



Decent Work in the South African Macroeconomy: Who are The Winners and Losers?

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Abstract

Concerns related to the future of work has precipitated various studies aimed at ensuring that the labour market is a place where people can earn a living, work in dignity, and flourish as human beings. Studies on labour market inequalities and how macroeconomic policies can be used to address such inequalities are also plentiful. What macroeconomic studies have often failed to do, however, is highlight the differences *between* individuals in the labour market. This is important, especially in an economy with large inequalities, such as South Africa. These inequalities are further entrenched given that wage employment is the primary mode of income generation for the majority of households in South Africa. The purpose of this study was to investigate changes in quality of work at the microeconomic level in relation to changes in the macroeconomy, using a decent work index built from secondary labour force survey data. The data show that changes in the macroeconomic policy environment coincide with differential outcomes for different groups of workers in the labour market, with women benefitting in terms of quality of work during times in which the government undertakes an expansionary fiscal approach, although only in occupation groups which are male-dominated. The study also finds, however, that in some occupation groups, quality of work does not change in relation to shifts in the macroeconomy. The study highlights the need for microeconomic analyses to inform macroeconomic policies to ensure that expected outcomes are distributed in the intended way.

Keywords Decent Work Index · Quality of Work · Decent Work · Labour Markets · Microeconomics · Macroeconomics

Introduction

Studies on labour market inequalities and how macroeconomic policies can be used to address such inequalities are plentiful (Fudge and Vosko 2001; Heintz 2019; Leibbrandt et al. 2009; Schönberg and Ludsteck 2007). These are often used to guide the approaches of governments in devising appropriate labour market policies. What many macroeconomic studies have failed to do, however, is highlight the differences *between* individuals in

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the labour market. This is important especially in an economy with large inequalities, such as South Africa. These inequalities are further entrenched given that wage employment is the primary mode of income generation for the majority of households in South Africa, resulting in the right to work being commodified (Finn 2015).

In contemporary capitalist societies characterised by neoliberal social and economic policies, it becomes important to be or have been a participant in the labour market to avert economic and social vulnerabilities and crises for individuals and their households. Policies which aim at reducing inequality and poverty thus rely heavily on creating favourable labour market outcomes, specifically in the absence of state capacity to ensure basic human rights via social security systems. Any changes in labour market conditions are expected to have important implications for inequality and poverty as well as ensuring citizens can live a life of human dignity. Resultantly, policies aimed at reducing poverty and inequality, both which are required to live a life of dignity, are underpinned by the value which can be extracted by an individual in his/her interaction with the labour market.

This exchange-based relationship conflicts with humanistic management principles and a human rights-based approach which advocate for an emphasis on social welfare and the common good, rather than individualism, a self-interested nature, and competitiveness (Zawadzki 2018). An emphasis on human well-being, rather than a singular focus on exchange is what underpins the International Labour Organization's Decent Work Agenda and the important links which work has for ensuring human rights for many around the world is further reflected by the inclusion of decent work as one of the United Nations' Sustainable Development Goals and the African Union's Agenda 2063 (African Union 2015; Blustein et al. 2016; ILO 1999). Although the aspiration of decent work itself does not adequately decommodify an individual's labour (in the absence of comprehensive social security systems underpinned by universality), it is a tool which can be used to overcome many of the ills which accompany exploitative labour practices which leave workers and their families vulnerable to a multitude of inequalities and possibly a life of poverty.

Despite the many forms of social and economic inequalities co-existing at the micro-economic (household, community, and firm) level, the policy focus has still largely been on macroeconomic indicators and traditional forms of employment i.e., getting people into full-time formal employment and reducing reliance on informal economy incomes. In doing so, South African macroeconomic policy has, as macroeconomic policies in many countries have, focused on economic outcomes for the productive economy rather than broader social and human well-being related indicators. Many policy documents have reiterated the need for employment growth (to achieve the country's developmental outcomes) rather than ensuring that citizens' human rights are achieved; for which many, wage employment is a means to.

In a country with large inequalities, a simple focus on macroeconomic indicators are not sufficient and this paper attempts to draw attention to this. The paper shows how circumstances for different groups within the labour market coincides with sectoral movements, but also that a macroeconomic shock could put those who are already economically vulnerable in an even worse position; confirming what so many other studies have found during the COVID-19 crisis (Arndt et al. 2020; Jessen et al. 2021; Sundar 2020). This paper descriptively looks at the relationship between macroeconomic and sectoral level performance and the quality of work of the workers in those sectors, using microeconomic labour force survey data.

The paper starts with a brief literature review in “[A Brief Literature Review on Labour Market Inequalities](#)” section on labour market inequalities and a few theories which can help conceptualise their persistence. “[The South African Macroeconomy and Sectoral](#)

Level” section then provides an overview of vital economic indicators in the South African macroeconomy to contextualise the results which are presented and discussed later in the paper. This is followed by a methodology section which outlines the process which was followed during the data analysis process and some limitations for the reader to consider as they peruse the results of the data analysis. “Decent Work in the South African Labour Market” and “The Winners and The Losers” sections present an overview of microeconomic decent work outcomes which characterised the South African labour market between 2001 and 2018. These are related to some of the macroeconomic indicators presented in “The South African Macroeconomy and Sectoral Level” section of the paper to find possible similarities in the microeconomic and macroeconomic changes which occurred over the period under consideration. Lastly, the “Discussion and Conclusions” section concludes with a brief discussion on the main findings of the paper, what we learn about the South African economy from the paper, and what areas of future research may be considered.

A Brief Literature Review on Labour Market Inequalities

Studies on the macroeconomy have traditionally based their assumptions on homogeneity of the population, rationality of market participants, and competitiveness (Becker 1974; Marshall 1920; Smith 1976). Many theorists have challenged these assumptions citing high unemployment and persistent inequalities in developing countries as some of the factors which support an argument against such traditional assumptions (Francis and Webster 2019; Orthofer 2016). As a result, policy decisions made based on these assumptions have been largely unsuccessful in addressing structural inequalities in the labour market.

Heintz (2008) provided a comprehensive critique of the assumptions of standard economic analyses, citing factors such as the perfectly competitive nature of the markets, labour as a factor of production which needs to be produced and reproduced, and the alleged distributive nature of macroeconomic policies. He argues for a change of mindset regarding the relationship between the informal and formal economies, and the difference between growth and development, for instance. He does this with the aim of challenging how we think about the relationship between the macroeconomy and the labour market. He specifically states that “[m]acroeconomic predictions typically depend on how the labour market is theorised” and that “macroeconomic relationships depend on how labour markets are theorised and the nature of these relationships has significant consequences for policy” (Heintz 2008:11–12).

This is an important consideration given the way in which macroeconomic predictions tend to be used in policy decision making. South Africa’s macroeconomic policy framework has been criticised for being too rigid in its approach and therefore unable to address the multitude of socioeconomic challenges which face the population. Examples of this include the inflation targeting framework, the prioritisation of a reduction in government debt over spending priorities, and an obsessive focus on reducing unemployment and ‘fixing’ the labour market. These approaches tend to focus on the symptoms of the socioeconomic problems in the country, rather than dealing with the causes. The key challenges which have plagued the South African economy over the last few decades are unemployment, inequality and poverty. These factors are highlighted in each new policy developed, although the proposals put forth to address them have remained conservative. An example is the proposal to promote skills development to ensure “rising employment, increased

productivity, improved living standards and a decline in inequality” (National Planning Commission 2012:115), despite persistent demand-side challenges in the labour market.

Poor households tend to have labour in abundance, as noted by Heintz (2008), although an increase in skills do not assist workers in such households to contend with the concentrated nature of wealth in the country, the structural challenges which such workers face in the labour market, or the failed attempts which government has made at redistributing other productive resources – such as land (Haughton and Khandker 2009). Furthermore, the South African government’s policies have tended to focus on the macro-picture; referring to exports, manufacturing, the currency, and investment, amongst others. Although, the detail on which sectors will be targeted and the types of people such policies should benefit is often not forthcoming and where it is, it is poorly coordinated and integrated with similar frameworks (Black 2009).

Although a macroeconomic plan is an important part of development planning for a country, it is important, especially in a country with such high inequality rates, that more specific details are communicated and pursued with the same vigour. Reasons for this, specifically related to the labour market, are echoed in the theoretical arguments of the segmented labour market and dual labour market theories.

The segmented labour market theory postulates that workers are segmented in the labour market along a number of different characteristics or ‘dimensions’ according to Rumberger and Carnoy (1980). The notion of segmentation was described by King (1999:505) as “separate markets which reward their participants differently, rather than as one large labour market in which the same rules apply to everyone.” Rumberger and Carnoy (1980:117) further stated that the dimensions which characterise privilege in different segments can include “wages, promotion opportunities, returns to education and training, and employment security”. The inequalities between workers who earn different wages and have different levels of education are thus often structural in nature. The dual labour market theorists, on the other hand, postulated that the labour market is divided into primary and secondary sectors, where the primary sector is characterised by low staff turnover, high wages, and employment security while the secondary sector is just the opposite; low wages, high staff turnover, and low employment security (Fine 1998; Ntuli 2009). While mainstream economists assume that individuals are easily able to move between these two sectors and that barriers to entry are lower in the secondary sector, the segmented and dual labour market theories argue that the characteristics of workers will be intimately linked to their positioning within the labour market and may even bar them from moving seamlessly between different segments of the labour market.

The dualistic nature of the approaches has received significant criticism citing the inability of these conceptual frameworks to accommodate more complex arrangements in the labour market and it being ill-suited for describing women’s position in the labour market (Albelda 1986; King 1999). Despite this, they have become useful tools for examining the structural complexities which characterise the South African labour market and the combination of these frameworks allows for an understanding of how the historically racialised and gendered nature of discrimination in the labour market continues to intersect with class formation which is intricately linked to labour market outcomes. In South Africa, these inequalities have been found to run along gender, race, age, and class lines (Browne and Misra 2005; Groenmeyer 2014; Natrass and Seekings 2001). These dimensions thus create barriers to entry into certain segments of the labour market, only allowing certain types of workers to move into particular types of jobs. Furthermore, the high barriers to entry in the South African informal economy, which would be considered part of the secondary economy exhibits elements of segmentation as well, given that women are for instance

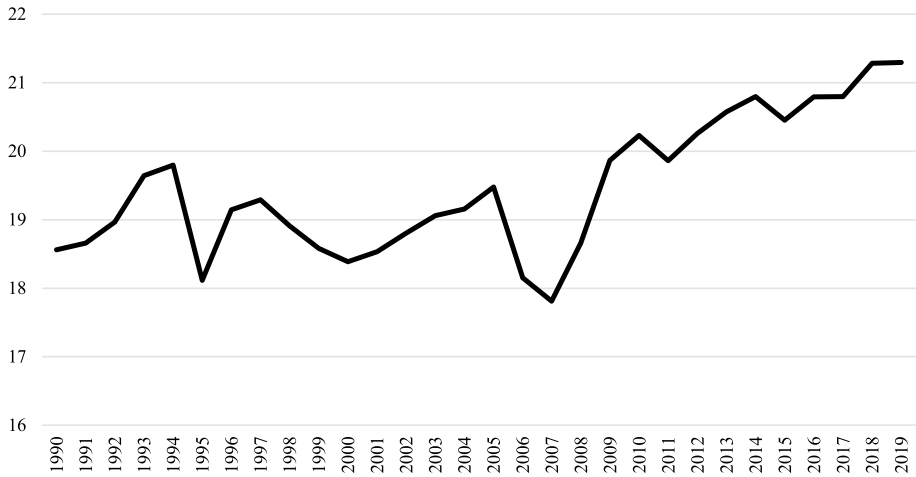


Fig. 1 General government final consumption expenditure (% of GDP), 1990 – 2019. Source: WDI

only able to access certain parts of this economy, such as informal trading (Heintz 2008; Muller 2003; Ossome 2015).

More recently, the concept of ‘fragmented labour markets’ has emerged. This theoretical approach moves away from the dualist approaches of the dual and segmented labour market theories. Bekker and Leschke (2021) argue that fragmented labour markets help illuminate the differences which may exist between groups in the primary and secondary sectors or the formal and informal economies. This is evident, for instance, in part-time work arrangements which may be encountered by workers in the formal economy or full-time, formal employees who take on additional informal, part-time work to make ends meet (Webster et al. 2015). These workers display the merging of complex labour arrangements into what may have been traditionally considered ‘good’ or ‘bad’ jobs. In a similar fashion, this paper attempts to take a closer look at the working conditions of certain groups of workers in their various sectors, by highlighting the differences workers who perform the same job function may experience in the labour market.

The South African Macroeconomy and Sectoral Level

The period under review in this study is 2001 to 2018. During this time, the South African government adopted purposeful economic policies. The effects of these policies are succinctly discussed by Sachs (2020). In his overview discussion he notes that the post-apartheid government employed a fiscally prudent budget to reduce government debt and public consumption, aimed at addressing the balance of payments challenges which had been inherited from the apartheid government. However, after 2001, the pendulum swung the other way. The decade starting 2001 was characterised by an increase in government’s fiscal commitments. Sachs (2020) describes that these came in the form of an expansion of core government services, increased remuneration of public servants, an increase in transfer payments made to poor households, and infrastructure spending. These economic decisions are evident in Fig. 1, which shows that there was a general increase in government consumption expenditure as a percentage of GDP from 2001 to 2010 (with the exception of

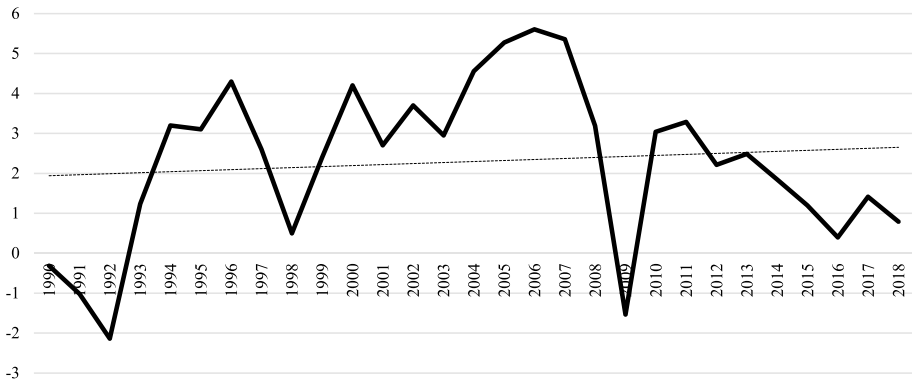


Fig. 2 GDP Growth Rate (%), 1990 – 2018. Source: WDI

the period during which the Global Financial Crisis occurred). Sachs (2020) further notes that during this ‘decade of spending’ government spending grew at about 7% each year on average in real terms.

This was also a time during which economic growth trends were generally favourable, despite a decline in the growth rate as a result of the Global Financial Crisis as depicted in Fig. 2. The economic growth rate reached a record high of 5.6% during the time that fiscal commitments were increased. This expansionary period undoubtedly provided relief to households (in terms of an increase in public service provision) and an increase in public sector employment (specifically in health, policing, and education) (Sachs 2020).

From 2012, however, the government undertook a different approach. Following on from an average growth rate of 4.2% between 2000 and 2008, this number had declined to 1.7% between 2010 and 2019 (Sachs 2020). There was a similar slowdown in the rate of government expenditure, domestic public and private investment, as well as a fall in export growth. This bleak economic picture was informed by a number of largely domestic factors, such as interrupted electricity supply, protests, and internal political turmoil (Sachs 2020).

Average remuneration per employee in each sector is presented in Fig. 3 and shows that for most sectors average remuneration per employee remained relatively constant over the period under review. However, the finance and manufacturing sectors saw growth over the period. The growth in remuneration in the finance sector is consistent with global trends in financialisation and further statistics presented in this section will show the extent to which the finance sector had become critical to the South African economy (Phillips and James 2014). Although manufacturing also saw an increase in real wages, it has been reported that the manufacturing sector had become more capital-intensive; suggesting that the growth in real wages could likely be attributed to growth in the share of skilled workers in that sector (Kingdon and Knight 2007). The utilities sector (electricity, gas, and water), on the other hand, saw a massive decline in average remuneration post 2007. This coincided with the start of electricity shortages in South Africa which led to rolling blackouts (National Treasury 2011).

Labour productivity, which represents the output per worker in each sector, is presented in Fig. 4. Several theorists have attempted to explain the relationship between labour productivity and wage growth. Some have argued that a positive relationship exists between the two (Gokulsing and Tandrayen-Ragoobur 2014), while others have suggested that the inverse is true (Von Fintel 2016; Volek 2012). However, this relationship is also severely affected by price and wage rigidities and theorists have diverged on whether the South

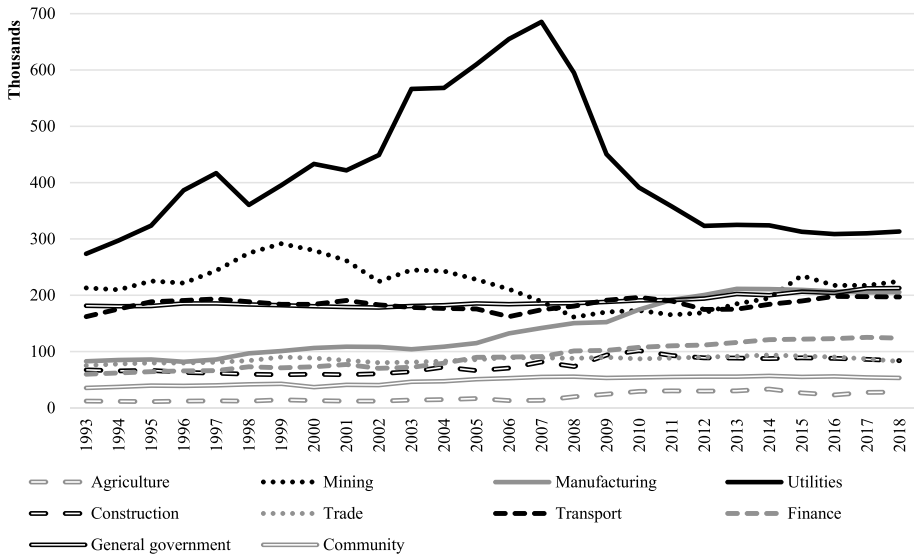


Fig. 3 Remuneration per employee – real wages (Rand) (in 2010 prices) by sector, 1993 – 2018. Source: Quantec

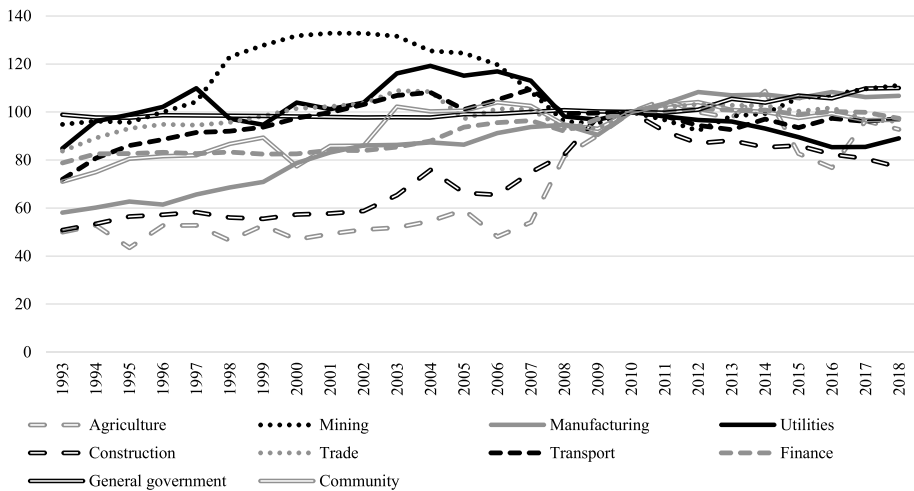


Fig. 4 Labour productivity by sector (%), 1993 – 2018. Source: Quantec. Note: Labour productivity is the most widely used productivity concept. Labour productivity is the ratio between output (Q) and the labour input (LI) used to produce that output: $\text{Labour productivity} = Q / LI = \text{output per unit of labour input}$. Labour productivity can be expressed as output per worker (by dividing total output by total number of workers employed) or as output per hour (by dividing total output by the total number of hours worked). Base year = 2010

African labour market is overly characterised by these rigidities. This is the basis on which many have argued for a relaxation of labour market regulations on the one hand and tighter regulation utilising tools such as national minimum wage legislation on the other (Finn 2015; Mudronova 2016; Strauss and Isaacs 2016).

Some notable trends in Fig. 4 (and Fig. 3) show that as real remuneration per employee in the mining sector was declining in the early 2000s, labour productivity in the sector also declined. The post-2015 boom in real wages was also met with an increase in productivity in the sector (see Fig. 4). The wage and productivity trends observed in the mining sector would suggest at face glance that there exists a positive relationship between labour productivity and wages. A similar trend was notable for the manufacturing sector. This sector displayed a largely consistent upward trajectory in productivity growth, as real wages per employee was also increasing during this time. This trend in manufacturing reflects the exit of firms which employ large proportions of unskilled workers, import competition, and the bargaining structure in which employers and employees negotiate (Rankin 2016).

The finance sector has also seen general increases in labour productivity (accompanied by a growth in real wages over the period), while sectors such as utilities, construction, community services, and transport largely saw a decline in productivity from 2012 onwards.

Worth noting in both Fig. 3 and Fig. 4, is the rise in labour productivity in the agriculture sector up to 2012, despite the real wages of agricultural workers remaining largely constant over the period under review. This suggests, at least graphically, that there is a weak relationship between productivity and wage growth in the agriculture sector. This sector has seen a massive decline in the number of workers employed in the sector, as well as the support mechanisms which were traditionally provided to the agriculture sector under the apartheid regime (Pons-Vignon and Anseeuw 2009; SAHO 2015). However, despite the spatial separation of agricultural workers, they managed to wage a sector-crippling strike in 2012 demanding higher wages, pay on days that they are not able to perform their duties due to adverse weather conditions, and decent working hours, amongst others (Devereux 2020) (Table 1).

Lastly, Fig. 5 shows how workers are spread across the sectors and indicates that the finance, construction, community, and transport sectors had all increased their share of workers over the period under consideration. While the agriculture, mining, manufacturing, and trade sectors had all decreased their shares. The utilities sector interestingly had a low and consistent share, despite large fluctuations in the wage rate per employee seen in Fig. 3.

Methodology

This section provides an overview of how a decent work index, conceptualised by Mackett (2020) and based on the ILO's decent work index, was used to achieve the aims outlined in the introduction of this paper. The ILO provides a range of variables with which to measure decent work, however, they categorise these under a number of indicators. These are (1) the economic and social context for decent work; (2) adequate earnings and productive work; (3) decent working time; (4) combining work, family and personal life; (5) work that should be abolished; (6) stability and security at work; (7) employment opportunities; (8) safe work environment; (9) equal opportunity and treatment by employer; (10) social security; and (11) social dialogue, workers' and employers' representation (ILO 2012, 2013).

This study used eight of the 11 indicators to measure decent work at the microeconomic level. 'Work that should be abolished', in the ILO's guides, is measured using variables which reflect child labour and forced labour. Neither of these were perceived to be a prevailing problem in South Africa, nor were data available with which to measure this indicator. However, in other countries, such as Botswana, individuals as young as 12-years-old are enumerated to shed light on the extent to which child labour is a continuing problem

Table 1 Labour productivity by sector (%), 2010 – 2018

Sector	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Transport	Finance	General gov- ernment	Community
2010	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2011	105.3	96.8	103.5	98.2	92.0	102.0	98.4	100.3	99.7	103.0
2012	100.0	92.2	108.3	96.7	87.0	103.2	94.5	101.4	101.0	104.1
2013	97.5	98.3	107.0	96.0	88.1	102.8	92.7	100.8	105.5	100.9
2014	108.7	99.3	107.2	93.2	85.3	102.7	97.1	100.8	103.9	100.1
2015	82.7	105.8	105.9	89.5	86.0	100.3	93.5	99.0	106.9	97.5
2016	76.8	107.2	108.4	85.3	82.4	101.8	97.4	100.2	105.7	99.5
2017	96.3	109.6	106.2	85.5	80.6	96.7	96.1	99.9	109.8	96.6
2018	92.8	111.1	106.8	89.1	77.0	96.1	97.3	97.3	110.0	96.8

Quantec. Note: Labour productivity is the most widely used productivity concept. Labour productivity is the ratio between output (Q) and the labour input (L) used to produce that output: Labour productivity = Q / L = output per unit of labour input. Labour productivity can be expressed as output per worker (by dividing total output by total number of workers employed) or as output per hour (by dividing total output by the total number of hours worked). Base year = 2010.

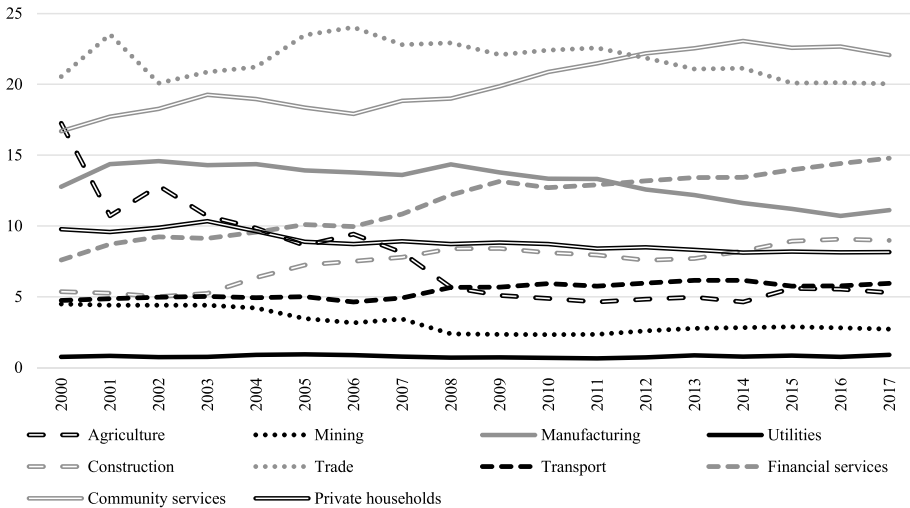


Fig. 5 Employment by branch of economic activity (%), 2000 – 2017. Source: PALMS. Note: Own calculations

(Central Statistics Office 1995). Furthermore, ‘safe work environment’, which is largely related to occupational injuries, time lost as a result of injuries, and the ratio of labour inspectors to workers, is also not included in the measurement here due to a lack of variables in the data with which to measure it. However, authors using primary data have managed to include this indicator in their studies (see for instance Webster et al. (2015)). Lastly, the ‘economic and social context for decent work’ largely includes macroeconomic variables, such as gross domestic product (GDP) growth, the inflation rate, the adult literacy rate, and labour productivity, amongst others. Some of these variables were included in Section 3 to supplement the microeconomic analysis, although due to the nature of the recommended variables for measurement, could not be included in the microeconomic index. Some of the recommended variables include general government expenditure as a percentage of GDP; GDP growth; real remuneration per employee by sector; labour productivity by sector; and employment by branch of economic activity.

For the microeconomic analysis, the ILO’s indicators were measured using three cross sections of the South African Labour Force Survey (LFS). The chosen cross-sections allow for measurement over time and includes the 2001 September biannual LFS, the 2011 Labour Market Dynamics Survey (LMD), as well as the 2018 LMD Survey.¹ Important to note regarding the cross-sections is that they were analysed separately and statistical significance between the time periods were thus not determined.

The study made use of secondary data, although a challenge which arises from using existing secondary data is that the analysis is limited to the variables which are available

¹ From 2000 the South African Labour Force Survey was collected on a biannual basis by Statistics South Africa. This was later replaced by the Quarterly Labour Force survey in 2008. The Quarterly Labour Force Survey is not released with wage data. The wage data are released on an annual basis in the Labour Market Dynamics Survey to account for seasonal fluctuations in earnings.

Table 2 Combined decent work indicators

ILO Indicators (combined)	Elements
Decent working time (3) and combining work, family, and personal life (4)	Longer hours; Paid leave; Excess hours
Employment opportunity (7), stability and security at work (6)	Employed sector; Informal employment rate; Contract type; Duration of employment; Written contract
Equal opportunity and treatment (9), adequate and productive earnings (2)	Low pay rate; Average earnings; Gender occupational segregation; Racial occupational segregation; Gender pay gap
Social security (10), dialogue, and workers' and employers' representation (11)	Medical aid; Number of workers in company; Pension contribution; UIF contribution; Union membership; Union density

The numbers in the first column in this table correspond to the numbers of the individual indicators described at the beginning of this methodology section and is included solely for ease of the reader's reference.

in the questionnaires. An advantage, however, is that it allows for comparability using nationally representative data. This means including occupation groups which are traditionally viewed as 'good' jobs as well as the occupation groups in which it is known that workers tend to be vulnerable, highlighting the complex and fragmented nature of working conditions in these occupation groups. As the study focused on job characteristics of individuals, the sample was limited to individuals of working age, between the ages of 18 and 65, who were gainfully employed at the time the data were collected. Unemployed and not economically active individuals would not have been asked questions related to the quality of their work and they could thus not be included in the study.

Due to the paucity of variables with which to measure the eight indicators, as well as the overlap which the underlying elements could have for measurement of each indicator, the variables were combined to form four indicators. For instance, paid leave, which reflects whether workers are entitled to paid vacation leave or not, could be used as a measure for 'decent working time' as well as 'combining work family and personal life'. The combined indicators are presented in Table 2 together with the individual variables (elements) which were used to construct them.

Some of the elements were measured at the individual level, while others were measured at the 2-digit occupation group level. For instance, 'paid leave' was measured at the *individual level*, meaning each worker could have a different value (1 = yes if they were entitled to paid leave and; 0 = no) for this variable regardless of their occupation group. Whereas the 'low pay rate' was measured at the *occupation level* and represents the proportion of workers employed in the occupation group who are paid less than two-thirds of the median wage rate. Mackett (2020) can be consulted for a substantive discussion on how the variables were calculated.

Given that some of the elements were calculated at the individual level and others at the occupation level, each worker in the sample had a different score when all the element scores were added up. To create comparable scores, they were standardised using the following formula:

$$X_i = (X_{actual} - X_{min}) / (X_{max} - X_{min}) \quad (1)$$

This standardisation procedure has been used by authors who have studied quantitative decent work measures, such as Webster et al. (2015), Standing (2002), and Nizami and

Prasad (2017). In formula (1), X_i was the index value for individual i , X_{actual} was the actual value assigned to individual i , X_{min} was the smallest value for any individual in the sample, and X_{max} was the largest value for any individual in the sample. As a final step, a Principal Components Analysis was performed to weight the scores of each individual in the sample, as has been done in previous studies (Gan et al. 2017; Greco et al. 2019; Greyling and Tregenna 2017; Ram 1982). The final outcome of this process was thus a weighted decent work index (DWI), which is used in the remainder of this paper as a proxy for quality of work. The next section presents the results of the DWI by occupation group in addition to an analysis of selected occupation groups and the sectors in which they were most dominant.

Decent Work in the South African Labour Market

The share of each occupation group in the overall occupation distribution shows that for the three survey periods under review (see Table 3), cleaners made up the largest share of workers in the South African labour market. In 2001 they made up 15.21%, in 2011 15.06%, and in 2018 they made up 16.27% of workers. The second largest occupation group was personal service workers who made up 7.40%, 10.39%, and 12.85%, in 2001, 2011, and 2018, respectively.

The four occupation groups, which will be discussed later, are highlighted in Table 3 and indicates that two of the groups had an initial increase in their shares and then a decrease. This was science and engineering professionals and health professionals which had an initial increase between 2001 and 2011 (from 0.68% to 1.46% for science and engineering professionals and 0.63% to 0.95% for health professionals) in their shares and then a decrease from 2011 to 2018 (0.71% for science and engineering professionals and 0.47% for health professionals).

Skilled forestry, fishery and hunting workers and cleaners, on the other hand, saw an initial decrease and then increase. For the former group, these shares decreased from 1.98% in 2001 to 0.02% in 2011 and then increased to 0.08% in 2018. Cleaners experienced a similar shift in their shares.

Viewing these shares disaggregated by gender, focussing on the highlighted occupation groups, shows that the science and engineering occupation group was male-dominated throughout the survey periods as was the skilled forestry, fishery and hunting occupation group. Health professionals and cleaners, on the other hand, were female-dominated. However, these occupation groups had different patterns in terms of how those shares changed.

For science and engineering professionals there was an initial increase in the share of females employed in the occupation group (2001 to 2011) and then a decrease. Whereas health professionals experienced a persistent increase in the share of females. Skilled forestry, fishery, and hunting workers and cleaners experienced an initial decrease and then an increase in the share of women employed in the occupation groups (Table 4).

The DWI scores for each group, presented in Table 5, provides the justification for the chosen occupation groups on which this study focuses. The table shows that the two best scoring occupation groups in terms of the DWI over the periods are science and engineering professionals and health professionals. Similarly, the worst scoring groups are cleaners and skilled, forestry, fishery and hunting workers.

Table 3 Share of occupation group in overall occupational distribution (%), 2001 – 2018

	2001	2011	2018
Chief executives, senior officials & legislators	0.12 (0.04)	0.36 (0.03)	0.44 (0.03)
Administrative & commercial managers	2.92 (0.18)	5.24 (0.11)	4.86 (0.11)
Production & specialised services managers	0.82 (0.08)	0.49 (0.03)	0.24 (0.03)
Science & engineering professionals	0.68 (0.08)	1.46 (0.06)	0.71 (0.04)
Health professionals	0.63 (0.07)	0.97 (0.04)	0.47 (0.03)
Teaching professionals	1.86 (0.12)	0.64 (0.04)	1.83 (0.07)
Business & administration professionals	1.34 (0.15)	2.78 (0.08)	1.81 (0.07)
Science & engineering associate professionals	2.10 (0.14)	2.28 (0.07)	2.03 (0.07)
Health associate professionals	1.71 (0.13)	1.81 (0.06)	1.68 (0.06)
Business & administration associate professionals	3.85 (0.16)	4.35 (0.08)	2.08 (0.07)
Legal, social & cultural associate professionals	3.39 (0.22)	3.53 (0.09)	2.87 (0.08)
General & keyboard clerks	7.56 (0.25)	8.14 (0.13)	7.02 (0.13)
Customer services clerks	3.92 (0.18)	4.08 (0.09)	4.26 (0.10)
Personal service workers	7.40 (0.23)	10.39 (0.14)	12.86 (0.16)
Sales workers	4.34 (0.19)	3.86 (0.10)	3.71 (0.09)
Skilled agricultural workers	2.62 (0.14)	0.28 (0.02)	0.16 (0.02)
Skilled forestry, fishery & hunting workers	1.98 (0.11)	0.02 (0.00)	0.08 (0.02)
Building & related trades workers	6.83 (0.23)	5.40 (0.11)	5.32 (0.11)
Metal, machinery & related trades workers	4.22 (0.23)	3.75 (0.09)	3.87 (0.10)
Handicraft & printing workers	0.54 (0.06)	0.48 (0.04)	0.44 (0.03)
Electrical & electronic trades workers	1.42 (0.09)	1.47 (0.06)	1.21 (0.05)
Stationary plant & machine operators	1.41 (0.10)	0.90 (0.04)	1.14 (0.05)

Table 3 (continued)

	2001	2011	2018
Assemblers	3.40 (0.15)	2.99 (0.09)	2.19 (0.07)
Drivers & mobile plant operators	6.93 (0.20)	5.67 (0.11)	6.05 (0.12)
Cleaners	15.21 (0.29)	15.06 (0.16)	16.27 (0.17)
Agriculture, forestry & fishery workers	7.11 (0.19)	6.60 (0.11)	8.62 (0.13)
Mining, construction, manufacturing & transport workers	5.67 (0.19)	7.01 (0.12)	7.76 (0.13)
Total	100	100	100
N	27,275	194,203	152,939

LFS 2001/2, LMD 2011, and LMD 2018. Note: Standard errors in parentheses. All differences significant at $p < 0.001$. Data are weighted.

The scores show that the male-dominated occupation groups (science and engineering professionals and skilled forestry, fishery and hunting workers) experienced an initial decline in DWI scores between 2001 and 2011. This score then remained constant for science and engineering professionals and increased for skilled forestry, fishery and hunting workers to 2018. While the female-dominated occupation groups (health professionals and cleaners) experienced an initial increase in their scores from 2001 to 2018 followed by a further increase for health professionals and a subsequent decrease for cleaners.

Disaggregated by gender (see Table 6), the female DWIs for these occupation groups all followed the same pattern as the female shares in the occupation groups. As the occupation group became more feminised, the DWI score for the females increased, while the score for females decreased as the share of males employed in the occupation group declined. The same was not true of the male DWIs. For health professionals and skilled forestry, fishery and hunting workers, the male DWIs displayed a positive relationship with the female share in the occupation group, although these moved in opposite directions for science and engineering professionals and cleaners. This is consistent with the dual labour market and segmented labour market theories which hypothesise barriers to entry between jobs and sectors. If this was not the case, workers would be able to move to jobs which provide them with higher returns. These results provide some preliminary evidence about the gender distribution in an occupation group (or the extent of gender inequality) and the outcomes this could have for women's quality of work. Although, this would need to be confirmed with inferential analysis which is beyond the scope of the current study.

The Winners and The Losers

This section expands on further disaggregated scores according to the sectors in which workers in the highlighted occupation groups were most prominently represented. The four occupation groups highlighted in this section have been discussed briefly in the previous

Table 4 Share of occupation group in overall occupational distribution, by gender (%), 2001 – 2018

	2001		2011		2018	
	Male	Female	Male	Female	Male	Female
Chief executives, senior officials & legislators	49.08 (15.44)	50.92 (15.44)	70.58 (3.63)	29.42 (3.63)	64.40 (3.70)	35.60 (3.70)
Administrative & commercial managers	74.62 (2.98)	25.38 (2.98)	64.17 (1.04)	35.83 (1.04)	63.20 (1.15)	36.80 (1.15)
Production & specialised services managers	77.60 (4.32)	22.40 (4.32)	64.48 (3.27)	35.52 (3.27)	74.18 (4.44)	25.82 (4.44)
Science & engineering professionals	82.05 (3.89)	17.95 (3.89)	79.54 (1.85)	20.46 (1.85)	79.56 (2.51)	20.44 (2.51)
Health professionals	35.82 (5.65)	64.18 (5.65)	32.35 (2.16)	67.65 (2.16)	29.83 (3.48)	70.17 (3.48)
Teaching professionals	39.29 (2.97)	60.71 (2.97)	40.90 (3.03)	59.10 (3.03)	35.40 (1.73)	64.60 (1.73)
Business & administration professionals	56.81 (5.52)	43.19 (5.52)	47.04 (1.51)	52.96 (1.51)	48.36 (1.96)	51.64 (1.96)
Science & engineering associate professionals	77.50 (2.80)	22.50 (2.80)	80.43 (1.22)	19.57 (1.22)	73.26 (1.57)	26.74 (1.57)
Health associate professionals	11.56 (2.17)	88.44 (2.17)	13.00 (1.06)	87.00 (1.06)	18.52 (1.46)	81.48 (1.46)
Business & administration associate professionals	36.23 (2.01)	63.77 (2.01)	30.10 (0.90)	69.90 (0.90)	26.13 (1.52)	73.87 (1.52)
Legal, social & cultural associate professionals	54.75 (3.45)	45.25 (3.45)	49.90 (1.23)	50.10 (1.23)	49.16 (1.49)	50.84 (1.49)
General & keyboard clerks	37.90 (1.64)	62.10 (1.64)	35.33 (0.79)	64.67 (0.79)	33.01 (0.88)	66.99 (0.88)
Customer services clerks	24.59 (1.96)	75.41 (1.96)	23.30 (0.99)	76.70 (0.99)	19.25 (0.93)	80.75 (0.93)
Personal service workers	63.12 (1.55)	36.88 (1.55)	58.31 (0.70)	41.69 (0.70)	48.65 (0.67)	51.35 (0.67)
Sales workers	48.44 (2.21)	51.56 (2.21)	61.28 (1.18)	38.72 (1.18)	58.39 (1.25)	41.61 (1.25)
Skilled agricultural workers	90.70 (1.48)	9.30 (1.48)	66.41 (4.04)	33.59 (4.04)	73.03 (4.99)	26.97 (4.99)
Skilled forestry, fishery & hunting workers	55.25 (2.83)	44.75 (2.83)	85.37 (7.97)	14.63 (7.97)	76.41 (7.72)	23.59 (7.72)
Building & related trades workers	94.52 (0.70)	5.48 (0.70)	95.41 (0.44)	4.59 (0.44)	95.48 (0.42)	4.52 (0.42)
Metal, machinery & related trades workers	97.09 (0.60)	2.91 (0.60)	95.96 (0.57)	4.04 (0.57)	94.68 (0.58)	5.32 (0.58)
Handicraft & printing workers	67.02 (5.09)	32.98 (5.09)	79.01 (2.83)	20.99 (2.83)	79.19 (2.99)	20.81 (2.99)
Electrical & electronic trades workers	42.66 (3.25)	57.34 (3.25)	53.01 (1.96)	46.99 (1.96)	52.19 (2.14)	47.81 (2.14)

Table 4 (continued)

	2001		2011		2018	
	Male	Female	Male	Female	Male	Female
Stationary plant & machine operators	96.25	3.75	90.81	9.19	85.07	14.93
	(0.99)	(0.99)	(1.28)	(1.28)	(1.55)	(1.55)
Assemblers	57.16	42.84	65.02	34.98	66.33	33.67
	(2.14)	(2.14)	(1.31)	(1.31)	(1.50)	(1.50)
Drivers & mobile plant operators	98.34	1.66	96.91	3.09	96.63	3.37
	(0.39)	(0.39)	(0.34)	(0.34)	(0.36)	(0.36)
Cleaners	19.27	80.73	21.37	78.63	20.31	79.69
	(0.85)	(0.85)	(0.49)	(0.49)	(0.47)	(0.47)
Agriculture, forestry & fishery workers	68.86	31.14	74.62	25.38	71.11	28.89
	(1.29)	(1.29)	(0.71)	(0.71)	(0.72)	(0.72)
Mining, construction, manufacturing & transport workers	75.13	24.87	71.01	28.99	69.07	30.93
	(1.38)	(1.38)	(0.79)	(0.79)	(0.79)	(0.79)
Total	58.03	41.97	55.85	44.15	54.05	45.95
	(0.44)	(0.44)	(0.23)	(0.23)	(0.24)	(0.24)
N	27275		194203		152939	

LFS 2001/2, LMD 2011, and LMD 2018. Note: Standard errors in parentheses. Rows add to 100. Data are weighted.

section and the analysis here sheds more light on the quality of work in each of these occupation groups over the period under consideration.²

Science and Engineering Professionals

Science and engineering professionals were predominantly located in the finance and manufacturing sectors. The DWI scores for those working in the finance sector were consistently lower than those in manufacturing, although both sectors had a declining trend in DWI scores. The gross value-added in GDP increased over the period under consideration for the finance sector and decreased for the manufacturing sector. Similarly, employment by branch of economic activity also increased for the finance sector over the period and decreased for the manufacturing sector. Despite these changes in the macroeconomy, real remuneration per employee increased for both sectors over the period, with wages surprisingly increasing at a faster pace in the manufacturing sector than they did in the finance sector. This suggests that despite macroeconomic changes which occurred in the sectors over the period under consideration, they were not necessarily reflected by the returns for workers over the same period.

The overall DWI scores (presented in Table 5) for this occupation group decreased between 2001 and 2011 and the score remained stagnant between 2011 and 2018. In 2001, 23.43% of workers worked in finance in 2001 and 33.7% in manufacturing. In 2011, the finance share had

² This section includes information on the share of workers in each sector. These results are discussed, but not presented in this paper, due to space constraints. The results are available from the author.

Table 5 DWI by occupation group, 2001 – 2018

	2001	2011	2018
Chief executives, senior officials & legislators	0.749 (0.04)	0.838 (0.01)	0.783 (0.01)
Administrative & commercial managers	0.799 (0.01)	0.792 (0.00)	0.816 (0.00)
Production & specialised services managers	0.709 (0.01)	0.643 (0.01)	0.588 (0.02)
Science & engineering professionals	0.854 (0.01)	0.847 (0.00)	0.847 (0.01)
Health professionals	0.789 (0.01)	0.835 (0.00)	0.883 (0.01)
Teaching professionals	0.799 (0.01)	0.802 (0.01)	0.863 (0.00)
Business & administration professionals	0.803 (0.01)	0.773 (0.00)	0.802 (0.00)
Science & engineering associate professionals	0.740 (0.01)	0.756 (0.00)	0.775 (0.00)
Health associate professionals	0.794 (0.01)	0.787 (0.00)	0.767 (0.00)
Business & administration associate professionals	0.765 (0.00)	0.768 (0.00)	0.719 (0.00)
Legal, social & cultural associate professionals	0.723 (0.01)	0.723 (0.00)	0.675 (0.00)
General & keyboard clerks	0.742 (0.00)	0.755 (0.00)	0.723 (0.00)
Customer services clerks	0.603 (0.01)	0.618 (0.00)	0.612 (0.00)
Personal service workers	0.570 (0.01)	0.562 (0.00)	0.546 (0.00)
Sales workers	0.481 (0.01)	0.524 (0.00)	0.535 (0.00)
Skilled agricultural workers	0.269 (0.01)	0.390 (0.01)	0.410 (0.01)
Skilled forestry, fishery & hunting workers	0.184 (0.01)	0.111 (0.01)	0.206 (0.02)
Building & related trades workers	0.513 (0.01)	0.547 (0.00)	0.507 (0.00)
Metal, machinery & related trades workers	0.602 (0.01)	0.647 (0.00)	0.652 (0.00)
Handicraft & printing workers	0.468 (0.02)	0.537 (0.01)	0.433 (0.01)
Electrical & electronic trades workers	0.526 (0.01)	0.543 (0.01)	0.564 (0.01)
Stationary plant & machine operators	0.710 (0.01)	0.726 (0.01)	0.720 (0.01)

Table 5 (continued)

	2001	2011	2018
Assemblers	0.617 (0.01)	0.660 (0.00)	0.653 (0.00)
Drivers & mobile plant operators	0.584 (0.01)	0.541 (0.00)	0.525 (0.00)
Cleaners	0.265 (0.00)	0.311 (0.00)	0.303 (0.00)
Agriculture, forestry & fishery workers	0.361 (0.00)	0.329 (0.00)	0.384 (0.00)
Mining, construction, manufacturing & transport workers	0.545 (0.01)	0.525 (0.00)	0.515 (0.00)
<i>N</i>	25,367	194,203	152,939

LFS 2001/2, LMD 2011, and LMD 2018. Note: Standard errors in parentheses. All differences significant at $p < 0.001$. Data are weighted.

increased to 42.04% and the manufacturing share had decreased to 14.19%. By 2018, 45.12% of the sample was working in finance and only 10.81% was working in manufacturing. Overall, workers in the manufacturing sector seemed to perform better in terms of their DWI scores compared to those in finance. This trend in manufacturing could likely support the studies which have demonstrated a shift to capital-intensity in the sector and the wages and productivity in the manufacturing sector increased over the same period (Kingdon and Knight 2007). However, the eventual decline of the DWI scores could similarly reflect the overall decline in the sector's importance to the broader macroeconomy.

By gender, the scores moved in opposite directions for men and women. Men's overall scores initially decreased (2001 – 2011) and then increased (2011 – 2018). The opposite was true for women, who had scores increase and then decrease. Women moved from manufacturing to finance at a faster pace than men. Decreasing their shares in manufacturing from 24.5% (2001), to 10.86% (2011), and then 7.26% (2018). By contrast, their shares in the finance sector increased (53.6% in 2001 to 54.16% in 2011) initially and then decreased (39.94% in 2018). The DWIs presented in Fig. 6 seem to match this pattern of shifting in the finance sector; with an initial increase followed by a decrease. Although, their DWI scores in manufacturing indicated the same pattern; an initial increase and then a decrease. These shifts were thus not sector specific and possibly reflects conditions for women in the labour market more broadly.

For men, on the other hand, consistent decreases were evident. Those employed in the manufacturing sector saw a decrease in their DWI scores over the period, and this was also the case for those in finance. Although, what is clear from the graphs is that female science and engineering professionals overtook men with their DWI scores in the 2011 sample, regardless of the sector of employment. Lastly, the decline in the DWI scores for the 2018 period also reflects a reduction in the domestic and private investment which occurred in the period leading up to 2018 and the many political challenges which characterised a poorer economic environment for both workers and firms as a result.

Health Professionals

Health professionals were also identified as one of the best scoring occupation groups in the sample and these workers were primarily located in the community sector which is

Table 6 DWI by occupation group and gender, 2001 – 2018

	2001		2011		2018	
	Male	Female	Male	Female	Male	Female
Chief executives, senior officials & legislators	0.707 (0.04)	0.787 (0.06)	0.845 (0.01)	0.818 (0.02)	0.797 (0.01)	0.758 (0.02)
Administrative & commercial managers	0.796 (0.01)	0.806 (0.01)	0.792 (0.00)	0.790 (0.00)	0.813 (0.00)	0.823 (0.00)
Production & specialised services managers	0.702 (0.01)	0.729 (0.03)	0.644 (0.01)	0.642 (0.02)	0.585 (0.02)	0.594 (0.04)
Science & engineering professionals	0.858 (0.01)	0.836 (0.03)	0.844 (0.00)	0.857 (0.01)	0.849 (0.01)	0.839 (0.01)
Health professionals	0.751 (0.02)	0.808 (0.01)	0.828 (0.01)	0.838 (0.00)	0.872 (0.01)	0.887 (0.01)
Teaching professionals	0.796 (0.01)	0.801 (0.01)	0.809 (0.01)	0.797 (0.01)	0.864 (0.00)	0.862 (0.00)
Business & administration professionals	0.801 (0.01)	0.806 (0.01)	0.764 (0.00)	0.781 (0.00)	0.795 (0.01)	0.808 (0.01)
Science & engineering associate professionals	0.741 (0.01)	0.735 (0.01)	0.755 (0.00)	0.759 (0.01)	0.774 (0.00)	0.779 (0.01)
Health associate professionals	0.778 (0.02)	0.796 (0.01)	0.746 (0.01)	0.793 (0.00)	0.751 (0.01)	0.771 (0.00)
Business & administration associate professionals	0.763 (0.01)	0.767 (0.01)	0.790 (0.00)	0.758 (0.00)	0.749 (0.01)	0.708 (0.00)
Legal, social & cultural associate professionals	0.723 (0.01)	0.724 (0.02)	0.720 (0.00)	0.725 (0.00)	0.672 (0.01)	0.678 (0.01)
General & keyboard clerks	0.750 (0.01)	0.737 (0.01)	0.762 (0.00)	0.751 (0.00)	0.728 (0.00)	0.721 (0.00)
Customer services clerks	0.599 (0.02)	0.604 (0.01)	0.630 (0.01)	0.614 (0.00)	0.615 (0.01)	0.612 (0.00)
Personal service workers	0.588 (0.01)	0.538 (0.01)	0.593 (0.00)	0.519 (0.00)	0.572 (0.00)	0.522 (0.00)
Sales workers	0.503 (0.01)	0.460 (0.01)	0.533 (0.01)	0.511 (0.01)	0.528 (0.01)	0.546 (0.01)
Skilled agricultural workers	0.268 (0.01)	0.280 (0.02)	0.411 (0.02)	0.347 (0.01)	0.422 (0.02)	0.378 (0.02)
Skilled forestry, fishery & hunting workers	0.176 (0.01)	0.195 (0.01)	0.111 (0.02)	0.111 (0.03)	0.179 (0.02)	0.292 (0.05)
Building & related trades workers	0.517 (0.01)	0.437 (0.03)	0.544 (0.00)	0.617 (0.02)	0.503 (0.00)	0.581 (0.02)
Metal, machinery & related trades workers	0.603 (0.01)	0.580 (0.04)	0.646 (0.00)	0.671 (0.01)	0.647 (0.00)	0.738 (0.01)
Handicraft & printing workers	0.453 (0.03)	0.503 (0.04)	0.527 (0.02)	0.577 (0.02)	0.404 (0.01)	0.546 (0.02)
Electrical & electronic trades workers	0.530 (0.02)	0.522 (0.01)	0.546 (0.01)	0.541 (0.01)	0.543 (0.01)	0.587 (0.01)

Table 6 (continued)

	2001		2011		2018	
	Male	Female	Male	Female	Male	Female
Stationary plant & machine operators	0.713 (0.01)	0.629 (0.06)	0.729 (0.01)	0.700 (0.02)	0.725 (0.01)	0.690 (0.02)
Assemblers	0.623 (0.01)	0.609 (0.01)	0.676 (0.00)	0.630 (0.01)	0.659 (0.01)	0.643 (0.01)
Drivers & mobile plant operators	0.584 (0.01)	0.583 (0.04)	0.537 (0.00)	0.668 (0.01)	0.521 (0.00)	0.639 (0.02)
Cleaners	0.353 (0.01)	0.244 (0.00)	0.389 (0.00)	0.289 (0.00)	0.380 (0.00)	0.284 (0.00)
Agriculture, forestry & fishery workers	0.357 (0.00)	0.368 (0.01)	0.314 (0.00)	0.373 (0.00)	0.363 (0.00)	0.434 (0.00)
Mining, construction, manufacturing & transport workers	0.550 (0.01)	0.530 (0.01)	0.525 (0.00)	0.524 (0.00)	0.520 (0.00)	0.502 (0.00)
N	49715	42967	269222	247025	215279	201716

LFS 2001/2, LMD 2011, and LMD 2018. Note: Standard errors in parentheses. All differences significant at $p < 0.001$. Data are weighted.

the only occupation group presented in this section. In the 2001 sample, 84.67% of health professionals worked in the community sector, 90.94% worked in the sector in 2011, and 87.78% worked in the sector in 2018. Despite this fluctuation in shares, the overall DWI for health professionals in the community sector increased over the three periods.

Disaggregated by gender, in 2001, 80.05% of male health professionals were in the community sector. For the 2011 sample, their percentage in the community sector had

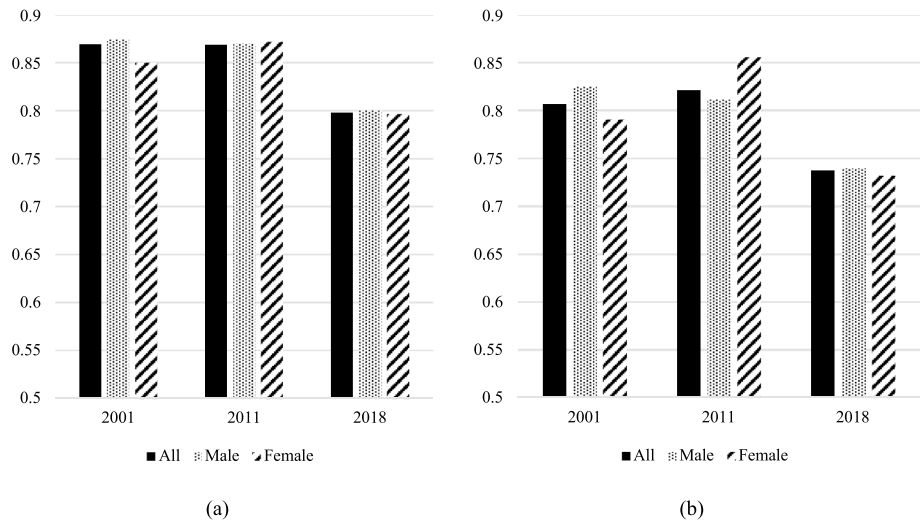


Fig. 6 DWI scores of science and engineering professionals in the (a) manufacturing and (b) finance sectors, 2001 – 2018. Source: LFS 2001/2, LMD 2011, and LMD 2018. Note: Data are weighted and differences between periods may not be statistically significant

increased to 84.26%. By 2018, the share of male health professionals in the community sector had increased to 85.71%. Male health professionals also experienced an initial increase between 2001 and 2011 in their DWI scores and a subsequent decrease to 2018. Female health professionals were also primarily employed in the community sector, although their shares did not consistently increase, as it did for men. Their shares were 87.25% in 2001, 94.13% in 2011, and 85.18% in 2018. Their DWI scores were higher, the higher their shares in the sector. The scores for men and women followed the same trend, despite their shares in the community sector not doing so. However, women consistently had higher DWI scores than men.

Studies have shown that health professionals in South Africa tend to be dissatisfied with their jobs as a result of poor work culture, a shortage of equipment and other resources, and a lack of training opportunities (Mumbauer et al. 2021), which has resulted in many health professionals leaving the country (Crush et al. 2005). Others have also identified disparities in the job satisfaction of health professionals in the private versus the public sector (Pillay 2009), and discussions have related to working time, given the unique needs of the sector, which requires delivery of the service seven days a week, 24 h a day (Kisting et al. 2017). However, as Mumbauer et al. (2021) have shown, professional health care workers were more likely to choose jobs which included additional benefits, such as pension contributions and medical aid and that professional nurses especially, preferred working in the public sector versus the private sector. The results of this study and others thus show the need for decent work studies which take a mixed-methods approach to assessing outcomes in the labour market. However, the high scores here could nevertheless be an indication of those additional benefits which characterise the job quality of health professionals.

Despite preferences for work in the community sector, these workers were not immune to the general decrease in the quality of work in the South African labour market, as is evident in Fig. 7. The trend in this graph is consistent with productivity growth in the sector which reflected an initial increase between 2001 and 2011 and then a decrease subsequent to that. The community sector's overall share in the economy also grew between 2001 and then declined from 2014. Furthermore, the community sector is one of the sectors which would have been directly affected when the government decreased its fiscal obligations by defunding services delivered by the police, education, and health sectors. This decreased support from the public sector may in part help explain why both men and women experienced a decline in their quality of work between 2011 and 2018.

Skilled Forestry, Fishery, and Hunting Workers

Skilled forestry, fishery, and hunting workers are individuals who do not produce goods for their own consumption. Data collection has traditionally been difficult for this group of workers (as well as other agricultural workers), owing to the type of work they do and the geographical locations in which such work is carried out. In some parts of the country, it has been found that agricultural work is performed by exploited migrant labourers from neighbouring countries, highlighting the continuities of the historical labour migrant system which characterises the Southern African region (Mather 2000).

Although skilled agricultural workers are considered part of the semi-skilled workforce (Spaull 2015), the working conditions of these workers do not reflect their higher status on the occupational spectrum. This occupation group was consistently the worst performing occupation group, scoring lower than both skilled agricultural workers and (unskilled) agriculture, forestry and fishery workers. Skilled forestry, fishery and hunting workers were

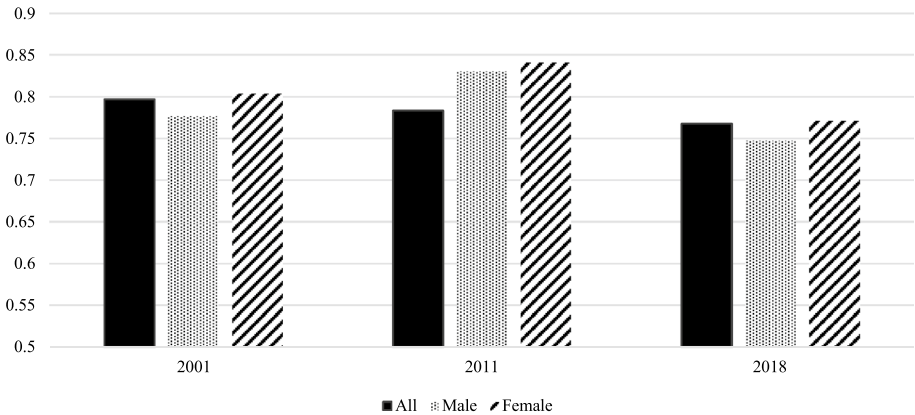


Fig. 7 DWI scores of health professionals in the community sector, 2001 – 2018. Source: LFS 2001/2, LMD 2011, and LMD 2018. Note: Data are weighted and differences between periods may not be statistically significant

primarily located in the agriculture industry – this was true for both men and women. Furthermore, these workers are interestingly the only group of workers who had a decline in DWI scores in 2011 and an increase in 2018. Most other occupation groups had an initial increase to 2011 and then a decrease to 2018.

The increase in the DWI could possibly be explained by the 2012 strike in which workers demanded a range of work-related benefits (Devereux 2020). In the aftermath of the strike, the average wage rate increased by 52%, maternity benefits were expanded, and a sectoral minimum wage was achieved. Although this also resulted in greater seasonality and evictions of farm labourers from the farms they worked on (Maregele 2019). It is thus possible that given the difficulty with enumerating seasonal workers, that the results here could reflect an overrepresentation of full-time workers resulting in more favourable DWI scores.

This is possible given that these were also accompanied by an increase in productivity in agriculture to 2010 and a subsequent decrease from 2015, despite the scores represented in Fig. 8 reflecting an increase in DWI scores for workers in this sector. Another observation which could support the hypothesis related to an overrepresentation of biased statistics relates to the higher DWI scores for women in an occupation group which is historically and currently remains male-dominated. Another alternative is that the strike in 2012 could have helped workers rebound in their DWI scores given that 2001 to 2011 was characterised by a severe decline in the share and number of agricultural workers in the South African labour market. None of these hypotheses can be established as true with the given information, thus the statistics reported for agricultural workers should be interpreted with caution.

Cleaners

Cleaners, according to the South African occupational classification include domestic, hotel and office cleaners, and vehicle, window, laundry, and other hand cleaning workers. In the 2001 sample, 13.64% of cleaners were employed in the community services sector. This share had increased to 17.32% in 2011 and 22.91% in 2018. There was thus an increase in the share of cleaners located in the community services sector. By contrast, the shares of cleaners in private households decreased from 61.79% in 2001, to 53.53%

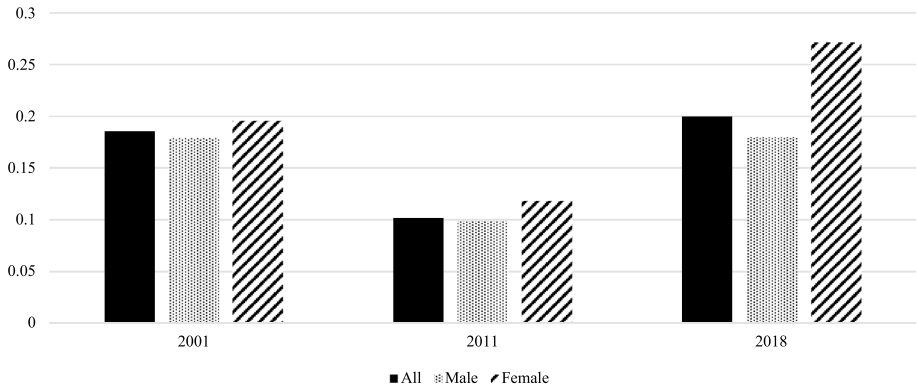


Fig. 8 DWI scores for skilled forestry, fishery, and hunting workers in the agriculture sector, 2001 – 2018. Source: LFS 2001/2, LMD 2011, and LMD 2018. Note: Data are weighted and differences between periods may not be statistically significant

in 2011, and 50.18% in 2018. The overall DWI scores in these sectors for cleaners followed the overall trend of an increase to 2011 and a decrease to 2018. Furthermore, the scores of those employed in the community sector was more than double the scores of those employed in private households.

According to the overall share of employment, the community sector increased its share of employment over the time period, while the share of workers employed in private households decreased. Women were primarily located in private households from 2001 to 2018, although this share decreased over time. In 2001, 74.13% of female cleaners worked in private households and only 9.7% of female cleaners worked in community services. These shares were 65.32% for private households and 31.35% for community services in 2011. For 2018, these were 60.83% for private households and 19.12% in community services. Although female cleaners showed a decline in community shares in 2018, during this time more female cleaners were also employed in financial services where 12.04% of female cleaners reported working in 2018.

By contrast, only 10.11% of male cleaners worked in private households in 2001, 10.16% in 2011, and 8.40% in 2018. Male cleaners thus decreased their shares in private households over the period. They had much larger shares in community services, with 20.09% of the 2001 sample reporting working in community services, 31.99% in 2011, and 37.79% in 2018. This representation in the community services sector is most certainly reflected in the higher overall DWI scores which males had over the period under consideration. Compared to workers in private households, community services workers would have the benefit of greater visibility physically as well as in legislation. They are thus likely to be less vulnerable in their employment compared to workers in private households. This overrepresentation of male cleaners in the community services sector is an important representation of the gendered division of labour in paid labour where men and women presumably perform the same function; although men's contributions are more visible in the productive sector of the economy, while women make the same contribution in the private and reproductive sphere for poorer working conditions and often lower wages.

Despite this, male workers were still vulnerable to changes in the overall macroeconomy as the community services sector suffered from a decline in productivity from 2012 as well as a decline in the share of employment in the overall economy from 2014. This is

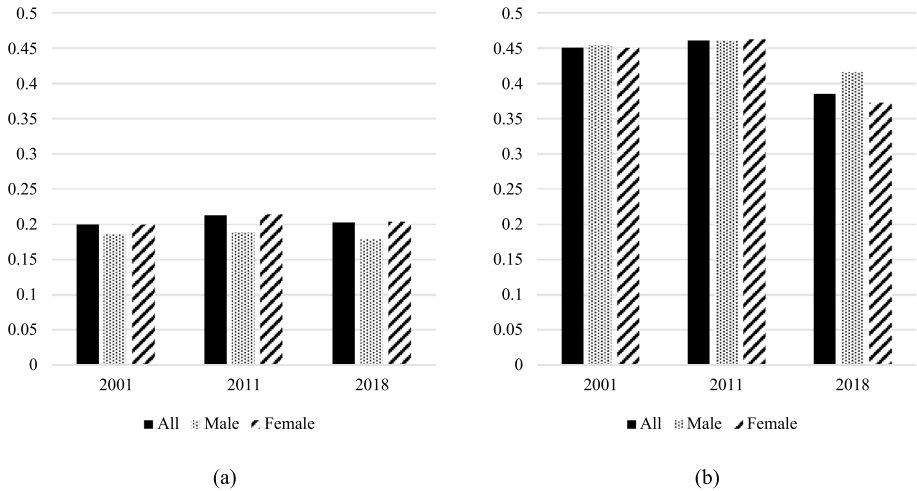


Fig. 9 DWI scores for cleaners and helpers in (a) private households and (b) community sectors, 2001 – 2018. Source: LFS 2001/2, LMD 2011, and LMD 2018. Note: Data are weighted and differences between periods may not be statistically significant

reflected in the lower DWI scores in Fig. 9, where both men and women experienced overall declines in the quality of their work. Cleaners in private households interestingly did not experience such a sharp decline in their score, although a decline was notable, nonetheless.

The data showed that there are overall trends that affect workers similarly across the economy – this is seen in the general increase in DWI scores between 2001 and 2011 and a decrease between 2011 and 2018 which support the findings of studies which group together workers to get a view of what may be happening to the economy overall. But the *extent* to which these trends affect workers differs. The findings discussed in this section also indicate that during a crisis, those who are at a lower level are most severely affected, resultantly, certain groups of workers must be afforded greater protection.

Discussion and Conclusions

The paper looked at the relationship between macroeconomic trends and the quality of work in the South African labour market, using a decent work index designed by Mackett (2020). Using macroeconomic, sectoral and microeconomic data, the research aimed to determine, at a descriptive level, how changes in macroeconomic conditions are reflected in the labour market.

The data showed that, from a macroeconomic perspective, government spending priorities and outcomes thereof were very pronounced over the period under review. Between 2002 and 2012, the government undertook a general expansionary approach to spending. This included distributing resources directly to citizens through cash transfers and indirectly through increased service delivery capacity and an increase in government employment (mainly the police service, health workers, and education workers (Sachs 2020)). An expansion of this sort is expected to provide relief for private households which tend to carry the burden when public services are lacking or not available or obtainable from the market. Given that women tend to be the primary labourers in households, such an expansionary approach would expectedly be to the benefit of their labour market outcomes.

The paper looked briefly at overall labour market trends, but honed in on six groups of workers in the labour market. These included science and engineering professionals in the manufacturing and finance sectors; health professionals in the community sector; skilled agriculture, fishery, and hunting workers in the agriculture sector; and cleaners in private households and the community sector. The data produced four main findings which are worth noting.

The first is that it provides preliminary evidence that the gender distribution in an occupation group could be related to the quality of work which women experience in that occupation group. For all the occupation groups observed on the occupational distribution, when there was an increase in the share of women in the occupation group, the DWI scores of the women employed in that occupation group increased. The reverse was also true although this was not necessarily the case for men.

The second notable finding was that there was an overall increase in the DWI scores in the labour market between 2001 and 2011 and an overall decline between 2011 and 2018. These trends were consistent with the government's macroeconomic policy approach over the same period, which, as described earlier, was characterised by an overall expansionary approach over the period which covered 2001 to 2011 and a contractionary approach in the latter period to 2018. Although this finding would also need further investigating, it does provide important preliminary evidence of the possible relationship between the macroeconomy and the effects changes therein would have on the labour market. However, the methodology employed in this study does not allow for the identification of a causal relationship between changes in the macroeconomy and subsequent changes in the labour market for the various groups of workers under study. There is thus no evidence suggesting that the observed macroeconomic and microeconomic trends are intrinsically linked.

Third, out of the six groups which were studied, only two were female-dominated. These included cleaners in private households and health professionals in the community sector. In all the other groups (except agriculture workers), women overtook men in their DWI scores in 2011 and men scored higher than women in 2001 and 2018. This indicates that the overall benefits which the labour market experienced could have affected women more positively, allowing them to overtake men with their quality of work.

Last, skilled forestry, fishery and hunting workers did not experience any of the changes which other workers experienced in the labour market over the period under consideration. These workers, as discussed earlier, are difficult to enumerate and this could either reflect the abnormally poor working conditions in this sector or alternatively the lack of accurate data on agricultural workers. With the current data, it is unfortunately not possible to determine which of these may be the case.

The results nevertheless provide a useful analysis for considering macroeconomic policy changes and how such changes may accompany circumstances of workers on the ground. It more importantly shows how a change from an expansionary approach to a contractionary approach could negatively affect women and quite possibly other vulnerable groups in the labour market; given previous evidence of the effects which macroeconomic outcomes have on women (Lim 2000; Osabuohien et al. 2019; Parrado and Zenteno 2001). The findings of the study also importantly show that changes in the macroeconomy seem to reflect or at least coincide with changes at the microeconomic level in the labour market, contrasting the findings of advocates who claim that rigidities in the South African labour market characterised by strong union involvement is likely to crowd out private investment and reduce the agility of business to respond to the changing economic climate. Last, in relation to the extent to which the DWIs change for the high scoring occupation groups and the poorer scoring occupation groups, the

study presents an important reflection of the different sets of rules which may exist for workers in different parts of the labour market – giving credence to the postulates of the segmented labour market theory and highlighting the structural inequalities which continue to characterise the post-apartheid labour market.

This has important implications for considering how one might approach Sustainable Development Goal 8 which encourages decent work *and* economic growth. It provides evidence that government ought to more carefully consider how changes in macroeconomic policies coincide with the ability of workers and their dependents to exercise their human rights; such as living a life of dignity and enjoying related freedoms. This would require an acknowledgment that, although macroeconomic policies are a useful tool for advancing macro-policy goals, they can also exacerbate existing and create new inequalities at the microeconomic level. There is thus a need to complement these policy decisions with a sensitivity towards decent work that allows these inequalities to be perceived as a valid outcome of a particular policy stance.

However, these data provide a limited view of the labour market with only three data points (2001, 2011, 2018). To determine whether the trends observed here are in fact robust in the long term, one would need to observe more years of data with which to compare macroeconomic trends and changes in job quality. Further research might also consider the relationship between the gender distribution in an occupation group and the quality of work experienced by workers in that occupation group.

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Code Availability Not Applicable.

Declarations

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