Testing the Social Polarization hypothesis in Johannesburg, South Africa

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Abstract

This study assesses both the social polarisation hypothesis and the role migrants play in this process. The manufacturing sector, once a major source of urban employment and consisting of a large percentage of skilled and semi-skilled, middle-income jobs has declined while the service sector, argued to consist of predominantly either high-skill, high-pay or low-skill, low-pay jobs, has grown. Thus, the decline of manufacturing and the growth of the service sector are argued to result in a more polarised society (Sassen, 1994). Low-wage, low-skill service sector jobs are also argued to attract poorly-educated, unskilled immigrants unable to compete in the urban labour market for anything other than low-skill, low-pay jobs. Thus, the contention is that immigration contributes to social polarisation by increasing the numbers of low-wage workers (Sassen, 1994). However, other scholars hold that the growth of an expanded low-wage service sector is only possible in the face of large-scale migration of these unskilled workers, and that a strong welfare state can militate against the development of a service proletariat (Hamnett, 1994).

Using survey and population census data of the Johannesburg region of South Africa from 1970 to 2010, it is shown that, when clerical and service and sales jobs are not misclassified as low-skill work, the growth in these white-collar, middle-income jobs does not contribute to increasing polarisation. Moreover, the numbers of high-skill occupations increased by two and half times as many as low-skill jobs, thereby resulting in a trend of increasing professionalisation of the employed workforce. Shift-share analysis shows that this professionalisation has taken place across all sectors, including the manufacturing sector, and was not confined to the service sectors only. In addition, this relatively smaller amount of low-skill job growth occurred despite large-scale in-migration and the general condition of large numbers of unskilled workers in South Africa. However, economic, and consequently, job growth did not match labour force growth. Even without sufficient welfare provision to discourage workers from taking low-skill, low-wage jobs in favour of unemployment and living on state grants, unemployment grew dramatically in this period as a result of the lack of suitable jobs. In terms of the employed workforce, migrant workers of both sex and all four race groups made significant contributions to the growth in absolute numbers of high-skill jobs. Thus, the increase in high-skill, high-wage and middle-income service sector jobs was that much greater than low-skill job growth, leading to a pattern more consistent with growing professionalisation of the urban workforce, with a concomitant increase in unemployment.

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Appendices:

This work has not been submitted previously, in whole or in part, for the award of any degree. It is my own work. Each significant contribution and quotation in this dissertation from the work(s) of others has been attributed, cited and referenced.

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Introduction

In essence, the social polarisation hypothesis states that due to the decline in manufacturing employment and the growth in service sector employment, the numbers of high-skill, high-pay and low-skill, low-pay jobs are increasing at the expense of middle-income jobs (Sassen, 1994). While many scholars support this theory, others argue that low-skill work is actually on the decline, and that only high-skill jobs are increasing, thereby leading to increasing professionalisation of the occupational structure (Hamnett, 1994a). These two theories will be weighed up against each other, using data from the Johannesburg region of South Africa to critically engage with some of the central tenets of both hypotheses.

In Chapter 1, the arguments for social polarisation and professionalisation will be reviewed. In addition, the contention that many scholars mistakenly reach the conclusion of increasing social polarisation due to the way in which certain service sector occupations are (mis)classified as low-skill, low-wage jobs will also be introduced (Borel-Saladin and Crankshaw, 2009). Literature on the role of immigrants in social polarisation will also be discussed. The argument will be made that those who support the social polarisation hypothesis view immigrants as contributing to increasing polarisation by filling increasing numbers of low-wage service jobs. The counter to this, namely that it is the presence of immigrants that makes a low-wage service sector possible, will also be explored (Hamnett, 1994a). However, the idea that not all immigrants are necessarily confined to low-skill service sector work will also be discussed (Cross and Waldinger, 1992). The issue of welfare provision and its impact on reducing the need for workers to seek low-wage work will also be discussed, leading to the assertion that in countries with strong welfare states, professionalisation accompanied by growing unemployment rather than low-skill work is the dominant trend (Esping-Andersen, 1993; Hamnett, 1996b). However, the contention that professionalisation with a concomitant increase in unemployment can take place without the actions of a welfare state to limit the growth of low wage jobs will also be introduced.

Chapter 2 describes the methods used in exploring and testing the ideas introduced in chapter 1. First, the method by which to accurately assess the polarisation theory will be discussed. Central to this discussion will be the issue of the classification of occupations. Another important section will deal with the shift-share method. This will be used later to examine occupational change and decompose said change into that caused by changes to the distribution of occupations across all industries and that due to changes in the distribution of industries themselves. The surveys used for studying this occupational change, as well as those selected for studying the impacts of immigration on the occupational structure will also be discussed.

In chapter 3, changes to the sectoral and occupational structure of the employed workforce of the Johannesburg region will be analysed through the use of descriptive statistics and the shift-share method. It will be argued that the occupational structure is tending more towards a pattern of professionalisation than polarisation, and that this is due to increasing professionalisation in most sectors, not only the growing service sectors.

The role of migrants in social polarisation will be considered in chapter 4. Evidence in support of the contention that migrants occupy mostly low-skill work will be critically examined. The argument will be made that migrants to the Johannesburg region are not overwhelmingly confined to low-skill work. Instead it will be shown that, overall, they have a similar occupational distribution to that of natives. However, occupational differences between individual race and gender groups of migrants will also be explored.

Chapter 5 will consider the theory that professionalisation with a concomitant increase in unemployment can take place without the actions of a welfare state to limit the growth of low wage jobs. It will be shown that welfare benefits in South Africa do very little to dissuade workers from seeking low-wage work. It will be argued that despite this, there is much

unemployment due to insufficient economic growth in the face of extensive labour force growth, especially amongst the unskilled, thereby leading to a shortfall of low-skill and jobs and increasing unemployment.

Chapter 1: Literature Review

Deindustrialisation and the rise of the service sector

In their 1982 paper *World City Formation*, John Friedmann and Goetz Wolff proposed that one of the most important issues facing emerging world cities would be the impact their changing employment structures would have on both their economies and social organisation. They expressed concern that certain sectors of the economy were growing at the expense of others in these cities. They argued that manufacturing's share of employment was steadily dropping, and that, with the rapidly increasing automation of many jobs, manufacturing employment in the world city would continue to decline.

The issue of the declining centrality of manufacturing mass production and employment has been taken up by many other scholars. Sassen (1994) contends that capital intensive, mass production and consumption in post-World War II America facilitated and encouraged the growth of a large middle-income, blue-collar class, while limiting inequality at the same time. Because this scale of production was so large, and played such a central role in employment, there were greater levels of unionisation and worker empowerment. Thus, these industries had large organised factories with many well-paid employees. Manufacturing was such a core industry in the economies of the 1950's and 1960's that, due to its high levels of unionisation, it even had great wage-setting power in other sectors (Sassen, 1994). Thus, Sassen (1994) argues, this type of economic growth led to a decrease in the number of poor in the United States (US), as well as other highly developed countries.

However, the socioeconomic system and functioning of the urban land market began to change from the mid-1970's (Sassen, 1994). Many scholars assert that not only did manufacturing employment begin to decline, but the organisation of manufacturing production began to change. Instead of large factories with highly unionised, well-paid employees, there was a decline in unions and a loss of protective measures, with increased part-time work and lower wages. Mass production manufacturing was also argued to provide

relatively high-paying jobs for blue-collar workers with little education (Sassen, 1994).[1] However, with the decline in this kind of manufacturing work, it is claimed the numbers of these jobs decreased most in industries with lower educational requirements, thereby leading to increased poverty and unemployment amongst unskilled workers (Kasarda, 1989; Soja, 1991; Wilson, 1987). Thus, Wilson (1996:29) says "One study revealed that in the 1970's, up to half of the huge employment declines for less-educated blacks might be explained by industrial shifts away from manufacturing toward other sectors". As Soja (1991:369) states, "…restructuring and rationalisation shrank the once bulging middle-wage stratum and created new, post-Fordist landscapes of despair and abandonment in many of the old working class neighbourhoods that made Fordism work". Therefore, it is reasoned, the general decline in wages and manufacturing employment led to the shrinking of the mass of middle-income earners.

As many cities experienced deindustrialisation, it is also argued they simultaneously began assuming specific functions in the global market as a result of the world-wide decentralising of business and the demand for the specialised services needed to operate and sustain expanding transnational corporations (Soja, 1991). Thus, while manufacturing employment declined, service sector employment grew. Many authors maintain that most growth has occurred in the business services: management, banking, finance, legal services, accounting, technical consulting, telecommunications, computers, international transportation, research and higher education, and that the workers in these types of jobs are mostly professionals and clerical personnel (Friedmann and Wolff, 1982). Also argued to be undergoing rapid growth are the numbers of jobs in international tourism, real estate, construction, hotel services, restaurants, luxury shopping, entertainment, private police and domestic services. While most of the jobs in these areas are considered to be stable and relatively well-paid, many are arguably not. For example, domestic servants are some of the worst paid urban workers (Friedmann and Wolff, 1982).

[1] These typical blue-collar manufacturing jobs of plant and machine operators and assemblers "operate and monitor industrial and agricultural machinery and equipment on the spot or by remote control, drive and operate trains, motor vehicles and mobile machinery and equipment, or assemble products from component parts according to strict specifications and procedures" (Warwick Institute for Employment Research, 2012). These jobs include industrial robot operators, any processing plant/machinery operators processing any material, from chemicals, wood, metal, glass and ceramics, to meat, dairy, baked goods and fruit. Specific examples are iron-moulding machine operators and furnace operators to brewers and tobacco production machine operators. This also includes drivers of all vehicles, from taxis to cranes to earth moving equipment.

Thus the contention is that economic internationalisation and the growth of the service industry have caused a shift in the city's economy from its traditional manufacturing base to services and high-tech industries, with the fastest growth occurring in finance and insurance services (Gu and Liu, 2002). This increase in service and high-tech industries is posited to be responsible for a growing income differential between high- and low-paid jobs as well as the simultaneous growth in the numbers of high-skilled, well-paid jobs and unskilled, irregular, low-paid jobs. Thus, these growing service industries are argued to have created a greater share of both low- and high-paying jobs than manufacturing, with several studies being offered as evidence that service industries, especially the producer services, create a larger number of both low-paying and the highest-paid jobs than manufacturing (Baum, 1997; Chiu and Lui, 2004; Sassen, 1994).

Increasing social polarisation versus professionalisation

Scholars such as Saskia Sassen contend therefore that the income structure has changed and earnings are distributed differently as a result of the shift from manufacturing to services as the city's major employer (Sassen, 1994; Soja, 1991). With the traditional, mainly manufacturing blue-collar working class shrinking, the growing numbers of professionals, largely in business services, are now argued to be much more predominant in the city (Friedmann and Wolff, 1982). These professionals are drawn in stark contrast to the increasing population of the poor of the city, which some authors claim constitute approximately a third of the population. Thus, the theory put forward by proponents of the social polarisation hypothesis is that while the steadily-growing group of professionals enjoys stable jobs and permanent income, the equally growing number of poor queue for jobs on the edges of the formal economy and mostly provide personal services to the professionals, "doing the dirty work of the city" (Friedmann and Wolff, 1982:322).[2] Therefore, many scholars argue that one of the greatest impacts of world city development is the polarisation of its social classes (Friedmann and Wolff, 1982; Sassen, 1994; Soja, 1991).

Not all authors agree with this assessment of growing numbers of professionals and unskilled, low-wage workers and a stagnating or even shrinking middle-income stratum. Fainstein,

[2] Examples offered by Friedmann and Wolf (1982) of less desirable jobs include day labourers, street vendors and modest artisans.

Gordon and Harloe (1992) criticise the bimodal picture of world cities such as New York and London. They argue that the idea of the polarised dual city ignores the "middle mass", which lives mostly in the suburbs and periphery of the city (Fainstein, et al., 1992:8). Chris Hamnett (1994a, 1994b, 2003) is highly critical of the social polarisation hypothesis. Hamnett contends that the suggestion that polarisation is absolute, that the numbers of high- and low-skill jobs are increasing, only holds for certain cities, and then only because of their unique and specific conditions. Instead, he argues, the numbers of semi-skilled and unskilled jobs available in Western capitalist countries have been decreasing steadily over the last 20-30 years (Hamnett, 1994a).

Hamnett (1994a, 1994b, 2003) argues that the shift from manufacturing to financial and business services has resulted, not in a more polarised employed workforce in most cities, but a more professionalised one. He argues that there has not been an absolute increase in the numbers of both high-skill, high-pay and low-skill, low-pay workers. Rather, he asserts there has been an absolute increase in the numbers of professional, managerial and technical workers only. Hamnett refers to Daniel Bell's pioneering work *The Coming of Post-Industrial Society* (1973) and the theory that there has been a shift in Western capitalist societies from industrialism to post-industrialism and the production of goods and manufacturing to the production of services and an information processing economy (Hamnett, 1994a, 2003). Hence, post-industrialist theorists such as Bell (1973), Fuchs (1968), Gartner and Reisman (1974) and Richta (1967) assert that this industrial shift has led to employers requiring more workers with greater technical expertise. Thus, they argue, work is more reliant on professional, managerial and technical skills and non-manual work, and less on unskilled, routine manual labour (Hamnett, 2003).

The post-industrial theory of an increasing demand for higher skilled workers is essentially the counterpoint to the Marxist theory of proletarianisation of the workforce. Wright and Singelmann (1982:178) state that "technical expertise is being confined to a smaller and smaller proportion of the labour force; routinisation of activity is becoming more and more pervasive, spreading to technical and even professional occupations; and responsibilities within work are becoming less meaningful." They assert that most Marxist scholars agree with Braverman's argument for increasing proletarianisation in advanced capitalist societies as set out in *Labour and Monopoly Capital* (Braverman, 1974). Moreover, Wright and Singelmann (1982) maintain that both of these processes would occur simultaneously. They

claim that proletarianisation is increasing within industrial sectors, but that there is a concomitant shift of employment to sectors where there is less proletarianisation overall. However, they contend that the shift of employment to sectors of relatively less proletarianisation is "weakening". Therefore they predicted that from 1980 to1990 there would be a decrease in non-proletarianised positions and an increase in proletarianised positions; hence, "a net proletarianisation process" in the United States (Wright and Singelman, 1982:179).

The theory of increasing proletarianisation has been criticised by many scholars. Esping-Andersen, Assimakopoulou and van Kersbergen (1993:32) state, "Virtually all research rejects Braverman's deskilling and mass proletarianisation thesis while pointing instead to a pervasive momentum of skill upgrading and professionalisation". Marshall and Rose (1988) found that rather than systematic proletarianisation of the British class structure, there was significant upward mobility into professional, managerial and administrative, as well as routine clerical positions. They found no net expansion in proletarian class positions. Even Wright and Martin (1987) subsequently wrote that Wright and Singelmann (1982) were incorrect in their prediction of increasing proletarianisation. In fact, they argued that in the 1970's in the US, there was deproletarianisation and shrinking of the working class, as well as accelerated growth of managerial class positions and numbers of semi-autonomous employees (Wright and Martin, 1987).[3] Wright himself states, "Unless these trends are a temporary detour, it thus appears that the class structure of capitalism continues to become increasingly complex rather than simplified around a single, polarised class antagonism" (1997: 111).

Thus, industrial shifts since World War Two have arguably resulted in occupational upgrading (Tienda, Jensen and Bach, 1984). These changes are argued to have led to the emergence and growth of the "new middle class" of managers and professionals in the post-industrial information-processing based economy, while the numbers of workers in all other occupations have declined (Hamnett, 1994a, 2003). Therefore, it is argued, many cities have experienced increased professionalisation of their occupational structure.

[3] "A good example is an engineer or a scientist who, within limits imposed by superiors, has considerable control over the immediate labor process but is excluded from any control over the apparatus of production." (Wright and Singelmann, 1982:S183).

Proponents of the social polarisation and professionalisation hypotheses both posit a simultaneous decline in manufacturing employment and growth in services. Both sides of this debate also contend that this sectoral change has resulted in a concomitant increase in the numbers of high-skill managerial, professional and technical type jobs. However, they disagree on what is happening to the numbers of low-skilled workers. Supporters of the social polarisation hypothesis argue that the nature of these service industries is that their occupation structure is bimodal, and that therefore, growth in employment in services leads to higher numbers of both high-skill and low-skill workers. On the other hand, the post-industrialist argument, like professionalisation, is that these service industries require mainly greater numbers of high-skill workers, not low-skill workers; thereby leading to increasing professionalisation of the employed workforce.

Scholars such as Hamnett concede that it is not inconceivable that income and occupation polarisation has occurred in US cities such as New York and Los Angeles. However, these cities display certain characteristics not common to other major Western cities such as London and many European cities (Hamnett, 1994b). Thus, he asserts, many authors' conceptualisation of polarisation tend to be "uni-causal", focusing on economic restructuring, in global cities especially, as the sole cause of the shift from manufacturing to services as the dominant employer, thereby resulting in occupational and income polarisation. However, it can also be argued that depending on the level of welfare provision and taxation, the outcome of economic restructuring can be professionalisation of the employed workforce, increasing unemployment and growing income inequality, rather than the increasing numbers of professionals as well as low-wage workers necessary for polarisation (Hamnett, 1994b). If the welfare state is service intensive and employs many low-skill workers at above market wages, the chances of an expanded low-wage service sector developing are greatly reduced (Esping-Anderson, et al., 1993; Hamnett, 1996b). Several European countries with welfare states have good unemployment benefits and other forms of welfare for the poor and unemployed, arguably resulting in people being less inclined to take low-paying, menial, service sector jobs. Also, it is much more unlikely that a large group of low-wage workers will develop in countries where unions are strong, centralised and bargain nationally. Thus, the scant welfare provision and income support for the poor, as well as the absence of effective minimum wage legislation in the US could possibly facilitate the growth of an expanded low-wage service sector (Esping-Anderson, et al., 1993; Hamnett, 1996b).

Testing social polarisation

The theory of social polarisation is indeed an appealing one, however, as Fainstein et al. (1992:13) point out:

> "The images of a dual or polarised city are seductive, they promise to encapsulate the outcome of a wide variety of complex processes in a single, neat, and easily comprehensible phrase. Yet the hard evidence for such a sweeping and general conclusion regarding the outcome of economic restructuring and urban change is, at best, patchy and ambiguous. If the concept of the 'dual' or 'polarising' city is of any real utility, it can serve only as a hypothesis, the prelude to empirical analysis, rather than as a conclusion which takes the existence of confirmatory evidence for granted."

Chris Hamnett too states:

> "The debate [around polarisation] has been characterised more by assertion than conceptual analysis and evidence" (Hamnett, 1994a:402), and,

> "This uncritical acceptance of the existence of social polarisation means that its existence is frequently assumed rather than demonstrated." (Hamnett, 2012:361).

While many scholars in this field use data to support their arguments, the so-called "hard evidence" Fainstein et al. refer to above, it is perhaps not surprising that different authors interpret the same data in ways that corroborate opposing arguments. One explanation offered for why many scholars who do examine empirical evidence conclude from the data that social polarisation is increasing in cities is concerned with the definitions of skill requirements and levels of remuneration of certain service sector occupations (Borel-Saladin and Crankshaw, 2009). There is little debate as to which jobs are considered high-skill and high-pay, and that both the proportion and absolute number of these jobs are increasing. However, in order for there to be a process of increasing polarisation, the numbers of both high-skill, high-pay and low-skill, low-pay jobs must increase. It is in the definition of these low-skill, low-income jobs that inconsistency occurs. Many authors classify clerical and sales and service worker occupations, and even some associate professional occupations, as low-skill, low-pay service sector jobs. For example, Wilson refers to 'practical nursing' and 'clerical work' as the kinds

of service-sector jobs held by 'less-educated' women, implying that he views these as low-skill, low-income occupations (Wilson, 1996:27). Sassen groups the clerical jobs of 'secretaries' and 'stock clerks' with the unskilled manual job of 'cleaner' when discussing low-paid service sector jobs (Sassen, 1994:105). While a certain proportion of sales jobs may conceivably be categorised as unskilled, arguably, there is little evidence that there is a trend of disproportionate growth in the numbers of low-skill sales jobs (Esping-Anderson, et al., 1993; Hamnett, 1994a). Following this scheme of classification, all non-managerial and non-professional service sector jobs will be classified as low-income, low-skilled jobs. This leads to the contention of the "bipolar" distribution of the occupations of the service sector; with high-skilled, high-income professionals and managers at one end of the skill and pay spectrum, and supposedly low-skill, low-income clerical and sales and service workers on the other (Borel-Saladin, 2009). Therefore, by definition, any growth in service sector employment will lead to increased polarisation. In the "declining middle" conceptualisation of polarisation, the numbers of these high- and low-skill service jobs are increasing at the expense of middle-income skilled (artisanal) and semi-skilled (operative) manual jobs in the manufacturing sector (Esping-Anderson, et al., 1993). However, arguably the clerical and service and sales jobs "misclassified" as low-skill and low-pay have similar skill requirements and income distributions to the skilled and semi-skilled manual manufacturing jobs they are replacing. Therefore, growth in the numbers of semi-skilled middle-income clerical and service and sales jobs would not exacerbate social polarisation, and would also mitigate the decline in typical manufacturing occupations and shrinking of the middle-income group. Thus, the misclassification of clerical and sales occupations results in the arguably inaccurate conclusion that employment growth in service sector jobs at the expense of manufacturing jobs leads to increasing polarisation of the occupational structure (Borel-Saladin and Crankshaw, 2009).

Differing conclusions about social polarisation: the examples of London and New York

It is perhaps not difficult to understand how scholars can conclude that one city is polarising and one is professionalising. However, in much of this literature, scholars reach conflicting conclusions about the same cities.

In the case of London, as Hamnett (1994b) recounts, Saskia Sassen refers to rising numbers of jobs in the banking, insurance and finance and business services on one hand, as well as

growth in employment in personal services. Thus, the implication is that the jobs in the former sectors are high-skill, high-pay, while the latter are low-skill, low-pay. This she contrasts with the large job losses in important manufacturing industries. She also refers to increasing income polarisation and talks about low-wage work increasing, but does not offer evidence of absolute numbers of this trend (Hamnett, 1994b). Gordon and Harloe (1991) maintain that one of the reasons for increasing dualism in London is that jobs in the growing sectors are polarised between the stable, qualified jobs of the finance and business services sectors, and the unstable, unskilled jobs of the private consumer services. In partial agreement with these assessments of London, Hamnett (1994b) concedes that there is increasing income polarisation in London. However, this is not necessarily due to occupational change. Population census data indicate there was a steep absolute increase in the numbers of managers and professionals between 1981 and 1991, while the numbers in all other occupational groups declined. Thus, concludes Hamnett (1994b), the occupational data indicate that London is becoming professionalised, not increasingly polarised.

With regard to New York, Edward Soja (1991:363) talks of "...a dramatically widening divide between the rich and the poor. An increasingly polarised city both socially and spatially has been taking shape in the economic recovery of the New York metropolitan region...". He argues that the "poverty population" has increased in New York, though he asserts this is due more to growing job losses rather than low-wage job growth (Soja, 1991:364). Moreover, he quotes estimates that professionals constitute a third of the population of New York. Thus, with growing numbers of poor and high-income workers, Soja views New York as increasingly polarised. Hamnett (1994a) acknowledges that New York may well be polarising. This he argues is due mainly to the large numbers of ethnic immigrants in the city. Thus, he asserts, the numbers of professional and managerial jobs are increasing, but, because of the ready supply of cheap unskilled labour in the form of Third World immigrants, there is also an expanded low-wage service sector (Hamnett, 1994a). However, Bailey and Waldinger (1991), maintain that earnings data for New York, while showing a trend towards greater inequality, do not indicate that immigrants are concentrated at the lower end of the earnings distribution. They contend that employment growth is concentrated in managerial and professional positions. Furthermore, they state that these occupations have increased much more substantially than either service occupations or blue-collar occupations in the service sector. Thus, they conclude that the data show very little evidence of increasing polarisation in the employed workforce (Bailey and Waldinger, 1991).

Therefore, even when considering the same city, scholars disagree about whether or not the dominant process is one of increasing polarisation or growing professionalisation.

Immigrants and Social Polarisation

Those who support the social polarisation hypothesis arguably view immigrants as contributing to increasing polarisation. They maintain that while the native residents of the city fill the growing numbers of high-skill, high-wage service sector jobs, unskilled immigrants to the city fill the concomitantly increasing number of low-wage service jobs. These immigrants are posited to provide bespoke and domestic services to the affluent professionals and managers in the city. Some scholars argue that the presence of large numbers of uneducated migrants suppresses the wages of low-skilled work, while exacerbating unemployment among unskilled natives. However, other scholars assert that it is the presence of a large number of unskilled immigrants that facilitates the development of a large low-wage service sector. Others contend that different ethnic groups of migrants can experience quite diverse fortunes regarding employment in the city. Many studies have also shown that the presence of a large population of immigrants does not adversely affect native employment and income levels. Finally, some scholars question the importance of the scale of immigration and its impact on social polarisation.

Some scholars maintain that the growth of low-wage service sector jobs in an increasingly polarising occupation structure attracts low-skilled immigrants to world cities (Sassen, 1994). Much of the expanding service sector, with its high turnover rate and ease of entry, is argued to attract immigrants, especially minorities, who experience greater difficulty breaking into more established or closed sectors of the economy (Sassen, 1994). Unskilled service jobs and downgraded manufacturing jobs are easy entry-level jobs for unskilled immigrant workers. Many new migrants also may not have their qualifications recognised on arrival in a world city, or cannot speak the local language, leading to their accepting lower-skill, lower-pay work (Baum, 1997; Wright and Ellis, 1999). Hence, the assertion that these “recent arrivals” are over-represented in the lower-paid entry-level jobs that the native population has rejected (Esping-Anderson, et al., 1993; Baum, 1997). Sassen (1991:318) states that migrants tend to be “disproportionately concentrated in lower-paying, more traditional service industries...and in the low-paying jobs of the producer services”. Thus, migrants are arguably portrayed as

contributing to social polarisation by filling the growing numbers of low-skill, low-paid service sector jobs available.

Sassen (1991) contends that the scale and timing of migration to the United States can be explained only by the increased supply of low-wage jobs generated by major growth sectors. She argues that changes in immigration law and the existence of prior immigrant communities cannot account for the increased flow of migrants to the United States in the 1970's and 1980's. She also points out that this increased immigration occurred in the face of growing unemployment in the United States and increasing employment opportunities in the immigrants' countries of origin. Thus, despite there apparently being fewer jobs on offer in the country of destination, and an increasing number in the countries of origin, people still chose to migrate to the US. Another deterrent to migration at the time was the decline in the sectors that had traditionally employed large numbers of immigrants, namely the manufacturing and goods-handling jobs (Sassen, 1999). Sassen (1991) therefore maintains that despite all these disincentives to migrate to the US, migration in fact increased in this time as immigrants were drawn by the rapidly expanding supply of low-wage service sector and downgraded manufacturing jobs.

It is asserted then that these immigrants are concentrated in world cities in particular, as this is where the major growth sectors that generate low-skill, low-income occupations are found (Sassen, 1994). Sassen (1991, 1994) argues that global cities are key points for the integration of large numbers of immigrants in activities that service the growing strategic sectors of global finance and trade. These migrants are either directly incorporated as low-paid clerical and blue-collar workers, such as janitors and repair workers, or indirectly through the consumption patterns of the growing class of high-pay professionals. It is argued that while well-educated world city natives fill the growing numbers of high-skill, high-wage managerial, professional and technical jobs, poorly-educated immigrants to the city are employed in the growing number of low-skill, low-wage service jobs that exist to service the needs of the high-wage workers. These low-wage service jobs include, in Sassen's view, nannies and maids, and low-wage workers in restaurants and shops. Thus, she states:

> "...immigration can be seen as providing labour for the low-wage service and manufacturing jobs that service both the expanding, highly specialised service sector

and the high-income lifestyles of those employed in the specialised, expanding service sector" (Sassen, 1991:315).

In a polarised conceptualisation of the city, high-income gentrification and the expansion of the poor population of the city are two seemingly opposite processes that have the same outcome for immigrants. High-paid professionals with limited free time create a demand for specialised goods and services, from delicatessens and boutiques to nannies and maids (Gordon and Sassen, 1992; Sassen, 1994). These products and activities tend to be more labour intensive and are manufactured on a much smaller scale than the traditional Fordist mass production and consumption. The creation of these activities therefore leads to an increased demand for low-wage workers. On the other end of the occupational class spectrum, the rapidly increasing numbers of the poor also have needs better met by small-scale manufacturing and smaller retail concerns (Gordon and Sassen, 1992). These establishments are usually more modest in size, rely on cheap or even free family labour, and often do not meet the health and safety standards of larger commercial businesses (Gordon and Sassen, 1992; Sassen, 1994). The contention therefore is that the demand from the increasing numbers of both the rich and the poor in the city is for a flexible workforce of low-wage workers, often working in the informal economy. Thus, it is argued that it is in the informal economy that unskilled immigrants are most easily able to find work in world cities.

Several proponents of the polarisation hypothesis tend to focus on low-skill migrant women in particular and their role in increasing levels of polarisation (Sassen, 1991, 1994; Baum, 1997, Chiu and Lui, 2004). Sassen (1994) talks of the growing number of illegal immigrant women in medium sized and small factories in Tokyo. However, it is in the area of domestic help especially that unskilled immigrant women and high-skilled, well-paid professional women native to the city are argued to be linked. The growth in the producer services and international finance and commerce has led to a growing demand for well-educated professionals and managers. Many studies have shown increasing numbers of women entering these jobs. Thus, Sassen (1991) paints the picture of the professional household in the world city, where both partners are successful, high-income professionals with jobs that leave them with little time for domestic responsibilities. As more women take challenging, time-consuming professional jobs, so this increases the demand for other women, often migrants from ethnic minorities to fulfill their labour-intensive domestic roles in the home (Chiu and Lui, 2004). Baum (1997) asserts that most of the increase in domestic servants and

personal service workers in Sydney is due to migrant women. Furthermore, he states that the numbers of these immigrant women recorded are an underestimate, "as a large underground economy in personal services" exists in Sydney (Baum, 1997:1899). Perhaps more importantly, some of these immigrant women are argued to accept wages for domestic service work far below those on offer in the formal economy (Baum, 1997). Thus, arguably polarisation theorists view women migrants holding often poorly-paid domestic and personal services jobs as facilitating increasing social polarisation by increasing the numbers of low-skill, low-wage workers in the city, opposite the increasing numbers of high-skill high-pay natives.

Some scholars also submit to the theory that this ready supply of migrant labour drives down wages at the lower end of the job market (Sassen, 1994; Wilson, 1996). For example, some maintain that the influx of poorly educated immigrants into the US in the 1980's is responsible for the growing wage differential between low- and high-income earners, thereby contributing to growing inequality. The addition of low-skill immigrant workers to the already large pool of native low-skill, poorly-educated labour is also argued to drive down the wages for all low-skilled workers (Wilson, 1996). Moreover, the steady supply of cheap, low-skill immigrant labour is also claimed to limit the chances for advancement of indigenous workers as well as contribute to their unemployment levels (Gordon and Sassen, 1992).

While the polarisation hypothesis was developed around global cities in Western capitalist countries, other world cities have been argued to be experiencing the same processes. Rural in-migration to the city of Johannesburg, South Africa has also been considered from the perspective of the social polarisation hypothesis. Poorly educated, unskilled rural migrants came to the city to work in the mines and factories as unskilled manual labourers during the pre- and early-apartheid period (Crankshaw and Parnell, 2004). However, due to the government's strict laws of the time designed to limit the size of the urban African population, many rural-born Africans were not granted permanent urban status. These rural migrants had only temporary urban rights, while their families remained in the homeland, to which they periodically returned (Lipton, 1989). Thus, two urban African groups were created: permanently settled African workers and their families residing in townships, and temporary migrant African workers housed mostly in single-sex hostels (Hindson, 1985). Subsequent government policies continued to disadvantage rural-born, non-resident Africans in comparison to urbanised Africans (Hindson, 1987). Manufacturing employment in

Johannesburg grew steadily until the early 1970's, but declined precipitously in the 1980's. (Crankshaw, 1997). At the same time, employment continued to increase in the tertiary sector and especially in the financial sector. With these changes in the labour market in the late Apartheid era, the numbers of semi-skilled and unskilled manual labour jobs in the mining and manufacturing sectors declined, whilst the demand for skilled white-collar workers and professionals in the commercial and financial sector grew (Hindson, 1991). This change from a need for unskilled to higher-skill workers meant employers wanted better educated labour to train (Crankshaw, 1997). As migrant workers were generally less educated and had higher turnover rates, employers preferred the urbanised African workers (Posel, 1991). Thus, due to the amendments to government's education and employment policy with regards to Africans, those Africans who urbanised during the early Apartheid period had a substantial advantage in accessing these "more skilled" positions in the 1980's and 1990's (Crankshaw, 1997). In contrast, poorly-educated, unskilled rural migrants endured increasing levels of unemployment.

Gu and Liu (2002) contend that Beijing is undergoing similar processes to Western countries' cities where polarisation is taking place. Furthermore, they assert that Beijing is experiencing a similar influx of migrants (Gu and Liu, 2002). Beijing has experienced a massive influx of migrants from rural areas as a result of the relaxation of migration controls in the late 1970's. At the same time, certain urban reforms instituted in the early 1980's led to a similar shift seen in many world cities from a traditional manufacturing base to a service led economy. Due to economic internationalisation and uneven foreign direct investment, traditional manufacturing areas in Beijing have deteriorated while certain high-tech and service industries have grown. Thus, it is argued, this increase in high-tech manufacturing and service sector jobs has led to increases in high-skill, well-paid, as well as low-skill, irregular, low-paid jobs. Gu and Liu (2002) contend that rural migrants are so poorly educated that they cannot compete in the urban labour market for the high-skill, high-pay jobs. Therefore, they are only eligible for the low-pay, casual, informal jobs that native residents do not want. These migrants also do not enjoy the same rights and advantages as Beijing natives, such as guaranteed education for their children, low-cost housing and health services. Thus the "original equity of the urban classless society" has been upset partly due to the fact that these migrants do not have access to the same welfare benefits as registered urban citizens (Gu and Liu, 2002:198). Therefore, Gu and Liu (2002) argue that there are two new social groups in Beijing: one is the population of circulatory migrant unskilled low-wage earners, while the

other consists of high-income business professionals in transnational corporations. This, they argue, is causing increased social polarisation in Beijing (Gu and Liu, 2002).

Some scholars however do not agree with the claim that it is the economy that is creating low-wage jobs to which immigrants are drawn (Hamnett, 1994a, 1994b, 1996a). Instead, they argue that the expansion of low-wage service sector jobs is only possible because of the presence of large numbers of poorly educated immigrants, and not that immigrants are attracted by said service sector (Hamnett, 1996a, 1994b). In American cities such as New York and Los Angeles, large and ever-growing numbers of unskilled, Third World immigrants swell the ranks of new entrants into low-paid consumer service and downgraded manufacturing jobs. Immigrants accounted for 22 per cent of the labour force growth alone in the 1980's (Gordon and Sassen, 1992). This is not to say that other world cities do not have large numbers of unskilled immigrants concentrated in low-wage, low-skill jobs. Hamnett's (1994a) argument is simply that the scale of migration to cities such as New York and Los Angeles is that much greater than that to other world cities, thus making their situation unique.

Cross and Waldinger (1992) present a similar line of argument about the differing scale of immigration to London and New York. While similarities between the two cities are considered, Cross and Waldinger (1992) draw attention to the fact that the two cities have very different inflows of migrants. Arguably, New York has always had and will continue to have much higher levels of immigration than London (Cross and Waldinger, 1992; Hamnett, 2003). Policy differences have played an important role in this. For example, the US relaxed immigration controls in the 1960's when the United Kingdom (UK) was disallowing economic migrants, thereby preventing the influx of cheap Third World labour into the UK labour market (Gordon and Sassen, 1992). Cross and Waldinger (1992) therefore refer to New York as a "majority minority" city, due to the fact that ethnic minorities now form the majority of the population. Despite various attempts to limit Third World immigration in particular, London remains a destination of choice for certain immigrant groups. However, the immigrant populations are simply proportionately not as large as in New York, and most scholars predict that the scale of immigration to London, especially in the light of recent restrictions on immigration, will never be on a par with that of New York (Cross and Waldinger, 1992; Hamnett, 1994a, 2003).

Moreover, Hamnett (2003) offers evidence that most of the immigrants to a country like the UK come from developed nations, with large proportions of students, or those employed as managers and professionals. He concedes that the decline in the manufacturing industry in London affected particular groups of migrants more than others. For example, immigrants of West Indian and African extraction increasingly hold low-status, low-wage jobs in the declining industrial sector and there are higher rates of unemployment amongst these groups. However, he does make the point that different groups of migrants perform differently in the economy of London and there is considerable disparity amongst the ethnic minorities in terms of levels of employment and professionalism. Therefore, the immigrant communities in London are not uniformaly uneducated, and arguably do not constitute a "vast army of low-wage workers entering the personal services sector" (Hamnett, 2003:107). Thus, Hamnett contends that the numbers of low-skill, low-wage immigrants in European cities are far smaller than those in major cities in the US, making the generalisation of the polarisation hypothesis beyond American cities such as New York and Los Angeles problematic.

Other scholars too, argue that immigrant communities are not homogeneous and therefore have different employment prospects in world cities. For example, with changes to immigration law in 1965 in the US, the nature of immigration to the US changed. So, while the main immigrant groups in the US had been Blacks from the south and Puerta Ricans up until the 1960's, with the change in legislation came a shift to more Asian immigrants, which continues today (Cross and Waldinger, 1992). Cross and Waldinger (1992) also consider the different make-up of immigrant communities in New York and London and their positions in what they call the new ethnic division of labour. They argue that many scholars have simply accepted the idea that the growth of services and the decline in manufacturing employment have left newcomers to the job market without the traditional entry-point of low-skill manufacturing work. However, as they point out, immigrants have continued to flock to the cities, countering the idea that there are no jobs for them. Cross and Waldinger (1992) assert therefore that not only demand-side factors should be considered when trying to understand the role of ethnic minorities in world cities, but supply-side issues too. They contend that the continuing outflow of whites from both London and New York to their respective suburbs has created a replacement demand significant enough to militate against manufacturing employment decreases, thereby giving ethnic minorities their opportunity to enter certain occupations and sectors. Which ethnic groups enter which sectors and occupations differs according to the particular group and its members' skills, networks and group resources,

resulting in new “distinct ethnic niches” (Cross and Waldinger, 1992:171). For example, in New York, the public sector has become a major employer for native blacks, but provided very little employment for immigrants to the city. On the other hand, the manufacturing sector increasingly employs immigrants. In London, Afro-Caribbean minorities relocated to the public sector during restructuring, while some Asians moved into manufacturing and others into advanced private-sector services (Cross and Waldinger, 1992). Thus, the various ethnic and immigrant groups have responded differently to newly available employment opportunities left by white out-migration in London and New York.

Even with this phenomenon of out-migration of whites, the demand for replacement labour does not necessarily match the inflow of migrants in these cities (Harloe and Fainstein, 1992). This imbalance between immigration levels and replacement labour demand has led to an increasing concentration of unemployment amongst blacks and new ethnic minorities in New York. London, with much less migration relative to New York, has not experienced such high levels of enduring unemployment amongst ethnic minorities and immigrants. Again the specific composition of the immigrant population becomes relevant here though, as unqualified school-leavers have the most limited employment opportunities (Harloe and Fainstein, 1992). Also, again, the argument can be made that the differing scale of immigration in New York and London results in different outcomes in terms of employment and social polarisation.

However, there are myriad studies of the impact of immigration on the labour force, conducted in the US as well as in other countries. These studies are from a variety of sources using a diverse range of research methods, and the argument that an increasing presence of immigrants has a negative effect on native employment levels and income seems contentious at best. As Dustmann, Glitz and Frattini (2008) point out, the evidence from these studies for immigration leading to the reduction of natives’ wages and increased underemployment and unemployment is very mixed. It has been argued that of the research that has been conducted, in only a few cases has there been any significant negative impact on native employment or wages (Wright, Ellis and Reibel, 1997; Card, 2005). Borjas (2003:1335) states, “The measured impact of immigration on the wage of native workers fluctuates widely from study to study (and sometimes even within the same study), but seems to cluster around zero”. In a review of approximately 48 studies on the labour market effects of immigration, Okkerse (2008) found that most research does not show a significant effect of immigration on

unemployment rates. In fact, immigrants tend to create more jobs than they occupy, thereby lowering unemployment rates. It can be argued that the poorest workers in particular are vulnerable to increased competition from migrants. However, overall, Okkerse (2008) concludes that immigrants have only a small effect on the native-born labour market, and that most economies can bear many new labourers without diminishing the positions of natives. Thus the presence of migrants does not necessarily lead to declining wages in low-wage jobs, or to a low-wage service sector dominated by immigrants who have "pushed" natives out of the workplace.

Despite these arguments, questions remain around the importance of large-scale immigration in deindustrialisation and service sector growth in cities (Borel-Saladin, 2006). In the case of Cape Town, South Africa, even though the number of unskilled jobs increased, there was much more employment growth in highly-skilled professional and managerial work, thereby making the changes in the city's economy more consistent with a process of professionalisation rather than increasing polarisation. However, this happened in the face of a significant amount of migration of unskilled workers to the city, before, during and after the Apartheid migration controls. These migrants were largely poorly-educated Africans from former homelands. However, many of these people did not work in low-wage, menial service sector jobs as would be predicted by the polarisation hypothesis. Rather, a large proportion, approximately 28 per cent, was unemployed (Nattrass, 2002).[4] Therefore, even though Cape Town continued receiving substantial numbers of unskilled migrants, a large, low-skilled, low-paid migrant class, doing menial service sector work for the increasingly affluent, did not develop. Considering that the occupational distribution in Cape Town became more professionalised than polarised, the contention that increased polarisation occurs in cities only where there are large numbers of poorly-educated migrants does not seem to hold. Large numbers of immigrants may be a necessary but not sufficient condition for the growth of an expanded low-wage service sector (Borel-Saladin, 2006).

[4] Calculated according to the strict definition of unemployment; that is, confined to the actively searching unemployed (Nattrass, 2002).

Unemployment and social polarisation

Burgers (1996) critiques Hamnett for ignoring the unemployed in his assessment of the social polarisation hypothesis. He refers to Hamnett's (1994a) argument for professionalisation rather than polarisation as the dominant process in world cities, with the case of the Randstad as evidence. He contends that the data Hamnett uses are biased in that they do not include the unemployed. He agrees with Hamnett's (1994a) conclusion that the increase in employment opportunities have been at the upper end of the occupation spectrum. These managerial, professional, associate professional and technical jobs require greater education levels. In contrast he asserts that the unemployed tend to be concentrated amongst the least well-educated, where ethnic minorities tend to be over-represented. Thus, he argues, the case of the Randstad actually involves two separate but related processes: growing professionalisation and increasing unemployment, especially amongst ethnic minorities (Burgers, 1996). He further states that in the Randstad specifically, there is an unequivocal distinction between those who are employed and those who are not and rely on welfare to survive, and that this divide correlates strongly with ethnicity (Burgers, 1996).

In response to this criticism, Hamnett (1996a) asserts that, as Sassen presents the polarisation hypothesis, the unemployed are not included. Under discussion then are changes in the employed workforce only, specifically "absolute growth at the top and bottom end of the occupational and income structure" (Hamnett, 1996a:108). However, he argues that this conceptualisation of polarisation is based on the American case, where there is almost no welfare and very high levels of low-wage worker immigration. Thus he contends that Sassen's uni-causal view of polarisation (that it is due to economic restructuring and the growth of high-skill, high-pay and low-skill, low–pay work) is short-sighted in that she does not consider the impact of strong welfare states on limiting the growth of a large, low-wage service economy. Hamnett (1996a) agrees with Burgers (1996) that Esping-Andersen's (1993) work on welfare state regimes is crucial in understanding the differing outcomes of industrial and occupational change with regard to increasing professionalisation or polarisation.

Hamnett (1996a, 1996b) claims that while the changes in the employment structure in the US result in growth in high-skill workers and an expanded low-wage service proletariat, in Europe, because of comparatively better welfare provision, alongside the growing ranks of

high-skill workers, one finds a greater number of unemployed and economically inactive instead. Thus, he argues, one needs to consider not just economic restructuring, but also the impact of various forms of welfare, state intervention and levels of unionisation on the growth of a low-wage service sector.

If the state is committed to full employment, direct welfare state job provision can limit unemployment (Esping-Andersen, et al., 1993; Hamnett, 1996b). If this increased state employment is in expanding social services, then welfare state service jobs can become a sink for unskilled workers. Thus, potentially, a lower-skilled service proletariat can develop as a result of direct state employment. However, state service workers in low-skill jobs are unlikely to be paid low wages, but rather, higher than free market wages (Esping-Andersen, et al., 1993). Therefore, a low-skill but not low-wage state service proletariat may develop. Alternately, if the state actively reduces labour supply and does not have a policy of social service provision, a large "outsider surplus population" can result (Hamnett, 1996b). If the state provides a social wage however, these outsiders need not re-enter the employed workforce in low-skilled service sector jobs and can remain unemployed and live on welfare benefits (Esping-Andersen, et al., 1993). The provision of a social wage is also crucial if there are state-sponsored early-retirement programmes. These measures facilitate labour market exit for older workers, thus opening up positions for younger workers (Hamnett, 1996b). However, it is due to the provision of a social wage that these retirees do not need to take low-wage work in order to survive. Moreover, welfare provision can be on such a level that there is no need for a person to enter the workforce in the first place: they need never take unattractive, low-skill, low-pay jobs as their needs are sufficiently provided for by the state (Esping-Andersen, et al., 1993). Thus, social wage provision can lead to a large population of the unemployed and economically inactive, some of whom may never have been employed at all.

Perhaps one of the most important areas of state provision that can influence the numbers of low-skill workers in the workforce is education. A good quality education system can play an important role in preparing the populace for the increasing numbers of high-skill managerial, professional and technical jobs arguably so prevalent in the post-industrial knowledge-economy (Esping-Andersen, et al., 1993). In addition, welfare states can even facilitate occupational mobility through sponsored adult training programmes for those who were not as well-educated in their formative years and who lack the necessary skills for these new

information-based occupations. However, in the absence of a comprehensive employment training system, a large unskilled labour force, such as that arguably present in US, can result (Esping-Anderson, et al., 1993). As Hamnett argues, it is this preponderance of low-skill workers in the US that enables the large low-skill, low-wage social sector to exist (Hamnett, 1994a).

The industrial relations system can also have a great impact on the numbers of low-wage workers in the workforce (Esping-Anderson, et al., 1993). Strong trade unions that bargain nationally and are committed to wage equalisation tend to lead to higher labour costs, thereby limiting the development of a large low-wage workforce. However, the US is characterised by weak, fragmented, localised unions. These are much less effective at militating against low-wage job growth, especially in the case of the service sector, where unions have minimal penetration (Esping-Anderson, et al., 1993).

Thus, it can be argued, with weaker welfare systems and trade unions in the US than in Europe, as well as much higher levels of low-skill immigration adding to the native supply of low-skill labour, a large low-wage service proletariat has developed in the US (Hamnett, 1996a). Hamnett (1996a) maintains that this unique set of circumstances, in combination with the increase in high-skill, high-pay work seen in all Western countries, has resulted in increasing polarisation in US cities. In contrast, Hamnett (1996a) contends that European cities, with much lower levels of low-wage immigration and strong welfare systems, have growing numbers of those who have never entered the workforce, the long-term-unemployed, the early-retired, and others subsisting on a social wage. Thus, alongside a professionalising employed workforce, a growing unemployed and economically inactive or "outsider surplus population" has also developed (Hamnett, 1996a). Thus, Esping-Anderson, et al. (1993:54) state, "It seems plausible that the post-industrial future will face a trade-off between a large service proletariat and a large outsider population".

The Johannesburg region seems to display the characteristics of the latter situation; that is, a large outsider surplus population of unemployed people. However, this is not through choice and the alternatives to employment offered by good welfare provision. As discussed above, Hamnett argues that many European cities display increasing professionalisation along with increasing unemployment, due to the provision of welfare making it unnecessary for people to take low-skill, low-pay service sector jobs. However, as will be shown, welfare provision

in South Africa is not on a par with that of many European countries, and therefore does not act to depress low-wage service sector growth. Rather, unemployment has resulted due to economic growth simply not keeping pace with population growth. Therefore, while the occupation distribution of the Johannesburg region has become increasingly professionalised, there has not been enough growth in low-skill, low-wage jobs for the large, unskilled population, thereby leading to high levels of unemployment. Thus, professionalisation with a concomitant increase in unemployment can take place without the actions of a welfare state to limit the growth of low wage jobs.

Chapter 2: Research Methods

Testing the social polarisation hypothesis

The social polarisation hypothesis is predicated on the idea that economic restructuring and the declining primacy of the manufacturing industry as the major employer and rising prominence and increasing employment offered by the service sector gives rise to certain changes in the occupation structure of world cities. Because occupations in the manufacturing sector are conceptualised as mostly semi-skilled and medium-income, and the occupations in the service sector are viewed as predominantly either high-skill, high-paid or low-skill, low-paid jobs, the shift in the bulk of employment from manufacturing to services is argued to increase social polarisation.

While this may seem to be a sensible, straightforward theory, arguably providing evidence of it is not. Saskia Sassen, one of the seminal proponents of the social polarisation hypothesis, has been criticised for not defining the concept of social polarisation precisely. Chris Hamnett (1994a) argues that Sassen is not clear whether she talks of occupational polarisation in absolute or relative terms. Absolute occupational polarisation results from the increase in the actual number of high-pay, high-skill and low-skill, low-pay jobs. This does not need to occur for relative occupational polarisation to take place. Relative occupational polarisation, that is, a greater proportion of jobs at the top and bottom of the occupation spectrum, can be caused by differential shrinkage of the labour force. For example, if the number of middle-income earners decreased from one year to the next, then, in relative terms, the high-skill and low-skill occupations would constitute a greater proportion of the occupation structure. Thus, relative occupational polarisation is not necessarily reflective of absolute polarisation. Hamnett (1994a) asserts that the implication in Sassen's writing is that she believes absolute occupation polarisation is occurring. However, because of this vacillation between absolute and relative arguments, Sassen is "flexible" as to what exactly can be considered evidence of social polarisation (Hamnett, 1994b:195). Thus, in order to test the social polarisation hypothesis, that is, whether or not the actual numbers of high- and low-skill jobs are increasing, one needs to study data on changes in the occupational structure.

Moreover, I would contend that rather than focus on the occupation data she arguably needs to substantiate the social polarisation thesis, Sassen refers, when utilising empirical data, to proxy data instead. Sassen (1994) has cited data on income differentials, changing family incomes, projections for educational requirements and changing percentages of part-time employment as evidence for increasing polarisation. Even though the trends she identifies using these data may point to changes in inequality, their relevance in terms of the debate around social polarisation is limited without the occupational data to demonstrate that the process they may or may not form part of is actually occurring. While Sassen (1994) argues for employment growth in high-skill and low-skill jobs, she does not provide direct evidence of this. She provides evidence of increasing poverty and unemployment, which may or may not be related to social polarisation, but not of actual changes in the amount of low- and high-wage employment. As Hamnett notes in disagreeing with her on London becoming more socially polarised, "She does not give any overall occupational change figures, though this is a key element of her theoretical argument" (Hamnett, 1994b:195).

Thus, following the logic of Hamnett (1994a, 1994b) and Borel-Saladin and Crankshaw (2009), in order to confirm the social polarisation hypothesis, arguably, certain criteria have to be met in terms of occupations and their incomes:

1. High-skill, high-pay occupations must require more skill and have greater levels of remuneration than low-skill, low-wage jobs.
2. Middle-income jobs must require less skill and pay less than high-skill, high-wage jobs, and require more skill and pay more than low-skill, low-wage jobs.
3. The numbers of high-skill, high-pay jobs as well as the number of low-skill, low-pay jobs must both increase in absolute terms (not only in relative terms).
4. The number of middle-income jobs must decline or at least stagnate in absolute terms.

Moreover, the above criteria are dependent on the definitions of high-skill, high-pay, semi-skilled, medium-income, and low-skill, low-pay jobs. It is the definition of these different categories of occupations that is the key to substantiating or refuting the social polarisation hypothesis.

What constitutes a high-skill, high-pay occupation is possibly the least contentious point (Borel-Saladin and Crankshaw, 2009). The producer services sector has grown the fastest and

the most in many cities (Nijman, 1996; Soja, 1991). This sector comprises sophisticated business and other professional and managerial services in the areas of finance, insurance, advertising and law. In other cities where high-tech industry has increased, the numbers of highly-skilled, qualified, technical professionals are also on the rise (Gu and Liu, 2002; Nijman, 1996; Sassen, 1994; Soja, 1991). High-skill, well-paid managerial and professional occupations in these areas therefore include bankers, stock brokers, coporate lawyers, advertising executives, technical designers and engineers (Borel-Saladin and Crankshaw, 2009).

Low-skill, low-wage service sector jobs on the other hand seem to be inconsistently classified. Presumably, no scholars would argue against the classification of occupations such as cleaners, janitors and domestic helpers as low-skill, low-wage. However, some, such as Sassen (1994) and Wilson (1996) would include clerks, secretaries, sales staff and even nurses in this category. In this view of the service sector then, there do not appear to be any middle-income service occupations, only a bipolar occupational distribution of high-skill, high-wage and low-skill, low-wage service jobs (Borel-Saladin and Crankshaw, 2009). Unsurprisingly, these scholars view the growth of service sector employment at the expense of mostly middle-income manufacturing jobs as the cause of increased social polarisation.

However, Borel-Saladin and Crankshaw (2009) contend that there are middle-income service sector jobs with levels of remuneration comparable to that of semi-skilled, blue-collar manufacturing jobs. The growing numbers of clerical and sales jobs which polarisation theorists claim are low-skill, low-wage jobs are arguably semi-skilled, middle-income white collar occupations on a par with, in terms of skills required and levels of remuneration, the semi-skilled, blue-collar jobs typical of the manufacturing sector. According to the South African Standard Classification of Occupations (Statistics South Africa, c.1996a), the white-collar occupations of clerks and service workers, shop and market sales workers have the same skill ranking as the blue-collar occupations of craft and related trades workers and plant and machine operators and assemblers (see list of main occupation groups below).[5] These four major occupation groups are all ranked above elementary or unskilled workers, supporting the argument that the truly low-skill workers in the workforce are those in elementary/unskilled jobs.

[5] Please note that this is based on and to all intents and purposes identical to the International Standard Classification of Occupations (ISCO). See later discussion in chapter.

Main occupation groups in SASCO and their skill level ranking (Statistics South Africa, c.1996a):

1.	Legislators, senior officials & managers	(Reference in skill level not made)
2.	Professionals	(4)
3.	Technicians & associate professionals	(3)
4.	Clerks	(2)
5.	Service workers, shop & market sales workers	(2)
6.	Skilled agricultural & fishery workers	(2)
7.	Craft & related trades workers	(2)
8.	Plant & machinery operators/assemblers	(2)
9.	Elementary/Unskilled occupations	(1)

Income data from the South African Labour Force Survey of 2007 also substantiate the claim that clerks and service workers, shop and market sales workers are not low-wage workers. These data indicate that most clerical and service, shop and market sales workers have a similar pay distribution to that of the typical blue-collar manufacturing occupations of craft and related trades workers and plant and machine operators and assemblers, and not that of unskilled workers (Table 2.1, with shading showing the range of income categories in which the majority – from 68 per cent to 94 per cent - of workers in a given occupation fall). In 2007, the average monthly income for clerks, service and sales workers, craft and related trades workers and operators and assemblers was R6,588, R4,669, R6,272 and R4,399 respectively.[6] The average monthly income for unskilled workers was only R3,233. Most clerks (69 per cent), craft and related trades workers (76 per cent) and machine operators and assemblers (85 per cent) earned between R2,501 and R11,000 a month. While 59 per cent of service and sales workers earned monthly incomes in a slightly lower category (R1,501 to R4,500), a further 26 per cent earned between R6,001 and R16,000 per month. This is substantially more than the R501 to R3,500 range in which 75 per cent of unskilled workers' monthly incomes fell.

[6] Average monthly incomes were estimated from the income categories shown in Table 2.1 by taking the midpoint of each category. Note though that the "over R30,000" category was treated as R30,000.

Esping-Andersen, in considering post-industrial class structures developed a post-industrial hierarchy consisting of (Esping-Andersen, 1993: 24-25):

(a) Professionals and scientists

(b) Technicians and semi-professionals (including school teachers, nurses, social workers, laboratory workers and technical designers)

(c) Skilled service workers (including cooks, hairdressers and policemen)

(d) Unskilled service workers or the service proletariat (including cleaners, waitresses, bartenders and baggage porters).

It would appear, though, that the concept of skilled service workers does not feature in the occupational hierarchies of most proponents of the social polarisation hypothesis. As Esping –Andersen (1993:13) notes regarding Eric Wright's proposed scheme for categorising classes, "To Wright, all service workers are classified together with the 'manual proletariat', which, accordingly, becomes so huge (about 50 per cent of the total labor force) that its analytical value is diminished". Saskia Sassen (1991, 1994, 1999) and William Julius Wilson (1987, 1996) share a similar view to Wright; namely, that only the semi-autonomous occupations of managers and professionals are truly middle-class. Therefore, for these scholars, such occupations constitute high-skill, high-pay occupations in the service sector, while all other occupations are deemed low-skill, low-pay jobs.

Borel-Saladin and Crankshaw (2009) argue that several scholars (Baum, 1997; Chiu and Lui, 2004) when interpreting similar income data to that presented above, mistakenly classify clerical and service and sales work as low-skill, low-wage workers, rather than semi-skilled medium-income white-collar service occupations. In the case of Sydney, Baum (1997) argues that the absolute growth in the managers and administrators, professionals and para-professionals at one end of the occupation spectrum and sales and personal services workers at the other is evidence for increasing social polarisation; especially in light of the absolute decline in the middle-income manufacturing jobs of trades persons and plant and machine operators and drivers. However, on closer examination of the incomes of these occupation groups, it could be argued that sales and personal service workers earn only marginally less than trades persons and plant and machine operators and drivers, and still earn more than labourers and related workers. Arguably then, labourers and related workers, by virtue of the minimal skill required for the job as well as the low levels of income should constitute the

low-skill, low-wage workers in this hierarchy, and not the sales and personal service workers. By this interpretation of the data, because the numbers of labourers and related workers are declining, the occupation distribution of Sydney appears to be professionalising (Borel-Saladin and Crankshaw, 2009). Similarly, in the case of Hong Kong, Chiu and Lui (2004) argue for increasing polarisation as a result of the growth of managerial and professional occupations along with an increase in service workers and shop and sales workers and elementary workers. Service workers and shop and sales workers are likened to elementary workers on the basis that their median monthly incomes are less than that of craft and related workers and plant and machine operators and assemblers. However, the monthly median income of service workers and shop and sales workers is far above that of elementary workers and on a par with that of craft and related workers and plant and machine operators and assemblers (Borel-Saladin and Crankshaw, 2009).

Therefore, because clerical and service and sales work are often construed as low-skill, low-wage jobs, any increase in their numbers is interpreted as swelling the ranks of a low-wage service proletariat. This combined with the concomitant increase in high-skill, high-pay occupations in these cities leads to the conclusion of increasing social polarisation. However, if clerks and service and sales workers are viewed as middle-income earners as Borel-Saladin and Crankshaw (2009) argue, then their growing numbers would not exacerbate polarisation. Additionally, the growth in these jobs can actually counteract the decline in the numbers of middle-income traditional blue-collar craft and related trades workers and plant and machine operators and assemblers occupations, and thereby mitigate any tendency towards social polarisation.

These criticisms of data use and interpretation are not limited to those who argue for polarisation only. Baum (1999), on the basis of data very similar to that used in his Sydney study, argues against increasing polarisation in Singapore. He concludes that despite production workers, plant and machine operators, cleaners and labourers accounting for the biggest share of employment in 1996, the trend was one of “a significant upgrading of occupational status”, due to the amount of growth in legislators, senior officials and managers, professionals and technicians and associate professionals (Baum, 1999:1104). This was presumably partly due to the fact that the number of production workers, plant and machine operators, cleaners and labourers barely increased (from 539,919 in 1983 to 541,371 in 1999). However, I would argue that it is difficult to draw this conclusion when the production workers and plant and machine operators, the typical semi-skilled blue-collar

manufacturing type occupations that many polarisation theorists lament the loss of, are combined with cleaners and labourers in one occupation category. Arguably, cleaners and labourers are of the lowest-skilled, lowest-paid workers in the occupation hierarchy. As it seems to be the trend in many cities, one would not be surprised if the numbers of production workers and machine operators decreased over time (although, this is still quite an assumption to make). But have the numbers of cleaners and labourers decreased? What if the numbers of cleaners and labourers grew dramatically, but the decline in production and machine operative workers was so large as to mask their growth? These data therefore cannot be used to test the social polarisation hypothesis.

Hamnett (1994a:409) even states of the occupation data he uses when arguing for increasing professionalisation and not polarisation in the Randstad, "The [Labour Force Survey data] are very ambiguous and unsatisfactory for the purpose of occupational class analysis, consisting as it does of an uneasy mixture of occupational and sectoral categories". Thus, arguably even the best available data for studying occupation change are not completely suitable for testing the social polarisation hypothesis. This is not to say that one should not use said data to attempt to test the social polarisation hypothesis. However, perhaps it is in this process of trying to interpret unsuitable data that the case for polarisation has been overstated.

Table 2.1. Occupation by monthly income category, Johannesburg region, 2007 (percentage distribution)

Income category	Managers, legislators and senior officials	Professionals	Associate professionals and technicians	Clerks	Service workers, shop and market sales workers	Craft and related trades workers	Plant and machine operators and assemblers	Unskilled/ elementary occupations	Total
R1 - R200	0	0	0	0	0	0	0	2	0
R201 - R500	1	0	1	2	1	0	1	3	1
R501 - R1 000	0	0	0	1	7	4	2	6	2
R1 001 - R1 500	2	0	2	3	4	8	1	17	3
R1 501 - R2 500	3	0	2	11	22	9	9	32	8
R2 501 - R3 500	1	1	2	9	11	16	34	21	9
R3 501 - R4 500	3	3	3	12	26	13	17	8	8
R4 501 - R6 000	9	2	16	22	3	25	16	3	11
R6 001 - R8 000	11	6	9	15	13	2	9	1	8
R8 001 - R11 000	20	15	11	11	3	12	8	3	12
R11 001 - R16 000	24	13	7	8	10	6	0	1	10
R16 001 - R30 000	9	14	10	5	0	2	1	3	7
R30,001+	18	46	37	0	0	4	0	0	20
Total	100	100	100	100	100	100	100	100	100
Average income (Rands)	13,939	20,836	17,076	6,588	4,669	6,272	4,399	3,233	12,226

Source: Labour Force Survey 2007

The Johannesburg region as a global city-region

As the theory of social polarisation was initially developed as part of the world cities thesis, some might feel it is necessary to justify the testing of this theory in the Johannesburg region of South Africa.

I have used the term "Johannesburg region" to refer to the province of Gauteng, as the latter name may be unfamiliar to a wider audience. The city of Johannesburg alone is well established as the decision-making and financial control centre of not just South Africa, but the southern African region (Rogerson, 2003). Various world city rosters include Johannesburg as a world city on the order of Melbourne, Washington, Amsterdam, Boston, Geneva, Santiago, Jakarta and Taipei (Beaverstock, Smith and Taylor, 1999; Taylor, 2000). Before the start of the century, Johannesburg was already considered to be a major accountancy and banking services centre (Beaverstock, et al., 1999). By various other measures of global connectivity, from telephone links to internet usage, office space and the number of international flights, Johannesburg is arguably a world city (Crankshaw and Parnell, 2004).

Johannesburg is not a "city alone" though. It is integrated with several other urban nodes in what has more recently been dubbed the Gauteng City-Region (GCR) (Wray, 2010). This global city-region consists of the Gauteng province of South Africa. Global city-regions are vital to the economic performance of the country. Gauteng exceeds even Greater London in terms of significance to its national economy, with a population of some 13 million people and by contributing approximately 50 per cent of South Africa's economic output (Wray, 2010). It is this increasingly integrated urban network of crucial economic importance both nationally and regionally that I have referred to as the Johannesburg region.

World city status aside, many scholars have used the polarisation theory as a framework in which to examine economic restructuring and its impacts on the labour markets of a range of cities throughout the world. These include cities as disparate as Beijing (Gu and Liu, 2002), Miami (Nijman, 1996), Rio de Janeiro (Ribeiro and Telles, 2000) and Chicago (Wilson, 1996). Thus, even if one were to contest the world city or global city-region status of the area, testing the polarisation hypothesis in the context of the Johannesburg region is arguably still both a valid and relevant exercise.

Consolidating Population Census Boundaries

Ideally, one would collect the population census and labour force survey data according to the current metropolitan boundary of the Gauteng province. However, this province only came into existence with the advent of full democracy in South Africa in 1994. Therefore, in order to study earlier periods, data were collated by the Magisterial Districts that constitute the Gauteng province, as incorporated into the province in the South African Population Census of 1996.[7] A Magisterial District is a judicial area under the jurisdiction of a magistrate. These jurisdictional districts have also been used by the state as the geographical units for the presentation of population census statistics. Due to their boundaries remaining relatively stable over many years, magisterial districts are best suited for comparing different censuses (Satistics South Africa, 2007). The magisterial districts that make up the Gauteng province include:

- Alberton
- Benoni
- Boksburg
- Brakpan
- Brits
- Bronkhorstspruit
- Cullinan
- Delmas
- Ga-Rankuwa
- Germiston
- Heidelberg (GT)
- Johannesburg
- Kempton Park
- Krugersdorp
- Kwamhlanga
- Nigel
- Oberholzer

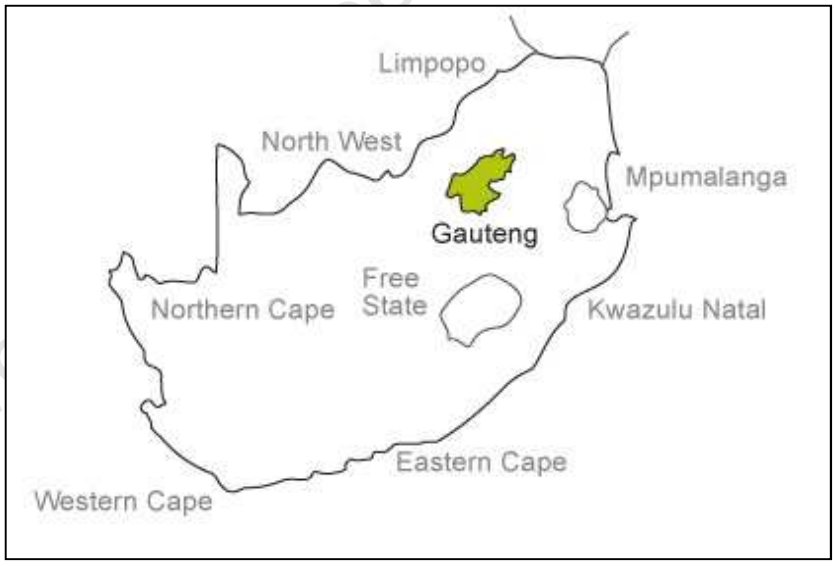

Fig 2.1: Map showing the position of Gauteng province in South Africa
Source: http://www.africatreasure.co.za/south-africa/gauteng/

[7] A table of the relevant magisterial districts and their codes in each of the South African Population Censuses is included in Appendix A.

- Pretoria
- Randburg
- Randfontein
- Roodepoort
- Soshanguve
- Soweto
- Springs
- Vanderbijlpark
- Vereeniging
- Westonaria
- Witbank
- Wonderboom

Figure 2.2: Map of main urban centres in Gauteng province
Source: http://www.commonwealth-towns.net/members/south_africa/gauteng.htm

The South African Labour Force Surveys collect data on a provincial scale, and came into existence in 2000, thereby negating the need to collect data via magisterial districts.

Occupational and Sectoral data

All occupational and sectoral data were recoded according to the South African Standard Classification of Occupations (SASCO) (Statistics South Africa, c.1996a) and the South African Standard Classification of Industries (SASCI) (Statistics South Africa, c.1996b) respectively, both of which are based on (and practically identical to) the International Standard Classification of Occupations (ISCO) and the International Standard Classification of Industries (ISCI).

The following are examples of the types of jobs and positions included in each of the occupation categories of the SASCO (Borel-Saladin, 2006:18-19):

Legislators, senior officials and managers: Government minister, administrator or councillor, officers of various ranks in the armed forces, director-general, secretary-general, chief-executive, managing-director and various levels of manager from department manager

to production manager to general manager, producer in film and radio, shopkeeper, retailer, restaurant owner, working proprietor of a restaurant or hotel.

Professionals: Physical, mathematical and engineering science professional from geologist to statistician to engineer, life science and health professional such as doctor or nurse, teaching professional, business professional such as accountant or economist, various types of consultant, legal professional such as lawyer or judge, computer programmer, sociologist, historian, reporter, editor, critic, commentator, painter, actor, musician, conductor, director, priest, rabbi.

Technicians and associate professionals: Natural and engineering science associate professional, life science and health associate professional, technician in a range of fields such as agriculture, metallurgy and sound effects, computer assistant, technical assistant, medical assistant, teaching associate professional, photographer, operator of technical equipment such as a camera or radio, pilot of a ship or aeroplane, inspector of safety and health to quality control, sales agent, shipping agent, sports agent, buyer, assessor, broker, executive secretary, certain specialised clerks such as legal clerks, tax officer, customs officer, immigration officer, detective, designer, decorator, nightclub or street musician, dancer, sportsman/woman, trainer, lay preacher.

Clerks: clerk, from auditing to data entry to wages, typist, secretary, bookkeeper, dispatcher, controller, postman or postwoman, cashier, bookmaker, receptionist.

Service workers, shop and market sales workers: conductor, steward, guide, cook, waiter or waitress, nanny, nursing aid, dental aid, veterinary aid, attendant of schoolchildren, hospital attendant, canteen attendant, beautician and make-up artist, hairdresser, valet, mortician, fire-fighter, police officer from sergeant to superintendent, soldier, security guard, model, working proprietor of a wholesale or retail business and import or export business, salesperson in anything from a shop to a street stall (though not street vending), petrol pump attendant.

Skilled agricultural and fishery workers: farmer/grower/raiser/breeder of animals or crops, skilled farm labourer, skilled gardener and groundsman, zookeeper, lumberjack and related such as marker, cutter, feller, logger and trimmer, diver, fisherman or fisherwoman, hunter.

Note that in this thesis this category was combined with undetermined occupations, as there were very few agricultural and fishery workers.

Craft and related trades workers: miner, quarryman, blaster, stonemason and stone workers including grinder, cutter and polisher, builder and related such as bricklayer, carpenter, roofer, plasterer, tile layer or insulation worker, repairer from clocks to electronics, fitter from pipes to machines to electronics, plumber, electrician, painter, welder, moulder, brazier, rigger, tool maker, setter-operator of various different types of machine, sharpener of tools, polisher, mechanic, blacksmith, instrument maker and tuner, jewellery maker and worker such as goldsmith, diamond polisher or jewel setter, handicraft worker, print worker from metal die engraver to typesetter, photograph developer and printer, meat/fish worker such as cutter, butcher or curer, baker, taster, tobacco worker, weaver, tailor, footwear maker.

Plant and machine operators and assemblers: Note: many of these occupations have names that are similar to those listed under craft and related trades workers. In this group however, the production process generally takes place on a production line and therefore involves the operation of industrial machinery. These occupations can be practiced in several different industries. For example, a machine operator can operate equipment involved in anything from wood boring to glaze-mixing to noodle-making. Occupations other than those mentioned above include furnace-operator, kiln-operator, assembler and driver/operator of any kind of vehicle from a taxi to a train to a forklift.

Elementary occupations: street vendor, telephone salesperson, babysitter, char, cook in private household, domestic cleaner, office cleaner, aircraft cleaner, hand launderer and dry-cleaner, caretaker, janitor, messenger, night watchman, fun-fair attendant, lavatory attendant, collector of anything from tolls to garbage, scavenger, labourer in a wide variety of activities, ranch hand, packer, labeller, loader, animal driver, porter.

The sectors used in the data are:

- Agriculture, hunting, forestry and fishing
- Mining and Quarrying
- Manufacturing
- Electricity, gas and water supply (Utilities)

- Construction
- Wholesale and retail trade
- Transport, storage and communication
- Financial intermediation, insurance, real estate and business services (FIRE and Business services)
- Community, social and personal services

The following is a description of the four sectors providing the majority of jobs in the Johannesburg region in 2010 (Borel-Saladin, 2006:21):

Community, social and personal services: This includes government bureaucracies at the national, provincial and municipal level, both public and private health and education services, sanitation, welfare, the activities of trade unions, professional associations and religious organisations, sporting, recreational and cultural activities, libraries, museums, botanical and zoological gardens, all entertainment activities, news agency activities, as well as private services such as laundries, hairdressing and funereal services. According to Statistics South Africa (c.1996b), domestic services fall into a residual category including those employed in private households, exterritorial organisations and those representing foreign governments. For the purposes of this analysis, this residual category is included in community, social and personal services.

Wholesale and Retail trade: This includes all wholesale and retail trade, catering and accommodation services, from the sale of various materials and products, to motor vehicle and appliance repairs, to the activities of hotels and restaurants.

Manufacturing: All manufacturing activities fall under this category, from the processing and manufacture of chemical products, basic metals, machinery, electrical equipment and appliances to wood products, furniture, textiles, clothing, jewellery, beverages and food products; as well as printing and publishing activities.

FIRE and Business services: This acronym refers to all ***f***inancial, ***i***nsurance, ***r***eal ***e***state and business services and also includes legal and accounting services, the renting of machinery and equipment, hardware and software consultancy and supply, data processing activities,

advertising, research and development in the natural and social sciences, as well as architectural and engineering activities. There are also a host of "miscellaneous" activities that fall into this category. These include a range of disparate services from labour recruiting, photographic activities, building cleaning, disinfection and extermination activities to security and debt collecting.

The data used in this study are the South African Population Census data and Labour Force Survey data, analysed using SPSS.

South African Population Census

Electronic record unit data were used. In several cases, these required recoding in terms of industries and occupations especially. For example, the data files for the 1980 population census have 293 occupation codes that I recoded according to the SASCO system.

Data not used in analysis:

- Census 1970: The primary concern with these data is that the black population data set is only a 5 per cent sample. However, it is not weighted (I was instructed by Statistics South Africa to "multiply by 20"). I suspect it is because of this that the sample is heavily skewed towards elementary workers. For the sake of completion, I have included these data initially in chapter 3. However, in more in depth analysis later in the chapter, the range of data I use begins with 1980 (this is arguably more useful in any case, as this is when manufacturing employment peaked before it declined).
- Census 1985: There are several problems with these data. There appears to be a different number of occupational categories in the data set than in the codebook. There are only 28 or 29 occupational codes. In addition, the way the occupations have been grouped is quite dissimilar to how I have recoded the other sets according to the SASCO system. Another drawback is the fact that these occupational data may include the unemployed who were instructed to give their occupation when they were last employed if they were unemployed at the time of the census. This would not be such a problem if there was a "work status" variable giving the respondent's employment status; however, there is not. These data have

also not been corrected for undercount, as all the other South African Population Censuses have been.

Possible errors in the data:

Census 1991: Even though there are 165 occupational categories, there is still overlap between what should be separate occupational groups according to the SASCO. For example, the occupational category "mining, quarry and related worker" can include anyone from a labourer to a craft worker or a machine operator or assembler in the mining industry. Thus, it is difficult to know which major occupation group to classify this as part of.

Data sets used:
South African Population Census 1970 , 1980 and 1991
South African Population Census 1996 and 2001 10 per cent sample (the full sets are not available to the public).[8]

As the unemployed are required to state the occupation and sector in which they were previously employed in the population census, I selected only for those respondents who were employed. Thus, the statistical analysis of occupational and sectoral data includes only the employed workforce.

Labour Force Surveys

Between 1994 and 1999, the main survey used for collecting labour market information was the October Household Survey (OHS) (Statistics South Africa, 2008a). Because the OHS tested a diverse range of variables, changes were made to the sample design from one year to the next. Thus, the OHSs were essentially independent cross-sectional surveys. In 2000, most of the non-labour questions were removed and incorporated into the General Household Survey (GHS), while the Labour Force Survey (LFS) retained the variables pertaining to labour issues (Statistics South Africa, 2008a). Thus, in 2001, the first LFS was conducted, and was undertaken on a six-monthly basis in March and September of each year until 2007 (Statistics South Africa, 2008b). In 2008, the LFS was revised to the Quarterly Labour Force

[8] As these are 10 per cent samples of full population censuses, they are very large, allowing for precise and reliable statistical estimates.

Survey (QLFS) (note though that I refer to the Labour Force Survey for all of these data when labelling the source of the data in the tables).

The LFS is representative of all provinces and strata within provinces (Statistics South Africa, 2008a). The sample consists of 3,000 Primary Sampling Units (PSUs) and 30,000 dwelling units, drawn from the population census. The dwelling unit was chosen due to the high degree of mobility of households and difficulty in tracking them. Thus, the sample unit is the dwelling unit, and the unit of observation is the household. The QLFS sample size, again based on the population census, but Census 2000 specifically, is approximately 3,080 PSU's (Statistics South Africa, 2008a). This sample is also designed to be representative at the provincial level, and, within provinces, at the metropolitan level (Statistics South Africa, 2008a).

Thus, the LFS and QLFS are large stratified probability samples of households. Of particular importance to this study is the fact that the occupational and sectoral data include both informal and formal sector activity.

I used the September LFS sets between 2000 and 2007. The third quarter was used for QLFS 2008 and 2009, and the second quarter QLFS for 2010 (the only one available to me at the time).

Occupational and sectoral data in the LFS are presented in accordance with the SASCO and SASCI coding systems respectively. In addition, these data are recorded for the employed only.

Presentation of the data

In the chapters to follow, when the entire range of data are given (1970/80 through to 2010), I have split the tables into South African Population Census 1970/80-2001, and Labour Force Surveys 2001-2010. Thus, the year 2001 is repeated. For the shift-share technique, I also split the analysis between the Population census (1980-2001) and the LFS (2001-2010). The reason for this is that the data for the two separate sets are generated quite differently (one is full census data, the other is sample survey data, where estimates of totals are based on population projections), and therefore, when comparing data, if possible, I preferred to

compare data of the same general set (population census or LFS). Of course, in generating data over the long term to compare 1980 to 2010 (in the case of migrants, for example) it was not possible to use only the population census or LFS exclusively.

Shift-share[9]

Shift-share is used later in this thesis to show that changes in the occupational structure have not occurred mainly due to changes in the relative sizes of the industries (that is, the shift from manufacturing as a major employer to services as the main source of employment) but mostly changes in the occupational distribution across the industries (all industries, manufacturing included, comprising of a growing percentage of professional workers).

The shift-share method allows one to study changes in the occupational structure. This method is used when the focus is not the changes in absolute numbers in each occupation, per se, but the changes in the distribution of occupations across the entire employed workforce, independent of overall employment growth. In shift-share, changes in the occupational distribution are attributed to either changes in the distribution of industries, changes in the distribution of occupations across industries, or the interaction of both of these effects.

Thus, shift-share aims to decompose the changes in the occupational structure into three distinct components:

1. The industry shift effect:

   The effect of changes in the industrial structure on the overall occupational structure (independent of employment growth as well as intra-industry occupational change). This represents the effect of the shift of the employed workforce from one industry with a particular occupational distribution to another industry with a different occupational distribution. Thus, these are the changes in the overall occupational structure attributable to differential industrial growth. Therefore, if there is an increase in the numbers of professionals in the employed workforce from one year to the next,

[9] This method and description based on that used in Browning and Singelmann, 1975; Browning and Singelmann, 1978; Gubbay, 2000; Marshall, 1988; Singelmann and Browning, 1980; Tienda, Jensen and Bach, 1984; Wright and Martin, 1987 and Wright and Singelmann, 1982.

and, on using shift-share analysis, the industry shift effect is found to be the most significant, then the increase in professionals is due to employment growth in the types of industries that tend to employ more professionals.

2. The occupation shift effect:

   The effect of changes in the occupational composition/distribution within industries on the overall occupational structure. Using the example of the increase in professionals above, if a shift-share analysis showed the occupational composition to have the greatest effect, then the reason for the increased employment of professionals would be that all industries were making greater use of professionals.

3. The interaction shift effect:

   The joint effect of simultaneous industrial and occupational composition shifts on the overall occupational structure; that is, the effect of changes in the distribution of the employed population both across and within industries. This represents the changes in the overall occupational composition due to movements from one occupation in one industry, to another occupation in another industry. This occurs when neither the industry nor occupation shift effect alone have a significant impact on the overall occupation distribution; but, rather, the interaction of the two is responsible for the observed changes. This effect is perhaps best illustrated by means of an example. The agricultural industry is unique in that the occupation of farmer or farm worker appears in this industry only, as opposed to, for example, a professional, which can be found in any industry. During the Industrial Revolution, not only did employment in agriculture decline and that in manufacturing increase, but the numbers of farmers and farm workers declined while the numbers of skilled and semi-skilled craftsmen and machine operators increased. Thus, there was not only a change in the industry in which most people were employed (from farming to manufacturing), but also their occupations (from farmers and farm labourers to semi-skilled blue-collar craftsmen and machine operators). Therefore, neither changes in industry nor occupation independently had the greatest impact, but rather the interaction and joint effect of the two.

Before examining the shift-share method in detail, a simplified explanation by means of an example will be provided. Between 1980 and 2001, the number of employed managers in the

Johannesburg region grew by 112,012 people. After accounting for population growth, the net shift in managers was a 93,160 (Table 2.2). The purpose of shift-share analysis is to calculate how much of this net shift was due to changes in the industrial structure, changes in the occupational structure within industries and the interaction of both industrial and occupational change. This is achieved by playing a kind of counterfactual game. First, one asks how many managers there would have been if the proportion of managers had remained the same between 1980 and 2001, but the industrial structure had been allowed to change the way it did between the two years. Thus, the proportion of managers is kept constant at 1980 levels and the share of the increase in managers attributable to changes in the industrial structure alone is calculated. This is the industry shift effect and, in this case, when expressed as a percentage of the net shift, is approximately 15 per cent. Therefore, 15 per cent of the increase in the numbers of employed managers in the Johannesburg region between 1980 and 2001 was due to the growth of industries that favoured the employment of managers versus those that did not.

Next, the counterfactual game is reversed and the question becomes how many managers there would have been if the industrial structure had remained the same between 1980 and 2001 but the proportion of managers in each industry had been allowed to change the way it did between the two years. Thus, the proportion of total employment in each industry remains the same as it was in 1980 and the share of the increase in managers attributable to changes in the occupational structure alone is calculated. This is the occupation shift effect and, in this case, expressed as a percentage of the net shift, is approximately 89 per cent. Thus, 89 percent of the increase in the numbers of employed managers in the Johannesburg region between 1980 and 2001 was due to the changing distribution of managers within industries.

The interaction shift effect is mathematically a residual term. Because the sum of all three shift effects must equal the net shift, in this specific example considering the employment of managers between 1980 and 2001, the interaction shift effect is -4 per cent (100-(89+15)). This means that although the numbers of managers increased between 1980 and 2001, the combined interaction of industrial and occupational change actually worked to decrease the numbers of managers.

In this example then, the greatest impact by far on the increase in the overall number of employed managers between 1980 and 2001 in the Johannesburg region was the change in

the occupational structure within industries (89 per cent). In simpler terms, the main reason there were more managers in 2001 is because all industries tended to employ more managers than in 1980.

The following is a detailed explanation of calculations of the shift-share method. I will start with the calculations for the industry shift effect (see Table 2.2)

Column (1):
The absolute number of people employed in an occupation in **Year 1** (the total of Column1 therefore equals the total employed labour force in year 1).

Column (2):
The absolute number of people employed an occupation in **Year 2** (the total of Column 2 therefore equals the total employed labour force in year 2).

Column (3): **Expected Year 2**
The expected number of employees in an occupation in year 2 due only to growth in the total employed labour force between years 1 and 2. Year 2's total labour force is therefore distributed among occupations in the same proportions as year 1. Each occupation in year 1 is multiplied by the percentage by which the total employed labour force grew between year 1 and 2: Total employed labour force year 2/Total employed labour force year 1 = factor by which to multiply each occupation in year 1. For example, between 1980 and 2001, the total employed labour force of the Johannesburg region grew by 2,918,339/2,442,194 = 1.19. Thus, for managers in 2001: 96,692 (managers in 1980)*1.19 = 115,543 managers expected in 2001.

Table 2.2. Industry shift effect and changes in the class structure of the employed workforce, Johannesburg region, 1980-2001

Occupation	Census 1980 (1)	Census 2001 (2)	Expected 2001 (3)	Weighted 2001 (4)	Actual Change (5) = (2) - (1)	Expected Change (6) = (3) - (1)	Net Shift (7) = (5) - (6)	Components of Net Shift: Industry Shift Effect (8) = (4) - (3)	Components of Net Shift: Occupation Shift and Interaction Shift Effect (9) = (2) - (4)	Percentage of Net Shift due to: Industry Shift Effect (10) = (8)/(7) *100	Percentage of Net Shift due to: Occupation Shift and Interaction Shift Effect (11) = (9)/(7)*100
Managers	96,692	208,704	115,544	129,862	112,012	18,852	93,160	14,318	78,842	15	85
Professionals	148,905	275,180	177,936	205,436	126,275	29,031	97,244	27,499	69,744	28	72
Technicians	118,393	282,749	141,476	163,336	164,356	23,083	141,273	21,860	119,413	15	85
Clerks	344,698	380,346	411,902	527,376	35,648	67,204	-31,556	115,474	-147,030	-366	466
Sales workers	233,622	333,808	279,170	312,782	100,186	45,548	54,638	33,612	21,026	62	38
Craft workers	510,950	361,403	610,568	412,536	-149,547	99,618	-249,165	-198,032	-51,133	79	21
Operators	325,037	236,564	388,408	292,067	-88,473	63,371	-151,844	-96,342	-55,503	63	37
Unskilled	528,748	597,891	631,836	655,747	69,143	103,088	-33,945	23,911	-57,856	-70	170
Skilled agricultural/ Other	135,149	241,694	161,498	219,198	106,545	26,349	80,196	57,699	22,496	72	28
Total	2,442,194	2,918,339	2,918,339	2,918,339	476,145	476,145	0	0	0		

Source: South African Population Census 1980 and 2001

Table 2.3. Occupation shift effect and changes in the class structure of the employed workforce, Johannesburg region, 1980-2001

Occupation	Census 1980 (1)	Census 2001 (2)	Expected 2001 (3)	Weighted 2001 (4)	Actual Change (5) = (2) - (1)	Expected Change (6) = (3) - (1)	Net Shift (7) = (5) - (6)	Components of Net Shift: Occupation Shift Effect (8) = (4) - (3)	Components of Net Shift: Industry Shift and Interaction Shift Effect (9) = (2) - (4)	Percentage of Net Shift due to: Industry Shift Effect (10) = (8)/(7) *100	Percentage of Net Shift due to: Occupation Shift and Interaction Shift Effect (11) = (9)/(7)*100
Managers	96,692	208,704	115,544	198,425	112,012	18,852	93,160	82,882	10,279	89	11
Professionals	148,905	275,180	177,936	249,832	126,275	29,031	97,244	71,896	25,348	74	26
Technicians	118,393	282,749	141,476	265,030	164,356	23,083	141,273	123,554	17,719	87	13
Clerks	344,698	380,346	411,902	342,184	35,648	67,204	-31,556	-69,719	38,162	221	-121
Sales workers	233,622	333,808	279,170	279,267	100,186	45,548	54,638	96	54,541	0	100
Craft workers	510,950	361,403	610,568	477,705	-149,547	99,618	-249,165	-132,863	-116,302	53	47
Operators	325,037	236,564	388,408	331,834	-88,473	63,371	-151,844	-56,574	-95,270	37	63
Unskilled	528,748	597,891	631,836	612,924	69,143	103,088	-33,945	-18,912	-15,033	56	44
Skilled agricultural/ Other	135,149	241,694	161,498	161,137	106,545	26,349	80,196	-361	80,557	0	100
Total	2,442,194	2,918,339	2,918,339	2,918,339	476,145	476,145	0	0	0		

Source: South African Population Census 1980 and 2010

Column (4): **Weighted Year 2**

Here it is assumed there were no changes in the occupational structure, and only the industrial structure is allowed to change as it did between years 1 and 2. Therefore, the total employment in an industry in year 2 is distributed among the occupational categories in the same proportions as year 1. This is calculated as the sum of the number of people employed in an occupation in year 2, assuming the occupational distribution of employment in the industries was the same as year 1. For example, the proportion of managers in agriculture in 1980 was 1,309/67,040 = 0.0195. Therefore, in 2001, the number of managers should be 0.0195*the total number employed in agriculture in year 2 (69,011) = 1,347. If the same procedure is performed for the number of managers in each industry, and all of these industries added together, one receives an expected total of 129,862 managers in 2001.

Column (5): **Actual Change**

The actual change in the number of people employed in an occupation between years 1 and 2. This is calculated as the difference between Column 2 and Column 1 (the number of people employed in an occupation in year 2 minus the number of people employed in an occupation in year 1). For example, the actual change in the number of managers between 1980 and 2001 was 208,704-96,692 = an increase in the number of managers of 112,012 between 1980 and 2001.

Column (6): **Expected Change**

The expected change in the number of people employed in an occupation between years 1 and 2. This is calculated as the difference between Column 3 and Column 1 (the expected number of people employed in an occupation in year 2 - due to overall labour force growth only - minus the actual number of people employed in an occupation in year 1). The expected number of managers in 2001 of 115,544-96,692 managers in 1980 = an expected increase in the number of managers of 18,852 between 1980 and 2001.

Column (7): **Net Shift**

This gives the growth in employment in an occupation independent of total employment growth. It is calculated as the difference between Column 5 and Column 6 (the actual change in the number of people employed in an occupation between years 1 and 2 minus the expected change in the number of people employed in an occupation between years 1 and 2).

A positive net shift is obtained when the occupational category grew relatively more than expected and increased its share of total employment, and a negative one when the occupational category grew relatively less than expected and its share of total employment decreased between the two years. For example, the actual change in the number of managers between 1980 and 2001 minus the expected change in the number of managers between 1980 and 2001 is 112,012 -18,852 = a positive net shift of 93,160.

Components of net shift:
Here the net shift calculated above is decomposed into the industry shift effect and the combined occupation shift and interaction shift effect.

Column (8): **Industry shift effect**

The effect of changes in the industrial structure on the net shift in an occupation. This gives the expected number of workers in an occupation or the amount of occupational change that occurred, as a result of industrial change between years 1 and 2, with no changes to the occupational composition of the industries themselves, while controlling for the growth rate of total employment. It is calculated as the difference between Column 4 and Column 3. This is the projected number of people employed in an occupation in year 2 as a result of industrial change only (where the occupational structure within industries has been kept constant, that is, the same as year 1) minus the expected number of people employed in an occupation in year 2 due to overall labour force growth only (where both the industrial and occupational structure are kept constant/the same as year 1). A positive industry shift effect is obtained when changes in the industrial structure resulted in a larger than expected increase in the numbers employed in an occupation between years 1 and 2. A negative industry shift effect indicates that the changes to the industrial structure between years 1 and 2 did not favour the growth of an occupation. For example, had there been no change in the proportion of managers in each industry between 1980 and 2001, changes in the industrial structure alone would have accounted for 129,862-115,544 = an increase of 14,318 managers.

Column (9): **Occupation Shift and Interaction Shift Effect**

This gives the expected change to the number of people employed in an occupation if there had been no change to the industrial structure and only changes in the occupational structure within industries as well as the interaction between the occupational and industrial structures between years 1 and 2. It is calculated as the difference between Column 2 and Column 4: the

actual number of people employed in an occupation in year 2 minus the projected number of people employed in an occupation in year 2 as a result of industrial change only (where the occupational structure within industries has been kept constant, that is, the same as year 1). For example, the combined occupation shift and interaction shift effects for managers between 1980 and 2001 was: 208,704-129,862 = 78,842.

Column (10):
The industry shift effect expressed as a percentage of the net shift.

Column (11):
The combined occupation shift and interaction shift effect expressed as a percentage of the net shift.

Now that the industry shift effect and the combined occupation shift and interaction shift effect have been calculated, in order to separate the interaction shift effect from the combined occupation shift and interaction shift effect, the standardisation must be reversed. In the following, the occupation shift effect and combined industry shift and interaction shift effect will be calculated. Thus, the subtraction of the industry shift effect from the combined industry shift and interaction shift effect will yield the interaction effect. Alternately, the occupation shift effect could be subtracted from the combined occupation shift and interaction shift effect.

To calculate the occupation shift effect (Table 2.3):

Column (1):
The absolute number of people employed in an occupation in **Year 1** (the total of Column1 therefore equals the total employed labour force in year 1).

Column (2):
The absolute number of people employed an occupation in **Year 2** (the total of Column 2 therefore equals the total employed labour force in year 2).

Column (3): **Expected Year 2**
The expected number of employees in an occupation in year 2 due only to growth in the total employed labour force between years 1 and 2. Year 2's total labour force is therefore

distributed among occupations in the same proportions as year 1. Each occupation in year 1 is multiplied by the percentage by which the total employed labour force grew between year 1 and 2: Total employed labour force year 2/Total employed labour force year 1 = factor by which to multiply each occupation in year 1. For example, between 1980 and 2001, the total employed labour force of the Johannesburg region grew by 2,918,339/2,442,194 = 1.19. Thus, for managers in 2001: 96,692 (managers in 1980)*1.19 = 115,544 managers expected in 2001.

Column (4): **Weighted Year 2**

Now the assumption is made that there was no change to the industrial structure, and that only the occupational structure changed as it did between years 1 and 2. Therefore, the industrial distribution of employment in year 1 is applied to the occupational distribution of employment in year 2. For example, managers: agriculture accounted for 3 per cent of the employed workforce in 1980. In absolute terms, 3 per cent of the employed workforce in 2001 amounts to 80,111 employees. In 2001, 4.45 per cent of those employed in agriculture were managers. Therefore, given the "new" total number of employees in agriculture in 2001 (using the industrial distribution of 1980), 4.45% *80,111 = 3,881 managers in the agricultural industry. This process is repeated across the rest of the occupations in agriculture, as well as across all occupations in all other industries. The sum of managers across all of the industries yields a projected total of 198,425 managers in 2001.

Column (5): **Actual Change**

The actual change in the number of people employed in an occupation between years 1 and 2. This is calculated as the difference between Column 2 and Column 1 (the number of people employed in an occupation in year 2 minus the number of people employed in an occupation in year 1). For example, the actual change in the number of managers between 1980 and 2001 was 208,704-96,692 = an increase in the number of managers of 112,012 between 1980 and 2001.

Column (6): **Expected Change**

The expected change in the number of people employed in an occupation between years 1 and 2. This is calculated as the difference between Column 3 and Column 1 (the expected number of people employed in an occupation in year 2 - due to overall labour force growth only - minus the actual number of people employed in an occupation in year 1). The expected

number of managers in 2001 of 115,544-96,692 managers in 1980 = an expected increase in the number of managers of 18,852 between 1980 and 2001.

Column (7): **Net Shift**

This gives the growth in employment in an occupation independent of total employment growth. It is calculated as the difference between Column 5 and Column 6 (the actual change in the number of people employed in an occupation between years 1 and 2 minus the expected change in the number of people employed in an occupation between years 1 and 2). A positive net shift is obtained when the occupational category grew relatively more than expected and increased its share of total employment, and a negative one when the occupational category grew relatively less than expected and its share of total employment decreased between the two years. For example, the actual change in the number of managers between 1980 and 2001 minus the expected change in the number of managers between 1980 and 2001 is 112,012 -18,852 = a positive net shift of 93,160.

Components of net shift:

Now the net shift calculated above is decomposed into the occupation shift effect and the combined industry shift and interaction shift effect.

Column (8): **Occupation Shift Effect**

The interaction effect has now been allocated to the industry shift effect (as opposed to the occupation-shift effect in Table 2.2). This gives the changes in an occupation (controlling for employment growth) that would have occurred had there been changes in only the occupation distribution across industries, but no change in the industrial structure of the employed workforce. Again, this is calculated as the difference between Column 4 and Column 3 (the projected number of managers due to the changing occupation structure minus the expected number of managers in year 2 due only to growth in the total employed labour force between years 1 and 2). For example, 198,425-115,544 = an increase of 82,882 managers between 1980 and 2001.

Column (9): **Industry Shift and Interaction Effect**

This gives the expected change to the number of people employed in an occupation if there had been no change to the occupational structure within industries, and only changes in the industrial structure as well as the interaction between the occupational and industrial

structures between years 1 and 2 and is calculated as the difference between Column 2 and Column 4 (the actual change in the number of managers between 1980 and 2001 minus the projected number of managers due to the changing occupational structure). For example, 208,704-198,425 = a combined industry shift and interaction shift effect of an increase in the number of managers between 1980 and 2001 of 10,279.

Column (10):
The occupation shift effect expressed as a percentage of the net shift.

Column (11):
The combined industry shift and interaction shift effect expressed as a percentage of the net shift.

The interaction effect is then calculated by subtracting the occupation shift effect (column 8 of Table 2.3) from the combined occupation shift and interaction shift effect (column 9 of Table 2.2). The results of the calculations in Table 2.2 and Table 2.3 are summarised in Table 3.13 (see chapter 3, or excerpt below) which consists of:

Net Shift: from Table 2.2 or Table 2.3, Column (7)

The components of net shift:

Industry Shift Effect: From Table 2.2, Column (8)

Occupation Shift Effect: From Table 2.3, Column (8)

Interaction Shift Effect:
Calculated as the difference between Table 2.2, Column 9 and Table 2.3, Column 8 (combined occupation shift and interaction shift effect minus occupation shift effect). As mentioned previously, one could also calculate this as the combined industry shift and interaction shift effect (Table 2.3, column 9) minus the industry shift effect (Table 2.2, column 8). Both calculations yield the same result.

Components of net shift in percentage

Industry Shift Effect: Industry Shift Effect above as a percentage of Net Shift.

Occupation Shift Effect: Occupation Shift Effect above as a percentage of Net Shift.

Interaction Effect: Interaction Shift Effect above as a percentage of Net Shift.

Therefore, using the example of managers given in the simplified explanation above (see excerpt from Table 3.13 below. Full results of Table 3.13 discussed in chapter 3):

		Components of Net Shift			Components of Net Shift in percent		
Occupation	Net Shift	Industry Shift Effect	Occupation Shift Effect	Interaction Effect	Industry Shift Effect	Occupation Shift Effect	Interaction Effect
Managers	93,160	14,318	82,882	-4,040	15	89	-4

There is a positive net shift in managers of 93,160; therefore, the numbers of managers increased relative to the other occupations between 1980 and 2001 and managers gained a greater share of the overall occupation distribution between 1980 and 2001. The industry shift effect of 15 per cent and occupation shift effect of 89 per cent indicate that changes in both the structure of industries as well as the distribution of occupations within those industries contributed to this increase between the two years. The interaction shift effect or joint effect of industrial and occupational change actually worked to decrease the numbers of managers, but by an almost negligible amount (4 per cent). However, the greatest effect was arguably the occupation shift effect, contributing 89 per cent of the net shift. Thus, an increase in the numbers of managers across all industries was the main contributor to the greater share of overall employment held by managers in 2001 versus 1980.

As one further example of interpreting shift-share results (also from the analysis of occupational change during the period 1980-2001):

		Components of Net Shift			Components of Net Shift in percent		
Occupation	Net Shift	Industry Shift Effect	Occupation Shift Effect	Interaction Effect	Industry Shift Effect	Occupation Shift Effect	Interaction Effect
Unskilled	-33,945	23,911	-18,912	-38,944	-70	56	115

As the net shift in unskilled work is negative (-33,945), this indicates that unskilled jobs lost share of the occupational distribution between 1980 and 2001. In terms of the effects though, only the occupation shift and interaction shift effects contributed to this decline, as they are both negative (-18,912 and -38,944 respectively). The industry shift effect was positive (23,911) and therefore did not contribute to the declining share of all work represented by unskilled jobs. Note that the sign changes when these effects are presented as percentages though. The occupation shift effect as a percentage of net shift is 56 per cent, as a negative divided by a negative gives a positive: (-18,912/-33945)*100 = 0.557. This means that the occupation shift effect contributed 56 per cent to the decline in unskilled jobs (and similarly with the interaction shift effect). The industry shift effect as a percentage of net shift is -70 per cent, as a positive divided by a negative is a negative: (23,911/-33,945)*100 = -0.704. This means that the industry shift effect worked in the opposite direction as it were to the net shift. That is, changes in the composition of industries between 1980 and 2001 actually worked in favour of increasing the proportion of unskilled workers, not decreasing them as happened during this period.

(Below are tables 2.4 and 2.5 of the shift-share analysis for the period 2001-2010).

Table 2.4. Industry shift effect and changes in the class structure of the employed workforce, Johannesburg region, 2001-2010

Occupation	LFS 2001 (1)	LFS 2010 (2)	Expected 2010 (3)	Weighted 2010 (4)	Actual Change (5) = (2) - (1)	Expected Change (6) = (3) - (1)	Net Shift (7) = (5) - (6)	Components of Net Shift: Industry Shift Effect (8) = (4) - (3)	Components of Net Shift: Occupation Shift and Interaction Shift Effect (9) = (2) - (4)	Percentage of Net Shift due to: Industry Shift Effect (10) = (8)/(7) *100	Percentage of Net Shift due to: Occupation Shift and Interaction Shift Effect (11) = (9)/(7)*100
Managers	239,029	399,540	312,188	301,839	160,511	73,159	87,352	-10,349	97,701	-12	112
Professionals	162,235	306,441	211,890	377,436	144,206	49,655	94,551	165,547	-70,995	175	-75
Technicians	342,582	418,817	447,435	384,347	76,235	104,853	-28,618	-63,088	34,470	220	-120
Clerks	369,148	516,993	482,132	545,597	147,845	112,984	34,861	63,465	-28,604	182	-82
Sales workers	424,801	542,686	554,819	486,190	117,885	130,018	-12,133	-68,628	56,496	566	-466
Craft workers	386,672	429,387	505,020	471,254	42,715	118,348	-75,633	-33,766	-41,867	45	55
Operators	255,624	289,040	333,862	313,233	33,416	78,238	-44,822	-20,629	-24,193	46	54
Unskilled	613,740	832,112	801,586	743,125	218,372	187,846	30,526	-58,461	88,987	-192	292
Skilled agricultural/ Other	77,478	15,106	101,191	127,100	-62,372	23,713	-86,085	25,908	-111,994	-30	130
Total	2,871,309	3,750,122	3,750,122	3,750,122	878,813	878,813	0	0	0		

Source: South African Labour Force Surveys 2001 and 2010

Table.2.5. Occupation shift effect and changes in the class structure of the employed workforce, Johannesburg region, 2001-2010

Occupation	LFS 2001 (1)	LFS 2010 (2)	Expected 2010 (3)	Weighted 2010 (4)	Actual Change (5) = (2) - (1)	Expected Change (6) = (3) - (1)	Net Shift (7) = (5) - (6)	Components of Net Shift		Percentage of Net Shift due to	
								Occupation Shift Effect (8) = (4) - (3)	Industry Shift and Interaction Shift Effect (9) = (2) - (4)	Industry Shift Effect (10) = (8)/(7) *100	Occupation Shift and Interaction Shift Effect (11) = (9)/(7)*100
Managers	239,029	399,540	312,188	496,915	160,511	73,159	87,352	184,728	-97,375	211	-111
Professionals	162,235	306,441	211,890	279,760	144,206	49,655	94,551	67,870	26,681	72	28
Technicians	342,582	418,817	447,435	378,103	76,235	104,853	-28,618	-69,333	40,714	242	-142
Clerks	369,148	516,993	482,132	664,101	147,845	112,984	34,861	181,969	-147,108	522	-422
Sales workers	424,801	542,686	554,819	450,796	117,885	130,018	-12,133	-104,022	91,890	857	-757
Craft workers	386,672	429,387	505,020	386,995	42,715	118,348	-75,633	-118,024	42,392	156	-56
Operators	255,624	289,040	333,862	274,112	33,416	78,238	-44,822	-59,750	14,928	133	-33
Unskilled	613,740	832,112	801,586	784,342	218,372	187,846	30,526	-17,243	47,770	-56	156
Skilled agricultural/ Other	77,478	15,106	101,191	34,997	-62,372	23,713	-86,085	-66,195	-19,891	77	23
Total	2,871,309	3,750,122	3,750,122	3,750,122	878,813	878,813	0	0	0		

Source: South African Labour Force Surveys 2001 and 2010

Surveys for migrants

The broadest definition of migration is possibly: “The crossing of a spatial boundary by one or more persons involved in a change of residence” (Posel, 2009; Statistics South Africa, 2007:81). This definition includes only the spatial and change of residence aspects of migration though. Many would argue that a time and social dimension would be necessary in the definition of a migrant as well (Statistics South Africa, 2007). These are some of the topics of debate in migration studies literature. Thus, in the broader field of migration studies, distinctions are made between, for example, international and internal migrants, temporary and permanent migrants, legally documented and illegal immigrants, voluntary migrants and refugees (Kok, van Zyl and Pietersen, 2006b). Of course, the list goes on.

Ideally, for the purposes of this study, I would have liked to define a migrant as someone who was born and educated outside of the Johannesburg region, and who came to the area as an adult, or over the age of 18, in search of work. This definition of a migrant would have yielded mostly economic/labour migrants. However, the available data do not allow for this level of detail in combination with information on the occupation and industry in which the respondent worked. That is, it is not possible to find all of these variables in any one data set.

Therefore, in this study, I will not be going into this level of detail around migrants. Definitions of migration most useful in this study then are (Borjas, 2000:1):

- Migration: A move from one geographic area to another.
- Internal migration: the household/individual moves across larger geographically distinct units - such as counties, metropolitan areas, states, or provinces - but remains within the same country.
- International migration: the household/individual moves across national boundaries.

Thus, in this study, a migrant is defined as someone who was not born in the Johannesburg region (Gauteng province) of South Africa, but who was living and working there at the time the survey or census was conducted. This includes both internal migrants (born within the borders of South Africa, but not in the Johannesburg region) and foreign migrants (born outside of South Africa) (see detailed discussion of data sets used later). This is obviously

quite a broad definition of migration, and, as such, yields a much wider sample than if I had used the definitions of migrants in the various data sets, which tend to focus on circulatory/temporary labour migrants.

In order for a data set from any survey to be useful in studying migrants in the Johannesburg region, the following variables were necessary:

1. Place of birth
2. Current province
3. Occupation
4. Industry
5. Employment status (so that only those currently employed are captured, including both formal and informal sector activity, as well as the self-employed)
6. Race
7. Gender
8. Highest level of education

Of the data sets to which I had access, many did not fulfil even these basic requirements. The data sets below were not suitable for the purpose of researching migrants to the Johannesburg region for this particular study for the following reasons:

South African Population Census 1970:

In terms of the African sample (and while this is a population census, only a 5 per cent sample was used for the African population), the place of birth variable is of limited utility because it only differentiates between South African and foreign-born Africans. Thus, there is no indication of where in South Africa an African respondent was born.

South African Population Census 1985:

Please see previous discussion of the shortcomings of the South African Population Census 1985 and why it was not used at all for this research.

South African Population Census 1991:

The place of birth variable only differentiates between those born in South Africa and those born outside of the country (including the Bantustans or African homelands). Therefore, there is no indication from which province in South Africa a respondent originates.

South African Population Census 1996:

The place of birth variable only asks in which country the respondent was born. Therefore, for South African-born respondents, there is no indication from which province in South Africa a respondent originates.

The Mesebetsi Labour Force Survey, Republic of South Africa, 1999/2000:

While the necessary variables are available in the data sets, the proportion of employed migrants and natives is very different in comparison to the other surveys and censuses used. So, while migrants are the majority of the employed workforce in the other data sets analysed, in this survey, natives are the majority (see discussion below on the data sets used in this study for greater detail on these data). While this may not be important when comparing the characteristics of migrants and natives in relative terms, I do compare these two groups in absolute terms as well.

Internal Migration in South Africa, 1999:

While this is a rich, detailed data set in many ways, it has certain limitations for the specific purposes of this study. However, the main problem with regard to studying migrants and the kinds of work they do is in the occupational categories used and the method of sampling.

The categories for occupations used in this study are not the same as that used in most other studies, such as the South African Population Censuses and Labour Force Surveys. The categories are as follows:

1.00 Managerial, executive and high administrative
2.00 Independent professional
3.00 Middle and lower salaried professional
4.00 Inspectoral and semi-professional
5.00 Clerical and non-counter sales
6.00 Skilled manual
7.00 Routine white collar and counter sales
8.00 Semi-skilled
9.00 Unskilled

There is no detailed explanation of what occupations are contained in each of these categories, either in the codebook or in the report. While several of the occupational category names in the Internal Migration survey are directly comparable to those in the Population Censuses and Labour Force Surveys, some are particularly vague, and therefore, hard to compare. This problem is perhaps greatest in the category semi-skilled in the Internal Migration survey. According to the International Organisation for Migration (Bureau of European Policy Advisors [BEPA], 2010), a semi-skilled worker is one who requires a certain amount of training or familiarisation with a job before he/she can perform it with a high level of competence. The amount of training required is less than that of a skilled/craft worker, lasting usually only days or weeks, and usually below the tertiary level. Thus, many manual workers, including production and construction workers would fall into the category of semi-skilled workers. If one accepts this definition, semi-skilled workers in the Internal Migration survey best approximate plant and machine operators and assemblers in the South African Population Censuses and Labour Force Surveys (Table 2.6 below).

Table 2.6. Occupational distribution of the Johannesburg region, 1999 and 2001.

Internal Migration Survey, 1999		Census 2001	
Occupation	Per cent	Occupation	Per cent
1.Managerial, executive and high administrative	0	Legislators, senior officials and managers	7
2.Independent professional	1	Professionals	9
3.Middle and lower salaried professional	6		
4.Inspectoral and semi-professional	1	Technicians and associate professionals	10
5.Clerical and non-counter sales	10	Clerks	13
7.Routine white collar and counter sales	4	Service, shop and market sales workers	11
6.Skilled manual	5	Craft and related trades workers	12
8.Semi-skilled	43	Plant/machine operators & assemblers	8
9.Unskilled	26	Elementary occupations	20
0.Don't know	4	Skilled Agriculture and Undetermined	8

Sources: Internal Migration survey 1999 and South African Population Census 2001.

If semi-skilled workers in the Internal Migration survey are the same as plant and machine operators and assemblers in the Population Census and surveys using similar occupation categories, then semi-skilled workers, at 43 per cent of the sample (Table 2.6), appear to be grossly over-represented in the Internal Migration survey in comparison to the census of the same year (8 per cent). Even if an aggregated blue-collar type occupation grouping is created

from the combination of semi-skilled and skilled manual workers in the Internal Migration survey, and this is compared to a combined craft and related trades workers and plant and machine operators and assemblers group in the Population Census, there remains a large disparity of 28 per cent (48 per cent versus 20 per cent respectively).

This is not the only discrepancy between the Internal Migration survey data and the Population Census data. Unskilled workers appear to be over-represented in the Internal Migration survey in comparison to the Population Census too (26 versus 20 per cent respectively, Table 2.6). On the other hand, high-skill, high-income occupations appear to be under-represented in the Internal Migration survey in comparison to the Population Census. Legislators, senior officials and managers represent at least 7 per cent of employed workers in the Johannesburg region in 2001 according to the Population Census, but less than 1 per cent in 1999 according to the Internal Migration survey. If the independent professionals and the middle- and lower-salaried professionals of the Internal Migration survey are combined, the percentage of professionals is similar across the Internal Migration survey and the Population Census (7 versus 9 per cent respectively). However, the percentage of technicians and associate professionals is much higher in the population census than the Internal Migration survey (10 versus 1 per cent respectively). Thus, it would appear that the Internal Migration survey over-sampled manual workers, and under-sampled high-skill, high-pay workers.

These discrepancies may be a result of the sampling method. Only the black African population was sampled in this survey (South African Data Archive, 1999). Instead of the more conventional simple random sample, the Internal Migration survey used a stratified sample, dividing the sample evenly between metropolitan, other urban and rural areas. As the black African population is likely to be over-represented amongst manual workers and under-represented amongst high-skill, high-pay workers, and it is not unreasonable to expect that those respondents from rural areas would also include a disproportionate number of manual workers, this may explain the preponderance of manual workers in the Internal Migration survey versus other surveys.

The 2001/2002 HSRC Migration Survey

The necessary variables for the purposes of this study of migrants are found in the 2001/ 2002 HSRC Migration Survey. However, most of the individual data set is missing values on a range of variables, and, most importantly for this study, for the variable province of birth.
Of the 3,618 cases of individual respondents, only 637 reside in the Gauteng province, and, of these, approximately 260 have data on province of birth. This appears to be a derived variable (probably from a question about the magisterial district in which the respondent's mother lived when he/she was born). I attempted to "fill in the blanks" of missing birth place data by manipulating several other, tangentially related variables, but this gave a very high percentage of natives of 78.5 per cent. This likely gives an undercount of migrants in the Johannesburg region (see discussion below of data sets used for greater detail). There is a migrant status variable, but no indication how it was derived. In addition, one of the category labels of this variable is "internal migrant (or origin not known)". Thus, there seems to be a certain degree of uncertainty around the birth place of respondents in the individual data set to which I have not been able to find a satisfactory solution.

One explanation for this could be the person who answered the individual respondent questionnaire. While there were specific within-household sampling instructions for choosing the person from the household to interview for the individual questionnaire, it would appear these were not adhered to: in 79 per cent of the individual respondent cases, the person interviewed as the individual respondent was also the person who answered the household questionnaire (Kok, et al., 2006). This could have resulted in significant interviewer and respondent fatigue, which may have contributed to the large proportion of missing data. Also, the questionnaire is quite complicated, which may have resulted in substantial confusion for both the interviewer and the respondent, and may also have contributed to the large amount of missing data.

Labor Force Surveys, 2001-2010

In none of the Labor Force Surveys is there a question about place of birth. The Labour Force Surveys of 2002, 2003, 2004 and 2005 do have a separate section on migrant workers. However, migrants are specifically defined as anyone who is considered part of the household but usually absent from it for a month or more each year due to work. This is a much narrower definition of a migrant than the one employed in this study, which defines a

migrant as anyone who now lives and works in the Johannesburg region of South Africa but who was not born there.

In the Labour Force Surveys of 2003, 2004 and 2005 there is also a question about where the respondent lived five years earlier. Again though, this would give too narrow a definition of a migrant for the purposes of this study and it would be limited to those who had moved to the Johannesburg region in the last five years only. Labour Force Surveys from 2006 through to 2010 have no useful data on migrants for the purposes of this study, as there is no question about birth place.

Data sets used in this study to compare migrants and natives

The South African Population Census 1980, the Mesebetsi Labour Force Survey 1999/2000, the South African Population Census 2001 10 per cent sample and the Community Survey 2007 all have the variables necessary for this study (place of birth, current province, occupation, industry, employment status, race, gender and highest level of education).

Over and above this consideration is the question of how accurately these data reflect the population of the Johannesburg region in general. Tables 2.7 and 2.8 show that the occupational distribution in the Mesebetsi Labour Force Survey 1999/2000 is very similar to that of the Labour Force Survey 2000, except with regard to the percentage of professionals, which is higher in the Mesebetsi Labour Force Survey 1999/2000 (13 per cent) than the Labour Force Survey 2000 (by only 6 percentage points though). The South African Population Census 2001 10 per cent sample and the South African Population Census 2001 have identical occupational distributions, unsurprisingly. The Community Survey 2007 also has a similar occupational distribution to the Labour Force Survey 2007, with the most notable divergence amongst elementary/unskilled occupations and undetermined occupations. The Community Survey 2007 records 16 per cent elementary or unskilled occupations, while the Labour Force Survey 2007 has 22 per cent. The Community Survey 2007 has 16 per cent undetermined occupations though in comparison to only 1 per cent in the Labour Force Survey 2007, thereby making it likely that several percent of the elementary occupations, along with several other occupational categories, were either misclassified as undetermined or were simply not recorded. Thus, the Mesebetsi Labour Force Survey 1999/2000, the South African Population Census 2001 10 per cent sample and the Community Survey 2007 all appear to have occupation distributions similar to other data sets used in this research.

Table 2.7. Comparing the occupational distribution of data sets used to study migrants to other data sets used to study occupational change in the Johannesburg region (frequency distribution)

Occupation	Census 1980	LFS 2000	Mesebetsi 1999/2000	Census 2001	Census 2001 10%	LFS 2007	Community Survey 2007
Legislators, senior officials and managers	96,692	182,295	195,267	208,018	208,705	440,371	425,784
Professionals	148,905	221,761	326,947	269,756	275,180	445,229	457,308
Technicians and associate professionals	118,393	345,563	277,361	280,420	282,750	455,560	274,444
Clerks	344,698	354,136	294,189	379,678	380,346	431,410	317,621
Service, shop and market sales workers	233,622	438,676	311,708	331,365	333,809	458,052	358,504
Craft and related trades workers	510,950	426,181	299,313	361,500	361,403	543,431	407,484
Plant and machine operators and assemblers	325,037	315,461	214,975	236,713	236,565	371,869	270,487
Elementary occupations	528,748	674,819	481,467	590,162	597,891	898,802	579,947
Undetermined and Skilled Agricultural	135,149	92,639	35,108	237,228	241,693	56,237	600,142
Total	2,442,194	3,051,530	2,436,334	2,894,840	2,918,341	4,100,962	3,691,721

Sources: South African Population Census 1980, 2001, 2001 10 per cent sample, Mesebetsi Labour Force Survey 1999/2000, Labour Force Survey 2000 and 2007 and Community Survey 2007

Table 2.8. Comparing the occupational distribution of data sets used to study migrants to other data sets used to study occupational change in the Johannesburg region (percentage distribution

Occupation in percent	Census 1980	LFS 2000	Mesebetsi 1999/2000	Census 2001	Census 2001 10%	LFS 2007	Community Survey 2007
Legislators, senior officials and managers	4	6	8	7	7	11	12
Professionals	6	7	13	9	9	11	12
Technicians and associate professionals	5	11	11	10	10	11	7
Clerks	14	12	12	13	13	11	9
Service, shop and market sales workers	10	14	13	11	11	11	10
Craft and related trades workers	21	14	12	12	12	13	11
Plant and machine operators and assemblers	13	10	9	8	8	9	7
Elementary occupations	22	22	20	20	20	22	16
Undetermined and Skilled Agricultural	6	3	1	8	8	1	16
Total	100	100	100	100	100	100	100

Sources: South African Population Census 1980, 2001, 2001 10 per cent sample, Mesebetsi Labour Force Survey 1999/2000, Labour Force Survey 2000 and 2007 and Community Survey 2007

There is a similar distribution of migrants versus natives in these data too, with natives comprising between 57 per cent and 61 per cent and migrants accounting for 38 per cent to 43 per cent (internal and foreign migrants combined) of respondents (Table 2.9). However, if one considers the employed amongst these only, the Mesebetsi Labour Force Survey 1999/2000 has a substantially higher percentage of employed natives in comparison to the other data sets (Table 2.10). Natives comprise between 40 and 47 per cent of all those employed in the South African Population Census 1980, South African Population Census 2001 10 per cent sample and the Community Survey 2007, but 60 per cent of the Mesebetsi Labour Force Survey 1999/2000 sample. That is a difference of at least 13 per cent in the number of migrants between the Mesebetsi Labour Force Survey 1999/2000 and the other three sets. Thus, the Mesebetsi Labour Force Survey 1999/2000 appears to have a very different distribution of migrants and natives amongst employed respondents in comparison to the other data.

Given this divergence in the percentage of migrants from the other data sets in the Mesebetsi Labour Force Survey 1999/2000, the consistency of migrant versus native numbers between the two South African Population Census sets and the Community Survey 2007, and the proximity in time of the Mesebetsi Labour Force Survey 1999/2000 and the South African Population Census 2001 10 per cent sample, I decided not to use the Mesebetsi Labour Force Survey 1999/2000, and rather use the two South African Population Census sets and the Community Survey 2007 for the purposes of studying migrants in the Johannesburg region of South Africa.

Table 2.9. Percentage distribution of migrants and natives in the Johannesburg region (all)

Migrant Status (all)	Census 1980	Mesebetsi 1999/2000	Census 2001 10% sample	Community Survey 2007
Native	57	61	59	57
Internal Migrant	35	34	35	37
Foreign Migrant	8	4	5	6
Unknown	0	0	0	0
Total	100	100	100	100

Sources: South African Population Census 1980, 2001 10 per cent sample, Mesebetsi Labour Force Survey 1999/2000 and Community Survey 2007

Table 2.10. Percentage distribution of migrants and natives in the Johannesburg region (employed only)

Migrant Status (employed only)	Census 1980	Mesebetsi 1999/2000	Census 2001 10% sample	Community Survey 2007
Native	40	60	47	44
Internal Migrant	48	34	44	47
Foreign Migrant	12	6	9	9
Unknown	0	0	0	0
Total	100	100	100	100

Sources: South African Population Census 1980, 2001 10 per cent sample, Mesebetsi Labour Force Survey 1999/2000 and Community Survey 2007

Average Annual Employment Growth Rate

The average annual employment growth rate was calculated using the following formula:[10]

$$\{[(T_2/T_1)^{(1/(Y2-Y1))}] - 1\} * 100$$

Where:

T_1 = Total number of people employed in the first year

T_2 = Total number of people employed in the second year

Y_1 = First year

Y_2 = Second year

For example, the average annual employment growth rate in the finance, insurance, real estate and business services sector between 1980 and 2010 was:

$$\{[(707{,}171/140{,}805)^{(1/(2010-1980))}]-1\} * 100 = 5.52 \text{ per cent.}$$

Thus, the number of people employed in the finance, insurance, real estate and business services sector grew on average approximately 6 per cent per annum between 1980 and 2010.

[10] This method from Mohr, P., van der Merwe, C., Both, Z. and Inggs, J. 1988. *The Practical Guide to South African Economic Indicators.* Johannesburg: Lexicon Publishers.

Chapter 3: Sectoral and Occupational Change in the Johannesburg Region

The Johannesburg region is not only South Africa's most densely populated area, but contributes some 50 per cent of South Africa's economic output, and is arguably the country's most dynamic economic region (Rogerson, 2003; Wray, 2010). This region was established as a result of the discovery of gold, the mining and processing of which first connected it to the rest of the world economy. The Johannesburg region led the processes of industrialisation and modernisation in South Africa, with a third of the country's industrial establishments, as well as 44 per cent of industrial employees located in this region by 1948 already (Nieftagodien, 2006). However, as with many other world city regions, the Johannesburg region has experienced a move away from mining and industrial production towards services and trade (Rogerson, 2003). While manufacturing had overtaken mining as the main source of employment by 1950, there has since been a relative downturn in the significance of manufacturing in the face of strong growth in the service sector (Rogerson, 2003). Arguably, the most significant growth has been in finance, insurance, real estate (FIRE) and business services, with this sector contributing 21,4 per cent to the region's Gross Domestic Product in 2004, the largest share of any sector (Statistics South Africa, 2004).

Industry in the Johannesburg region: a brief history

The community, social and personal services sector has always been one of the largest employers in the Johannesburg region. However, there have been considerable shifts in employment in other sectors (Crankshaw and Parnell, 2004). Since the discovery of gold on the Witwatersrand, mining had been the main employer of labour, and continued to be so up until the 1960's. As was the case in most cities post-World War Two, Johannesburg experienced an economic boom which was to last till the oil crisis in the 1970's (Beall, Crankshaw and Parnell, 2002). Thus, employment grew rapidly during this period. However, with the depletion of gold ore reserves in the Witwatersrand mines and the establishment of new gold fields in the Orange Free State, mining employment in the Johannesburg region declined (Crankshaw and Parnell, 2004).

The manufacturing sector began as a service industry to the gold mines, but grew to the extent that it was the second largest employer in the Johannesburg region, behind the community, social and personal services sector by 1960 (Crankshaw and Parnell, 2004; Trapido, 1971). In the early post-war period, due to high commodity prices and the rapidly developing international economy, the mining industry profited handsomely from its primary exports (Black, 1991). These considerable profits were then invested in large-scale manufacturing. The expansion of the manufacturing sector was facilitated not only by demand from the growing mining sector, but also through state intervention in the creation of parastatals to develop capacity in the key industries of iron and steel, electricity and petroleum production (Beall, et al., 2002). The manufacturing sector also benefitted from protectionist measures such as tariff barriers on imported goods; one of the main instruments of the state's industrialisation policy (Black, 1991). Employment growth in the manufacturing sector was particularly impressive in the 1960's and early 1970's (Crankshaw and Parnell, 2004). This corresponds to when the bulk of investment in manufacturing took place in South Africa, with investors being attracted by an already sizeable and rapidly growing domestic market and relatively low wages (Black, 1991). However, with a period of long-term lower output growth beginning in the late-1970's, manufacturing employment soon decreased dramatically (Beall, et al., 2002).

Several explanations have been offered for the precipitous manufacturing employment decline after 1980 (Crankshaw and Parnell, 2004). Scholars argue that at no point did South Africa's manufacturing sector achieve its potential growth (Joffe, Kaplan, Kaplinsky and Lewis, 1995). Many have blamed the expansion of the manufacturing sector under the policy of import substitution from the 1950's already, as there was limited foreign exchange during this time (Moll, 1991). The growth of manufacturing was also heavily dependent on increasing demand for consumer durables from what was only a small, mainly white market (Freund, 1986). Unfortunately, the change to export-led industrialisation in the late 1970's did not ameliorate this situation. As the rest of the world began to embrace neo-liberal macro-economic policies, so too did South Africa (Beall, et al., 2002). Protectionist measures in the manufacturing industry were steadily removed and the government reduced expenditure and inflation control in accordance with the principle of promoting the operation of the free market. However, many industries that had started under trade barriers still needed them decades later (Moll, 1991). Interest rates became so high that manufacturers' and other companies' profit margins were substantially reduced. In addition to this, lessened control

over the flow of capital into and out of the country led to disinvestment from export-oriented South African manufacturers for more profitable overseas business concerns (McGrath and Jenkins, 1985). However, poor macro-economic planning was not the only culprit. Deindustrialisation and education policies, which both sought to limit African urbanisation, hindered manufacturing growth. Under deindustrialisation policies, employers either had to reduce the numbers of African workers or relocate to remote areas, especially in or near the Bantustans, to limit the numbers of African workers coming to the cities (Beall, et al, 2002; Karam and Sihlongonyane, 2006). One of the impacts of this industrial decentralisation was greatly increased opportunity costs of manufacturing (Tomlinson and Hyslop, 1984). Thus, many argue that several state industrialisation initiatives, such as parastatals, were inefficient and that policies such as the industrial decentralisation policy were misguided (Moll, 1991). Education policies, for example, also meant that only limited secondary education was available to Africans in Johannesburg (Lipton, 1989; Beall, et al., 2002). Thus these policies acted to intensify the situation of a dearth of skilled workers in the region (Crankshaw and Parnell, 2004).

In terms of labour, gold mining historically relied mainly on cheap rural migrant workers (Freund, 1991). What skilled jobs there were, were filled by Whites, who defended their market position though trade unions and government support (Trapido, 1971). Consequently, only unskilled and semi-skilled manual jobs were available to Africans, and therefore were mainly filled by poorly-educated rural migrant Africans. Employment in the manufacturing sector followed a similar pattern to that of mining. Whites, usually from urban areas and with better education, held the best semi-skilled factory jobs (Crankshaw, 1997). Whites also dominated the skilled trades by excluding Africans from apprenticeships and, as in the mining sector, with government support and job reservation when their jobs were under threat from cheaper African labour (Lipton, 1989). Thus, unskilled and low-wage semi-skilled work was all that was available to Africans in the manufacturing sector as well, which was again attractive to poorly-educated rural migrant Africans in particular.

However, significant employment growth during the 1960's and 1970's precipitated a skilled white labour shortage; initially in the skilled trades, then later in white-collar occupations too (Crankshaw, 1997). Employers therefore lobbied government to intervene with white trade unions and reform employment and education policies towards Africans, thereby allowing them to be trained and employed in semi-skilled jobs to make up the labour shortfall (Platzky

and Walker, 1985). In several sectors, agreements were reached which allowed Africans to be advanced into semi-skilled, supervisory and white-collar work, although not at the expense of White employment (Lipton, 1989). Previously urbanised, better-educated Africans were therefore best placed to take advantage of these new opportunities for upward occupational mobility (Crankshaw, 1997). At the same time, employers were switching to more capital intensive methods of production. Therefore, while employment opportunities for semi-skilled African plant and machine operators and assemblers increased, so demand for unskilled labour decreased (Hindson, 1991). Thus, while the late-apartheid period gave rise to more skilled and professional work for educated urbanised Africans, employment opportunities for unskilled rural migrant Africans dwindled.

Employment in the smaller industrial sectors of construction, utilities, transport and communication continued to grow, albeit at a slower rate, during the manufacturing employment boom years of the 1960's and 1970's and beyond (Crankshaw and Parnell, 2004). While manufacturing and mining employment declined after 1980, employment in the tertiary sector continued to grow. Thus, the only apparent commonality between the early- and late-apartheid periods is high levels of employment in the community, social and personal services sector. With regard to other sectors, in the early-apartheid period, unskilled and semi-skilled labour was in high demand in the mining and manufacturing sectors. By the late-apartheid period though, skilled white-collar and professional workers were in higher demand for the commercial, business and financial services sectors (Crankshaw and Parnell, 2004).

After 1994, the new government followed the same policy as the former regime of controlling inflation by limiting the supply of money, inadvertently causing interest rates to rise (Beall, et al., 2002). This was part of a greater strategy of reducing public debt in order to appear economically stable enough to attract foreign investment.[11] However, these high interest rates suppressed demand for both locally made and imported goods. Moreover, the Rand became over-valued and South African made goods became too expensive to compete in world markets. Added to this was the global recession of the early 1990's. Thus, the manufacturing industry did not recover with the export-led growth strategy of the 1980's and 1990's either (Beall, et al., 2002).

[11] See discussion of GEAR in chapter 5.

Changing employment patterns

Manufacturing employment peaked at 619,680 workers in 1980, representing 25 per cent of all employment in that year (Tables 3.1 and 3.3, Figure 3.1). From this point, manufacturing employment decreased in both absolute and relative terms, reaching a low of 310,049 employees or 13 per cent of the employed workforce of the Johannesburg region in 1996 (Tables 3.1 and 3.3). After this nadir, manufacturing employment started to recover, reaching a maximum of 688,606 by 2008, but dropping below the 600,000 mark by 2010 (Table 3.2 and Figure 3.2). By 2010, manufacturing represented only 16 per cent of the employed workforce (Table 3.4).

During this same period (1970 to 2010), employment in all service sectors grew substantially The number of employees in the community, social and personal services sector more than doubled between 1970 and 2010, from 473,369 to 1,012,516, and accounted for between 24 per cent and 30 per cent of all employment in this period (Tables 3.1, 3.2, 3.3 and 3.4, Figures 3.1 and 3.2).[12] The wholesale and retail trade sector steadily increased its share of employment from 13 per cent in 1970 to 22 per cent in 2010, with an increase of 588,389 employees (Tables 3.3 and 3.4). The most impressive growth was arguably in the finance, insurance, real estate (FIRE) and business services sector. The numbers of employees in FIRE and business services increased almost eight-fold, from 91,130 and a share of total employment of 5 per cent in 1970 to 707,171 and a 19 per cent share of employment in 2010 (Tables 3.1, 3.2, 3.3 and 3.4). Therefore, while manufacturing accounted for the second largest share of employees in 1970, only marginally behind the number of workers in the community, social and personal services, by 2010, employment in each of the service sectors had surpassed that in the manufacturing sector (Figure 3.2).

Manufacturing employment appeared to have recovered to 1980 levels by 2007 (Tables 3.1 and 3.2). However, between 1980 and 2010, the average annual growth rate of manufacturing employment was 0 per cent.[13] Added to this is the fact that this "recovery" in manufacturing employment happened in the face of a massive expansion of service sector employment. By contrast, the average annual growth rates of employment during the same period in the community, social and personal services, wholesale and retail trade, and FIRE and business

[12] Note: the community, social and personal services sector includes domestic workers.
[13] See Research Methods for how this was calculated.

services sectors were 1 per cent, 3 per cent and 6 per cent respectively. Thus, the Johannesburg region experienced simultaneous growth in employment in its service sectors and a decline and recovery, and therefore overall stagnation of employment growth in the manufacturing sector between 1980 and 2010.

In the terms of the social polarisation hypothesis, this decline in manufacturing's share of employment and concomitant growth in the service sector's share thereof should result in a decline in the numbers of middle-income skilled and semi-skilled manufacturing jobs, and a rise in the numbers of both high-skill, high-pay and low-skill, low-pay service sector jobs, leading to increased social polarisation. However, it can be argued that the real changes in the occupational structure of the Johannesburg region during this period were not consistent with this predicted outcome. This conclusion about the precise nature of the changes to occupational structure is dependent upon the definitions of skill requirements and levels of remuneration of certain service sector occupations (Borel-Saladin and Crankshaw, 2009). As was mentioned in chapter 1 and discussed in chapter 2, there is little debate in the literature as to which jobs are considered high-skill and high-pay, and that both the proportion and absolute number of these jobs are increasing. However, in order for there to be a process of increasing polarisation, the numbers of both high-skill, high-pay and low-skill, low-pay jobs must increase, while the numbers of medium-pay jobs must stagnate or decline. It is in the definition of these low-skill, low-income jobs that inconsistency occurs. Many polarisation theorists categorise clerical and service and sales worker occupations, and even some associate professional occupations, as low-skill, low-pay service sector jobs (Baum, 1997; Clark, 1998; Sassen, 1994; Wilson, 1996). Therefore, by this definition, all non-managerial and non-professional service sector jobs are effectively classified as low-income, low-skilled jobs. As the numbers of employees in these types of jobs are also growing, along with the numbers of high-skill, high-pay workers, this leads to a "bipolar" distribution of the occupations of the service sector, with high-skilled, high-income managers and professionals at one end of the skill and pay spectrum, and low-skill, low-income workers on the other.

Table 3.1. Employment by main economic sector, Johannesburg region, 1970-2001 (frequency distribution)

Sector	Census 1970	Census 1980	Census 1991	Census 1996	Census 2001
Agriculture, Hunting, Forestry and Fishing	74,699	67,040	66,945	34,043	69,010
Mining and Quarrying	206,969	253,185	236,452	168,595	96,846
Manufacturing	439,662	619,680	537,447	310,049	401,580
Utilities	16,745	23,103	33,977	34,333	21,808
Construction	112,098	113,191	156,440	147,174	162,210
Wholesale and Retail Trade	238,718	345,023	461,600	331,212	485,974
Transport, Storage and Communication	90,605	132,093	169,402	157,903	171,356
FIRE and Business services	91,130	140,805	243,091	310,305	416,113
Community, Social and Personal Services	473,369	651,356	851,554	687,899	807,101
Other and Unspecified	75,891	96,718	101,677	238,616	286,342
Total	1,819,886	2,442,194	2,858,585	2,420,129	2,918,341

Source: South African Population Censuses

Table 3.2. Employment by main economic sector, Johannesburg region, 2001-2010 (frequency distribution)

Sector	LFS 2001	LFS 2002	LFS 2003	LFS 2004	LFS 2005	LFS 2006	LFS 2007	LFS 2008	LFS 2009	LFS 2010
Agriculture, Hunting, Forestry and Fishing	27,826	59,180	27,095	63,503	54,833	61,699	74,626	66,494	42,845	28,771
Mining and Quarrying	126,824	123,666	134,366	87,647	69,998	85,828	74,648	27,575	31,834	27,894
Manufacturing	510,153	526,221	502,843	519,564	531,896	564,458	625,139	688,606	560,736	592,391
Utilities	19,836	17,556	25,573	36,997	31,382	52,070	30,010	31,046	39,965	41,413
Construction	130,610	136,930	123,551	217,756	309,644	281,470	273,218	297,920	268,209	252,084
Wholesale and Retail Trade	643,033	605,240	668,330	692,281	851,954	905,949	880,712	919,008	843,050	827,107
Transport, Storage and Communication	181,000	216,800	181,399	191,107	216,973	196,735	320,979	276,881	258,036	254,731
FIRE and Business services	456,280	504,201	507,427	483,580	583,289	579,456	687,844	715,548	702,449	707,171
Community, Social and Personal Services	756,987	694,165	835,807	802,297	839,333	897,508	1,109,372	1,081,772	1,005,051	1,012,516
Other and Unspecified	18,760	48,422	22,481	8,698	13,801	22,887	24,413	2,203	5,786	6,045
Total	2,871,309	2,932,381	3,028,873	3,103,431	3,503,103	3,648,060	4,100,962	4,107,052	3,757,961	3,750,122

Source: Labour Force Surveys

Note: Discrepancy between values for 2001 in this table and Table 3.1 above due to use of different data sets, namely the LFS and Population Census. See Research Methods.

Table 3.3. Employment by main economic sector, Johannesburg region, 1970-2001 (percentage distribution)

Sector	Census 1970	Census 1980	Census 1991	Census 1996	Census 2001
Agriculture, Hunting, Forestry and Fishing	4	3	2	1	2
Mining and Quarrying	11	10	8	7	3
Manufacturing	24	25	19	13	14
Utilities	1	1	1	1	1
Construction	6	5	5	6	6
Wholesale and Retail Trade	13	14	16	14	17
Transport, Storage and Communication	5	5	6	7	6
FIRE and Business services	5	6	9	13	14
Community, Social and Personal Services	26	27	30	28	28
Other and Unspecified	4	4	4	10	10
Total	100	100	100	100	100

Source: South African Population Censuses

Table 3.4. Employment by main economic sector, Johannesburg region, 2001-2010 (percentage distribution)

Sector	LFS 2001	LFS 2002	LFS 2003	LFS 2004	LFS 2005	LFS 2006	LFS 2007	LFS 2008	LFS 2009	LFS 2010
Agriculture, Hunting, Forestry and Fishing	1	2	1	2	2	2	2	2	1	1
Mining and Quarrying	4	4	4	3	2	2	2	1	1	1
Manufacturing	18	18	17	17	15	15	15	17	15	16
Utilities	1	1	1	1	1	1	1	1	1	1
Construction	5	5	4	7	9	8	7	7	7	7
Wholesale and Retail Trade	22	21	22	22	24	25	21	22	22	22
Transport, Storage and Communication	6	7	6	6	6	5	8	7	7	7
FIRE and Business services	16	17	17	16	17	16	17	17	19	19
Community, Social and Personal Services	26	24	28	26	24	25	27	26	27	27
Other and Unspecified	1	2	1	0	0	1	1	0	0	0
Total	100	100	100	100	100	100	100	100	100	100

Source: Labour Force Surveys

Note: Discrepancy between values for 2001 in this table and Table 3.3 above due to use of different data sets, namely the LFS and Population Census. See Research Methods.

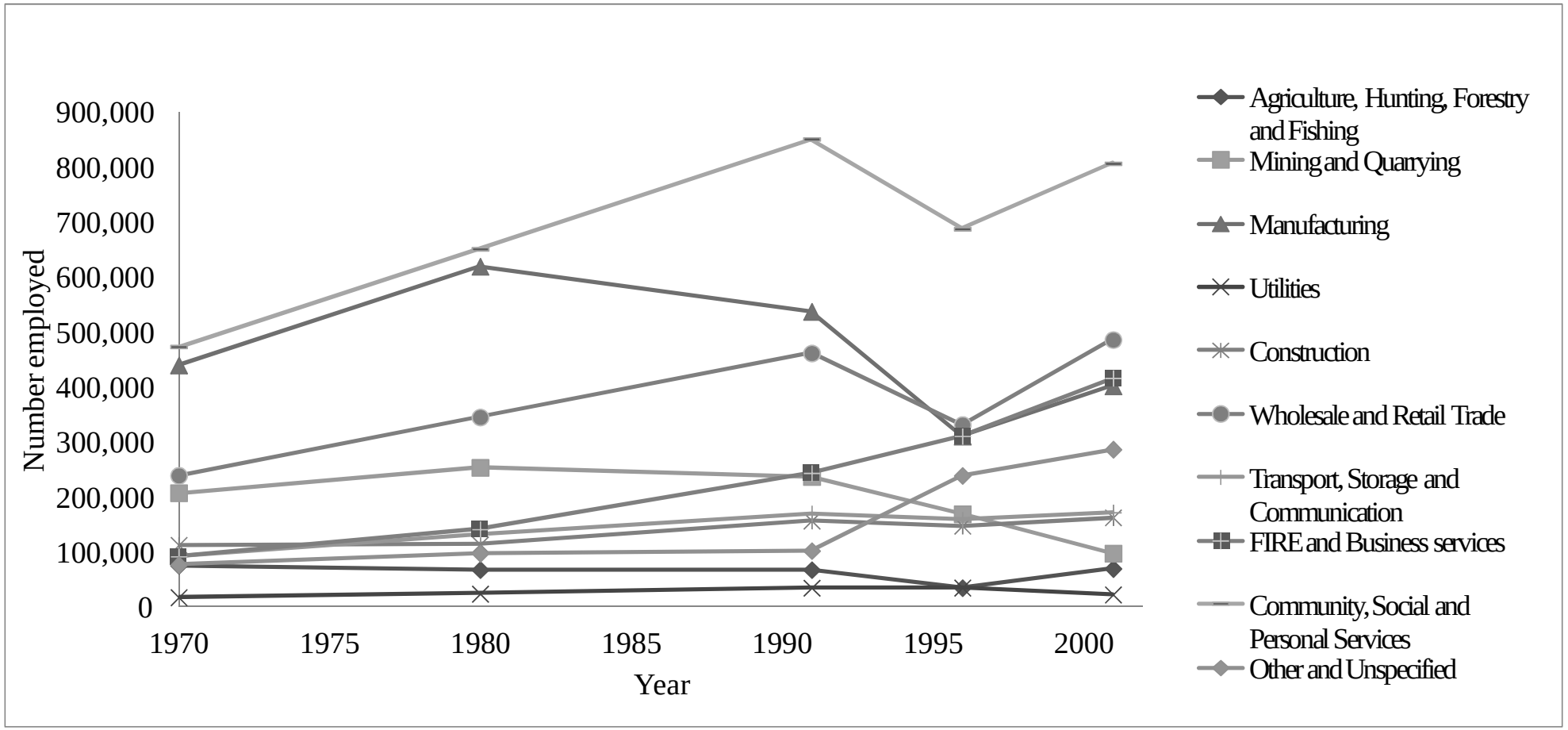

Fig 3.1. Employment by main economic sector, Johannesburg region, 1970-2001

Source: South African Population Censuses

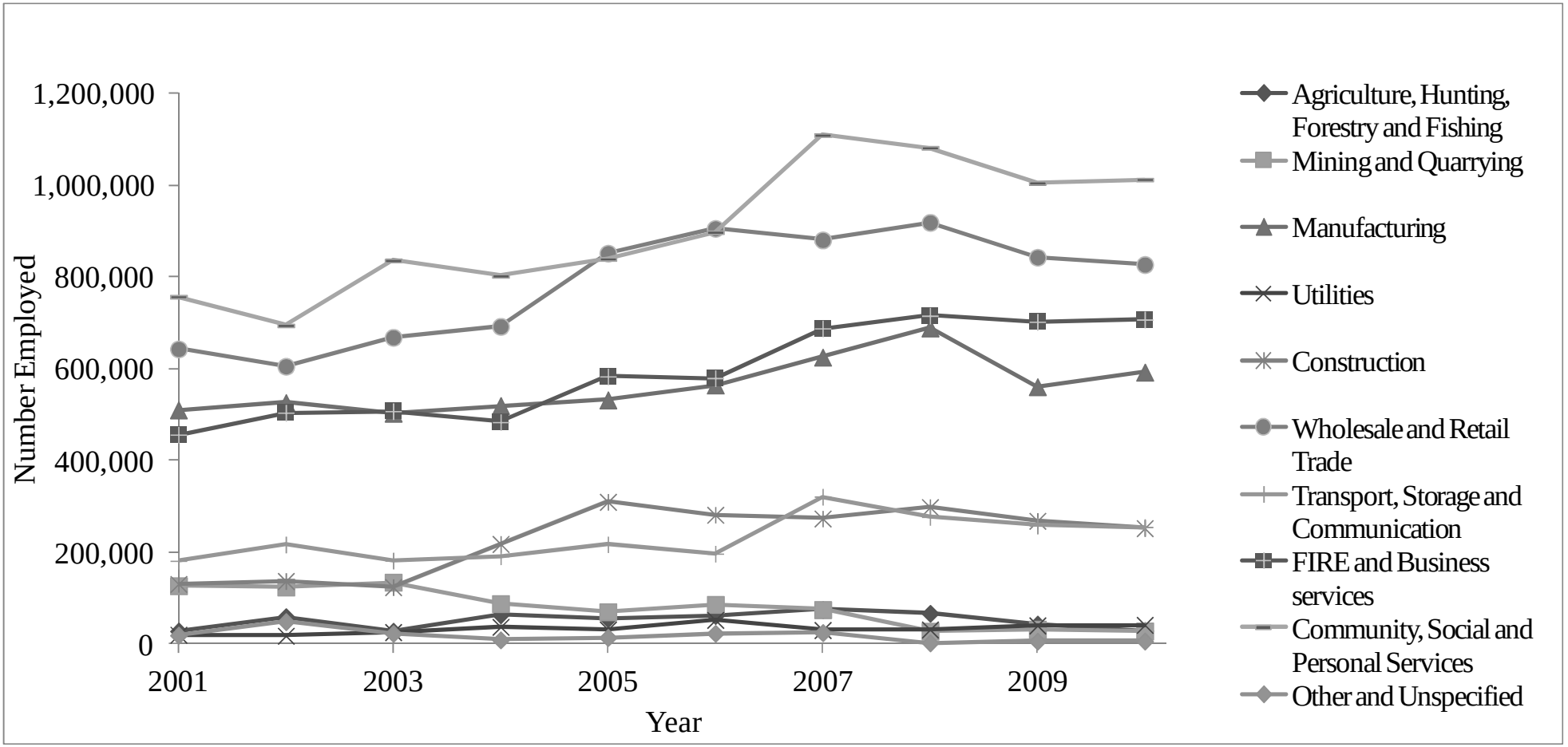

Fig 3.2. Employment by main economic sector, Johannesburg region, 2001-2010

Source: Labour Force Surveys

Arguably though, many clerical and service and sales jobs are not low-skill, low-pay and require the same amount of skill as craft and related trades work, and plant and machine operator and assembler jobs (see previous discussion in chapter 2). These are the types of skilled and semi-skilled blue-collar manufacturing jobs many supporters of the polarisation hypothesis view as middle-income jobs. Therefore, these "misclassified" clerical and service and sales jobs have similar income and skill distributions to the skilled and semi-skilled blue-collar manual manufacturing jobs they are supposedly replacing (Borel-Saladin and Crankshaw, 2009). Thus, the ever-increasing numbers of clerical and service and sales jobs are not only not low-pay, low-skill, but the continued growth in their numbers offsets the decline in the numbers of so-called middle-income manufacturing jobs.

Reflecting the fortunes of the declining manufacturing sector then, employment in the semi-skilled, blue-collar jobs of craft and related trades workers and plant and machine operators and assemblers reached a combined peak of 835,987 (Table 3.9a) in 1980, after which point employment in these jobs decreased to a low of 597,968 in 2001.[14] After 2001, these numbers began to rise again, reaching a highest total of 915,300 in 2007, before dropping to 718,429 by 2010: 117,558 fewer and a loss of 14 per cent from the peak 28 years before in 1980 (Tables 3.9a).

By contrast, all other job categories grew substantially more between 1980 and 2010 (Tables 3.5, 3.6, 3.7 and 3.8). The most growth occurred among the high-skill, high-pay jobs of managers, professionals, associate professionals and technicians. Between 1980 and 2010, the numbers of managers increased by 302,847 or 313 per cent, professionals by 157,536 or 106 per cent, and associate professionals by 300,423 or 254 per cent (Table 3.9a). Taken together as a group, this represents the creation of 760,806 jobs and employment growth of 209 per cent between 1980 and 2010 (Table 3.9b). Significant growth of 172,296 jobs (50 per cent) and 309,063 jobs (132 per cent) also occurred amongst clerks and service and sales workers respectively between 1980 and 2010 (Table 3.9a). Together, these semi-skilled, white-collar jobs increased by 481,359 or 83 per cent (Table 3.9a). Unskilled/Elementary work also grew by 303,364 jobs between 1980 and 2010 – an increase of only 57 per cent (Table 3.9b).

[14]The craft and related trade workers and plant and machine operators and assemblers are combined here, as they are both semi-skilled, blue-collar jobs in which there is substantial overlap in required skills and remuneration.

On the face of it, these figures could be interpreted as evidence for increased polarisation. The numbers of both high-skill, high-pay jobs (managers, professionals, associate professionals and technicians) and low-skill, low-pay jobs (unskilled/elementary workers) increased, while the numbers of typical manufacturing semi-skilled, blue-collar jobs at first declined and then recovered to match their original peak in 1980. But there are several arguments why this would be an erroneous interpretation of the data.

First, following the methodology of Borel-Saladin and Crankshaw (2009), clerks and service and sales workers arguably should be viewed as middle-income, white-collar semi-skilled jobs. In this case, the growth of these middle-income service sector jobs (481,359 between 1980 and 2010, Table 3.9a) more than outweighs the lack of growth in the middle-income manufacturing jobs of craft and related trades workers and plant and machine operators and assemblers (a loss of 117,558 jobs in the same period, Table 3.9a). In other words, the increase in the numbers of clerks and service and sales workers did not contribute to the decline of middle-income jobs – middle-income work in fact grew by 363,801 jobs between 1980 and 2010 (Table 3.9b). Therefore, the growth of clerks and service and sales workers did not contribute towards social polarisation.

Also of importance is that while there was an absolute increase in the numbers of high-skill, high-pay and low-skill, low-pay jobs, the increase in the numbers of managers, professionals and associate professionals was far greater than that in unskilled workers. The numbers of managers, professionals, associate professionals and technicians increased by 760,807 between 1980 and 2010, versus an increase of only 303,364 amongst unskilled workers (Table 3.9b). Therefore, the number of high-skill, high-pay jobs increased by more than two and a half times the number of unskilled jobs (Table 3.9b and Figure 3.3). Thus, what appears superficially to be a polarising tendency is more a skewing of the occupational structure towards professionalisation of the employed workforce. Moreover, middle-income jobs also increased more than unskilled work: an absolute increase of 363,801 versus 303,364 respectively (Table 3.9b). Figure 3.3 gives a visual representation of the distribution of employment per occupational category in 1980 and 2010, as well as the absolute difference between the two years. In this figure it is clear how much greater the increase in high-skill workers is versus that of unskilled workers.

Table 3.5.Occupational distribution of the employed workforce, Johannesburg region, 1970-2001 (frequency distribution)

Occupation	Census 1970	Census 1980	Census 1991	Census 1996	Census 2001
Legislators, senior officials and managers	52,646	96,692	152,425	126,749	208,705
Professionals	85,785	148,905	225,689	247,553	275,180
Technicians and associate professionals	62,464	118,393	52,264	190,111	282,750
Clerks	230,322	344,698	432,512	241,379	380,346
Service, shop and market sales workers	140,628	233,622	585,975	245,021	333,809
Craft and related trades workers	240,277	510,950	295,816	390,415	361,403
Plant and machine operators and assemblers	330,815	325,037	382,364	219,193	236,565
Elementary occupations	599,409	528,748	573,953	467,392	597,891
Undetermined and Skilled Agriculture	77,547	135,149	157,585	292,319	241,693
Total	1,819,893	2,442,194	2,858,583	2,420,132	2,918,341

Source: South African Population Censuses

Table 3.6.Occupational distribution of the employed workforce, Johannesburg region, 2001-2010 (frequency distribution)

Occupation	LFS 2001	LFS 2002	LFS 2003	LFS 2004	LFS 2005	LFS 2006	LFS 2007	LFS 2008	LFS 2009	LFS 2010
Legislators, senior officials and managers	239,030	298,633	329,630	321,629	316,296	330,309	440,371	445,369	385,859	399,539
Professionals	162,235	183,493	207,580	141,839	213,736	186,180	445,229	310,447	295,905	306,441
Technicians and associate professionals	342,582	374,252	374,912	321,908	362,092	341,862	455,560	484,969	474,249	418,816
Clerks	369,149	417,445	411,002	404,804	415,512	422,565	431,410	536,840	502,345	516,994
Service, shop and market sales workers	424,800	370,849	373,139	420,367	462,958	528,559	458,052	500,799	527,369	542,685
Craft and related trades workers	386,672	372,363	365,610	416,501	518,394	569,351	543,431	550,526	434,522	429,387
Plant and machine operators and assemblers	255,624	284,328	290,546	328,941	315,662	320,440	371,869	358,112	320,451	289,042
Elementary occupations	613,741	566,751	661,832	731,995	876,155	929,145	898,802	907,410	800,974	832,112
Undetermined and Skilled Agriculture	77,477	64,267	14,622	15,448	22,299	19,650	56,237	12,581	16,287	15,106
Total	2,871,309	2,932,381	3,028,873	3,103,431	3,503,103	3,648,061	4,100,962	4,107,052	3,757,961	3,750,122

Source: Labour Force Surveys

Table 3.7. Occupational distribution of the employed workforce, Johannesburg region, 1970-2001 (percentage distribution)

Occupation	Census 1970	Census 1980	Census 1991	Census 1996	Census 2001
Legislators, senior officials and managers	3	4	5	5	7
Professionals	5	6	8	10	9
Technicians and associate professionals	3	5	2	8	10
Clerks	13	14	15	10	13
Service, shop and market sales workers	8	10	20	10	11
Craft and related trades workers	13	21	10	16	12
Plant and machine operators and assemblers	18	13	13	9	8
Elementary occupations	33	22	20	19	20
Undetermined and Skilled Agriculture	4	6	6	12	8
Total	100	100	100	100	100

Source: South African Population Censuses

Table 3.8. Occupational distribution of the employed workforce, Johannesburg region, 2001-2010 (percentage distribution)

Occupation	LFS 2001	LFS 2002	LFS 2003	LFS 2004	LFS 2005	LFS 2006	LFS 2007	LFS 2008	LFS 2009	LFS 2010
Legislators, senior officials and managers	8	10	11	10	9	9	11	11	10	11
Professionals	6	6	7	5	6	5	11	8	8	8
Technicians and associate professionals	12	13	12	10	10	9	11	12	13	11
Clerks	13	14	14	13	12	12	11	13	13	14
Service, shop and market sales workers	15	13	12	14	13	14	11	12	14	14
Craft and related trades workers	13	13	12	13	15	16	13	13	12	11
Plant and machine operators and assemblers	9	10	10	11	9	9	9	9	9	8
Elementary occupations	21	19	22	24	25	25	22	22	21	22
Undetermined and Skilled Agriculture	3	2	0	0	1	1	1	0	0	0
Total	100	100	100	100	100	100	100	100	100	100

Source: Labour Force Surveys

Table 3.9a. Changes in the occupational distribution of the employed workforce, Johannesburg region, 1980-2010 (frequency distribution)

Occupation	1980	2010	Absolute Change 1980-2010	Percentage change 1980-2010
Legislators, senior officials and managers	96,692	399,539	302,847	313
Professionals	148,905	306,441	157,536	106
Technicians and associate professionals	118,393	418,816	300,423	254
Clerks	344,698	516,994	172,296	50
Service, shop and market sales workers	233,622	542,685	309,063	132
(all semi-skilled, white collar workers	578,320	1,059,679	481,359	83)
Craft and related trades workers	510,950	429,387	-81,563	-16
Plant and machine operators and assemblers	325,037	289,042	-35,995	-11
(all semi-skilled, blue-collar workers	835,987	718,429	-117,558	-14)
Elementary [unskilled] occupations	528,748	832,112	303,364	57
Undetermined and Skilled Agriculture	135,149	15,106	-120,043	-89
Total	2,442,194	3,750,122	1,307,928	54

Sources: South African Population Census 1980 and Labour Force Survey 2010

Table 3.9b. Aggregate changes in the occupational distribution of the employed workforce, Johannesburg region, 1980-2010 (frequency distribution)

Occupation	Occupational category	1980		2010		Absolute Change 1980-2010	Percentage change 1980-2010
		Frequency	Percentage	Frequency	Percentage		
Legislators, senior officials and managers Professionals Technicians and associate professionals	High-skill, high-income	363,990	15	1,124,797	30	760,807	209
Clerks Service, shop and market sales workers Craft and related trades workers Plant and machine operators and assemblers	Semi-skilled, Middle-income	1,414,307	58	1,778,108	47	363,801	26
Elementary [unskilled] occupations	Low-skill, Low-income	528,748	22	832,112	22	303,364	57
Undetermined and Skilled Agriculture		135,149		15,106		-120,043	-89
Total		2,442,194		3,750,122		1,307,928	54

Sources: South African Population Census 1980 and Labour Force Survey 2010

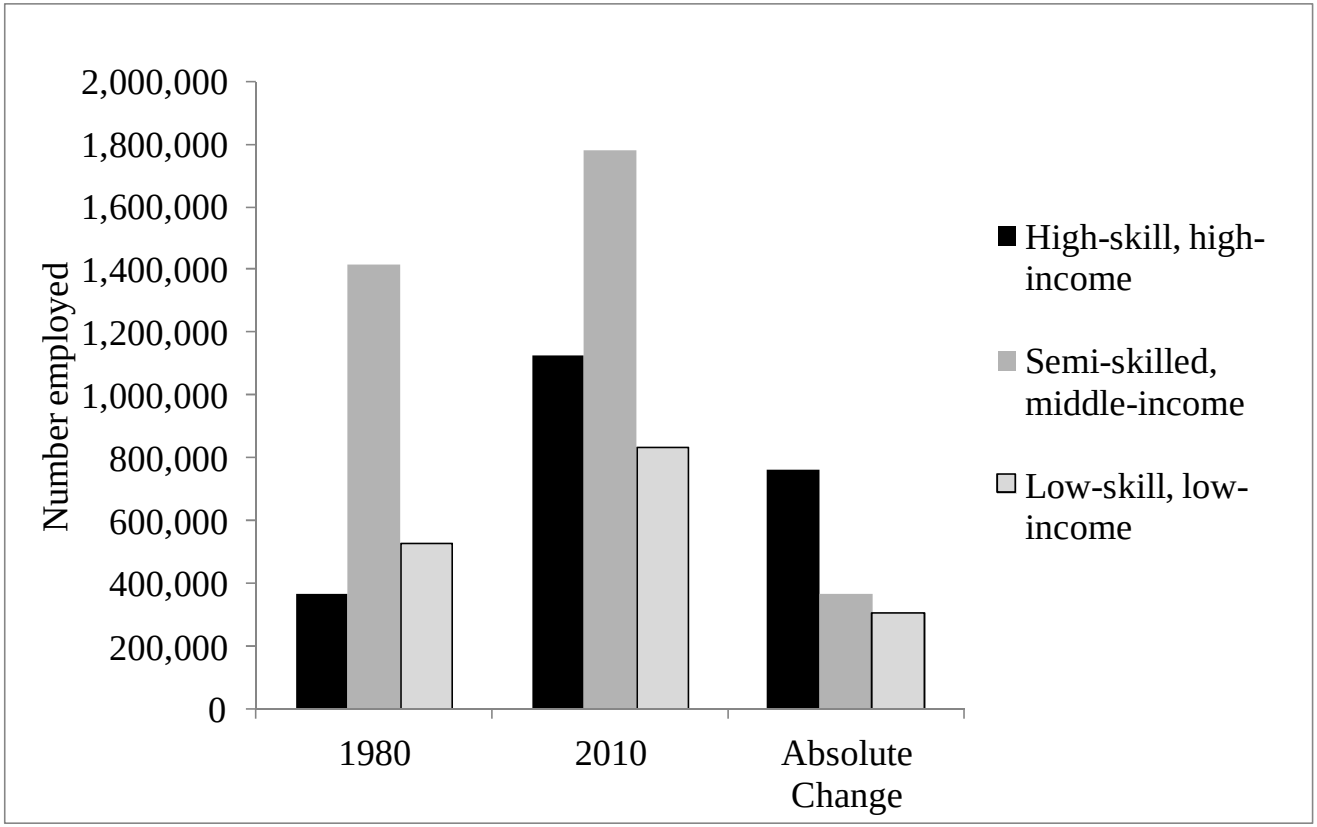

Fig 3.3. Employment by occupational categories in 1980 and 2010 and the change over this period, Johannesburg region

Sources: South African Population Census 1980 and Labour Force Survey 2010

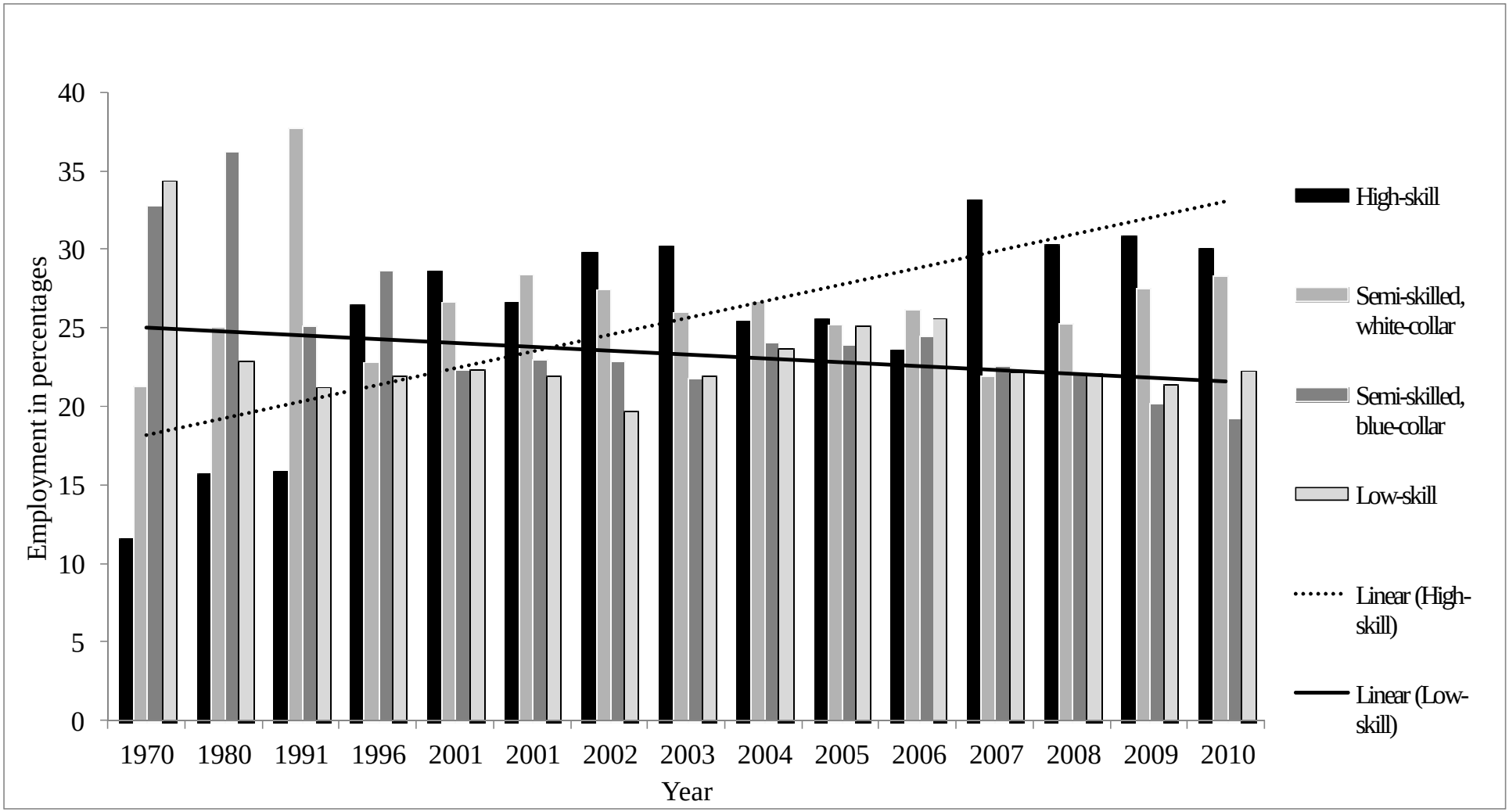

Fig 3.4. Changes in employment per occupational category, Johannesburg region, 1970-2010

Source: South African Population Censuses and Labour Force Surveys (note:from left to right, first 2001 is the Census, second 2001 is the LFS)

These absolute changes in the occupational structure of the employed workforce of the Johannesburg region indicating a tendency towards increasing professionalisation are also reflected in relative terms. The percentage of the employed workforce in elementary/unskilled occupations reached a maximum of 25 per cent in 2005 and 2006 (Table 3.8).[15] For most of the period between 1980 and 2010 though, the percentage employed in unskilled work was between 19 per cent and 22 per cent (Table 3.9b). The trend line (solid line) in Figure 3.4 shows very little change in the percentage of jobs accounted for by unskilled work in this period. Therefore, the percentage of the workforce employed in low-skill, low-pay jobs in the Johannesburg region has remained reasonably constant over time. In contrast, the percentage of high-skill, high-pay workers (managers, professionals, associate professionals and technicians) doubled from 15 per cent in 1980 to 30 per cent in 2010 (Tables 3.7 and 3.8), and the trend line (dotted line) in Figure 3.4 shows a clear increase over time in the percentage of jobs accounted for by high-skill work. So, while the percentage of low-skill, low-pay workers remained constant, and was, in fact, no higher in 2010 than in 1980 in the Johannesburg region, the percentage of high-skill, high-pay workers doubled in the same period. Unskilled employment exceeded high-skill employment in 1980 in both absolute and relative terms: 22 per cent of all employment versus 15 per cent respectively and 528,748 versus 363,990 jobs respectively (Table 3.9b). However, these positions reversed over time, and by 1996, high-skilled employment had already overtaken unskilled employment (564,413 jobs versus 467,392). This trend continued through 2010, with high-skill work constituting 30 per cent of all employment versus 22 per cent for low-skill work (760,087 versus 303,364 jobs respectively, Table 3.9b). Thus, the occupational structure became more professionalised.

This chapter started with evidence of the change in the sectoral distribution of work in the Johannesburg region between 1970 and 2010, the decline in manufacturing employment and concomitant growth of service sector work. In accordance with the social polarisation hypothesis, due to the predominance of semi-skilled, manual, blue-collar middle-income jobs in the manufacturing sector versus the much greater share of high- and low-skill in the service sector in comparison, this change should lead to increased social polarisation, with many more high-skill and low-skill jobs than middle-income jobs. However, the results of the

[15]As the South African Population Census 1970 only sampled 5 per cent of the African population and no weights were calculated for this sample, the 32 per cent employment in elementary/unskilled occupations is most likely an overestimate as a result of this sampling without a correct weight.

analysis of occupational change over the same period do not support this. Why is this the case?

Arguably, one of the main flaws in the polarisation hypothesis is the assumption about the nature of the "typical" job in the manufacturing and service sectors. Manufacturing jobs are assumed to be middle-income, blue-collar, semi-skilled manual jobs in the main while the service sector consists of predominantly either high-skill, high-pay, or low-skill, low pay jobs. However, the evidence does not support this interpretation. Tables 3.10 and 3.11 show the distribution of occupations across the four main sectors of employment for 1980 and 2010: manufacturing, and the three service sectors of wholesale and retail trade, FIRE and business services and community, social and personal services. Historically, the manufacturing sector did have a greater share of semi-skilled middle-income jobs (both white-collar – clerks and service and sales workers - and blue-collar – craft and related trades workers and plant and machine operators and assemblers) than each of the service sectors. In 1980, semi-skilled, white- and blue-collar jobs combined accounted for 449,485 jobs out of a total of 619,680 or 73 per cent of manufacturing employment (Tables 3.10 and 3.11). Not far behind this though was the wholesale and retail trade sector, with 237,489 out of a total 345,023 jobs (69 per cent) in semi-skilled, white- and blue-collar work. Even 82,294 of the 140,805 jobs, or 58 per cent, in the FIRE and business services sector in 1980 were semi-skilled, white- and blue-collar positions (Tables 3.10 and 3.11). However, by 2010, the share of semi-skilled, white- and blue-collar work in manufacturing employment had decreased by 15 percentage points to 58 per cent – on a par with that of the wholesale and retail trade sector (59 per cent); and 45 per cent of jobs in the FIRE and business services sector were still semi-skilled (Table 3.11). Thus, while the manufacturing sector still consisted of mostly middle-income jobs by 2010, this was only by a slender majority and on a par with the wholesale and retail trade sector, one of the biggest employers. Therefore, all major employment sectors, including manufacturing and service sectors, have experienced a relative loss of semi-skilled, white- and blue-collar, middle-income work over time.

However, while the manufacturing sector and all the service sub-sectors other than the community, social and personal services sector showed a relative loss in semi-skilled work between 1980 and 2010, there were considerable gains made in absolute terms in the numbers of semi-skilled, white- and blue-collar jobs in most of these sectors (Table 3.10). In the manufacturing sector, the total number of semi-skilled jobs declined between 1980 and 2010

by 107,884 (Table 3.12). In contrast, the total numbers of semi-skilled workers in each of the service sectors increased in this time, the vast majority in the white-collar, semi-skilled clerical and service and sales jobs. The wholesale and retail trade sector gained 249,673 semi-skilled jobs in total, the FIRE and business service sector 235,260 jobs and the community, social and personal services sector 100,601 of these jobs (Table 3.12). With such large absolute increases, how is it there was a substantial relative decline in semi-skilled, white- and blue-collar work in the FIRE and business services and wholesale and retail trade sectors, and a negligible 1 per cent gain in the community, social and personal services sector?

The answer lies in what happened to the numbers of high-skill, high-pay jobs. Over this same period of time, most of these sectors experienced large increases in the numbers of high-skill managerial, professional, associate professional and technical positions. In comparison to the substantial gains made in semi-skilled employment, the number of high-skill, high-pay jobs in the FIRE and business services sector increased by even more – 247,897 (Table 3.12). Due to the large proportion of the FIRE and business services sector composed of high-skill jobs in 1980 already, the addition of this large a number of jobs between 1980 and 2010 meant that the growth in semi-skilled work in this sector was overshadowed by the total number of high-skill occupations. Therefore, high-skill work increased from the already considerable 33 per cent of all FIRE and business services employment in 1980 to an even more substantial 42 per cent in 2010 (Table 3.11). Thus, the FIRE and business services sector went from an already highly professionalised sector in 1980 to one consisting of an even greater proportion of managerial, professional, associate professional and technical jobs in 2010, due to massive growth in the numbers of these jobs. The increase in number of high-skill, high-pay jobs in the community, social and personal services sector was more than twice the increase in semi-skilled jobs in this sector (224,117 versus 100,601 respectively, Table 3.12). Again, the already substantial base of high-skill jobs in 1980 and the exceptional growth in these jobs between 1980 and 2010 led to the less substantial growth in semi-skilled jobs in this sector being overshadowed (and appearing as less, in relative terms, in 2010 in comparison to 1980). Thus, while high-skill jobs accounted for only a fifth (21 per cent) of all work in the community, social and personal services sector in 1980, by 2010, high-skill jobs represented over a third (36 per cent) of community, social and personal services sector work (Table 3.11).

In the case of the wholesale and retail trade sector, the relative decline in the numbers of semi-skilled, white- and blue-collar jobs is a result of increases in both the high-skill, high-pay professions (100,056), as well as unskilled jobs (139,366, Table 3.12). Due to the massive gains in total number of semi-skilled jobs (249,673, Table 3.12) relative to those in high-skill and low-skill work, the wholesale and retail trade sector did not lose as big a percentage of semi-skilled jobs in comparison to the drop in the manufacturing sector. However, due to the gains in both high and low-skill jobs in this sector, one could argue that it became more polarised between 1980 and 2010, but with greater relative and absolute growth in the low-skill jobs than in the high-skill jobs.

As has been discussed already, all of the main sectors had large gains in high-skill occupations. However, in all except the wholesale and retail trade sector, these gains in high-skill, high-pay occupations were much larger than the increases in low-skill jobs (Table 3.12). Ironically, it is the manufacturing sector that showed the greatest percentage increase in high-skill work. Although high-skill jobs accounted for only 12 per cent of manufacturing employment in 1980, by 2010, this had more than doubled to 27 per cent (Table 3.11) – that is, a gain of 85,294 jobs, in comparison to a gain of only 17,956 low-skill jobs (Table 3.12). Unskilled work in the manufacturing sector increased by only 4 percentage points, from 11 percent in 1980 to 15 per cent in 2010 (Table 3.11). Unskilled work in the FIRE and business services sector increased from 7 per cent in 1980 to 13 per cent in 2010 (Table 3.11), representing 84,867 jobs, in comparison to the nearly 250,000 high-skill jobs gained in this sector during this period (Table 3.12). Low-skill jobs in the community, social and personal services sector increased by a comparable 79,179 positions (Table 3.12). Again though, high-skill work in this sector increased by almost 225,000 jobs (Table 3.12). Therefore, while there was a relative increase in the percentage of high-skill workers of 15 percentage points between 1980 and 2010, there was a relative decline in unskilled workers, from 46 per cent to 37 per cent of jobs in the community, social and personal services in this period (Table 3.11). Therefore, not only most of the major service sectors, but the manufacturing sector too, have become more professionalised, and not more polarised, over time (see Figures 3.5 to 3.8 for a visual representation of the absolute changes in employment in each of the main sectors discussed).

Table 3.10. Occupational category by main sector, Johannesburg region, 1980 and 2010 (frequency distribution)

Occupational category	1980				2010			
	Manufacturing	FIRE and business services	Community Social and Personal Services	Wholesale and Retail Trade	Manufacturing	FIRE and business services	Community Social and Personal Services	Wholesale and Retail Trade
High-skill	76,976	46,929	135,630	46,035	162,270	294,826	359747	146,091
Semi-skilled, white-collar	98,729	76,931	138,476	172,038	77,885	289,477	253568	367,275
Semi-skilled, blue-collar	350,756	5,363	29,901	65,451	263,716	28,077	15410	119,887
(all semi-skilled jobs	449,485	82,294	168,377	237,489	341,601	317,554	268,978	487,162)
Low-skill	69,841	9,924	299,896	54,488	87,797	94,791	379075	193,854
Undetermined and Skilled Agriculture	23,378	1,658	47,453	7,011	723	0	4,716	0
Total	619,680	140,805	651,356	345,023	592,391	707,171	1,012,516	827,107

Source: South African Population Census 1980 and Labour Force Survey 2010

Table 3.11. Occupational category by main sector, Johannesburg region, 1980 and 2010 (percentage distribution)

Occupational category	1980				2010			
	Manufacturing	FIRE and business services	Community Social and Personal Services	Wholesale and Retail Trade	Manufacturing	FIRE and business services	Community Social and Personal Services	Wholesale and Retail Trade
High-skill	12	33	21	13	27	42	36	18
Semi-skilled, white-collar	16	55	21	50	13	41	25	44
Semi-skilled, blue-collar	57	4	5	19	45	4	2	14
(all semi-skilled jobs	73	58	26	69	58	45	27	59)
Low-skill	11	7	46	16	15	13	37	23
Undetermined and Skilled Agriculture	4	1	7	2	0	0	0	0
Total	100	100	100	100	100	100	100	100

Source: South African Population Census 1980 and Labour Force Survey 2010

Table 3.12. Changes in Occupational distribution by main sector, Johannesburg region, 1980 to 2010 (absolute difference)

Occupational category	Absolute difference between 1980 and 2010*			
	Manufacturing	FIRE and business services	Community Social and Personal Services	Wholesale and Retail Trade
High-skill	85,294	247,897	224,117	100,056
Semi-skilled, white-collar	-20,844	212,546	115,092	195,237
Semi-skilled, blue-collar	-87,040	22,714	-14,491	54,436
(all semi-skilled jobs	-107,884	235,260	100,601	249,673)
Low-skill	17,956	84,867	79,179	139,366
Undetermined and Skilled Agriculture	-22,655	-1,658	-42,737	-7,011
Total	-27,289	566,366	361,160	482,084

Source: South African Population Census 1980 and Labour Force Survey 2010

*For a visual representation of these absolute differences by main employment sector, see Figures 3.5 to 3.8

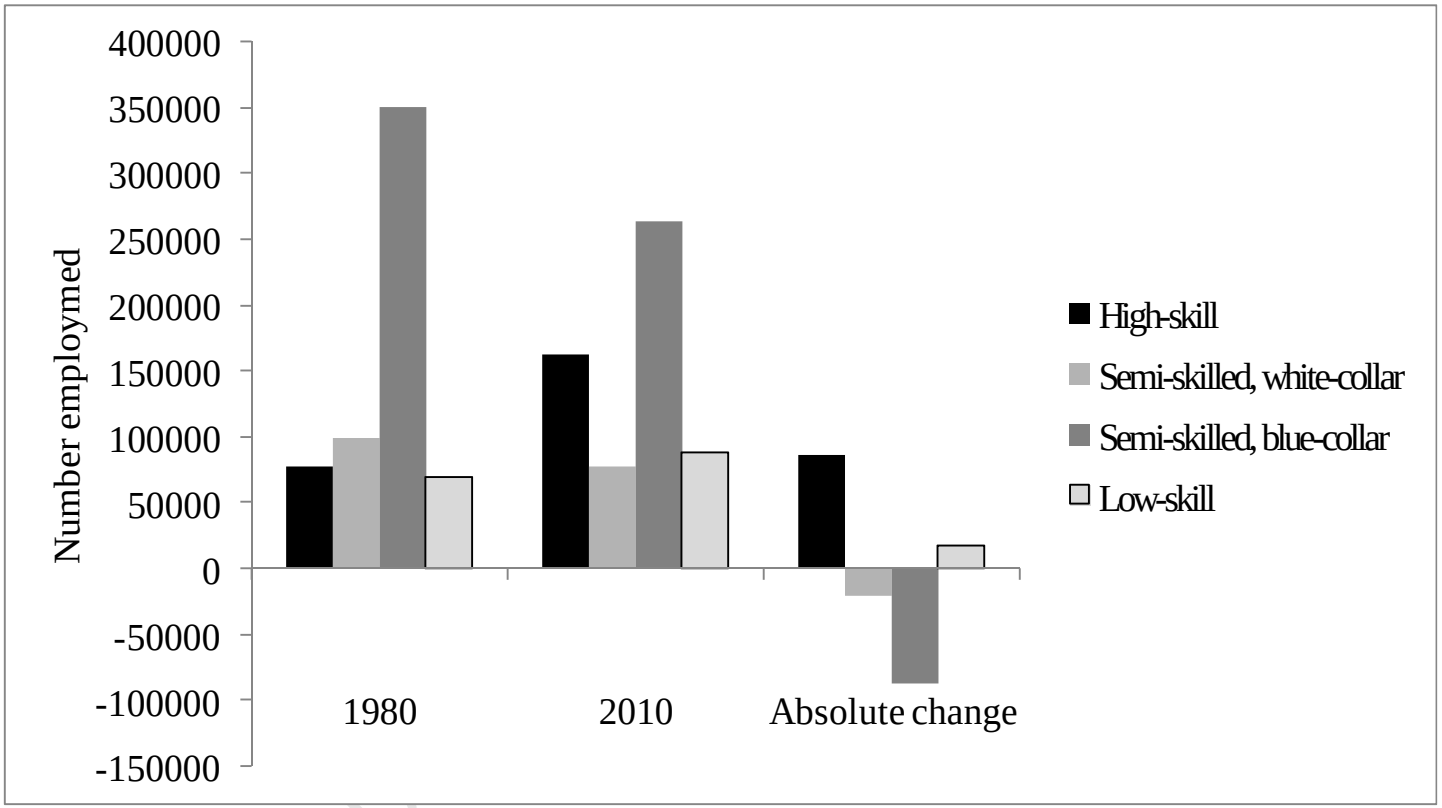

Fig 3.5. Manufacturing sector employment by occupational categories in 1980 and 2010 and the change over this period, Johannesburg region

Source: South African Population Census 1980 and Labour Force Survey 2010

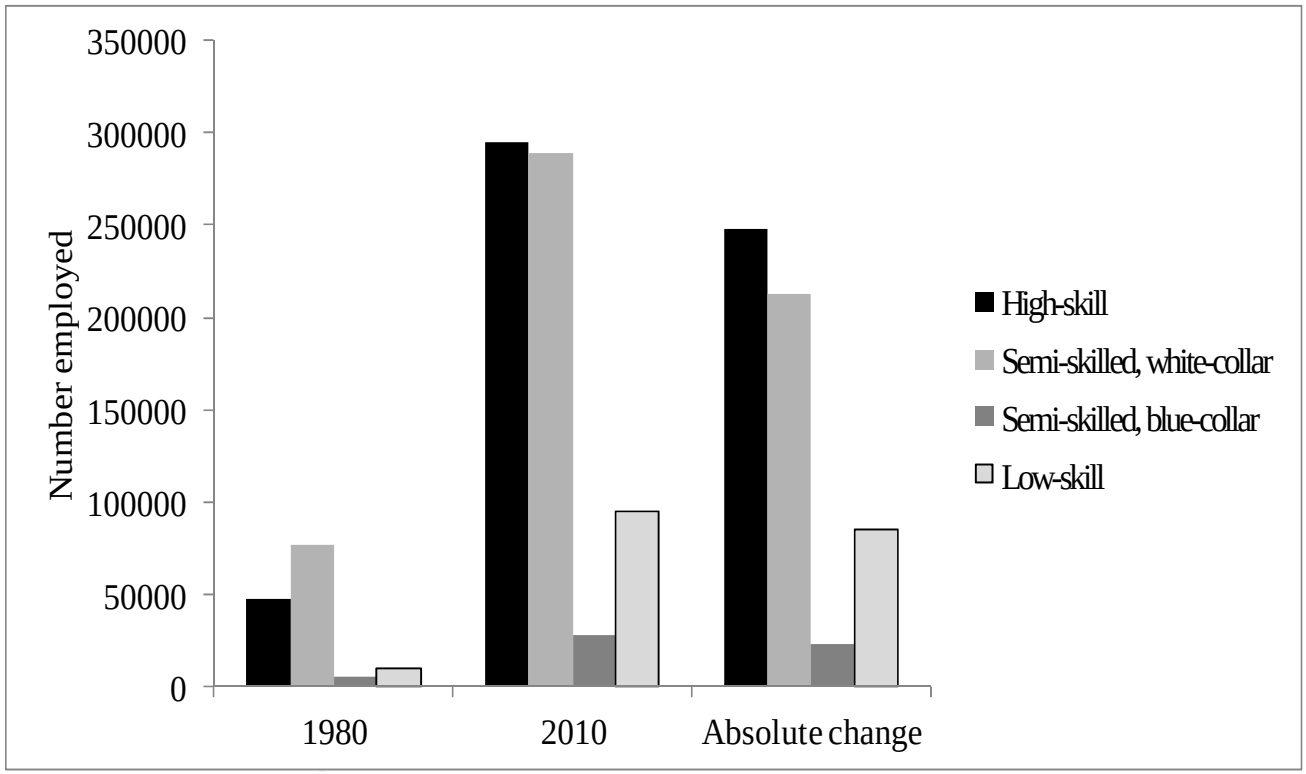

Fig 3.6. FIRE and Business services sector employment by occupational categories in 1980 and 2010 and the change over this period, Johannesburg region

Source: South African Population Census 1980 and Labour Force Survey 2010

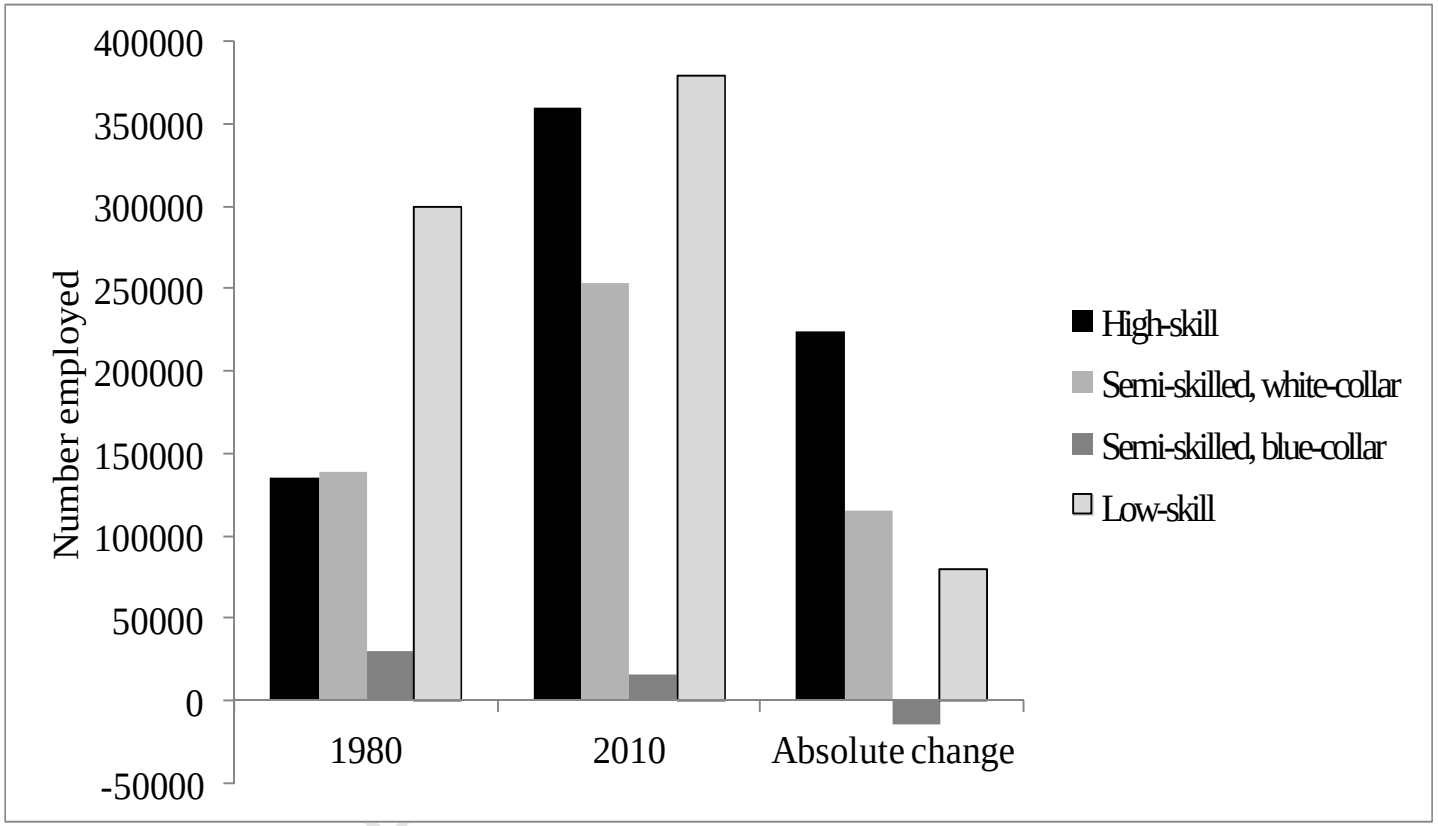

Fig 3.7. Community, Social and Personal services sector employment by occupational categories in 1980 and 2010 and the change over this period, Johannesburg region

Source: South African Population Census 1980 and Labour Force Survey 2010

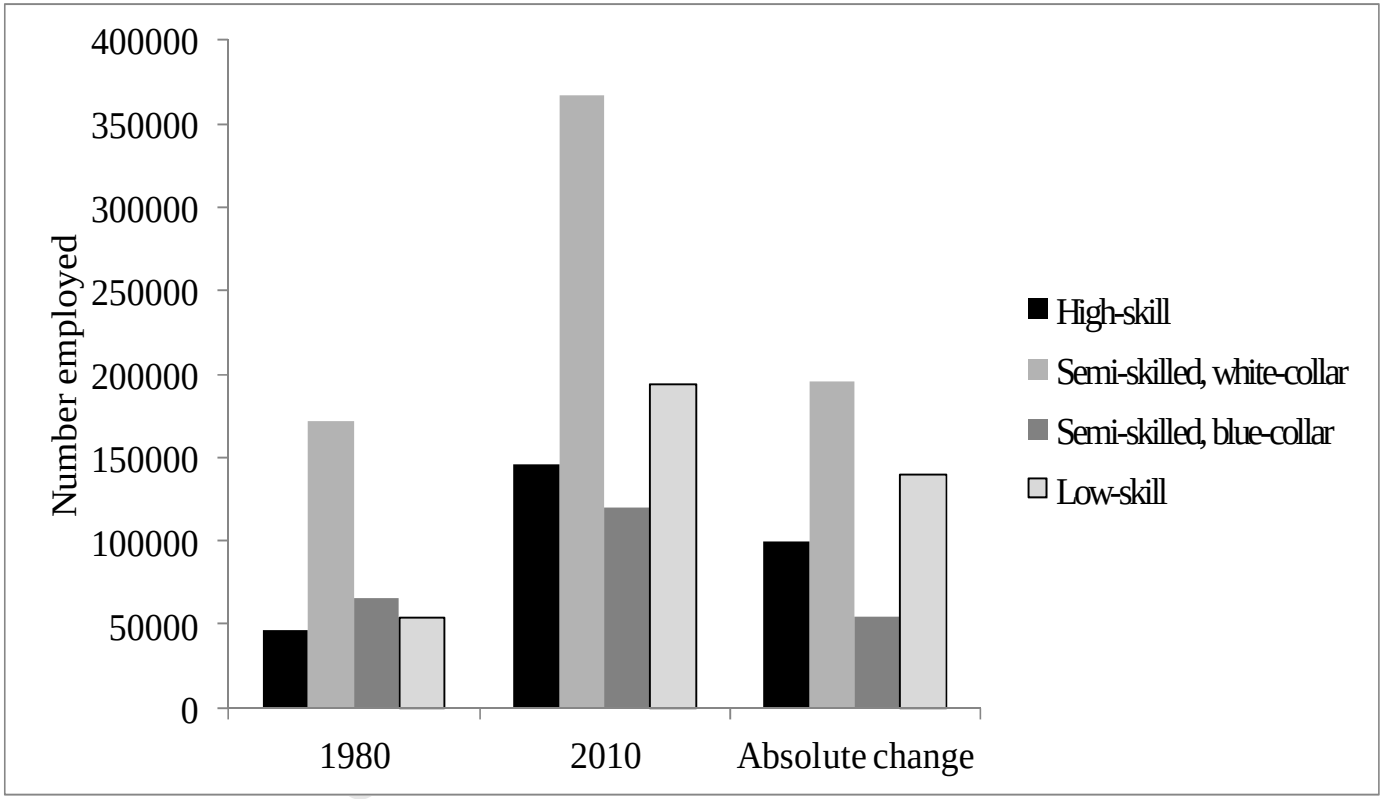

Fig 3.8. Wholesale and Retail Trade services sector employment by occupational categories in 1980 and 2010 and the change over this period, Johannesburg region

Source: South African Population Census 1980 and Labour Force Survey 2010

Despite the fact that the sectoral distribution of employment changed as predicted by the polarisation hypothesis, the occupational distribution of employment did not. Even though employment shifted from the manufacturing to the service sector, the occupational distribution did not tend towards polarisation, but professionalisation. Part of the reason for this is that the service sector, especially the producer services of FIRE and business services, are generally not as polarised as polarisation theorists portray them to be, as shown above. They do not consist only of high- or low-skill occupations, but a substantial percentage of semi-skilled, middle-income jobs. Furthermore, all sectors, manufacturing included, became more professionalised between 1980 and 2010. Thus, while all major employment sectors showed absolute increases in middle-income and low-skill work, these changes were overshadowed by the gains in managerial, professional, associate professional and technical positions, leading to increasing professionalisation.

Shift-share analysis of occupational change between 1980 and 2010

Shift-share analysis: 1980 to 2001

Further evidence of why the decline of employment in the manufacturing sector and the growth of employment in the service sector have not led to increased polarisation can be found in the application of the shift-share method to occupational and sectoral change in the Johannesburg region between1980 and 2010. Briefly, the shift-share method measures how much of the change in the overall occupational structure of the workforce over time is due to changes in the relative sizes of the industries (industry shift effect), changes in the occupational distribution across the industries (occupation shift effect), and the joint effect of industrial and occupational change (interaction shift effect).[16] The net shift is calculated for an occupation, yielding the growth/decline in employment in that occupation independent of total employment growth. A positive net shift is obtained when the occupation grew relatively more than expected and increased its share of total employment, and a negative one when the occupation grew relatively less than expected and its share of total employment decreased between two points in time. This net shift in an occupation is then decomposed into the three components of industry, occupation and interaction shift effects. These three components can

[16] See chapter 2 for a full explanation of the shift-share method.

also be presented as percentages of the net change, where all three shift effects combined, be they positive or negative, add up to 100 per cent. In addition to the directions of the net shifts, it is also worth noting the relative sizes of these shifts. The relative net shift gives the net shift as a percentage of the total in the starting year in the shift-share analysis. Thus, the net shift of 93,160 managers between 1980 and 2001 represents a relative net shift of 96 per cent on the total number of managers in 1980 (96,692).

If, as is asserted in the polarisation theory, the change from the manufacturing industry as the main employer to the majority of employment being provided by the service sector is the main cause for an increase in low-skill and high-skill occupations, then the industry shift effect would be greater than the occupation shift and interaction shift effects for all occupations. The high-skill occupations of managers, professionals, associate professionals and technicians, as well as the low-skill occupations, would show positive net shifts, while crafts and related trades workers, and machine operators and assemblers (typical blue-collar, semi-skilled manufacturing type jobs) would have negative net shifts, with the majority of these changes being attributable to the industry shift effect. However, the results of the shift-share analysis, calculated for the period during which manufacturing employment declined (1980 to 2001) and the period during which it grew again (2001 to 2010), do not show this. Instead, generally the high-skill occupations showed positive net shifts, but mostly due to the occupation shift effect, and not the industry shift effect. Thus, the main driver of the increasing share of high-skill occupations was the occupation shift effect: all industries gained a greater proportion of high-skill workers, not service industries alone. At the other end of the occupational spectrum, the low-skill occupations actually lost share in the period 1980 to 2001, and showed only a relatively small positive net shift between 2001 and 2010. Craft and related trades workers and plant and machine operators and assemblers displayed considerable negative net shifts, and, therefore, a decreased share in the overall occupational structure - even between 2001 and 2010, when manufacturing employment was growing. However, this was not due solely to the industry shift effect (the decline of manufacturing employment) but also the occupation shift effect (a declining share of craft and related trades workers and plant and machine operators and assemblers within each industry). Thus, the results of this shift-share analysis show why deindustrialisation did not result in social polarisation. The results support the argument that the occupational distribution of the Johannesburg region is becoming more professionalised across all sectors, from manufacturing to the service sub-sectors and that the share of low-skill work is growing much

less than that of high-skill work, and then also not exclusively due to the shift to services as the main employer, but, again, also across all sectors.

The high-skill occupations increased their share of the overall occupational structure of the employed workforce of the Johannesburg region between 1980 and 2001, but due mainly to the occupation shift effect, not the industry shift effect. The substantial positive net shifts aside, the relative net shifts are arguably even more impressive, at 96 per cent, 65 per cent and 119 per cent for managers, professional and associate professionals and technicians respectively (Table 3.13). However, counter to the prediction of the polarisation hypothesis, this was not due mainly to the industry shift effect, but the occupation shift effect. The growth of industries that favour the employment of high-skill workers had a relatively small impact on the increasing share of high-skill occupations, as the industry shift effect for managers, professionals, associate professionals and technicians was only 15 per cent, 28 per cent and 15 per cent, respectively. (Table 3.13) Rather, all industries employed growing numbers of high-skill workers; hence, the occupation shift effect accounting for 74 per cent to 89 per cent of the positive net shift in the numbers of managers, professionals, associate professionals and technicians (Table 3.13). Thus, it would appear that the increase in high-skill workers between 1980 and 2001, and therefore the trend of increasing professionalisation, was due mainly to increasing employment of high-skill workers across all industries. This result is counter to that posited by the polarisation hypothesis, namely increasing numbers of high-skill workers due to the shift from manufacturing to services as the main employer.

Low-skill occupations lost share in the overall occupational structure of the Johannesburg region in this time, evidenced in its negative net shift (Table 3.13). However, consistent with the polarisation hypothesis is the fact that the industry shift effect acted counter to this negative net shift and loss of occupational share (-70 per cent, Table 3.13). Thus, the growth of industries that employ low-skill workers actually encouraged an increased share of low-skill occupations. However, the occupation shift and interaction shift effects far outweighed the industry shift effect (56 per cent and 115 per cent, respectively, Table 3.13) thereby leading overall to a decreasing share of low-skill employment between 1980 and 2001. Thus, in part, the general trend of a decreasing share of low-skill work across all sectors led to a lower share of low-skill work in the occupational distribution of the employed workforce of the Johannesburg region between 1980 and 2001.

As one would expect, given the massive decline in blue-collar, semi-skilled employment between 1980 and 2001, craft workers and machine operators and assemblers displayed considerable negative net shifts, and, therefore, a decreased share in the overall occupational structure. However, this was not due solely to declining manufacturing employment and growing service sector employment, as argued by polarisation theorists. The industry shift and occupation shift effects are quite similar: the industry shift effects for craft workers and machine operators and assemblers were 79 per cent and 63 per cent respectively, versus occupation shift effects of 53 and 37 per cent respectively (Table 3.13). Thus, the effect of the decline in the share of blue-collar work across all sectors was comparable to the effect of sector specific manufacturing employment losses. That is, the share of the occupational distribution of typical semi-skilled, blue-collar work declined not only because of the contraction of employment in the manufacturing sector itself, but because of a shrinking share of this kind of work in other sectors as well.

Shift-share analysis: 2001 to 2010

In the following period, 2001 to 2010, despite the growth of employment in the manufacturing industry from approximately 2001 onwards, there was a continuing, and arguably greater, decline in the share of blue-collar work in all industries. Relative net shifts amongst craft workers and machine operators and assemblers were -49 and -47 per cent in the period 1980 to 2001 (Table 3.14). In the following period, the relative net shifts were smaller, but still negative (-20 per cent and -18 per cent respectively). Thus, craft workers and machine operators and assemblers continued to display considerable negative net shifts, and, therefore, decreased shares in the overall occupational structure between 2001 and 2010. As was the case between 1980 and 2001 though, this does not appear to have been solely due to declining manufacturing employment and growing service sector employment, as argued by polarisation theorists, because the occupation shift effects were actually larger than the industry shift effects. Occupation shift effects for craft workers and machine operators and assemblers were 156 and 133 per cent respectively, versus the industry shift effects of 45 and 46 per cent respectively (Table 3.14). Thus, consistent with trends discussed earlier, semi-skilled, blue-collar work continued to lose share in the occupational distribution due mainly to relative losses in all sectors, and not only in specific sectors such as manufacturing.

Table 3.13. Decomposition of changes in the occupational structure of the employed workforce, Johannesburg region, 1980-2001

Occupation	Net Shift	Components of Net Shift (absolute)			Components of Net Shift (percentage)			Relative Net Shift
		Industry Shift Effect	Occupation Shift Effect	Interaction Effect	Industry Shift Effect	Occupation Shift Effect	Interaction Effect	
Managers	93,160	14,318	82,882	-4,040	15	89	-4	96
Professionals	97,244	27,499	71,896	-2,152	28	74	-2	65
Technicians	141,273	21,860	123,554	-4,141	15	87	-3	119
Clerks	-31,556	115,474	-69,719	-77,311	-366	221	245	-9
Sales workers	54,638	33,612	96	20,929	62	0	38	23
Craft workers	-249,165	-198,032	-132,863	81,729	79	53	-33	-49
Operators	-151,844	-96,342	-56,574	1,072	63	37	-1	-47
Unskilled	-33,945	23,911	-18,912	-38,944	-70	56	115	-6
Skilled agricultural/Other	80,196	57,699	-361	22,858	72	0	29	59

Source: South African Population Census 1980 and 2001

Table 3.14. Decomposition of changes in the occupational structure of the employed workforce, Johannesburg region, 2001-2010

Occupation	Net Shift	Components of Net Shift (absolute)			Components of Net Shift (percentage)			Relative Net Shift
		Industry Shift Effect	Occupation Shift Effect	Interaction Effect	Industry Shift Effect	Occupation Shift Effect	Interaction Effect	
Managers	87,352	-10,349	184,728	-87,027	-12	211	-100	37
Professionals	94,551	165,547	67,870	-138,866	175	72	-147	58
Technicians	-28,618	-63,088	-69,333	103,802	220	242	-363	-8
Clerks	34,861	63,465	181,969	-210,573	182	522	-604	9
Sales workers	-12,133	-68,628	-104,022	160,518	566	857	-1323	-3
Craft workers	-75,633	-33,766	-118,024	76,158	45	156	-101	-20
Operators	-44,822	-20,629	-59,750	35,556	46	133	-79	-18
Unskilled	30,526	-58,461	-17,243	106,230	-192	-56	348	5
Skilled agricultural/Other	-86,085	25,908	-66,195	-45,799	-30	77	53	-111

Source: Labour Force Survey 2001 and 2010

Between 2001 and 2010, as one would expect given the trend towards increasing professionalisation shown already in this chapter, most of the high-skill occupations continued to increase their share of the overall occupational structure of the employed workforce of the Johannesburg region, as evidenced in their substantial positive net shifts. The relative net shift for managers was 37 per cent and 58 per cent for professionals (Table 3.14). Again, consistent with the professionalisation theory and counter to the prediction of the polarisation hypothesis, the increased share of managers was not due mainly to the industry shift effect, which was -12 per cent, but the occupation shift effect, which was a considerable 211 per cent (Table 3.14). Thus, as was also shown earlier in this chapter, most industries employed more managers between 2001 and 2010. In the case of the increasing share of professionals, the industry shift effect for this high-skill occupation group was 175 per cent versus only 72 per cent for the occupation shift effect (Table 3.14). Thus, professionals increased their share of the overall occupational structure due more to the growth of industries that favoured the employment of professionals than to an overall increase in their numbers across all industries – a prediction consistent with the polarisation hypothesis. Contrary to both hypotheses though, the share of technicians declined in this period, evidenced in a negative net shift, a decline apparently almost evenly contributed to by both industry and occupation shift effects (220 per cent and 242 per cent respectively, Table 3.14). However, the relative net shift is only -8 per cent, thus this was arguably not a strong tendency towards declining share of the occupational structure.

While low-skill occupations did increase their share in the occupational structure of the Johannesburg region between 2001 and 2010, evidenced in a positive net shift, the relative net shift of only 5 per cent indicates that this was not a strong trend (Table 3.14). However, contrary to the predictions of the polarisation hypothesis is the fact that the industry shift effect acted counter to this positive net shift. The interaction shift effect far outweighed this counter industry shift effect though (348 versus -192 per cent respectively, Table 3.14), thereby leading to an increasing share of low-skill employment between 2001 and 2010. Thus, the joint effects of industrial and occupational change led to an increase in the relative numbers of low-skill workers.

However, overall, the positive relative net shifts of the high-skill occupations are larger and more significant than those of low-skill jobs. Not only is this consistent with an increasingly professionalising workforce. More importantly, this was not exclusively due to the shift to

services as the main employer (industry shift effect), but also across all sectors in general (occupation shift effect). Between 1980 and 2001, the relative net shift amongst managers was 96 per cent, amongst professionals, 65 per cent, and 119 per cent for associate professionals and technicians (Table 3.13). In contrast, the relative net shift for unskilled/low-skill workers was -6 per cent. Between 2001 and 2010, the relative net shift for managers and professionals was 37 per cent and 58 per cent respectively (Table 3.14). Technicians showed a negative relative net shift, but of only -8 per cent. In this period, low-skill work increased and there is a positive relative net shift, but it is only 5 per cent. Thus, the relative net shifts amongst high-skill workers were far more significant than those amongst low-skill workers. In addition, the results of these shift-share analyses support the findings shown earlier in this chapter that most of the increase in high-skill workers was due to increasing numbers of managers, professionals, associate professionals and technicians across all industries (occupation shift effect). This greater increase in high-skill work than low-skill work due to changes in the entire occupational structure, regardless of industry, is consistent with the professionalisation hypothesis. Contrary to the polarisation hypothesis, the numbers of high-skill and low-skill jobs did not increase equally, and the occupational changes were not due mainly to increasing employment in the service sector (industry shift effect).

Chapter 4: The Role of Migrants in Social Polarisation

A brief overview of migration in South Africa

African migration

During the height of Apartheid, many measures were implemented to limit the numbers of Africans in the cities (Hindson, 1987; Posel, 1991). These included influx control and relocation of people, in particular, returning them to the homelands which had been created to be their permanent places of residence (Lipton, 1989). Not only internal migrants were affected by this. African migrants from the rest of the continent were also barred from settling in South Africa permanently. Thus, Apartheid affected not only the patterns of internal migration in South Africa, but those across the whole of Southern Africa (Kok, Gelderblom and van Zyl, 2006a).

In the early 1900's, very few Africans lived in urban areas (Gelderblom and Kok, 1994). Prior to the 20th century, many Africans had been subsistence farmers (Portes, 1978). This self-sufficient economy was destroyed by the establishment of protectorates and the imposition of hut taxes on African farmers. Thus, Africans were forced to enter the cash economy (Savage, 1986). Some African farmers sold excess produce to generate income. However, dwindling opportunities to do so, land expropriations and discriminatory policies such as subsidies in favour of white farmers resulted in most Africans eventually having no alternative but to migrate to urban areas to find work (Lipton, 1989; Portes, 1978). Thus, while many Africans had lived on largely white-owned farms and in the Reserves (later "homelands"), the end of share-cropping and the labour-tenancy system on white farms, as well as increasing mechanisation of farming, instigated the migration of Africans from the farms to the cities (Kok, et al., 2006a).

Very few work migrants could take their families to the cities (Lipton, 1989). Those African families who had been living on white-owned farms also had to migrate to a new place to live. Most moved to the reserves, which, during segregation and Apartheid were continually expanded to provide more land to accommodate the growing African population (Kok, et al.,

2006a). Thus, African men would work in the cities, and remit their incomes to their families in the reserves where there was, on the whole, no work to supplement the meagre remittances from the breadwinners in town and transfer payments from the state.

Many African men went to work in the gold mines of the Witwatersrand (Portes, 1978). The discovery of gold on the Witwatersrand in 1886 cemented the migrant labour system that had started on a much smaller scale on the diamond mines of Kimberley 16 years earlier (Trapido, 1971; Van der Horst, 1971). Thus, South Africa's Apartheid-era labour requirements for the mines was in large part the motivation behind the creation of the reserves, both in South Africa, and in neighbouring African countries (Adepoju, 2006). Because such a large supply of cheap labour to extract low-grade gold ore in very deep mines was needed, employers started to recruit beyond South Africa's borders as well (Breytenbach, 1979). Outside of South Africa, employment agencies recruited unskilled labour from Botswana, Lesotho, Swaziland, Malawi, Mozambique and Zimbabwe.

Failing economies in the reserves left many African men with few choices but to urbanise to work in the ever growing mining and manufacturing sectors (Seekings and Nattrass, 2005). Thus, by the 1940's, the scale of African urbanisation had resulted in a housing shortage in Johannesburg (Crankshaw and Parnell, 2004). In response, the government provided a large amount of low-cost housing during the 1950's and 1960's for Africans (Lipton, 1989). Throughout this, the government continued with forced removals and other forms of control over African urbanisation. Even with these controls in place, the government granted permanent urban status to a substantial number of African families (Hindson, 1985). As a result, by 1960, 31 per cent of the African population of South Africa had urbanised (Wentzel and Tlabela, 2006).

All workers, whether native or foreign born, were allowed to stay in the urban areas for a specified period of time only, while strict influx control laws prohibited their families from relocating to the cities (Lipton, 1989). In addition, it became compulsory for migrant workers to return to their place of origin a minimum of once a year (Platzky and Walker, 1985). Thus, circular or oscillatory migration was systematically engineered by law. Once their contract was up, workers had to return to their families in the reserves, thereby greatly reducing the financial burden on the South African government and employers with regard to the welfare and other costs of maintaining a workforce (Malan, 1985; Portes, 1978;). Thus, for migrant

workers, there was continuous movement between their families in the rural areas of the Bantustans and the (usually) all-male mining barracks of the urban areas (Trapido, 1971).

During the 1970's, mechanisation programmes, rationalisation policies and a general decline in the growth of labour demand resulted in increasing levels of unemployment in South Africa (Adepoju, 2006; Seekings and Nattrass, 2005). This prompted the government to institute laws forcing the mines to give South African Africans preference of employment over foreign Africans (Wentzel and Tlabela, 2006). By 1986, influx control had been abolished and Africans were allowed to settle in the cities (Posel, 2009). However, foreign Africans still did not have the benefit of residential rights in South Africa, and many South African workers preferred to leave their families in the homelands. More current research indicates that Africans still choose to leave their households and migrate temporarily for purposes of work (Mabin, 1990). Thus, the migrant labour system has persisted.

In South Africa today, other than contract mine migration, documented circular migrants and undocumented migrants, international African migrants include skilled immigrants, consisting of highly-skilled, professional, semi-professional, managerial and technical workers (Wentzel and Tlabela, 2006). Under Apartheid, the only African people allowed into South Africa were temporary farm and mine labourers, and professionals who settled in the homelands (Kok, et al., 2006a). Since the late 1980's, many more African professionals from the rest of Africa have been attracted to South Africa; so much so, that some now talk of a "brain drain" from the rest of Africa to South Africa (Wentzel and Tlabela, 2006). However, arguably a substantial brain drain from the rest of the continent has been stanched by the arduous process immigrants now face to secure work permits or permanent residency visas in South Africa (Crush, 1999).

A relatively newer trend throughout Africa is the migration of women (Adepoju, 2006). As their husbands lose their jobs, incomes become more irregular, and rural living and working conditions worsen, women are migrating to urban areas in ever increasing numbers. Cities offer education, training and employment options for women they often cannot access from the rural areas. With the expansion of employment opportunities in cities, the prospects of educated women in particular have improved (Adepoju, 2006). In South Africa specifically, pre-1920, African women migrated to the cities predominantly following their husbands (Anderson, 2006). However, later, growing numbers of women migrated for economic

reasons. Ironically, even though they were not the targets for recruitment, the economic depression in the homelands in South Africa drove many African women to become domestic workers in white households (Anderson, 2006). These migrant African women as a group also became more diverse, not confined to married women, but including the divorced, widowed, childless and single (Cockerton, 1997).

Other migrants

Problems in the agricultural sector such as deficient farming techniques, depression and drought in the late 1800's led many Afrikaners to abandon farming and move to the towns (Wentzel and Tlabela, 2006). Thus, by 1936, approximately half of all Afrikaners were urbanised (Giliomee, 2003). However, many of them were poor; a problem the government addressed via the civilised labour policy by making them state employees. Other solutions to the "poor white" problem were public works programmes and job reservation. Parastatals were also forced to institute the civilised labour policy and eventually the private sector came under pressure to do the same. These actions remedied unemployment amongst Afrikaners and facilitated their urbanisation (Gelderblom and Kok, 1994; Giliomee, 2003).

In terms of white international migration, different strategies have been adopted at different times throughout South African history. In 1948, the National Party controlled government discouraged the immigration of white Europeans in order to consolidate white Afrikaner power (Anderson, 2006). However, by 1960, concerned about the shrinking proportion of the population that was white, the government began actively encouraging white immigration by means of subsidies and recruitment (Brown, 1987).

Revisiting the views on migrants and their role in increasing social polarisation

Most authors agree that global cities are points of concentration for the producer services vital to managing global financial systems and the high-skill, high-pay workers that perform these tasks. If this was the only phenomenon in question though, there would likely be an indisputable trend towards professionalisation and no debate about increasing polarisation. Many authors argue that world cities also attract large numbers of poorly-educated, unskilled rural immigrants to service these strategic sectors in ever-increasing numbers of low-skill, low-wage service jobs.

Some scholars argue that immigration to world cities is inextricably linked to the growth of the service sector, with its preponderance of high-skill, high-pay and low-skill, low-pay jobs. They assert that the high levels of migration to the US, both in the past and at present, can be explained only by the increased supply of low-wage jobs generated by major growth sectors such as personal services. Thus, arguably, many polarisation theorists view immigrants as part of the cause of social polarisation in that they provide the unskilled labour necessary to fill the growing numbers of low-skill, low-pay service sector jobs. These scholars maintain that immigrants are greatly over-represented amongst low-skill, low-pay workers. Much of this demand is argued to be from high-pay professionals with disposable income but no time to maintain their households. Thus, it is argued, they employ low-skilled immigrants, especially women, who are paid very low wages to clean their houses, care for their children and complete other domestic tasks (Baum, 1997; Chiu and Lui, 2004; Esping-Anderson, et al., 1993; Gordon and Sassen, 1992; Gu and Liu, 2002; Sassen, 1991).

In contrast to these views, other scholars contend that in most of Western Europe, the changes to the occupational structure point towards professionalisation, along with growing numbers of unemployed and economically inactive, rather than polarisation with a large, low-pay service class posited for the United States. Here the argument is two-fold, revolving around the nature, as well as the levels, of immigration. These scholars maintain that different immigrant communities, with their divergent histories and differing degrees of social capital, each has a different experience with regards to finding employment in world cities. Certain ethnic immigrant groups prosper in specific occupations, and some in others (Bailey and Waldinger, 1991; Cross and Waldinger, 1992; Hamnett, 2003). Thus, they argue there is no one standard employment trajectory for immigrants in world cities. The scale of immigration is also a point of contention. Many argue that the great and ever growing numbers of unskilled immigrants with poor job prospects and limited access to welfare benefits provide a large pool of cheap labour in the US. However, they dispute that this is the case in other countries, especially in Europe. Therefore, the employment outcomes for immigrants may also depend on the scale of immigration to a particular world city (Cross and Waldinger, 1992; Hamnett, 1994a, 1994b, 1996, 2003; Harloe and Fainstein, 1992).

The role of migrants in social polarisation: evaluating a sample of evidence

Baum (1997) states that of the total resident labour force in Sydney in 1991, 30 per cent were born outside of Australia. Thus, he contends, the occupational distribution of this foreign-born labour force has important implications for social polarisation. Baum (1997:1898) even talks of the "causal link between migration and social polarisation", without defining this "causal link" though. However, he argues that recently-arrived migrants tend to be over-represented in lower-skilled, lower-paid occupations. He states that despite the emphasis on skilled migration to Australia, migrants tend to "fill places at the bottom of the occupational ladder", the "lower-paid entry-level jobs which have been rejected by the native-born population" (Baum 1997: 1898 and 1897). Baum (1997:1899) reiterates "the link between migration, social polarisation and the occupational structure". Thus, arguably the implication here is that immigration contributes to polarisation by providing the workers for the increasing number of low-skill, low-wage service jobs, while natives fill the increasing number of high-skill, high-pay occupations. As evidence of this "causal link" between migration and the increasing social polarisation he maintains is occurring in Sydney, he offers the following data:

1. The percentage of plant and machine operators and drivers, as well as labourers and related workers is higher amongst newly-arrived immigrants (those who arrived between 1981 and 1991) than amongst those who were born in Australia (approximately 26 per cent versus 14 per cent) (Table 4.1).
2. The percentage of managers, professionals and para-professionals is lower amongst recent migrants than natives (28 per cent versus 33 per cent).

Thus, the implication is that while native Australians hold ever-increasing numbers of high-skill, high-pay jobs (the managers, professionals and para-professionals), recent migrants are over-represented in the lower-skill, lower-paid jobs (the plant and machine operators and drivers and labourers and related workers), thereby leading to increasing social polarisation.

Table 4.1. Occupation by migrant status, Sydney, Australia (percentage distribution)

Occupational group	Australian-born	Overseas-born arrived prior to 1981	Overseas-born arrived 1981-1991
Managers and administrators	11	12	9
Professionals	15	13	13
Para-professionals	7	6	6
Trades persons	13	14	13
Clerks	19	15	15
Sales and personal services workers	15	12	12
Plant and machine operators and drivers	5	8	9
Labourers and related workers	9	14	17
Inadequately described and not stated	5	7	8
Total*	100	100	100

Source: adapted from Baum (1997)
*Pease note: original data presented to one decimal place, which have been rounded up here.

However, plant and machine operators and drivers are arguably not low-skill, low-wage occupations, but rather, semi-skilled, medium-income ones. Borel-Saladin and Crankshaw (2009) argue that middle-income jobs have been misclassified as low-income jobs in much of the polarisation literature. Thus, they contend, the blue-collar, semi-skilled occupations such as the plant and machine operators and drivers Baum refers to should actually be classified as middle-income jobs. In fact, earlier in the same paper, Baum (1997) portrays the occupations of plant and machine operators and drivers this very way: as middle-income manufacturing jobs in decline due to deindustrialisation. This assessment is even supported by the income data he presents. He therefore contradicts himself when considering the impact of migration on the occupational structure of Sydney by referring to this occupational group as lower-skilled and lower-paid. If these plant and machine operator and driver jobs are, arguably, correctly viewed as semi-skilled, middle-income jobs, then one reaches a different conclusion about the impact of immigration on polarisation in Sydney. Baum's argument about increasing numbers of migrants being over-represented in jobs "at the bottom of the occupational ladder" only holds if these are low-skill, low-pay jobs. Therefore, if these jobs are semi-skilled and middle-income, increasing numbers of migrants working in them does not contribute to increasing social polarisation.

Moreover, these are not the only semi-skilled, middle-income jobs misclassified as low-skill low-income occupations by Baum. Clerks and service and sales workers are also often

misclassified as low-skill, low-income jobs.[17] In offering evidence for the increasing polarisation of occupations in Sydney, Baum (1997) makes the point that the only occupational groups to grow were the managers, professionals and para-professionals on one hand, and the sales and personal service workers on the other. He considers the service and sales workers to be low-skill, low-pay jobs, and their increasing numbers to intensify social polarisation. Yet, he ignores these occupations when discussing the role of immigrants in this supposed increasing polarisation in Sydney. Why would this be, if, as he claims, migrants are concentrated in low-skill, low-wage occupations? The reason for this may be that the data appear to contradict his argument. The group with the highest percentage of sales and personal service workers is neither older nor newer migrants (both 12 per cent), but those born in Australia (15 per cent) (Table 4.1). If these occupations are as Baum claims low-skill, low-pay, and "recently arrived migrants are over represented in lower-skilled, lower-paid occupations" (Baum, 1997:1897), one would expect sales and personal service work to form a much more substantial proportion of the migrant workforce's occupational distribution. If, however, one views these as semi-skilled, medium-income jobs, then the similarity of the percentages of these jobs between natives and migrants again does not support the contention that migrants occupying mostly low-skill, low-wage jobs.

The data in support of the argument for ethnic immigrant women being marginalised in domestic and personal service work in Sydney are also problematic. Baum (1997) asserts that there is evidence of a burgeoning household service economy in Australia, fuelled by the employment of poorly-paid, unskilled, foreign domestic servants, many of whom are women. On the evidence for Sydney, he states that 1991 census data indicate that 500 people were involved in domestic services work, 60 per cent of which were women. He argues that this is a significant increase since 1986. This would mean that 301 women were engaged in domestic work in 1991 out of an employed workforce of 2,896,400, or 0.01 per cent of the working population.[18] Even if this figure is an underestimate, and there is a large underground personal services sector in Sydney, as Baum argues, how significant a factor can woman immigrant employment in domestic services really be in increasing social polarisation in Sydney? Baum (1997) also gives domestic and personal service worker figures for the whole of Australia for 1991. These figures show that 13,000 people were employed in domestic services in private homes, with a further 134,000 people in personal service occupations. It is suggested that a large proportion of these also consists of migrant women. Again, the significance of these numbers in comparison to the whole population is questionable, and 147,000 workers in total does not appear to be a large number in the context of the total employed workforce of Australia. Arguably then, this is not the best evidence for the claim that increasing immigration, especially of poor, unskilled women, has a significant impact on social polarisation.

A more recent critique of Hamnett argues that while his assessment of immigration to Britain in the 1990's may have been accurate, it is now out-of-date and no longer accurately reflects

[17] See discussion in chapter 2.
[18] This total workforce calculated as the sum of each occupation group in 1991 (Table 2, pg 1886) as well as the "other" occupation group (Table 5, pg 1892) in Baum (1997).

the economic position of migrants. May, et al., (2007) contend that due to labour shortages, British migration laws were changed to allow greater numbers of not only highly skilled, but also unskilled workers into the country. They argue that due to a process of managed migration, where unskilled migrants are afforded only temporary admission rights to the country and no welfare benefits, the number of unskilled foreign-born workers in low-skill, low-wage jobs in London has increased. Thus May, et al., (2007) contend that London is becoming increasingly polarised, with new migrants disproportionately represented amongst low-skill jobs, representing a new "reserve army of labour" (May, et al., 2007:162).

Again though, the data in support of this argument are problematic. First, in terms of the growth of low-skill, low-wage jobs, the authors refer to a "small but significant rise in the proportion of low-paid jobs" (May, et al., 2007: 152). However, the graph they present shows only a 13 per cent to 14 per cent rise in jobs in the lowest income decile, versus 70 per cent and 84 per cent increases in the number of jobs in the top two income deciles respectively. Thus the increase in low-wage jobs hardly seems significant, and certainly not in comparison to the increases in high-skill, high-pay jobs.

The greater problem perhaps is with the data used to draw the conclusion of a "new migrant division of labour" with "an extraordinary preponderance of migrants in parts of London's low-paid economy" (May, et al., 2007: 155 and 158). The data are drawn form a survey of 341 migrants working in four specific sectors in London known to employ high numbers of low-wage workers. Respondents were selected utilising the help of trade unions, through snowballing and some were "randomly" selected, that is, approached on the street outside their places of work (thus, not technically randomly sampled at all). Targeting certain sectors and using these methods of finding respondents, it is perhaps not surprising that the authors find such a disproportionate representation of foreign-born migrants in low-wage jobs in London. As May, et al., (2007: 158) state: "The relatively small number of people interviewed, the limited number of sectors investigated and mixed sampling frame mean that we cannot claim the data are representative of low-paid employment in London as a whole." Given these constraints, arguably the authors cannot make quantitative claims about London's workforce from these data.

Earlier in the same paper, May, et al., (2007) give data from other studies that show that while foreign-born migrants form 35 per cent of London's working-age population, they are employed in 46 per cent of London's elementary occupations. While this does support the contention that migrants are over-represented in low-skill, low-wage work, approximately 11 per cent is arguably not a large degree of over-representation, and certainly does not support the argument of the rise of a "new migrant division of labour" with migrants being confined to low-skill, low-wage service sector work.

Dustmann, Fabri and Preston (2005) use occupational and educational data to argue that unlike the US with its large contingent of unskilled immigrants, migrants to Britain are more similar to native Britons in terms of educational and skill levels. First, using British Labour Force Survey data for the year 2000, they compare the educational levels of native-born

workers, immigrants and recent immigrants (those who entered Britain between 1991 and 2000). Educational qualifications are divided into low (no formal qualification), intermediate (up to O-levels or equivalent) and advanced (A-levels or college/university degree). While they concede that the percentage of native-born workers with advanced education is higher than in the two groups of migrants, they also point out that both groups of migrants have higher percentages of intermediate education than the native-born workers. Percentages of low education are very similar amongst all three groups. Thus, they conclude, migrants to Britain have a similar educational background to native Britons.

While some of the disparities in the educational levels are more significant than Dustmann, et al. (2005) acknowledge, I would argue that more importantly these data show that immigrants are not mostly uneducated, low-skilled workers. There is a 21 per cent difference between the percentage of native-born and recent immigrants with advanced education (Table 4.2). The difference between these two groups is again quite stark when considering their levels of intermediate education (a 23 per cent difference in favour of recent immigrants). These are not small differences, and I would question the conclusion that the educational background of native-born and immigrant workers to Britain are "fairly similar" (Dustmann, et el., 2005:330). However, there is a similar percentage of workers with low education amongst natives and immigrants (17 and 18 respectively), and a slightly lower percentage even amongst recent immigrants (15 per cent) (Table 4.2). Furthermore, 55 per cent of recent immigrants have an intermediate education and 30 per cent have advanced education. Thus, immigrants are by no means overwhelmingly uneducated and unsuitable for any work other than low-skilled service sector jobs, as many who support the polarisation hypothesis would contend.

Table 4.2. Educational and occupational distribution, Immigrants and natives

Education	Advanced education	Intermediate education	Low education	Total
Natives	51	32	17	100
Immigrants	42	3	18	100
Recent Immigrants	30	55	15	100

Occupation	Skilled*	Semi-skilled†	Unskilled‡	Total
Natives	25	40	36	100
Immigrants	31	36	33	100
Recent Immigrants	31	36	32	100

Source: adapted from Dustmann, Fabri and Preston, 2005.

*Those with highest hourly wages, including employers and managers, professionals and the armed forces.

†Includes intermediate and junior non-manual workers, and foremen and supervisors.

‡Includes farmers and farm workers, manual workers and personal service workers.

Pease note: original data presented to one decimal place, which have been rounded up here.

The occupational data (second half of Table 4.2) presented by Dustmann, et al. (2005) are much more consistent with the argument that immigrants' skill distribution is similar to that of native Britons. Also, as they argue, the similarities between the three groups are much stronger in the skill distribution than the educational distribution. The greatest difference is between natives and recent immigrants in terms of skilled work. Even then, they are separated by approximately 6 per cent only (Table 4.2). Amongst the other skill categories, the difference between any two groups is no greater than 4 per cent. Arguably, these data are well chosen in support of the authors' claim that immigration to Britain has not led to a massive increase in unskilled or low-skilled labour (Dustmann, et al., 2005).

Employment patterns amongst migrants and natives in the Johannesburg region

Bearing in mind the critique of data presented above, as well as the arguments around the effects of immigration on social polarisation in cities throughout the world, I have endeavoured to utilise the best available data to answer the question of the possible role of migrants in any polarising tendencies there may exist in the occupational distribution of the Johannesburg region.

Briefly, the argument I will make here is that migrants have a very similar occupational distribution to natives. While migrants are slightly under-represented in high-skill work in comparison to natives, and slightly over-represented in unskilled work, these differences are arguably not as large as polarisation theorists would have expected. In addition, migrants also have a similar educational profile to that of natives. Thus, migrants are well represented in high-skill, high-pay and semi-skilled, middle-income work and not overwhelmingly uneducated and marginalised in low-skill service sector work.

In considering the opposing theories about the impact of migration on social polarisation with regard to the Johannesburg region, it is important to establish the scale of migration first.[19] As the core of South Africa's economy and the country's centre of trade with rest of Southern Africa and beyond, the Johannesburg region has long attracted migrants from both South Africa's rural areas and other urban centres (Wray, 2010). It has been the most popular destination for moves from both non-metropolitan areas as well inter-provincial migration within South Africa (Casale and Posel, 2006). Between 1980 and 2007, migrants constituted a significant proportion of the total population of the Johannesburg region: between 40 per cent and 43 per cent. Moreover, migrants formed the majority of the employed workforce, between 53 per cent and 60 per cent, a proportion of the total workforce that remained stable over this 27-year period (Table 4.5). Thus, there has been and continues to be a significant movement of people to the Johannesburg region.

[19] Immigration status is determined by birthplace. If the respondent was born in the Johannesburg region, he/she is a *native*. If the respondent was born in another province of South Africa, he/she is classed as an *internal migrant*. If the respondent was born outside South Africa, he/she is called a *foreign migrant*. See chapter 2 for full discussion of categorisation of migrants.

While internal migrants (those born in South Africa, outside of the Johannesburg region) are over-represented in unskilled work, arguably they are not over-represented in low-skill, low-wage work to the extent that many polarisation theorists would anticipate. Table 4.4 shows that elementary occupations or unskilled work formed a similar percentage amongst natives and South African or internal migrants in comparison to the working population as a whole in 1980: 21 per cent and 26 per cent respectively, versus 22 per cent amongst the whole population. Foreign migrants were under-represented amongst unskilled workers in comparison to the rest of the working population, with elementary occupations constituting a mere 6 per cent of work amongst employed foreign migrants versus the 22 per cent in the whole employed population of the Johannesburg region (Table 4.4). Thus, while all migrants (internal and foreign combined) formed 60 per cent of the working population in 1980, they held a slightly higher percentage of unskilled jobs, 62 per cent (Table 4.5). Therefore, in 1980, migrants were only slightly over-represented in unskilled/elementary work in comparison to those native to the Johannesburg region.

By 2001, migrants constituted a bigger percentage of low-skill, low-wage workers. However, again, arguably polarisation theorists would have presumed the degree to which this occurred to be much greater than it in fact was. Natives to the Johannesburg region were under-represented in unskilled work, with 15 per cent of native employment consisting of elementary occupations, versus the slightly lower than 1980 level of 20 per cent of the entire working population (Table 4.4). Approximately 27 per cent of internal migrants held elementary/unskilled jobs (Table 4.4). Internal migrants formed 58 per cent of all unskilled workers, but constituted only 44 per cent of the employed workforce (Table 4.5). Foreign migrants were slightly under-represented amongst unskilled workers, with only 16 per cent of their work coming from unskilled jobs versus the 20 per cent of the whole population (Table 4.4). They formed 7 per cent of all elementary workers while constituting 9 per cent of the employed workforce (Table 4.5). Thus, all migrants together held 65 per cent of unskilled work but only made up 53 per cent of the population (Table 4.5). Therefore, essentially, there were 12 per cent more migrants working in low-wage, low-skill jobs than one would have expected from the population numbers alone. This is not a particularly large disparity, and arguably not of the magnitude many supporters of the polarisation hypothesis would anticipate.

Table 4.3. Occupational distribution of migrants and natives, Johannesburg region, 1980, 2001 and 2007 (frequency distribution)*

Occupation	Census 1980				Census 2001 10 per cent sample				Community Survey 2007			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	35,854	35,606	25,211	96,671	113,037	67,224	28,443	208,704	214,149	159,211	50,698	424,058
Professionals	65,638	59,159	24,098	148,895	143,206	99,205	32,769	275,180	235,197	180,896	39,820	455,913
Technicians and associate professionals	54,530	42,856	20,994	118,380	165,704	95,175	21,872	282,751	141,654	108,178	23,659	273,491
Clerks	176,439	133,901	34,330	344,670	230,310	128,963	21,073	380,346	182,564	118,357	15,534	316,455
Service, shop and market sales workers	103,046	106,180	24,370	233,596	150,768	154,006	29,034	333,808	145,450	183,403	28,042	356,895
Craft and related trades workers	163,664	240,192	107,068	510,924	144,606	167,561	49,235	361,402	145,908	207,433	52,168	405,509
Plant and machine operators and assemblers	131,437	164,759	28,819	325,015	96,247	122,880	17,438	236,565	98,047	155,421	16,336	269,804
Elementary occupations	201,838	309,318	17,531	528,687	209,514	347,488	40,889	597,891	195,546	337,873	43,643	577,062
Skilled Agriculture and Undetermined	49,052	75,651	10,412	135,115	123,207	96,475	22,011	241,693	271,591	275,222	50,263	597,076
Total	981,498	1,167,622	292,833	2,441,953	1,376,599	1,278,977	262,764	2,918,340	1,630,106	1,725,994	320,163	3,676,263

Sources: South African Population Census 1980, 2001 10 per cent sample and Community Survey 2007

* Includes only the employed and those respondents whose migrant status could be ascertained, i.e. excludes those whose place of birth was missing.

Table 4.4. Occupational distribution of migrants and natives, Johannesburg region, 1980, 2001 and 2007 (percentage distribution, column totals)*

Occupation	Census 1980				Census 2001 10 per cent sample				Community Survey 2007			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	4	3	9	4	8	5	11	7	13	9	16	12
Professionals	7	5	8	6	10	8	12	9	14	10	12	12
Technicians and associate professionals	6	4	7	5	12	7	8	10	9	6	7	7
(all high-skill occupations	17	12	24	15	30	20	31	26	36	25	35	31)
Clerks	18	11	12	14	17	10	8	13	11	7	5	9
Service, shop and market sales workers	10	9	8	10	11	12	11	11	9	11	9	10
Craft and related trades workers	17	21	37	21	11	13	19	12	9	12	16	11
Plant and machine operators and assemblers	13	14	10	13	7	10	7	8	6	9	5	7
Elementary occupations	21	26	6	22	15	27	16	20	12	20	14	16
Skilled Agriculture and Undetermined	5	6	4	6	9	8	8	8	17	16	16	16
Total	100	100	100	100	100	100	100	100	100	100	100	100

Sources: South African Population Census 1980, 2001 10 per cent sample and Community Survey 2007

* Includes only the employed and those respondents whose migrant status could be ascertained, i.e. excludes those whose place of birth was missing

Table 4.5. Occupational distribution of migrants and natives, Johannesburg region, 1980, 2001 and 2007 (percentage distribution, row totals)*

Occupation	Census 1980				Census 2001 10 per cent sample				Community Survey 2007			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	37	37	26	100	54	32	14	100	50	38	12	100
Professionals	44	40	16	100	52	36	12	100	52	40	9	100
Technicians and associate professionals	46	36	18	100	59	34	8	100	52	40	9	100
(all high-skill occupations	43	38	19	100	55	34	11	100	51	39	10	100)
Clerks	51	39	10	100	61	34	6	100	58	37	5	100
Service, shop and market sales workers	44	45	10	100	45	46	9	100	41	51	8	100
Craft and related trades workers	32	47	21	100	40	46	14	100	36	51	13	100
Plant and machine operators and assemblers	40	51	9	100	41	52	7	100	36	58	6	100
Elementary occupations	38	59	3	100	35	58	7	100	34	59	8	100
Skilled Agriculture and Undetermined	36	56	8	100	51	40	9	100	45	46	8	100
Total	40	48	12	100	47	44	9	100	44	47	9	100

Sources: South African Population Census 1980, 2001 10 per cent sample and Community Survey 2007

* Includes only the employed and those respondents whose migrant status could be ascertained, i.e. excludes those whose place of birth was missing

By 2007, all migrants combined had increased their share of unskilled work to 67 per cent, but formed only 56 per cent of the working population (Table 4.5). Thus, migrants were over-represented amongst elementary workers by 11 per cent, a similar percentage to 2001. Natives were again under-represented in unskilled work, with 12 per cent of natives holding elementary jobs versus 16 per cent of the employed workforce (Table 4.4). Therefore, migrants have historically been over-represented in low-skill, low-wage work in comparison to the region's native residents. However, this over-representation is relatively small.[20] For example, there is no more than a seven point difference between the percentage of elementary workers amongst internal migrants and the whole working population in 1980, 2001 and 2007 (Table 4.4). Thus, migrants are by no means overwhelmingly concentrated in low-wage, low-skill work in comparison to natives, a finding inconsistent with what many polarisation proponents would contend regarding migrants.

In addition, while natives held a higher percentage of high-skilled jobs than migrants, this difference was also relatively small, and between 1980 and 2007, migrants experienced a similar increase in the percentage of high-skill jobs to that of natives. In 1980, 17 per cent of those native to the Johannesburg region held managerial, professional, associate professional or technical jobs, which increased to 30 per cent in 2001 and 36 per cent by 2007 (Table 4.4). The percentage of internal migrants employed in these same high-skill occupations was 12 per cent in 1980, but had grown to 20 per cent in 2001 and 25 per cent by 2007 (Table 4.4). In contrast, foreign migrants have been consistently over-represented amongst high-skill, high-pay workers. High-skill work constituted 24 per cent of foreign migrant jobs in 1980, versus the 15 per cent of the whole population that these jobs accounted for (Table 4.4). This grew to 31 per cent for foreign migrants in 2001, when high-skill occupations constituted 26 per cent of all employment, and 35 per cent in 2007, when managerial, professional, associate professional and technical jobs combined formed 31 per cent of the occupations of the employed workforce of the Johannesburg region (Table 4.4). Natives have consistently had a higher percentage of managers, professionals, associate professionals and technicians than the total employed population, but by a relatively small margin. Between 1980 and 2007, these

[20] There were more undetermined occupations in 2007 than 1980, making the "Skilled agriculture and Undetermined" occupation category anywhere from 10 per cent to 12 per cent greater in the 2007 data in comparison to the 1980 data. There is a possibility then that any drop in the number of percentage points of a particular occupation between 1980 and 2007 is over-exaggerated and the increase in a particular occupation is under-estimated. Unfortunately, the extent to which this may have happened in any one occupation category cannot be determined.

high-skill, high-wage jobs constituted 2 per cent to 5 per cent more of the native respondents' occupations than amongst the total employed workforce (Table 4.4). And while migrants have been under-represented in these jobs historically, it would again appear to be by a relatively small margin. Between 1980 and 2007, high-skill occupations constituted only 3 to 6 per cent fewer jobs amongst internal migrants than the total employed workforce (Table 4.4). Thus, by 2007, all migrants constituted approximately 49 per cent of all high-skill workers, while accounting for 56 per cent of the employed workforce (Table 4.5). Therefore, the percentage of migrants in high-skill work was only slightly below that of the entire employed workforce between 1980 and 2007, and these jobs were not wholly dominated by natives to the detriment of migrants.

Migrants and education

Many supporters of the polarisation theory argue that part of the reason migrants are restricted to low-skill, low-wage work is a result of their lack of skills and education. These scholars portray most immigrants to world cities as lacking adequate education or skills training. Given the similarity (or lack of significantly large disparities) in the percentages of unskilled and high-skilled workers amongst natives and migrants in this study, it is perhaps not surprising that the educational credentials of these two groups are also quite similar. While 30 per cent of natives completed secondary education versus 26 per cent of the whole working population, 20 per cent of natives had some form of tertiary education versus 19 per cent of the employed workforce (Table 4.7). While natives constituted 44 per cent of the employed workforce of the Johannesburg region, they constituted 51 per cent of those who had at least completed secondary education, and 47 per cent of those with some form of tertiary education (Table 4.8). Thus, natives are slightly over-represented in terms of secondary and tertiary education in comparison to the whole population.

Table 4.6. Educational distribution of employed migrants and natives, Johannesburg region, 2007 (frequency distribution)

Level of Highest Education	Native	Internal migrant	Foreign migrant	Total
No schooling	25,956	70,690	18,110	114,756
Some primary school	85,946	189,970	35,016	310,932
Completed primary school	46,048	79,481	17,055	142,584
Some secondary school	632,686	662,726	106,231	1,401,643
Completed secondary school*	492,884	414,090	61,362	968,336
Higher education†	324,558	284,026	78,802	687,386
Unspecified	22,027	25,012	3,585	50,624
Total	1,630,105	1,725,995	320,161	3,676,261

Source: Community Survey 2007
* includes certificates and diplomas with less than grade 12
† includes certificates and diplomas with grade 12, all university and technicon degrees and diplomas

Internal migrants tend to be under-represented in comparison to the whole population in terms of secondary and tertiary education, but, again, only to a marginal degree. Of all internal migrants, 24 per cent completed secondary education at least, versus 26 per cent of the whole working population, and 16 per cent of these internal migrants had some form of tertiary education versus 19 per cent of the total population (Table 4.7). Internal migrants comprised 47 per cent of the employed workforce, but 43 per cent of high school graduates and 41 per cent of those with higher education (Table 4.8). This under-representation is arguably relatively small.

Table 4.7. Educational distribution of employed migrants and natives, Johannesburg region, 2007 (percentage distribution, column totals)

Level of Highest Education	Native	Internal migrant	Foreign migrant	Total
No schooling	2	4	6	3
Some primary school	5	11	11	8
Completed primary school	3	5	5	4
Some secondary school	39	38	33	38
Completed secondary school*	30	24	19	26
Higher education†	20	16	25	19
Unspecified	1	1	1	1
Total	100	100	100	100

Source: Community Survey 2007
* includes certificates and diplomas with less than grade 12
† includes certificates and diplomas with grade 12, all university and technicon degrees and diplomas

A lower percentage of foreign migrants completed secondary school (19 per cent versus 26 per cent of the total employed population), but a higher percentage completed some form of tertiary education (25 per cent versus 19 per cent of the total employed population) (Table 4.7).

Table 4.8. Educational distribution of employed migrants and natives, Johannesburg region, 2007 (percentage distribution, row totals)

Level of Highest Education	Native	Internal migrant	Foreign migrant	Total
No schooling	23	62	16	100
Some primary school	28	61	11	100
Completed primary school	32	56	12	100
Some secondary school	45	47	8	100
Completed secondary school*	51	43	6	100
Higher education†	47	41	11	100
Unspecified	44	49	7	100
Total	44	47	9	100

Source: Community Survey 2007
* includes certificates and diplomas with less than grade 12
† includes certificates and diplomas with grade 12, all university and technicon degrees and diplomas

Thus, employed migrants and native residents of the Johannesburg region share similar educational profiles. One could argue that this is the result one would expect, as, in order to be employed, migrants would need similar credentials to those of natives in order to be able to compete in the labour market. What of the educational distribution of the entire adult population then, not just the employed? From the point of view of polarisation theory, one might presume that the adult migrant population taken as a group would be poorly educated in comparison to the native population, and that those migrants finding employment could be the small percentage with a similar educational profile to that of natives.

Table 4.9. Educational profile of all adult migrants and natives (employed, unemployed and economically inactive), Johannesburg region, 2007 (frequency distribution)

Level of Highest Education (all adults)	Native	Internal migrant	Foreign migrant	Total
No schooling	83,111	140,271	31,332	254,714
Some primary school	249,161	354,479	55,542	659,182
Completed primary school	145,245	163,620	26,551	335,416
Some secondary school	1,752,009	1,382,685	175,097	3,309,791
Completed secondary school*	883,893	717,182	92,062	1,693,137
Higher education†	414,853	353,722	100,571	869,146
Unspecified	47,081	46,691	5,770	99,542
Total	3,575,353	3,158,650	486,925	7,220,928

Source: Community Survey 2007
* includes certificates and diplomas with less than grade 12
† includes certificates and diplomas with grade 12, all university and technicon degrees and diplomas

However, the data do not bear this argument out. All adult migrants, aged 15-65 (the average ages between which most people work), whether employed, unemployed or economically inactive have a similar educational distribution to that of natives in the Johannesburg region in 2007. Internal migrants were arguably only slightly under-represented amongst those with tertiary education, with 11 per cent of internal migrants versus 12 per cent of the whole adult population holding higher educational qualifications (Table 4.10). Also, while internal migrants represented 44 per cent of the adult population, they held 41 per cent of tertiary educational qualifications (Table 4.11). However, the same percentage of internal migrants as the whole population had "completed high school" as their highest educational qualification (Table 4.10). Foreign migrants were under-represented in terms of completing high school (19 per cent versus the 23 per cent of the whole population of working age adults). However, 21 per cent of foreign migrants had tertiary degrees/ diplomas/ certificates as their highest level of education, versus just 12 per cent in the whole population, and represented 12 per cent of all higher educational qualifications while constituting only 7 per cent of the population in total (Tables 4.10 and 4.11).

Table 4.10. Educational profile of all adult migrants and natives (employed, unemployed and economically inactive), Johannesburg region, 2007 (percentage distribution, column totals)

Level of Highest Education (all adults)	Native	Internal migrant	Foreign migrant	Total
No schooling	2	4	6	4
Some primary school	7	11	11	9
Completed primary school	4	5	5	5
Some secondary school	49	44	36	46
Completed secondary school*	25	23	19	23
Higher education†	12	11	21	12
Unspecified	1	1	1	1
Total	100	100	100	100

Source: Community Survey 2007
* includes certificates and diplomas with less than grade 12
† includes certificates and diplomas with grade 12, all university and technicon degrees and diplomas

Table 4.11. Educational profile of all adult migrants and natives (employed, unemployed and economically inactive), Johannesburg region, 2007 (percentage distribution, row totals)

Level of Highest Education (all adults)	Native	Internal migrant	Foreign migrant	Total
No schooling	33	55	12	100
Some primary school	38	54	8	100
Completed primary school	43	49	8	100
Some secondary school	53	42	5	100
Completed secondary school*	52	42	5	100
Higher education†	48	41	12	100
Unspecified	47	47	6	100
Total	50	44	7	100

Source: Community Survey 2007
* includes certificates and diplomas with less than grade 12
† includes certificates and diplomas with grade 12, all university and technicon degrees and diplomas

Adults of working age native to the Johannesburg region were only marginally over-represented amongst those who had completed secondary education and were slightly under-represented amongst those who had some form of tertiary education as their highest educational achievement. While 23 per cent of the total population completed high school, so too had 25 per cent of natives (Table 4.10). However, natives constituted 50 per cent of the population, while holding only 48 per cent of tertiary educational qualifications (Table 4.11).

Thus, while there has been large-scale migration to the Johannesburg region, these immigrants have very similar levels of education in comparison to natives and are therefore, unsurprisingly, only marginally under-represented in managerial, professional, associate professional and technical occupations and only slightly over-represented in unskilled work.

These data therefore do not support the idea of a growing service sector generating myriad low-skill, low-wage service jobs to be filled by large numbers of uneducated, unskilled immigrants, as generally proposed by advocates of the polarisation hypothesis.

The heterogeneity of immigrant populations and their varied employment outcomes

Some scholars who oppose the polarisation hypothesis tend to focus on what they consider to be the unique make-up of the immigrant population where the theory has been developed most: the US. Thus, Chris Hamnett (1994a, 1996) concedes that cities such as New York and Los Angeles may be undergoing a process of social polarisation. However, he argues this can be attributed primarily to their large and ever growing population of unskilled Third World immigrants, which facilitates the expansion of the low-wage service sector. By contrast, he argues, European cities do not have this level of low-skill immigration. Another important difference he asserts is that migrants to European cities are not uniformly uneducated. Therefore European cities tend more towards professionalisation (Hamnett, 2003). Many other scholars would agree that the level of immigration to European cities is far below that to American cities. However, several also argue that the immigrant population even in American cities such as New York is not homogeneously unskilled and that these diverse immigrant communities have different outcomes in terms of employment.

In 1970, foreign-born Hispanics were heavily over-represented in the industries that would suffer the greatest losses in the next decade, namely manufacturing, personal services and retail (Bailey and Waldinger, 1991). Hispanics constituted a third of manufacturing workers, while representing only a fifth of city residents. The personal services sector shrank by 30 per cent between 1970 and 1980. Despite this, employment levels amongst Hispanics still grew by 50 per cent during this period. Even though manufacturing was continuously losing jobs, with Whites leaving this sector, openings were created for Hispanic workers. Thus, by increasing their share of dwindling blue-collar occupations such as machine operators, labourers and craft workers, by 1980, Hispanics had become even more concentrated in the manufacturing sector than they had been in 1970. They remained under-represented amongst professional and clerical workers though. Thus, their representation in the top income quintiles dropped, especially amongst women. Add to this the fact that earnings in the bottom

quintiles did not keep pace with the gains made in the top quintiles (Bailey and Waldinger, 1991).

The Asian immigrant group in New York has a somewhat different employment history to that of Hispanics. Retail and manufacturing were historically the primary employers amongst Asians (Bailey and Waldinger, 1991). Strong representation in retail and manufacturing allowed Asians to withstand the economic hardships of the 1970's when Whites were leaving these sectors. By the 1980's though, Asians were beginning to reduce their dependency on the retail and manufacturing sectors, while making important occupational advances in them. They also started making employment gains in the finance, insurance and business services sector. Thus, their share of all white-collar work increased, especially amongst managers, sales and clerical workers. This led to a significant reduction in the proportion of Asians in the bottom income quintile, and gains in all other quintiles. At the same time though, there was growth in the number of very low-paid women (Bailey and Waldinger, 1991).

As Bailey and Waldinger (1991) note, because retail (restaurants and food retail in particular) and manufacturing (especially garment production) have been and continue to be such strongholds of Asian business, the expansion of the Asian niche added jobs at all levels of the occupational ladder, not just the bottom. This is in contrast to Hispanics, who seemed to gain most of their jobs at the bottom of the occupational hierarchy. Asians as a group also prospered in comparison to Hispanics because they moved out of their traditional sectors of the economy (retail and manufacturing) and into the new, growing economic sectors (the finance, insurance and business services sector). Thus, these two disparate ethnic immigrant groups have had different outcomes with regards to employment in New York.

Therefore, while scholars discussing different world cities have argued that immigrants tend to be concentrated in the low-skill, low-wage service sector (Baum, 1997; Sassen, 1991; Wilson, 1996), the case of New York discussed here serves to show that migrants, even to the US, can have diverse outcomes in terms of employment. While I have shown earlier that migrants on the whole have a similar occupational distribution to natives of the Johannesburg region, could it be the case that individual immigrant communities have more varied occupational outcomes?

Migrants to the Johannesburg region and social polarisation

As has been shown already, immigrants to the Johannesburg region do not appear to have significantly contributed to a trend of increasing social polarisation. Contrary to what many polarisation theorists argue, it does not appear that uneducated, unskilled immigrants are being attracted in large numbers to work in a burgeoning low-wage service sector. On the contrary, from an educational perspective, immigrants have a very similar profile to natives. Furthermore, the distribution of occupations amongst migrants is as diverse as amongst natives and they are not confined to low-skill work. Hamnett (1994a, 1994b, 1996, 2003), in opposition to the polarisation hypothesis, argues that a large and ever growing population of unskilled Third World immigrants facilitates the expansion of the low-wage service sector, thereby leading to increasing polarisation. However, this process also does not appear to be happening in the Johannesburg region. There has always been and continues to be large-scale migration to the Johannesburg region. As the majority of these are internal migrants and therefore come from inside the borders of a country with many Third World characteristics itself, one would expect the migrants to be mostly uneducated and unskilled manual workers. However, as has been shown earlier, this also does not appear to be the case.

While, on the whole, migrants to the Johannesburg region display a similar occupational distribution and educational profile to natives, this is not to say that at a finer level of disaggregation the diverse immigrant communities look the same. As has been discussed in chapter 1 and in the previous section of this chapter, distinct groups of immigrants perform differently in the urban environments to which they migrate and are absorbed into diverse occupations and industries to varying degrees. However, in the context of the social polarisation and professionalisation hypotheses there is a more pertinent question: even though overall the occupational profile of immigrants shows that their presence does not lead to increasing social polarisation, how have the individual groups of immigrants either contributed to or detracted from the trend towards professionalisation in the Johannesburg region over time?

Briefly, although historically the vast majority of high-skill jobs were held by White men, and despite the greatest trend towards professionalisation occurring amongst Coloureds and Indians, it is in fact the increasing professionalisation of native and internal migrant African men and women and White women and that has significantly changed the distribution of

high-skill occupations and contributed most in absolute terms towards increasing professionalisation in the Johannesburg region between 1980 and 2007.

The greatest absolute growth in managers, professionals, associate professionals and technicians occurred amongst African men. Native African men gained 90,041 high-skill jobs, while internal migrant African men made the biggest gains of all of the groups with an increase of 129,647 (Table 4.14). Therefore, combined, African native and internal migrant men accounted for 219,688 of the increase of over 700,000 high-skill occupations between 1980 and 2007 (Table 4.14). The biggest percentage point increase also occurred amongst internal migrant African men, who went from holding 3 per cent of high-skill jobs in 1980 to 12 per cent in 2007 (Tables 4.12 and 4.13).

The second biggest contribution to the increasing numbers of high-skill occupations was by African women. Native African women added 96,565 high-skill occupations between 1980 and 2007, and internal migrant African women added 86,218 (Table 4.14). Thus, combined, African native and internal migrant women accounted for 182,783 of the increase of over 700,000 high-skill occupations between 1980 and 2007.

Thus, some of the biggest contributions to the increase in the number of high-skill occupations between 1980 and 2007 in the Johannesburg region came from the "previously disadvantaged" groups of African men and women. Moreover, far from appearing to be hindered by their migrant status, internal African migrant men and women showed some of the greatest growth. Internal migrant Africans had comparable gains to all other groups in terms of high-skill managerial, professional, associate professional and technical occupations.

High-skill occupations[21]

Table 4.12. Percentage distribution of high-skill occupations across the four main race groups and men and women in the Johannesburg region, 1980

1980 High-skill	African			White			Coloured			Indian			Total
	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	
Men	4	3	0	23	22	15	1	0	0	1	0	0	69
Women	5	3	0	9	9	4	0	0	0	0	0	0	31

Source: South African Population Census 1980

Table 4.13. Percentage distribution of high-skill occupations across the four main race groups and men and women in the Johannesburg region, 2007

2007 High-skill	African			White			Coloured			Indian			Total
	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	
Men	9	12	2	14	8	4	1	1	0	1	2	0	55
Women	10	8	1	13	6	2	1	1	0	1	1	0	45

Source: Community Survey 2007

[21] The data from which these and the following tables were calculated can be found in Appendix B.

Table 4.14. Absolute change in high-skill occupations across the four main race groups and men and women in the Johannesburg region, 1980-2007

Absolute change between 1980 and 2007	African			White			Coloured			Indian			Total
	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	
Men	90,041	129,647	26,320	81,926	6,141	-12,161	13,386	7,114	610	12,502	18,237	4,002	377,765
Women	96,565	86,218	8,314	117,624	40,353	14,591	14,647	7,148	432	8,287	15,809	1,766	411,754

Source: South African Population Census 1980 and Community Survey 2007

Unskilled occupations

Table 4.15. Percentage distribution of unskilled occupations across the four main race groups and men and women in the Johannesburg region, 1980

Unskilled 1980	African			White			Coloured			Indian			Total
	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	
Men	14	28	2	0	0	0	0	0	0	0	0	0	45
Women	23	29	1	0	0	0	0	1	0	0	0	0	55

Source: South African Population Census 1980

Table 4.16. Percentage distribution of unskilled occupations across the four main race groups and men and women in the Johannesburg region, 2007

Unskilled 2007	African			White			Coloured			Indian			Total
	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	
Men	9	19	4	1	1	0	0	0	0	0	0	0	36
Women	22	37	3	1	1	0	0	0	0	0	0	0	64

Source: Community Survey 2007

Table 4.17. Absolute change in the numbers of unskilled occupations across the four main race groups and men and women in the Johannesburg region, 1980-2007

Unskilled Absolute change between 1980 and 2007	African			White			Coloured			Indian			Total
	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	
Men	-18,516	-38,647	11,363	6,771	1,915	1,160	680	161	24	359	542	507	-33,681
Women	1,292	64,344	12,112	2,791	1,362	569	-59	-1,356	145	388	236	233	82,057

Sources: South African Population Census 1980 and Community Survey 2007

Semi-skilled, blue-collar occupations

Table 4.18. Absolute change in the numbers of semi-skilled blue-collar occupations across the four main race groups and men and women in the Johannesburg region, 1980-2007

Semi-skilled, blue-collar	African			White			Coloured			Indian			
Absolute change between 1980 and 2007	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	-21,818	-16,175	-42,680	-21,493	-41,213	-26,268	-2,090	-3,942	348	416	1,299	918	-172,698
Women	-5,938	18,760	1,611	3,198	19	-1,439	-3,293	-1,058	-21	-127	214	147	12,073

Sources: South African Population Census 1980 and Community Survey 2007

Semi-skilled, white-collar occupations

Table 4.19. Absolute change in the numbers of semi-skilled white-collar occupations across the four main race groups and men and women in the Johannesburg region, 1980-2007

Semi-skilled, white-collar	African			White			Coloured			Indian			
Absolute change between 1980 and 2007	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	18,367	70,125	10,706	-15,255	-40,825	-12,217	3,581	910	17	-1,500	192	374	34,475
Women	53,616	68,564	7,493	-18,395	-44,314	-22,028	5,614	2,617	231	2,502	4,409	298	60,607

Sources: South African Population Census 1980 and Community Survey 2007

The next highest gains in high-skill work were amongst White native and internal migrant women. While they held the second highest percentages of high-skill work in 1980, this paled in comparison to that of White men (only 22 per cent for all White women versus 60 per cent for all White men) (Table 4.12). However, by 2007, the percentage of high-skill workers among native and internal migrant White women was comparable to that of white men (13 per cent and 6 per cent respectively versus 14 per cent and 8 per cent amongst White men, Table 4.13). Internal migrant White women added 40,353 high-skill jobs between 1980 and 2007 (Table 4.14). However, native White women added a considerable 117,624 high-skill jobs in the same period (Table 4.14). Thus, 157,977 of the high-skill positions gained between 1980 and 2007 were occupied by White native and internal migrant women.

High-skill managerial, professional, associate professional and technical work was historically dominated by white men; however, by 2007, this was no longer the case. Almost a quarter (23 per cent) of all high-skill work was held by native white men in 1980, 22 per cent was held by internal migrants and 15 per cent by foreign migrants (Table 4.12). This is arguably not surprising, given the history of South Africa discussed elsewhere in this thesis and the fact that whites were the most privileged and afforded the best opportunities in terms of education and available jobs through measures such as job reservation. However, by 2007, while white men still had the greatest share of high-skill work, although only marginally so, the percentages had dropped to 14 per cent amongst native White men, 8 per cent amongst White internal migrants and 4 per cent amongst foreign migrants (Table 4.13). Of the 789,519 high-skill jobs added to the occupational distribution of the Johannesburg region between 1980 and 2007, only 81,926 were White native men and 6,141 were white internal migrants (Table 4.14). The number of high-skill positions amongst White foreign migrant men actually decreased by 12,161 jobs. Thus, the growth in high-skill positions was not largely driven by the employment of white men.

That Tables 4.12 and 4.13 show that Coloureds and Indians have hardly any share of high-skill work is perhaps misleading, as the percentage of high-skill jobs increased the most amongst Coloured and Indian workers between 1980 and 2007 (see Appendix B for detailed description and data from which these figures are derived). High-skill work represented just 8 per cent and 10 per cent of all employment amongst Coloured men and women respectively in 1980 (Tables B3 and B7). By 2007, 36 per cent of Coloured men and 40 per cent of Coloured women held high-skill occupations (Tables B4 and B8). Thus, the percentage point

increase in high-skill work was between 28 per cent and 30 per cent. The relative growth in high-skill work was even greater amongst Indians. High-skill work represented 22 per cent and 16 per cent of all employment amongst Indian men and women respectively in 1980 (Tables B3 and B7). By 2007, 56 per cent of Indian men and 53 per cent of Indian women held high-skill occupations (Tables B4 and B8). This represents a percentage point increase ranging from 34 per cent to 37 per cent, with by far the most growth occurring amongst internal migrant Indian men and women.

What could account for this impressive growth? With the change in government, presumably, changes to legislation and the institution of affirmative action policies facilitated the increased employment of not only Africans in higher-skilled occupations, but Coloureds and Indians as well. The reason for their growth being higher relative to Africans though could be partly historical. While Whites were afforded the best opportunities and Africans arguably the worst, Coloureds and Indians were treated differently to both population groups. The Nationalist government, concerned at the prospect of a unified non-European resistance of Coloureds and Africans, felt it necessary for Coloureds to see themselves as distinct from Africans (Goldin, 1984; Marais, 1984; Pickel, 1997). Thus, various government initiatives such as development programmes and the Coloured Labour Preference Policy were designed to improve the standard of living of Coloureds (Pickel, 1997). In comparison to Africans, Coloureds were relatively better off in several areas, but one of the most important for this discussion is education. Also, the preferential treatment of Coloureds arguably led to a "better position" of Coloured workers at the expense of Africans (Goldin, 1984). However, Coloureds were still kept out of many of the skilled and higher-skilled positions and jobs reserved for Whites. With the removal of institutional barriers to their advancement, Coloureds and Indians were arguably better positioned than Africans, due to more comprehensive education and comparatively higher-skilled previous jobs, to seize the opportunities for advancement into managerial, professional, associate professional and technical occupations.

However, these considerable gains are not reflected in Tables 4.12 and 4.13 because the absolute increases they represent are small in comparison to the overall increase in high-skill work. Of the 789,519 high-skill jobs gained between 1980 and 2007, only 103,940 are from all Coloureds and Indians combined. Therefore, even though arguably the most impressive

growth in high-skill work occurred amongst Coloureds and Indians, this represents only a relatively small amount of the total absolute growth in these occupations.

Thus, it has been shown that migrants have clearly played just as important a part in the growth of high-skill jobs over time in this region as natives. What of unskilled/low-skill work though? First, it is important to keep in mind that unskilled work grew much less than high-skill work between 1980 and 2007; hence, the argument that the absolute growth in both high-skill and low-skill occupations is heavily skewed towards high-skill jobs, thereby resulting in more of a professionalising trend in the Johannesburg region.[22] Nonetheless, there was absolute growth in the number of low-skill workers between 1980 and 2007.

There is arguably a similar effect here to studies done in other parts of the world that show that ethnic minorities, especially women, fill the majority of low-skilled jobs. The most significant increase in the percentage of unskilled workers was amongst African internal migrant women. They formed the greatest percentage of unskilled workers in 2007: 37 per cent (Table 4.16). More importantly, this percentage grew from 29 per cent in 1980 (Table 4.15). There was an absolute increase of 64,344 unskilled workers amongst African internal migrant women, which represent the majority of the 82,057 unskilled jobs gained by all women between 1980 and 2007 (Table 4.17). Thus, the entry of increasing numbers of African native and internal migrant women into the labour market since 1980 contributed towards both high-skill and low-skill job growth. However, the greatest contribution by African native and internal migrant women was in high-skill occupations, as nearly 100,000 more high-skill jobs than low-skill jobs were added. Thus, overall there is still more of a professionalising trend in terms of absolute differences in the numbers of high- and low-skill jobs added between 1980 and 2007.

In contrast, African internal migrant and native men had substantial absolute decreases amongst unskilled workers of 38,647 and 18,516 respectively (Table 4.17). Considering that in total men lost 33,681 unskilled jobs between 1980 and 2007, this was entirely due to the losses amongst African internal migrant and native men. Furthermore, given the addition of 219,688 high-skill jobs both of these groups contributed overall, African native and internal

[22]The potentially artificially low numbers of unskilled workers in 2007 aside (due to a greater number of undetermined occupations in 2007 - see previous footnote), the increase in numbers of low-skill occupations has been shown to be much lower than the increase in high-skill occupations between 1980 and 2010 in chapter 2.

migrant men arguably played an even more significant role than African women in the increasing professionalisation of the occupational distribution of the Johannesburg region (Table 4.14).

Therefore, the Johannesburg region does not conform to the image painted by many polarisation theorists of large numbers of unskilled immigrants occupying a rapidly increasing number of low-skill, low-wage service jobs. Migrant women are over-represented in unskilled work; however, they are also well represented amongst high-skill, high-pay occupations, not to mention the other main occupational groups. Thus, the occupational distribution of the different immigrant groups is diverse, and they are not on the whole marginalised in low-skill, low-wage jobs.

Increasing professionalisation with increasing unemployment?

At first glance, one might interpret the reduction in the share of unskilled work held by internal migrant and native African men as a sign of their upward occupational mobility. As has been demonstrated, there is evidence of increasing professionalisation of these two groups between 1980 and 2007. The percentage of high-skill managerial, professional, associate professional and technical work amongst African internal migrants and native men increased by 15 percentage points and 18 percentage points respectively (see Tables B3 and B4 in Appendix B for the data from which this was derived). However, the percentage of African men employed in almost all other occupational groups dropped. In addition, the absolute number of semi-skilled, blue-collar workers also decreased amongst African men by 80,673 workers (native, internal and foreign migrant men combined) in the same period (Table 4.18).

Table 4.20. Percentage distribution of employed workforce by race and gender, Johannesburg region, 1980 and 2007

Race and Gender	Percentage of employed workforce		Percentage point difference
	per cent in 1980	per cent in 2007	
African men	45	40	-5
African women	18	28	10
White men	21	14	-7
White women	12	12	0

Source: South African Population Census 1980 and Community Survey 2007
(see Appendix B for data from which derived)

Even though all African men combined (natives and migrants) gained 99,198 (Table 4.19) semi-skilled, white-collar jobs between 1980 and 2007, given the fact that their overall share of the employed population dropped 5 percentage points in this time (Table 4.20), it seems more likely that, far from being a positive sign, the large decreases in unskilled and semi-skilled, blue-collar work are actually indications of increasing unemployment amongst African men in the Johannesburg region between 1980 and 2007.

This idea of increasing professionalisation in the face of increasing unemployment in the Johannesburg region will be discussed in the next chapter.

Chapter 5: Unemployment and Social Polarisation

As has already been shown in this thesis, the occupational structure of the Johannesburg region is tending towards increasing professionalisation rather than polarisation. This is consistent with Chris Hamnett's argument of increasing numbers of high-skill, high-wage jobs with no simultaneous increase in low-skill, low-wage jobs, except in cities such as in the US where large-scale, unskilled immigration and a weak welfare state leads to the growth of an expanded low-wage service proletariat too. However, there are high levels of immigration to the Johannesburg region (shown in the last chapter) from within a country in which most people would agree there are many unskilled adults of working age. Why then is the increase in high-skill workers not paralleled in growth in low-wage service sector work, as in the US? Why does the occupational structure of the Johannesburg region not display a huge bias towards low-skill, low-wage service work? The answer is that rather than the unskilled being employed in low-skill service sector work, they are instead unemployed. According to the results of the Labour Force Survey 2010, approximately 25 per cent of the adult population of the Johannesburg region was unemployed.[23]

However, while the outcome of increasing professionalisation alongside growing unemployment is consistent with Hamnett's (1996b) argument for the pattern of occupational change in Europe, the reasons for this as well as the circumstances in which this has occurred in the Johannesburg region are very different. The lack of a large low-wage service proletariat in the Johannesburg region is not because welfare benefits are so substantial that working age adults can opt out of the employed workforce and survive on these benefits, as is the case in much of Europe. Essentially, all the conditions for substantial growth in low-skill, low-wage work are present. However, in South Africa, economic growth has not kept pace with population growth, thereby leading to a shortage of jobs for unskilled workers, and

[23]This is according to the strict/official definition of unemployment. "In South Africa, two different concepts of unemployment are used routinely: the strict (narrow) and the expanded (broad) definition. The narrow definition applies a job-search test, whereas the broad definition accepts as unemployed those who did not search for work in a 4-week reference period, but who report being available for work and say they would accept the offer of a suitable job. In 1998, the narrow concept was declared the 'official' definition of unemployment and it is now the one generally used." (Kingdon and Knight, 2007:827).The expanded definition therefore includes discouraged work seekers, that is, those who are not currently employed but report that they would accept work if offered, but who are not actively searching (Casale and Posel, 2002; Statistics South Africa, 2007).

growing unemployment. Thus, while a large number of low-skill workers may be necessary for the growth of a low-wage service proletariat, as proposed by Hamnett (1994a), arguably, this is not a sufficient condition. Therefore, despite the fact that a large proportion of the South African population is unskilled, and welfare benefits are not substantial enough to keep these workers from seeking jobs, a large low-wage service proletariat has not developed because economic growth has not created enough jobs for the growing labour force.

In this chapter, the history of growing unemployment in South Africa before and during the Apartheid period will be discussed. Some government strategies designed to encourage economic and employment growth will also be explored. It will be shown however that the employment growth resulting from these policies fell far short of expectations. The limits of state welfare provision and its minimal impact in discouraging low-wage employment will also be explored. Ultimately, it will be shown that the reasons for increasing unemployment lie in (a) job growth of a nature unsuited to the low skill-level of the population at large and (b) too little job growth in the face of far greater increases in the size of the labour force.

Growing Unemployment

The rate of unemployment in South Africa is one of the highest in the world (Rodrik, 2008). Official (strict) unemployment increased from 13 per cent in 1993 to 31 per cent in 2003, while broad (expanded) unemployment increased from 29 per cent to 42 per cent in this period (Seekings, Leibbrandt and Nattrass, 2004). Unemployment is highest for Africans, the young and the unskilled (Rodrik, 2008; Rogerson, 1996; Seekings, et al., 2004). Unemployment was greater amongst women than men between 1995 and 2003 (Kingdon and Knight, 2007). However, the percentage point difference in unemployment growth was slightly greater for men than women in this time (by 3 percentage points). In this same period, the most rapid increase in the unemployment rate occurred in the Johannesburg region.

Scholars have argued that South Africa's unemployment problem has its origins in Africans being forced out of subsistence farming into the cash economy (Portes, 1978). African peasant agricultural production was being undermined by coercion from the late 19th century already (Portes, 1978). Conditions in the reserves to which most African families moved, with their failing economies and little agriculture, necessitated participating in wage labour in

mining and manufacturing. Thus, early legislation was "designed to propel the African population into the white controlled economy" (Savage, 1986:200). These reserves provided a large pool of cheap, unskilled African labour, and, increasingly throughout the 20th century, this African labour was channelled into the white-owned mines, commercial farms and industries (Platzky and Walker, 1985; Thompson, 2000; Trapido, 1971).[24] With only a limited number allowed to fully urbanise, many migrant African labourers returned to the reserves/Bantustans after their contracts to work in the city had expired. However, the reserves did not only house workers between contract stints. Many in the reserves were increasingly underemployed. "Idle" Africans in towns seeking better-paying work and labour not used year-round on White farms (therefore, essentially, all unemployed), the old and the young were relocated to the reserves (Gelderblom and Kok, 1994; Trapido, 1971). As agriculture in the Bantustans gradually collapsed, and the populations in these areas continued to grow, greater numbers of workers became fully unemployed (Seekings and Nattrass, 2005). Moreover, the Bantustans were treated as holding areas for the unemployed where they could be geographically isolated and better controlled (Lewis, 1991).

The changing labour needs of employers are another major factor in increasing unemployment amongst Africans. Initially, labour demand in South Africa in the mines and factories was predominantly for unskilled labour (Crankshaw, 1997). Capitalisation, including mechanisation, in construction, mining and manufacturing changed this demand to one for semi-skilled machine operative labour.[25] Although these types of jobs had been reserved for Whites, there simply were not enough semi-skilled White workers to meet the needs of employers (Moll, 1991). Whites had also dominated the skilled trades by defending their market position though trade unions and government support to exclude Africans (Lipton, 1989). However, by lobbying government, employers were able to break White union control over production and began to advance African workers into the growing number of semi-skilled positions (Crankshaw, 1997). Thus, there was a shift from labour-intensive production, which utilized a large number of cheap, unskilled African workers, to capital intensive production, which utilized a smaller number of semi-skilled, higher-wage African workers (Lipton, 1989). This of course meant that there were fewer job opportunities for unskilled African labourers and therefore growing unemployment.

[24] See chapter 4 for a more detailed discussion.
[25] See chapter 3 for a more detailed discussion.

Thus, the mid- to late-20th century was characterised by a period of labour demand followed by one of labour excess, particularly in unskilled labour (Lipton, 1989). From the 1940's to the 1970's, those seeking work could arguably quite easily find employment. Under these circumstances, rather than earning minimal pay for unpleasant work in the mines and on farms, many African workers could opt for higher-wage urban manufacturing jobs (Posel, 1991). Farm wages were four times lower than those in manufacturing, and consequently the commercial farms suffered labour shortages (Seekings and Nattrass, 2005). So too did the mines. There was even a shortage of labour for the more arduous poorly-paid hard manual jobs in the manufacturing sector itself. However, economic and employment growth slowed dramatically during the mid-1970's and essentially did not recover (Hindson, 1991). In addition, the economic growth that did occur immediately after this did not produce enough jobs (Simkins, 1978). Thus, by approximately the late 1970's, the period of labour shortages came to an end, giving way to increasing unemployment, especially amongst unskilled Africans (Bell and Padayachee, 1984; Simkins, 1981).

Measures by government to promote economic and, consequently, employment growth to help alleviate unemployment have had limited success, if not been outright failures. The goal of the "High Productivity Now" strategy was to create a high-wage, high-value-added, high-productivity economy that would promote economic growth (Seekings and Nattrass, 2004). This strategy involved raising minimum wages with the intention that this would encourage companies to shift from low-wage, low-value added activities towards more "high-tech", high-productivity activities, in which they would utilise better trained workers earning higher wages. However, this led to a decline in employment, especially in manufacturing, which was, in theory, the sector that would drive the new economic growth (Seekings, et al., 2004).

A later (though arguably no more effective) strategy to improve economic and employment growth was 'Growth, Employment and Redistribution' (GEAR). The basic premise of GEAR was to encourage foreign investment by showing that South Africa had stable finances (Nattrass, 1996). One of the targets was an average annual growth rate of 2.9 per cent, or 270,000 new jobs per year (Burger and Woolard, 2005). This was to be achieved through flexibility, productivity and the lowering of labour costs in order to encourage labour–intensive growth. However, the investment received fell short of the amounts envisaged, as the GEAR strategy was not fully implemented (Nattrass and Seekings, 2001). Legislation making the labour market less flexible was enacted, while other promised labour market

reforms were not. Trade liberalisation too was overlooked. Evidence from the OECD (1999) shows that, when policies towards macro-economic stabilisation are enacted without addressing such labour market issues, the result is higher unemployment. In addition, some scholars have argued that GEAR substituted for what should have been greater state-spending, which arguably would have advanced economic growth much more effectively (Burger and Woolard, 2004).

Welfare and other state interventions

It is clear from the history described above that the reasons for unemployment in South Africa are very different to the reasons proposed by Hamnett (1996b) for Europe. While increasing professionalisation alongside growing unemployment (rather than growing low-wage service work) is consistent with Hamnett's (1996b) argument for much of Europe, unlike his argument, this is not due to the provision of adequate welfare state benefits. On the contrary, I will argue here that in South Africa, welfare benefits do little to discourage the growth of a low-skill, low-wage service proletariat. The persistently high levels of unemployment are arguably also not addressed by most of the welfare policy either.

Scholars have asserted that the South African social security system was, by middle-income country standards, already well-developed in 1994, and has expanded even more since then (Leibbrandt, Woolard, Finn and Argent, 2009). Within the first years after 1994, government shifted social spending further towards the poor and disadvantaged, and social spending continued to increase throughout the 1990's (Seekings and Nattrass, 2004). While fewer than three million people received government grants in the late 1990's, this total had risen to nearly six million recipients by 2003. In 2009, social welfare was 4.4 per cent of GDP, which was three times greater than median spending on welfare in most developing economies (1.4 per cent of GDP) (Leibbrandt, et al., 2009).

While social security may be widely available in South Africa and accessed by a significant proportion of the population, arguably the actual value of welfare benefits is the most salient factor when considering whether or not the unemployed need to take low-skill, low-wage service work.

The old-age pension has the greatest uptake of all benefits and forms a significant proportion of income in the poorest households in South Africa (Seekings and Nattrass, 2004). It is a means-tested, monthly lump-sum cash transfer, to the value of "roughly twice the average per capita income in African households, to eligible women over the age of 60 and men over the age of 65" (Bertrand, Mullainathan and Miller, 2003:28). The maximum amount payable is approximately 3.52 times the poverty line, and is granted regardless of prior contribution (Case and Deaton, 1998). Because this is considered to be a reasonably generous grant, some scholars have argued that the availability of an old-age pension acts as a disincentive to work for prime-age men and women in the same household as pensioners (Bertrand, et al., 2003). However, other findings based on the same data are that the female African members of households with at least one old-age pension recipient are significantly more likely to be labour migrants (Posel, Fairburn and Lund, 2006). Thus, it is theorised, the pension covers some of the costs incurred in migrating, or provides the means for family members to care for the children of the migrant worker (Posel, et al., 2006). Considering the widespread availability of and access to the old-age pension, it could be argued that this form of welfare sufficiently reduces the need for the elderly to seek low-wage, low-skill employment. However, it is unlikely that this is the case, given the value of the grant in comparison to the number of people it is generally used to support (often a large household including unemployed, prime-age children and their offspring and extended family). The old-age pension, because it is only available from 60 to 65 years of age onwards, does not play a role in early-retirement, and therefore does not act to remove workers from the labour force prematurely. Most importantly perhaps then, the pension does not necessarily remove the need for younger unskilled workers in the same household to seek low-skill, low-wage work (not to mention those who are members of households where there is no old age pension recipient).

Child and foster care support grants may seem like an odd form of welfare to discuss under the rubric of unemployment. In South Africa, the Child Support Grant (CSG) was introduced in 1998 and has been hailed as an important poverty alleviation measure (Triegaardt, 2005). It is a means-tested, cash benefit for children under the age of seven in poor families, to the value of approximately R170 in 2005, or US$26 per child per month (Triegaardt, 2005). Despite claims of young women having babies for the sake of accessing this grant, most studies have found no relationship between teenage pregnancy rates and the CSG (Makiwane, Desmond, Richter, and Udjo, 2006). However, theoretically it is possible that grants for

children, if substantial enough, could act as disincentives for women, as the primary care-givers, to enter the labour force. This is unlikely in the South African case, as these grants are not substantial enough to maintain a household. Thus, state child support arguably does not act to discourage the seeking of low-skill, low-wage service work.

Also related to children is state expenditure on education. In theory, improved education could give learners greater skills and a better chance of attaining tertiary education and therefore higher-skilled work. Throughout the 1990's there was increased spending on education in South Africa (Seekings and Nattrass, 2004). However, most of this went towards larger teachers' salaries. Therefore, scholars argue that learners have not benefitted from this increased spending, as there is no indication of an improvement in the quality of education in South Africa, and in several poorer areas, evidence that it has remained substandard (Seekings and Nattrass, 2004). Thus, while there has been increased investment in education, it appears that it has not resulted in a more educated populace. Therefore, the numbers of unskilled workers best suited to low-skill, low-wage work continues to grow.

A more direct source of welfare for the unemployed comes from the Unemployment Insurance Fund (UIF). However, the payout from this fund has several substantial shortcomings. First, the value of the benefit is approximately R700, or less than half of the average unskilled worker's monthly salary (Department of Labour, 2004). In addition, the UIF affords the unemployed a short-term payout only, and is only available to those who have contributed previously (Lewis, 1991). If a worker has contributed to the fund for four years or more, UIF payouts may be received for up to a maximum of 238 days after becoming unemployed (Leibbrandt, et al., 2009). Thus, this assistance is relatively short-lived. Moreover, those who have never been employed are excluded. Taking into account the length of bouts of unemployment too, this means that there is no provision under the UIF for most of South Africa's unemployed, 65 per cent of who report that they have never worked (Bhorat and Leibbrandt, 1996; Lewis, 1991). Furthermore, UIF payouts are also only available to those who have been retrenched (staff lay-off, usually to reduce the costs of the business), and are not available to those who have resigned or been dismissed (Lewis, 1991). With all these shortcomings, it is estimated that less than 10 per cent of the strictly unemployed are receiving unemployment benefits at any time (Leibbrandt, et al., 2009). Thus, the UIF is clearly not an effective deterrent to taking low-skill, low-wage work, as it is only a temporary measure available to relatively few in the workforce.

Perhaps the most direct way government can intervene in unemployment is through public works programmes. In South Africa, the Extended Public Works Programme (EPWP) was established in 2004 with the express goal of providing employment for unskilled, unemployed workers specifically (Leibbrandt, et al., 2009). The temporary, unskilled jobs created also incorporate job skills training, with the aim that on leaving the programme, participants will have a greater chance of finding subsequent employment (Department of Public Works, 2004). In terms of this programme, the unskilled individuals targeted are defined as the unemployed lacking secondary education (Hemson, 2007). However, studies have found that 33 per cent of participants had completed secondary education; a percentage comparable to the population at large (Leibbrandt, et al., 2009). Moreover, studies also show that the majority of South Africans are unaware of the programme, and that only small amounts of money are actually transferred to a few households through it.(Leibbrandt, et al., 2009). Thus, while this may have some degree of impact on the depths of poverty, it is not a long-term solution to unemployment and arguably of limited utility in helping the unemployed find future employment (Kingdon and Knight, 2007). Again, all these shortcomings considered, it seems unlikely that a government intervention of this nature significantly reduces the demand amongst the unskilled for increased numbers of low-skill, low-wage service jobs.

One final form of state intervention to be considered is that of labour laws. Many have blamed high minimum wages for the level of unemployment. Trade unions and collective bargaining have been blamed for high formal sector wages in comparison to other countries at similar income levels, thereby discouraging employers from hiring more workers (Seeking and Nattrass, 2005; Rodrik, 2008). However, real wages have not risen substantially since 1994, and arguably unions have only succeeded in preventing the reduction of wages. Thus, high wages are arguably not the main cause of unemployment in South Africa.

While one expects it hardly needs saying, the vast majority of unemployment is definitely not voluntary. Some scholars have argued that people choose to remain jobless while they seek a “good” job. But many others find very little evidence of this. The unemployed are considerably worse off in terms of income and other indicators of well-being than the informally employed (Kingdon and Knight, 2004). It has also been found that the unemployed are less happy than the informally employed. Studies of workers reservation

wages have also shown that the majority of unemployed people do not have unrealistically high expectations of their potential wages (Nattrass and Walker, 2005). Therefore, this is arguably not contributing to their unemployment. Thus, it is unlikely that the situation of the unemployed is voluntary (Kingdon and Knight, 2004).

Mismatched economic and employment growth

As has been shown, welfare and other state interventions in South Africa are generally not of the nature to limit entry into low-wage service work. In addition, South Africa has a large percentage of unskilled workers, many of whom migrate to cities to find work. Why then is there growing unemployment accompanying a tendency towards professionalisation in the employed workforce, and not an increase in low-skill, low-wage work, leading to polarisation? Why does the workforce of the Johannesburg region share, with many European cities, the trend of increasing unemployment, as proposed by Hamnett (1996b), but none of the characteristics that he refers to that could explain why this has occurred? The answer concerns both the type of economic and employment growth that has occurred in South Africa, as well as the scale of it in comparison to the population.

Many scholars argue that low economic growth and increasing unemployment are due mainly to the decline in the manufacturing sector (Rodrik, 2008). As was discussed earlier in this thesis, employment in services has grown dramatically (FIRE and business services in particular, but also wholesale and retail trade and other service sectors) (Burger and Woolard, 2005; Rodrik, 2008). This occurred at the expense of manufacturing, agricultural and mining employment (Rodrik, 2008, Hodge, 2009). Thus, rather than increasing their share of workers, the sectors with the highest labour productivity in the economy lost workers to the service sectors (Rodrik, 2008). However, the service sectors do not have the same concentration of low-skilled labour as sectors such as manufacturing, mining and agriculture. In addition, as was also shown earlier in this thesis, there has been skill upgrading in all sectors of the economy (Rodrik, 2008). Even in the manufacturing, mining and agricultural sectors, capital intensive production techniques utilising new technology-intensive methods have also reduced the demand for low-skilled labour (Burger and Woolard, 2005). Thus, the decline in employment in sectors such as manufacturing has resulted in a significant decline in the relative demand for low-skilled labour (Rodrik, 2008; Seekings and Nattrass, 2004).

Therefore, there was a simultaneous shift in the economy from unskilled and semi-skilled labour in manufacturing, mining and agriculture, to skilled service sector work, as well as general skill-upgrading across all sectors. This resulted in not only skilled, better-educated, urbanised Africans prospering in the growing number of higher-skill, higher-pay service sector occupations, but also, uneducated rural migrant Africans becoming increasingly unemployed due to the decline in unskilled work (Burger and Woolard, 2005; Crankshaw, 1997; Hindson, 1991).

Furthermore, what economic growth there has been has not kept pace with labour force growth. Even though the post-apartheid economy grew at a rate of 2.7 per cent per annum between 1995 and 2002, this was not fast enough to provide employment for the rapidly increasing labour force (Burger and Woolard, 2005). Between 1995 and 2003, the labour force grew by at least 4.6 million people (Kingdon and Knight, 2007).[26] This represents an annual growth rate of 4.2 per cent. Wage employment grew by only 1.8 per cent per annum (1.3 million people) in this time, and self-employment by 5.1 per cent per annum (0.7 million people) (Kingdon and Knight, 2007). Thus, while formal sector employment grew by 32 per cent between 1995 and 2007, the percentage of the working age population (between 15 and 65 years) grew by 26 per cent, and the labour force grew by 48 per cent (Hodge, 2009). The amount of labour force growth therefore overshadowed employment growth, leading to increasing unemployment.

Other than natural population increase, this labour force growth is partly attributable to a significantly greater rise in female participation rates than male participation rates, particularly amongst African women (Kingdon and Knight, 2007). Of the increase of 1.97 million people in employed labour between 1995 and 2003, 1.43 million were women. The African female participation rate rose by fully 15 percentage points, while the male rate rose by 5 percentage points in the same period. This increase amongst women appears to be due to several factors (Kingdon and Knight, 2007):

- Declining access to men's incomes due to (ironically) increased unemployment.
- HIV/AIDS epidemic creating more single parent households.

[26] This excludes the non-searching unemployed.

- An increasing number of female heads of household resulting from changing household structures.
- The lifting of Apartheid restrictions on movement to urban areas and perceived new employment opportunities.
- An expectation of improved occupational attainment for non-whites, women in particular, partly due to employment equity legislation.
- Participation rates typically increase with educational level, especially for women.

Another area in which many scholars believe there has not been enough growth is that of the informal sector (Rogerson, 1995). South Africa's informal sector is smaller relative to the informal sectors in other countries at a similar level of development (Seekings, et al., 2004; Rodrik, 2008). In Latin America in particular, those without formal sector employment are often able to find work in the informal sector (Seekings, et al., 2004). However, in South Africa, there is only a small informal sector, and those who cannot find work in the formal sector become unemployed instead. Reasons offered for the informal sector not developing to its full potential are both historical and current. Because Africans were not allowed in urban areas in addition to restrictive zoning and licensing laws, arguably they were not able to develop the networks necessary for the maintenance of a large-scale informal sector (Rodrik, 2008; Rogerson, 1996). Furthermore, this history of repression of informal activities amongst Africans has resulted in the underdevelopment of entrepreneurial skills (Kingdon and Knight, 2007; Lipton, 1989; Rogerson, 2000). The dearth of infrastructure and access to credit in African townships are also obstacles to entering the informal sector (Burger and Woolard, 2005; Rogerson, 2000). Therefore, the informal sector has not developed to the extent where it can provide enough employment to compensate for the short-fall in the formal sector.

Thus, it is "the sheer speed of divergence between the growth of the labour force and the growth of formal sector employment (the divergence over the period 1997–2003 being nearly 4 per cent per annum) that is the underlying cause" of growing unemployment (Kingdon and Knight, 2007:816).

In summary, while the conditions for the growth of low-skill, low-wage service jobs exist in the Johannesburg region (a lack of adequate state welfare benefits and a large number of

unskilled adults), unemployment has grown instead, due to insufficient economic growth in comparison to population growth. Thus, the Johannesburg region has a large surplus outsider population of adults along with an increasingly professionalised employed workforce. This is consistent with the case, as Hamnett (1996b) argues, in many European cities. However, the reasons for the development of this same pattern are very different. The unskilled in the Johannesburg region arguably do not receive state welfare support to the degree that it discourages their seeking low-skill work. Moreover, the case that Hamnett (1994a) presents for the US, that is, the presence of large numbers of low-skilled workers in the absence of substantial welfare benefits resulting in the growth of low-wage jobs, also does not apply here: there are arguably large numbers of unskilled workers and low levels of welfare in the Johannesburg region, but not disproportionately large numbers of low-skill jobs. Rather, there simply are not enough low-skill jobs being generated by the economy for the large number of unskilled workers to occupy; hence, growing unemployment alongside an increasingly professionalised employed workforce.

Conclusion

The purpose of this thesis has been to critically assess the social polarisation hypothesis using the case of the Johannesburg region of South Africa. The evidence does not support Sassen's (1994) conceptualisation of the social polarisation hypothesis, namely, that changes in sectoral structure have led to equal increases in high- and low-skill work, at the expense of skilled middle-income, manual employment. Employment in the manufacturing sector did decline from the 1980's as employment in all service sectors increased. However, this arguably did not lead to increased polarisation of the occupational structure. As Hamnett (1994a) contends, the dominant pattern is one of increasing numbers of high-skill, high-pay jobs. Thus, while the numbers of low-skill workers did increase in the Johannesburg region between 1980 and 2010, the absolute growth in the numbers of higher-skilled, higher-paid managerial, professional, associate professional and technical workers was two and a half times greater than that amongst low-skill workers. This led to a marked skewing of the occupational distribution towards high-skill work.

Crucial to this conclusion is how one defines the major occupation groups. Many supporters of the polarisation hypothesis would arguably mistakenly classify all clerical and service and sales occupations as low-skill, low-wage service sector work, and therefore interpret the expansion of these occupations as contributing to increasing social polarisation. However, these occupations have been shown to have similar skill requirements and levels of remuneration to the typical, blue-collar, middle-income jobs of the manufacturing sector that are in decline. Following the method of Borel-Saladin and Crankshaw (2009) then, if clerical and service and sales work is classified as semi-skilled, white-collar, middle-income work, growth in the numbers of these occupations does not contribute towards increasing social polarisation and can even mitigate the effects of the decline of the semi-skilled, blue-collar, middle-income manufacturing jobs. Thus it has been shown that despite the characterisation of many polarisation theorists of jobs in the service sector as being either high-skill, high-pay or low-skill, low-wage, a large proportion of these jobs are actually semi-skilled, middle-income occupations. In terms of social polarisation theory, this goes directly to the heart of the supposed cause of increasing social polarisation: the growth of the service sector and the decline of manufacturing employment. If the service sector in general (as the make-up of the various sub-sectors will vary) does not consist solely of high-skill, high-pay and low-skill, low-pay jobs, but also a significant proportion of semi-skilled, middle-income jobs, then growth in service sector employment and a decline in manufacturing employment cannot lead inexorably to increased social polarisation.

Another assumption of many polarisation theorists concerns the occupation structure of the manufacturing sector. Many authors have argued that the manufacturing sector is made up of predominantly skilled and semi-skilled, middle-income, blue-collar jobs. Thus, the growth of the high-skill, high-pay occupation group has been viewed as a result of employment growth in the service sector only. However, this study has shown that the increase in high-skill, high-pay occupations occurred across all major employment sectors, not only the service sub-sectors: this includes manufacturing. The manufacturing sector itself became more professionalised, with much more growth in high-skill occupations than any other types of jobs. Shift-share analysis was used to show that the increasing share of the occupational distribution held by managerial, professional, associate professional and technical work was due to increases in the numbers of these occupations across all industries (that is, the occupation shift effect was the most significant in general). Therefore, contrary to the argument of social polarisation theorists that the increase in high-skill, high-pay occupations is due to growth in service sector employment only, growth in the numbers of these jobs in fact occurred across all sectors. This in turn lead to increased professionalisation across all sectors, and the professionalisation of the occupational distribution of the Johannesburg region.

The role of migrants in social polarisation was also considered. In much of the polarisation literature, migrants are portrayed as mostly poor, unskilled workers from Third World countries, unable to access anything but low-skill work in the cities to which they migrate. Many scholars allude to the role these migrants play in social polarisation, but do not state what they view this role to be. I would argue that these scholars are implying that migrants contribute to social polarisation by filling the low-skill, low-wage service jobs available that the natives do not want. Thus, with increasing levels of migration, there are more and more migrants to fill these low-wage jobs, while natives fill the growing number of high-skill positions, thereby leading to increasing social polarisation. However, other scholars contend that migrants do not only occupy low-skill, low-wage exclusively. The data for the Johannesburg region show that migrants have similar occupational distributions to natives, and that all migrants have contributed significantly in absolute terms to the growth of managerial, professional, associate professional and technical occupations, and therefore, the greater trend towards increasing professionalisation. Thus, in the case of Johannesburg, not only did large-scale migration not appear to lead to increasing social polarisation, but migrants in fact form a substantial proportion of the ever-growing numbers of high-skill, high-pay workers. Thus the presence of migrants in this case could be argued to be more relevant to the process of the skewing of the occupation distribution towards increasing professionalisation.

However, as South Africa is a country with large numbers of unskilled adults, it would not be unreasonable to expect that the growth in high-skill occupations would be accompanied by a

concomitant growth in low-skill work. Hamnett (1994a) has argued that the presence of a large number of unskilled migrants makes an expanded low-wage service sector possible. As he argues, the case in many European countries is that only a relatively small migrant population is present, and there is sufficient welfare provision which negates the need for people to seek low-skill service sector worker. Thus, growing professionalisation is accompanied by growing unemployment and a large outsider surplus population. Arguably, this is also the case in the Johannesburg region, but not due to adequate welfare benefits making it unnecessary for workers to hold low-wage jobs and choose unemployment instead. Rather, there has simply not been sufficient economic growth and job creation in comparison to labour force growth in South Africa. Thus, this has also resulted in growing professionalisation accompanied by increasing unemployment and a large outsider surplus population.

The above findings highlight two points: first, that professionalisation is not a process that occurs only in Western, developed economies, and second, that professionalisation can be accompanied by unemployment under quite different circumstances. These points are linked though. It is perhaps not surprising that the professionalisation observed in Johannesburg is occurring alongside very high levels of unemployment, much higher than that recorded in most developed countries. Arguably, welfare benefits in many developed countries are of a level that allows a reasonable standard of living for the unemployed. In South Africa, even though this is not the case, the unemployment levels are much higher. Why are the unemployed not taking up low-skill, low-wage jobs? Because there simply are not enough low-skill, low-wage jobs for the large unskilled labour force. This perhaps underscores a fundamental difference between developed countries and developing countries: vastly different levels of wealth. Arguably, even though there are increasing numbers of high-skill, high-pay workers, the percentage of the total population they form, and the amount of money they earn, simply is not enough to generate the demand for the low-skill, low-pay service sector jobs necessary to create employment for the majority of unskilled workers. Thus, instead of the situation in a developed country of increasing professionalisation and increasing levels of wealth of the middle-classes alongside a smaller percentage of the economically inactive (those who are unemployed, but still able to live a reasonable quality of life due to adequate welfare benefits), a developing country may show increasing professionalisation alongside a growing mass of economically inactive, poor, unskilled workers. Thus, while professionalisation may occur in both developed and developing countries, the differing contexts in which the process takes place may lead to very different outcomes for those excluded from the economically active workforce.

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Appendix A:

Magisterial Districts that comprise Gauteng Province in the South African Population Censuses

1996/2001	1970	1980	1985	1991
Alberton	164	164	149	301
Benoni	160	167	152	304
Boksburg	161	165	151	303
Brakpan	162	168	160	312
Bronkhorstspruit	173	182	181	333
Cullinan	174	181	167	319
Germiston	165	163	150	302
Heidelberg (GT)	212	172	170	322
Johannesburg	159	161	148	300
Kempton Park	166	166	153	305
Krugersdorp	152	175	159	311
Nigel	213	170	162	314
Oberholzer	153	179	157	309
Pretoria	167	159	164	316
Randburg	Part of Johannesburg	162	154	306
Randfontein	154	178	158	310
Roodepoort	155	176	155	307
Soshanguve	Not present*	Part of Wonderboom	166	318
Soweto	Part of Johannesburg			
Springs	163	169	161	313
Vanderbijlpark	157	184	168	320
Vereeniging	158	183	169	321
Westonaria	156	177	156	308
Wonderboom	Part of Pretoria	160	165	317

* Was Mabopane East, which was subsequently renamed Soshanguve and reincorporated into South Africa.

Appendix B: Immigrants to the Johannesburg region of South Africa, 1980-2007

Table B1. Occupational distribution of employed men by race in the Johannesburg region, 1980 (frequency distribution)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	1,339	1,207	118	2,664	28,844	29,741	22,209	80,794
Professionals	6,704	4,888	546	12,138	27,079	28,387	16,551	72,017
Technicians and associate professionals	5,542	4,609	323	10,474	27,341	23,216	15,319	65,876
Clerks	41,500	31,783	2,213	75,496	25,215	30,140	6,294	61,649
Service, shop and market sales workers	25,914	52,652	5,226	83,792	23,453	24,708	10,445	58,606
Craft and related trades workers	71,272	182,784	77,937	331,993	54,096	39,322	26,980	120,398
Plant/machine operators and assemblers	87,965	132,972	21,646	242,583	18,508	21,208	6,065	45,781
Elementary occupations	72,072	148,391	11,042	231,505	1,587	2,157	511	4,255
Skilled Agriculture and Undetermined	29,752	62,125	7,146	99,023	5,412	5,399	2,219	13,030
Total	342,060	621,411	126,197	1,089,668	211,535	204,278	106,593	522,406

Table B1.continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	311	202	12	525	1,065	531	350	1,946
Professionals	878	466	19	1,363	1,227	643	198	2,068
Technicians and associate professionals	660	365	14	1,039	865	544	183	1,592
Clerks	3,226	1,476	12	4,714	3,863	2,282	419	6,564
Service, shop and market sales workers	978	770	36	1,784	3,680	1,660	1,463	6,803
Craft and related trades workers	8,700	6,153	183	15,036	1,572	1,107	468	3,147
Plant/machine operators and assemblers	5,052	2,992	23	8,067	750	497	64	1,311
Elementary occupations	1,283	1,142	40	2,465	408	210	74	692
Skilled Agriculture and Undetermined	1,179	1,051	29	2,259	226	180	56	462
Total	22,267	14,617	368	37,252	13,656	7,654	3,275	24,585

Source: South African Population Census 1980

Table B2. Occupational distribution of employed men by race in the Johannesburg region, 2007 (frequency distribution)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	36,204	50,051	11,019	97,274	67,808	39,360	21,317	128,485
Professionals	34,982	47,671	9,853	92,506	61,130	29,753	13,268	104,151
Technicians and associate professionals	32,440	42,629	6,435	81,504	36,252	18,372	7,333	61,957
Clerks	31,291	36,629	3,682	71,602	13,535	5,235	1,139	19,909
Service, shop and market sales workers	54,490	117,931	14,463	186,884	19,878	8,788	3,383	32,049
Craft and related trades workers	68,427	162,416	43,291	274,134	41,225	15,135	5,721	62,081
Plant/machine operators and assemblers	68,992	137,165	13,612	219,769	9,886	4,182	1,056	15,124
Elementary occupations	53,556	109,744	22,405	185,705	8,358	4,072	1,671	14,101
Skilled Agriculture and Undetermined	86,351	141,005	25,755	253,111	46,917	18,303	8,300	73,520
Total	466,733	845,241	150,515	1,462,489	304,989	143,200	63,188	511,377

Table B2.continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	5,830	3,223	182	9,235	7,021	8,546	2,501	18,068
Professionals	5,220	3,118	266	8,604	5,458	7,320	1,791	14,569
Technicians and associate professionals	4,185	1,806	207	6,198	3,180	4,089	441	7,710
Clerks	4,229	1,324	0	5,553	2,626	1,801	433	4,860
Service, shop and market sales workers	3,556	1,832	65	5,453	3,417	2,333	1,823	7,573
Craft and related trades workers	7,931	3,628	500	12,059	1,997	1,781	980	4,758
Plant/machine operators and assemblers	3,731	1,575	54	5,360	741	1,122	470	2,333
Elementary occupations	1,963	1,303	64	3,330	767	752	581	2,100
Skilled Agriculture and Undetermined	6,598	3,527	194	10,319	4,685	4,368	794	9,847
Total	43,243	21,336	1,532	66,111	29,892	32,112	9,814	71,818

Source: Community Survey 2007

Table B3. Occupational distribution of employed men by race in the Johannesburg region, 1980 (percentage distribution, column totals)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	0	0	0	0	14	15	21	15
Professionals	2	1	0	1	13	14	16	14
Technicians and associate professionals	2	1	0	1	13	11	14	13
Clerks	12	5	2	7	12	15	6	12
Service, shop and market sales workers	8	8	4	8	11	12	10	11
Craft and related trades workers	21	29	62	30	26	19	25	23
Plant/machine operators and assemblers	26	21	17	22	9	10	6	9
Elementary occupations	21	24	9	21	1	1	0	1
Skilled Agriculture and Undetermined	9	10	6	9	3	3	2	2
Total	100	100	100	100	100	100	100	100

Table B3. continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	1	1	3	1	8	7	11	8
Professionals	4	3	5	4	9	8	6	8
Technicians and associate professionals	3	2	4	3	6	7	6	6
Clerks	14	10	3	13	28	30	13	27
Service, shop and market sales workers	4	5	10	5	27	22	45	28
Craft and related trades workers	39	42	50	40	12	14	14	13
Plant/machine operators and assemblers	23	20	6	22	5	6	2	5
Elementary occupations	6	8	11	7	3	3	2	3
Skilled Agriculture and Undetermined	5	7	8	6	2	2	2	2
Total	100	100	100	100	100	100	100	100

Source: South African Population Census 1980

Table B4. Occupational distribution of employed men by race in the Johannesburg region, 2007 (percentage distribution, column totals)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	8	6	7	7	22	27	34	25
Professionals	7	6	7	6	20	21	21	20
Technicians and associate professionals	7	5	4	6	12	13	12	12
Clerks	7	4	2	5	4	4	2	4
Service, shop and market sales workers	12	14	10	13	7	6	5	6
Craft and related trades workers	15	19	29	19	14	11	9	12
Plant/machine operators and assemblers	15	16	9	15	3	3	2	3
Elementary occupations	11	13	15	13	3	3	3	3
Skilled Agriculture and Undetermined	19	17	17	17	15	13	13	14
Total	100	100	100	100	100	100	100	100

Table B4. continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	13	15	12	14	23	27	25	25
Professionals	12	15	17	13	18	23	18	20
Technicians and associate professionals	10	8	14	9	11	13	4	11
Clerks	10	6	0	8	9	6	4	7
Service, shop and market sales workers	8	9	4	8	11	7	19	11
Craft and related trades workers	18	17	33	18	7	6	10	7
Plant/machine operators and assemblers	9	7	4	8	2	3	5	3
Elementary occupations	5	6	4	5	3	2	6	3
Skilled Agriculture and Undetermined	15	17	13	16	16	14	8	14
Total	100	100	100	100	100	100	100	100

Source: Community Survey 2007

Table B5. Occupational distribution of employed women by race in the Johannesburg region, 1980 (frequency distribution)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	451	212	15	678	3,626	3,612	2,469	9,707
Professionals	10,927	5,833	99	16,859	17,508	17,924	6,623	42,055
Technicians and associate professionals	8,122	3,894	115	12,131	11,206	9,714	5,022	25,942
Clerks	18,788	4,610	155	23,553	76,376	60,496	25,113	161,985
Service, shop and market sales workers	35,780	14,451	486	50,717	10,674	10,485	6,509	27,668
Craft and related trades workers	22,486	7,515	326	30,327	1,816	1,464	1,135	4,415
Plant/machine operators and assemblers	13,979	3,939	191	18,109	1,768	1,635	809	4,212
Elementary occupations	123,432	151,414	5,482	280,328	985	1,720	351	3,056
Skilled Agriculture and Undetermined	10,055	5,007	254	15,316	1,456	1,322	696	3,474
Total	244,020	196,875	7,123	448,018	125,415	108,372	48,727	282,514

Table B5. continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	103	48	3	154	115	53	35	203
Professionals	843	711	17	1,571	472	307	45	824
Technicians and associate professionals	520	352	11	883	274	162	7	443
Clerks	4,520	1,844	34	6,398	2,951	1,270	90	4,311
Service, shop and market sales workers	1,371	931	16	2,318	1,196	523	189	1,908
Craft and related trades workers	3,259	1,694	11	4,964	463	153	28	644
Plant/machine operators and assemblers	3,070	1,433	10	4,513	345	83	11	439
Elementary occupations	1,929	4,093	26	6,048	142	191	5	338
Skilled Agriculture and Undetermined	814	503	3	1,320	158	64	9	231
Total	16,429	11,609	131	28,169	6,116	2,806	419	9,341

Source: South African Population Census 1980

Table B6. Occupational distribution of employed women by race in the Johannesburg region, 2007 (frequency distribution)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	33,270	24,543	3,650	61,463	55,813	25,339	11,123	92,275
Professionals	57,385	49,915	3,352	110,652	58,889	31,283	10,344	100,516
Technicians and associate professionals	25,410	21,699	1,541	48,650	35,262	14,981	7,238	57,481
Clerks	64,936	44,956	2,356	112,248	51,666	19,827	7,377	78,870
Service, shop and market sales workers	43,248	42,669	5,778	91,695	16,989	6,840	2,217	26,046
Craft and related trades workers	18,851	20,489	1,339	40,679	5,288	2,236	214	7,738
Plant/machine operators and assemblers	11,676	9,725	789	22,190	1,494	882	291	2,667
Elementary occupations	124,724	215,758	17,594	358,076	3,776	3,082	920	7,778
Skilled Agriculture and Undetermined	78,231	83,031	8,620	169,882	38,934	17,829	6,162	62,925
Total	457,731	512,785	45,019	1,015,535	268,111	122,299	45,886	436,296

Table B6. continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	4,914	2,476	53	7,443	3,290	5,674	853	9,817
Professionals	8,246	3,901	310	12,457	3,886	7,936	636	12,458
Technicians and associate professionals	2,953	1,882	100	4,935	1,972	2,721	364	5,057
Clerks	8,999	3,817	214	13,030	5,282	4,767	333	10,382
Service, shop and market sales workers	2,506	1,575	67	4,148	1,367	1,435	244	3,046
Craft and related trades workers	1,686	1,411	0	3,097	503	337	123	963
Plant/machine operators and assemblers	1,350	658	0	2,008	178	113	63	354
Elementary occupations	1,870	2,737	171	4,778	530	427	238	1,195
Skilled Agriculture and Undetermined	6,004	2,977	55	9,036	3,869	4,182	382	8,433
Total	38,528	21,434	970	60,932	20,877	27,592	3,236	51,705

Source: Community Survey 2007

Table B7. Occupational distribution of employed women by race in the Johannesburg region, 1980 (percentage distribution, column totals)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	0	0	0	0	3	3	5	3
Professionals	4	3	1	4	14	17	14	15
Technicians and associate professionals	3	2	2	3	9	9	10	9
Clerks	8	2	2	5	61	56	52	57
Service, shop and market sales workers	15	7	7	11	9	10	13	10
Craft and related trades workers	9	4	5	7	1	1	2	2
Plant/machine operators and assemblers	6	2	3	4	1	2	2	1
Elementary occupations	51	77	77	63	1	2	1	1
Skilled Agriculture and Undetermined	4	3	4	3	1	1	1	1
Total	100	100	100	100	100	100	100	100

Table B7. continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	1	0	2	1	2	2	8	2
Professionals	5	6	13	6	8	11	11	9
Technicians and associate professionals	3	3	8	3	4	6	2	5
Clerks	28	16	26	23	48	45	21	46
Service, shop and market sales workers	8	8	12	8	20	19	45	20
Craft and related trades workers	20	15	8	18	8	5	7	7
Plant/machine operators and assemblers	19	12	8	16	6	3	3	5
Elementary occupations	12	35	20	21	2	7	1	4
Skilled Agriculture and Undetermined	5	4	2	5	3	2	2	2
Total	100	100	100	100	100	100	100	100

Source: South African Population Census 1980

Table B8. Occupational distribution of employed women by race in the Johannesburg region, 2007 (percentage distribution, column totals)

Occupation	African				White			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	7	5	8	6	21	21	24	21
Professionals	13	10	7	11	22	26	23	23
Technicians and associate professionals	6	4	3	5	13	12	16	13
Clerks	14	9	5	11	19	16	16	18
Service, shop and market sales workers	9	8	13	9	6	6	5	6
Craft and related trades workers	4	4	3	4	2	2	0	2
Plant/machine operators and assemblers	3	2	2	2	1	1	1	1
Elementary occupations	27	42	39	35	1	3	2	2
Skilled Agriculture and Undetermined	17	16	19	17	15	15	13	14
Total	100	100	100	100	100	100	100	100

Table B8. continued

Occupation	Coloured				Indian			
	Native	Internal migrant	Foreign migrant	Total	Native	Internal migrant	Foreign migrant	Total
Legislators, senior officials and managers	13	12	5	12	16	21	26	19
Professionals	21	18	32	20	19	29	20	24
Technicians and associate professionals	8	9	10	8	9	10	11	10
Clerks	23	18	22	21	25	17	10	20
Service, shop and market sales workers	7	7	7	7	7	5	8	6
Craft and related trades workers	4	7	0	5	2	1	4	2
Plant/machine operators and assemblers	4	3	0	3	1	0	2	1
Elementary occupations	5	13	18	8	3	2	7	2
Skilled Agriculture and Undetermined	16	14	6	15	19	15	12	16
Total	100	100	100	100	100	100	100	100

Source: Community Survey 2007

Table B9. High-skill occupations across the four main race groups and men and women in the Johannesburg region, 1980 (frequency distribution)

High-skill		African			White			Coloured			Indian			
1980	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	13,585	10,704	987	83,264	81,344	54,079	1,849	1,033	45	3,157	1,718	731	252,496
Women	19,500	9,939	229	32,340	31,250	14,114	1,466	1,111	31	861	522	87	111,450

Source: South African Population Census 1980

Table B10. High-skill occupations across the four main race groups and men and women in the Johannesburg region, 2007 (frequency distribution)

High-skill		African			White			Coloured			Indian			
2007	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	103,626	14,0351	27,307	165,190	87,485	41,918	15,235	8,147	655	15,659	19,955	4,733	63,0261
Women	116,065	96,157	8,543	149,964	71,603	28,705	16,113	8,259	463	9,148	16,331	1,853	523,204

Source: Community Survey 2007.

Table B11. Unskilled occupations across the four main race groups and men and women in the Johannesburg region, 1980 (frequency distribution)

Unskilled		African			White			Coloured			Indian			
1980	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	72,072	148,391	11,042	1,587	2,157	511	1,283	1,142	40	408	210	74	238,917
Women	123,432	151,414	5,482	985	1,720	351	1,929	4,093	26	142	191	5	289,770

Source: South African Population Census 1980

Table B12. Unskilled occupations across the four main race groups and men and women in the Johannesburg region, 2007 (frequency distribution)

Unskilled		African			White			Coloured			Indian			
2007	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	53,556	109,744	22,405	8,358	4,072	1,671	1,963	1,303	64	767	752	581	205,236
Women	124,724	215,758	17,594	3,776	3,082	920	1,870	2,737	171	530	427	238	371,827

Source: Community Survey 2007.

Table B13. Semi-skilled Blue-collar occupations across the four main race groups and men and women in the Johannesburg region, 1980 (frequency distribution)

Semi-skilled		African			White			Coloured			Indian			
Blue-collar 1980	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	159,237	315,756	99,583	72,604	60,530	33,045	13,752	9,145	206	2,322	1,604	532	768,316
Women	36,465	11,454	517	3,584	3,099	1,944	6,329	3,127	21	808	236	39	67,623

Source: South African Population Census 1980

Table B14. Semi-skilled Blue-collar occupations across the four main race groups and men and women in the Johannesburg region, 2007 (frequency distribution)

Semi-skilled		African			White			Coloured			Indian			
Blue-collar 2007	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Native	Internal migrant	Foreign migrant	Total
Men	137,419	299,581	56,903	51,111	19,317	6,777	11,662	5,203	554	2,738	2,903	1,450	595,618
Women	30,527	30,214	2,128	6,782	3,118	505	3,036	2,069	0	681	450	186	79,696

Source: Community Survey 2007