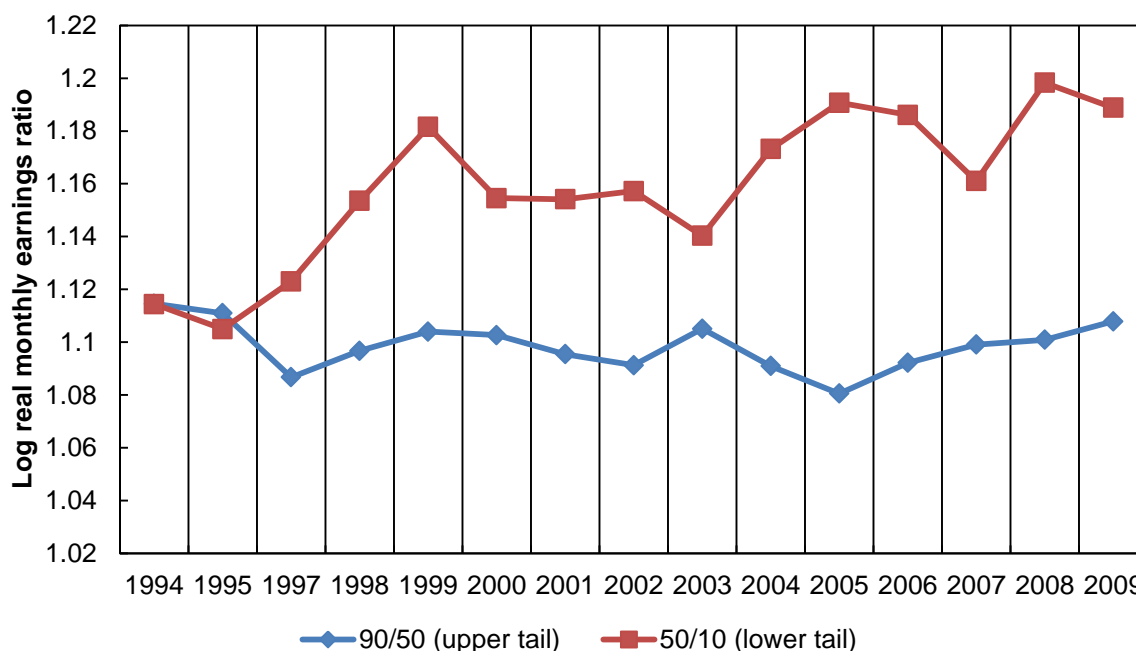
**Figure 8 Earnings inequality by years of education: Grade 12**



The increase in earnings inequality among people who completed Grade 12 is clear to see. Over the period the 90<sup>th</sup> percentile made gains relative to the 50<sup>th</sup> percentile. The 50<sup>th</sup> percentile made large gains relative to the 10<sup>th</sup> percentile through to 2001 after which the bottom-end again caught up with the middle somewhat.

Figure 9 shows the evolution of the 90-50 and 50-10 log real monthly earnings from 1994 to 2009 for people who held post-school qualifications. Over the period the inequality between the top-end and middle of the distribution did not change much. For this highest level of qualifications, the people in the middle of the distribution of earnings made some gains relative to the bottom-end of the distribution.

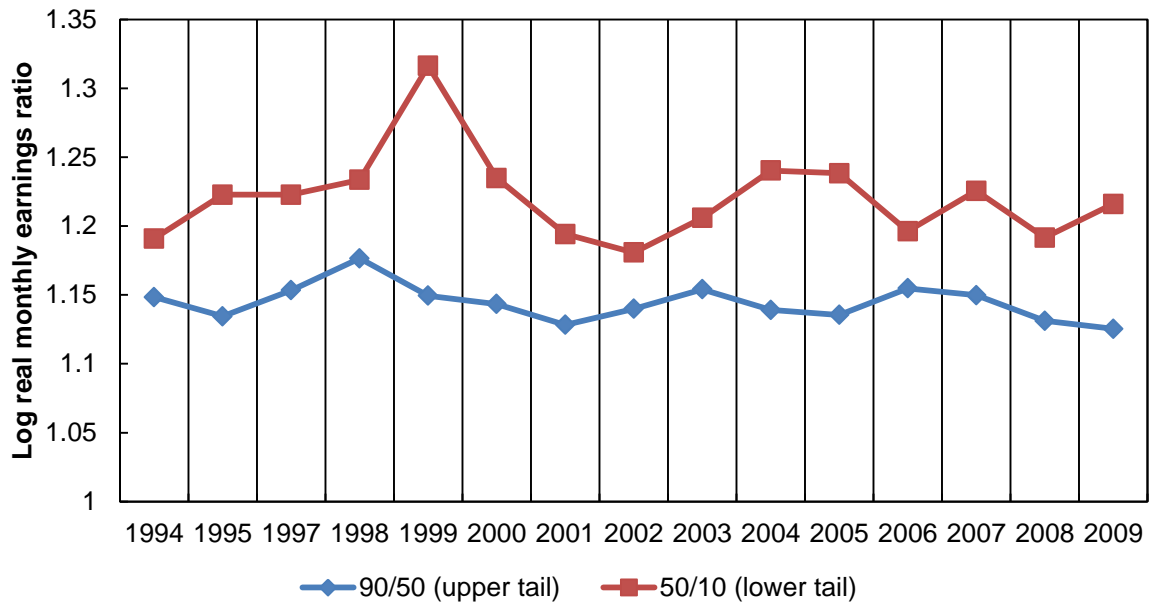
**Figure 9 Earnings inequality by years of education: Post-school qualifications**



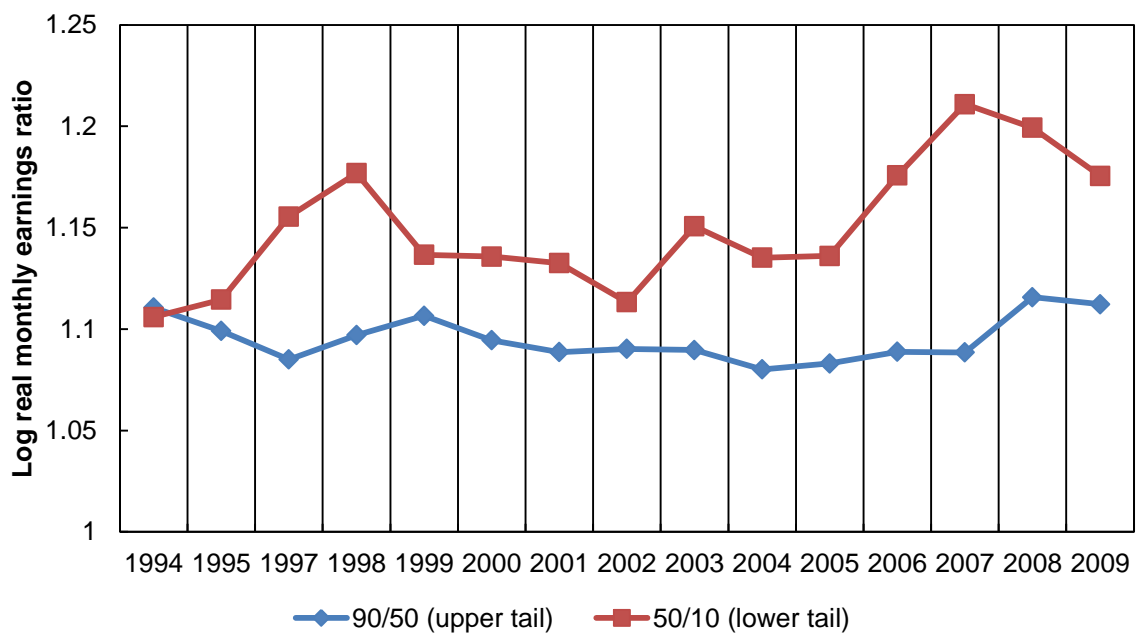
In the international literature there is a lot of emphasis on how inequality changed when one considers different occupations. To consider occupations is to also consider their associated education or skills requirements. Autor *et al.* (2006:191) is able to link detailed occupations to a measure of task intensity to distinguish between the occupations characterised by routine or non-routine manual or cognitive tasks and link that to changes in wages. Goos and Manning (2003:12) look at employment growth by detailed occupation and also employ a manual/non-manual classification of occupations (Goos & Manning, 2003:15). Unfortunately, in the South African case the data do not allow for analysis of detailed occupations. The PALMS data set do contain detailed occupation classification codes, but the underlying LFS and QLFS data sets were stratified by province and the changes observed in the employment or earnings of detailed occupation groups may not be representative. The following few graphs do show the evolution of the 90-50 and 50-10 log real monthly earnings for the classification: Occupation of main job.

There is no need to discuss each of the occupations in detail. The focus is on occupations where the changes in the disaggregated data differ from what has been observed for all workers.

**Figure 10 Occupation of main job: Senior officials and managers**



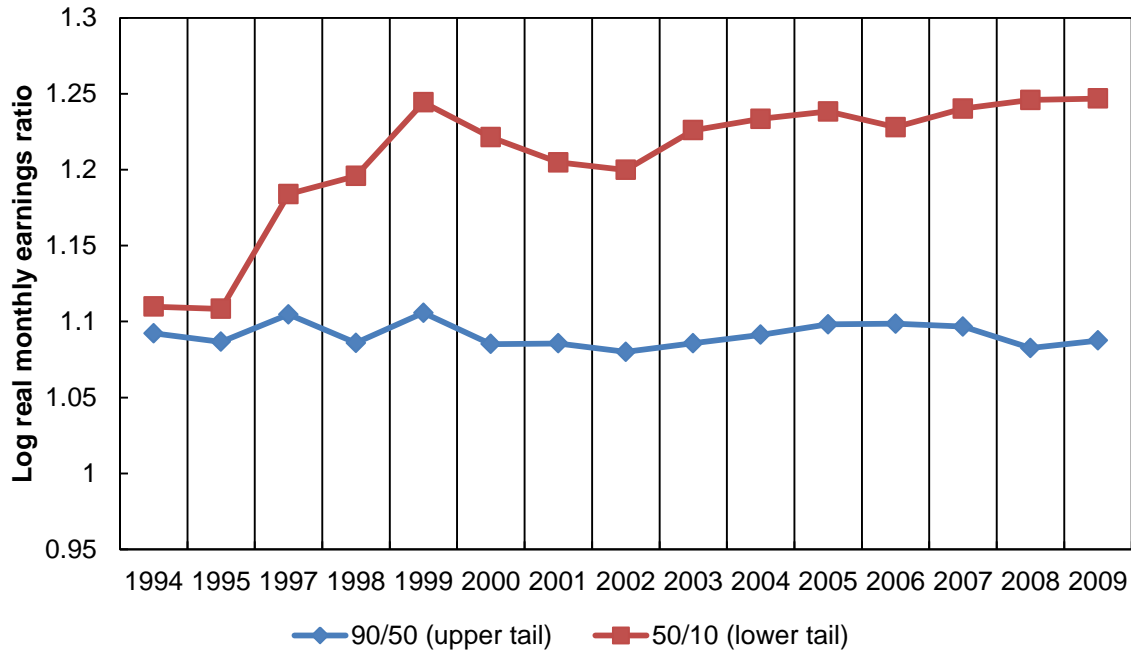
**Figure 11 Occupation of main job: Professionals**



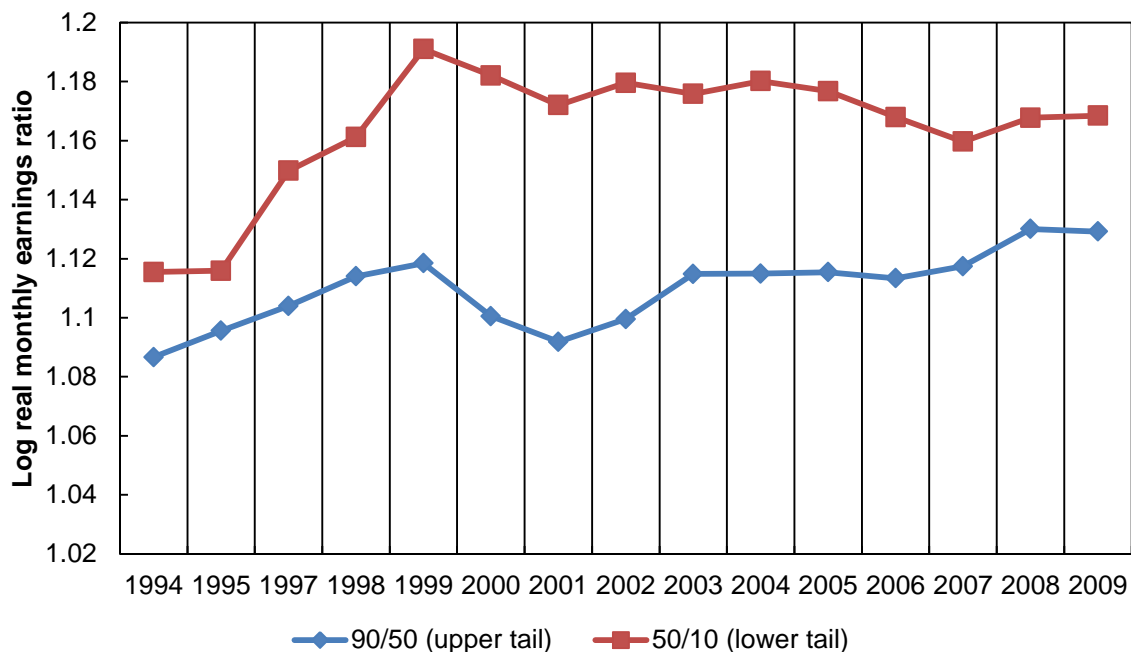
There are few occupations in which inequality worsened and the top-half of the distribution made significant gains compared to the middle. The few examples to the contrary include

Clerks; Service workers, shop and marketing sales workers; Craft and related trades workers and Plant and machine operators and assemblers.

**Figure 12 Occupation of main job: Technical and associated professionals**



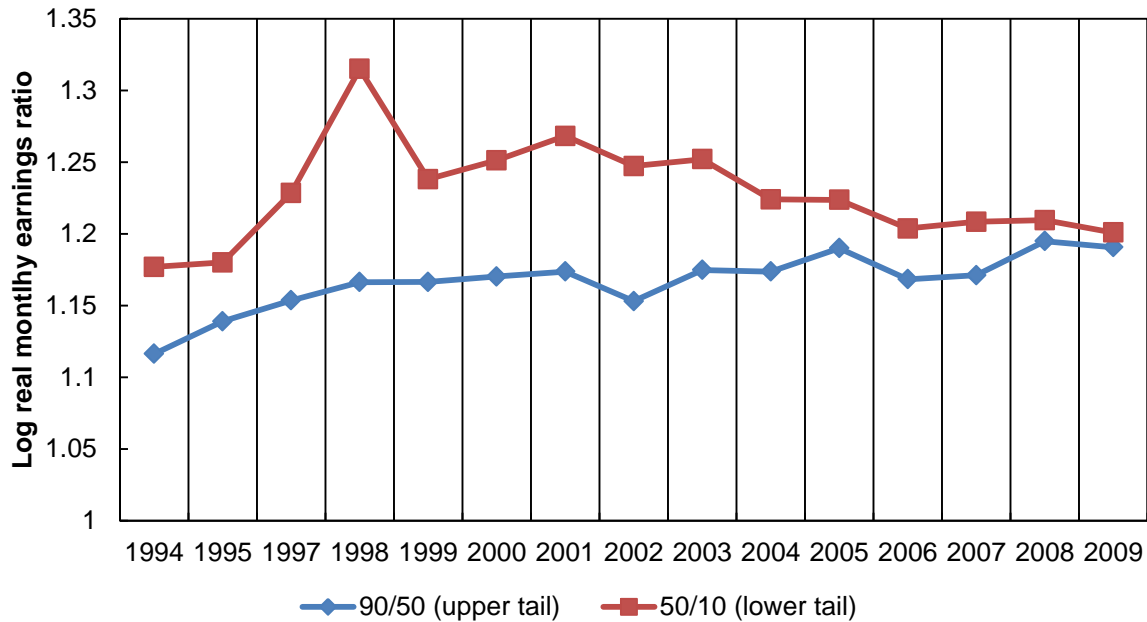
**Figure 13 Occupation of main job: Clerks**



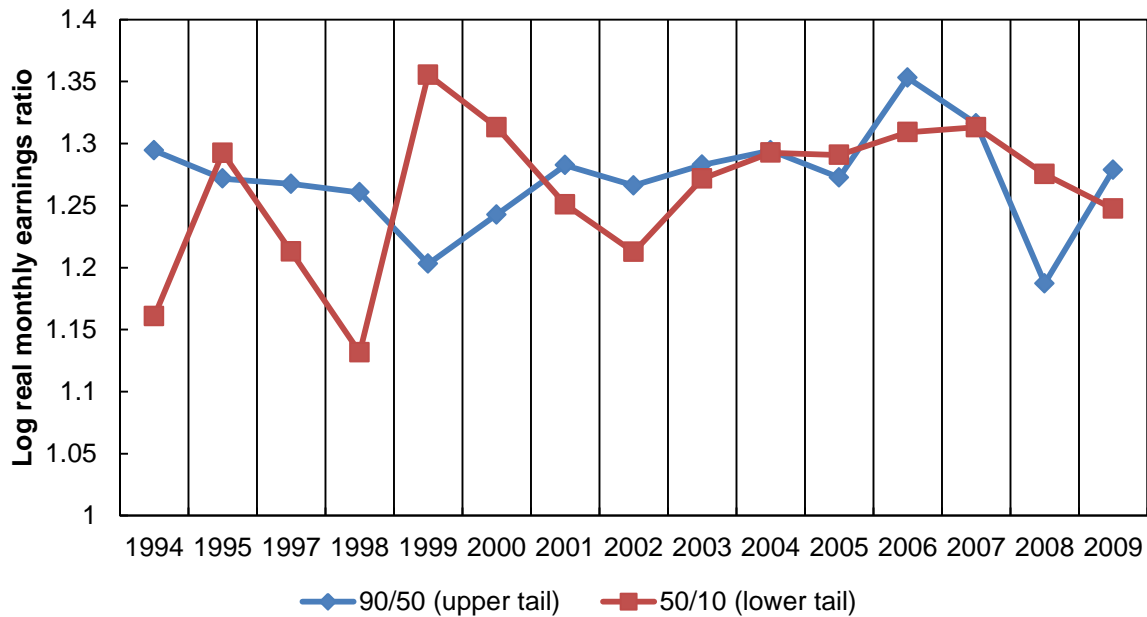
There are a number of occupations in which workers in the 50<sup>th</sup> percentile of the earnings distribution gained relative to the 10<sup>th</sup> percentile and inequality worsened at the bottom of the distribution. The disaggregation by occupation shows a different picture than that of Figure 3

for all workers. These occupations include Professionals; Technical and associated Professionals; Clerks and Skilled agricultural and fisheries workers.

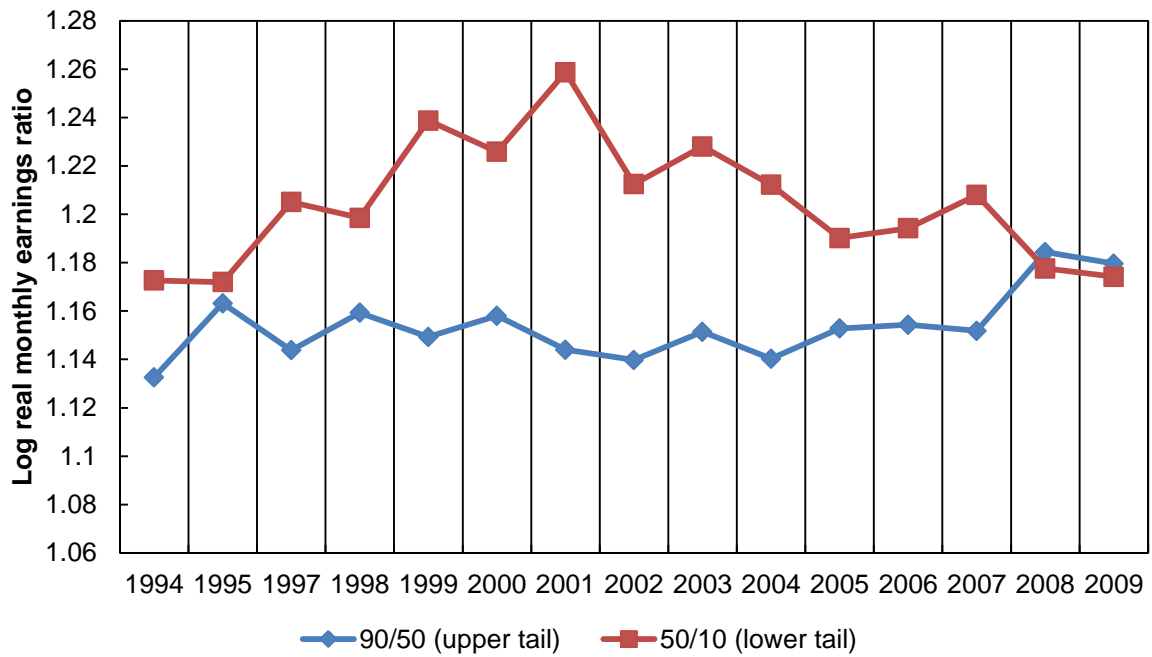
**Figure 14 Occupation of main job: Services workers, shop and market sales workers**



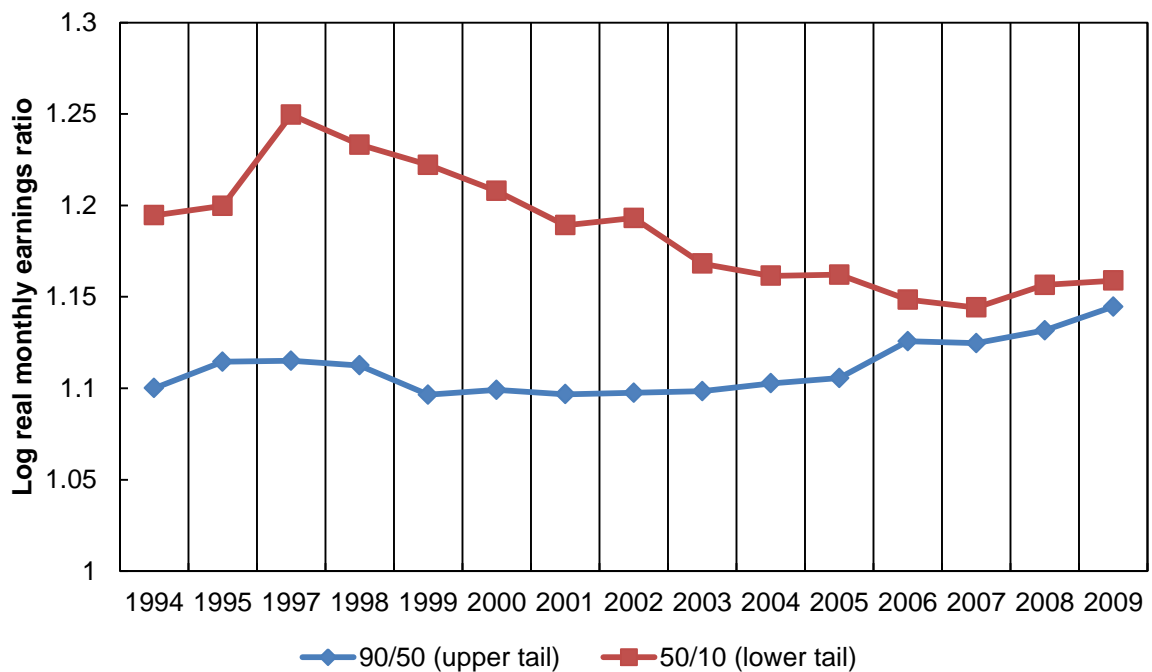
**Figure 15 Occupation of main job: Skilled agricultural and fisheries workers**



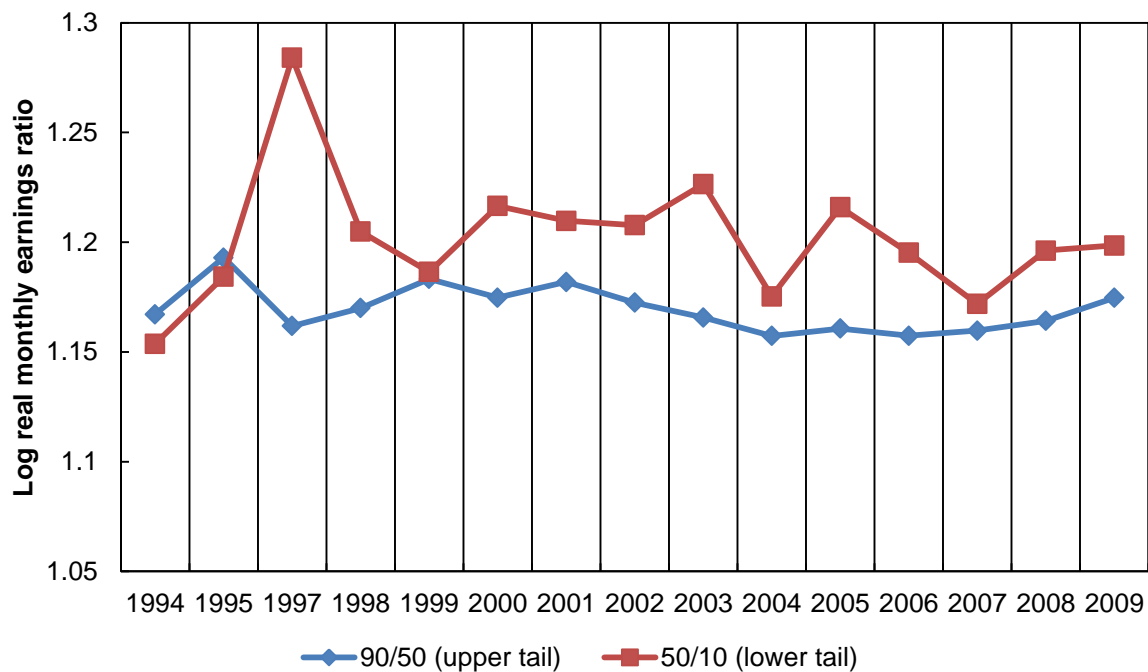
**Figure 16 Occupation of main job: Craft and related trades workers**



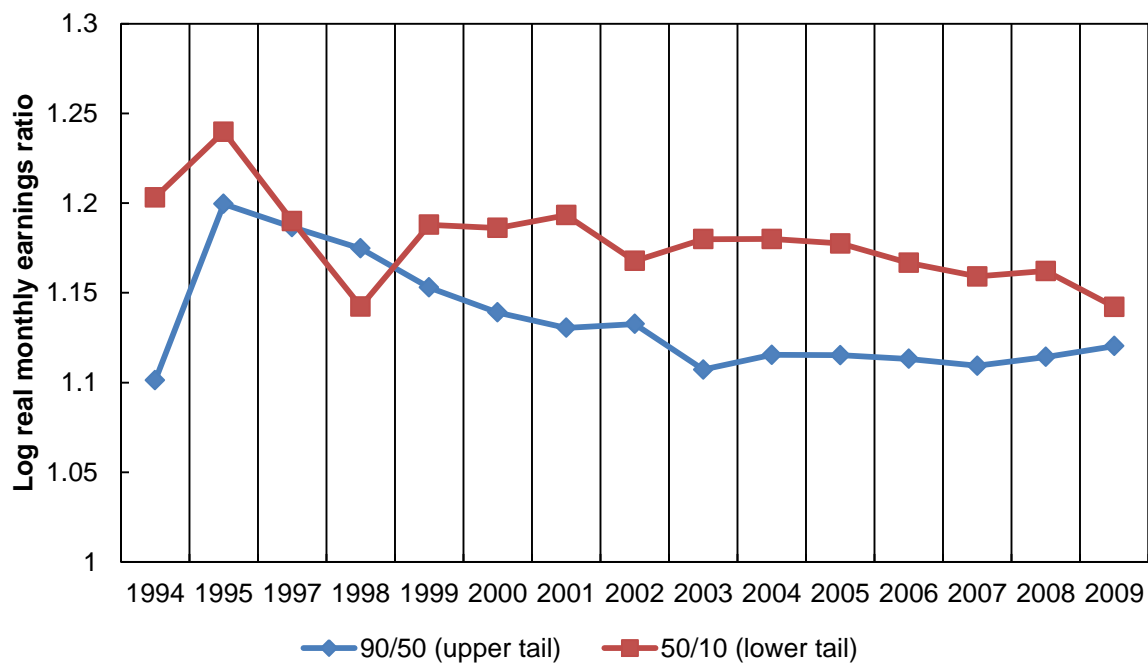
**Figure 17 Occupation of main job: Plant and machine operators and assemblers**



**Figure 18 Occupation of main job: Elementary occupations**



**Figure 19 Occupation of main job: Domestic workers**



#### 4.5 CONCLUSIONS

This chapter presented a description of South African labour market data searching for evidence of polarisation. The South African picture is different from what the international



literature finds for the USA and the UK. Figure 2 showed the percentage change in employment share by initial earnings decile and there has clearly been growth in the high earning deciles, little change in the middle of the distribution and some growth in the third and fourth deciles. This picture is to some extent mirrored in the evolution of earnings inequality. When all workers are considered there is increased inequality in the upper tail of the distribution. The 50-10 earnings ratio showed strong gains for the middle up to around 2001, but there after inequality in the bottom-half of the distribution falls again.

Unpacking these changes showed that inequality in the top half of the distribution can be attributed to the gains made by women, people with a Grade 12 education, Clerks; Service workers, shop and marketing sales workers; Craft and related trades workers and Plant and machine operators and assemblers.

The gains made in the middle of the income distribution, perhaps reflecting the growth in employment in the third and fourth earnings deciles included Technical and associated Professionals; Clerks and Skilled agricultural and fisheries workers. The occupations in which those at the bottom of the distribution caught up with the middle (and the 50-10 earnings ratio declined) included Plant and Machine operators and assemblers and Domestic workers.

The conclusion is that the South African story is not a simple one of technological change and globalisation changing job tasks and the education required, and putting pressure on unions and wages. Though South Africa is well-known for its skills shortages, it has not fuelled runaway inequality at the top of the income distribution. This story seems to be one of gains in the middle of the distribution for service sector-type jobs for people with a Grade 12 education. This matches with Bhorat *et al.*'s (2014:19) finding that changes in the distribution of employment and earnings mirror the broader sectoral changes that occurred after 1994. The importance of the tertiary sector also has a lot to do with the importance of public sector employment over the period. The occupations in which the bottom of the distribution caught up with the middle are those strongly influenced by minimum wages (Domestic workers) and union power (Plant and Machine operators and assemblers).

Thus one finds the familiar South African story of skills-biased labour demand, but does it translate into polarisation?

# CHAPTER 5 CONCLUSION

## 5.1 INTRODUCTION

In this study the main question that is asked is whether polarisation has occurred in the South African labour market since the end of apartheid in 1994. To answer this question, both a literature study and empirical work were undertaken.

The definition of polarisation was discussed in detail in Chapter 2, with the general consensus being that polarisation involves changes in the distribution of employment and earnings. It involved increases in both the high- and low-income jobs, while middle-income jobs remained stagnant or even decrease. Polarisation could deepen the already severe inequalities internationally and in South Africa.

This chapter presents a brief summary of the study as well as some conclusions and recommendations.

## 5.2 SUMMARY

The review of the literature can be found in Chapters 2 and 3. In Chapter 2 the concept of polarisation was explained and an overview presented of a number of international studies. This presented evidence of polarisation in the UK and the USA and discussed literature's views on the proximate and fundamental causes of polarisation. There have been increasing returns to higher levels of education and to high-level skills, fuelling inequality. This is, in turn, caused by forces such as technological changes, globalisation and de-industrialisation of advanced economies.

In Chapter 3 the focus was on the literature of the South African labour market. Currently there is a single paper that examines skills-biased labour demand and finds some evidence of the polarisation of the South African labour market. Consequently, the overview in Chapter 3 had a wider focus on inequality and the different forces that have influenced the South African labour market since 1994. The aim was to show how the analysis of polarisation fits into the bigger literature on employment and inequality.

The South African economy has experienced various changes over the years, both structural and policy related, and these changes influenced the domestic labour market in various

ways. The labour market in South Africa remains segmented with elevated levels of unemployment. The high Gini coefficient is proof of the imbalanced income distribution. Income inequality is, however, not the only form of inequality in the country – as was discussed earlier, there are also inequalities in education, health and infrastructure. Earlier on in this study, it was also mentioned that various measures have been implemented to decrease these inequalities but so far these measures have had only some success.

Chapter 3 further focused on recent research regarding the changes in the South African labour market since 1994 and explicit attention was given to population growth, labour legislation, the removal of trade sanctions and BEE. The emphasis was on how these aspects might have influenced the labour market, and thus polarisation.

The empirical analysis undertaken in Chapter 4 consisted of descriptions of data from the PALMS, and focused on changes in the distributions of jobs and of earnings over time. Analysis of employment shares by earnings decile showed a large growth in the share of employment in the top three deciles and some growth in the third and fourth deciles as well. There was a decline in the share of employment of the bottom two deciles. It was argued that there is an indication of slow growth and some decline in the ‘middling jobs’. Analysis of changes in the distribution of earnings showed an increase in inequality in the top half of the distribution. In the bottom half of the distribution there was at first an increase in inequality but this declined after 2001 to a level slightly lower than in 1994. The analysis of polarisation was also undertaken by gender, education and occupation.

### **5.3 CONCLUDING REMARKS**

This study finds some evidence of polarisation of employment and earnings in South Africa. There is clearly a skills-biased demand for education, as found by Borat *et al.* (2014). The South African story is, however, not as simple as the one told in the USA or UK, where technology and globalisation have swept or is set to sweep away the middle-income job and the middle class. In South Africa the growth of the tertiary sector and the public sector has meant gains in the middle of the distribution for people with a Grade 12 education. Relatively strong unions and the introduction of minimum wages have helped those at the bottom to catch up with the middle.

#### **5.4 RECOMMENDATIONS**

This study set out to find evidence of the polarisation of the South African labour market. There is some polarisation, but it was also shown that other forces have been at work in the changes in the distribution of employment and earnings.

The first recommendation for further research is to link the notion of polarisation, skills-biased labour demand, public sector employment and the importance of minimum wages to the three discourses of the labour market outlined by Fourie (2011). The second is to link the polarisation of employment and earnings to the inequality debate. Internationally Piketty's *Capital in the 21<sup>st</sup> Century*, which was first published in 2013, has placed inequality at the centre of growth and development discourses.

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