

# Underemployment in South Africa

Rochelle Beukes, Tina Fransman, Simba Murozvi & Derek Yu  
(Department of Economics, University of the Western Cape)

**Abstract:** With the introduction of the Quarterly Labour Force Survey (QLFS) since 2008, a newly derived variable, namely underemployed, has become available. This variable is derived according to the “time-related” approach (i.e. those who are employed, but would like to work longer hours and are available to work longer hours in the near future). However, it is argued that underemployment could also be derived according to the “inadequate employment situations” approach (e.g. under-utilisation of skills, over-qualification). There are virtually no in-depth local studies that examine underemployment in South Africa. Hence, this paper investigates the extent of underemployment according to two definitions, before examining whether the characteristics of the underemployed are significantly different from those of the other employed.

**JEL:** J00

**Keywords:** Underemployment; underemployed; South Africa

## **1. Introduction**

It is no secret that when reference is made to the South African labour market, it is common to hear phrases relating to high unemployment, serious inequality, low labour absorption rates, as well as labour market discrimination and rigidities. “Look on the bright side”, a common phrase used in times of distress, should perhaps be kept in mind at this point as declaring these eerie issues so swiftly might seem to set an immediate negative undertone for the rest of the paper. This leaves the need to mention that on the bright side, since the dawn of democracy changes to promote equality have occurred in spheres such as education, health care and within the labour market. South Africa has in fact come a long way in terms of correcting the imbalances of the past but this task has proven to be no easy feat.

One of the major socio-economic issues South Africa is still grappling with to date remains the persistently high level of unemployment (5.5 million labour force were unemployed, while unemployment rate was 26.3% in the first quarter of 2015). Consequently, one of the most important and recurring goals emphasised by government on various platforms such as the New Growth Path (NGP) and the National Development Plan (NDP) is job creation. Over the years, labour market analysis has focused mainly on the employed versus the unemployed with job seekers and discouraged work-seekers also being accounted for. However, as the labour market grows in terms of complexity, the distinction between being employed and unemployed has proven to not be adequate any longer. Economic policy around job creation always seems to focus on increasing the number of jobs created each year or setting out goals to create a certain number of jobs within a particular period. However, little attention is paid to the extent to which jobs occupy people in terms of hours and the way in which it utilises their skills and qualifications. The capacity of the labour force is therefore often disregarded.

Labour agencies in various developed countries have seen the need to consider that unemployment rates may not be an adequate measure of labour under-utilisation. There may be many individuals who are in fact participating in the labour force, but their labour may not be fully utilised based on various definitions of underemployment. This presents an issue for economists, as the underutilised labour is not recoverable. Even more unsettling is that the loss of skills and future career path consequences for individuals may be hampered for a longer duration than is expected, impacting the labour force in a manner that could exacerbate structural problems in an economy.

With the introduction of the Quarterly Labour Force Survey (QLFS) since 2008, two new variables were derived by Statistics South Africa (Stats SA). One of them, of which this paper will be based on, is known as the *underemployment* variable. Initially this variable only referred to what is termed the time-based approach, which in brief terms relates to individuals who are employed and are willing and able to work longer hours but cannot for various reasons. In addition to this, the underemployment variable can also be analysed in the context of the “inadequate employment situations” approach which highlights the under-utilisation of skills or over-qualification (to be discussed later). If someone is underemployed, this may suggest that labour, as a factor of production, is being under-utilised. Due to the derivation of the underemployment variable, distinguishing the employed from the unemployed now only paints one fragment of the picture in the context of the South African labour market.

To date, the majority of existing studies focus on the characteristics of the unemployed, the causes of unemployment and policy options to alleviate unemployment (Kingdon and Knight 2004; Banerjee, Galiani, Levinsohn, McLaren and Woolard 2008; Bhorat 2009 & 2012). Thus, a platform is therefore created to investigate the underemployed in South Africa to a greater extent as there are currently only three South African studies which investigate underemployment in South Africa (Yu, 2009; Schoeman, Botha and Blaauw, 2010; Mathebula, 2013). This shows that underemployment is still very much an under-researched topic in South Africa. This can be attributed to the fact that the variable can still be considered to be quite newly derived when compared to other variables. Hence, this study aims to provide a preliminary analysis on the profile of the underemployed.

In the context of this paper, the term “underemployment” will be related to two definitions, namely the time-based approach and the inadequate employment situations approach which will be comprehensively elaborated at a later stage in the paper. With this in mind, the question can be posed that perhaps the labour market segmentation should be re-examined after taking underemployment into consideration.

The rest of the paper is structured as follows: Section 2 presents both a conceptual as well as a theoretical framework. The conceptual framework looks at labour market segmentation, how the underemployment variable is defined locally versus internationally and also highlights the two main approaches adopted in relation to the two definitions. The theoretical framework presents a brief discussion of the various theories that can be related to

underemployment. A literature review of the past local and international studies is also presented in this section. Section 3 explains the methodology and data as well as the results of the empirical data analysis on the profile of the underemployed. Section 4 concludes the study.

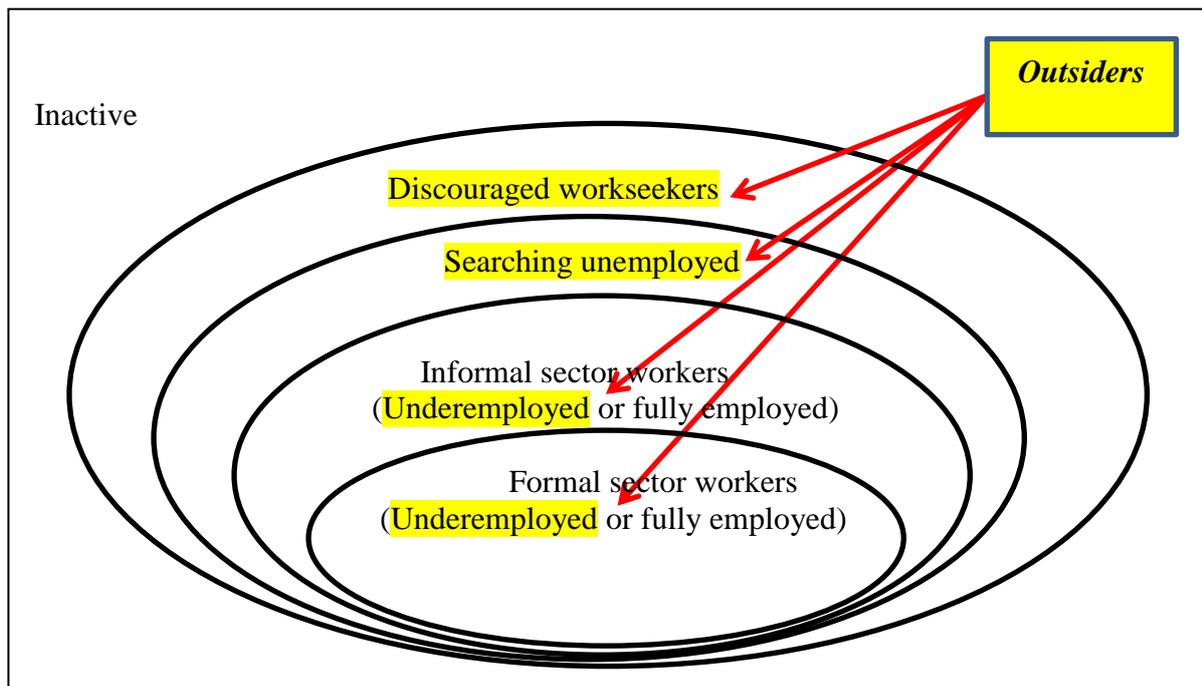
## **2. Literature review**

### **2.1 Labour market segmentation**

With reference to the South African labour market, emphasis is often placed on structural unemployment, relating to the shortage of skilled labour and over-supply of semi-skilled and unskilled labour on top of the mismatch of skills possessed by the labour force in relation to skills required by the economy (Barker, 2007:177). It is ironic that despite all of this, there are people who actually find themselves in jobs where their skills are in fact under-utilised, indicating the presence of a large pool of labour which remains untapped. This calls for concern especially in the case of skilled labour which is so sorely sought after. How could it even be that skills possessed by workers are under-utilised?

The traditional manner in which the labour market is analysed is by the examination of labour market segmentation. This segmentation is analysed based on the reasoning that unskilled people, who were not able to find employment in the formal sector, engage in informal sector activities. In addition, discouraged workseekers along with the searching unemployed are those who failed to find employment in both the formal and informal sectors. It can therefore be argued that this labour market segmentation story is as “simple” as it deemed to be. The reason for this is that in the formal sector, it is actually possible to find two additional segments. These two segments comprise of the fully employed versus the underemployed. These two segments may also be found in the informal sector. To provide a better picture of how the labour market is segmented, taking the underemployed into account as well is illustrated in Figure 1 below.

**Figure 1: Labour market distinctions**



Source: Adapted from Fourie (2011: 12).

The underemployed can form part of both the formal as well as informal sectors. The underemployed can therefore be distinguished from the unemployed based on the fact that they do earn an income for the hours worked. With regards to labour market theory, more particularly, the insider-outsider theory, the underemployed can be considered to be outsiders along with discouraged workseekers and those searching for employment. This therefore implies that even though these individuals are employed, they do not enjoy benefits comparable to those enjoyed by insiders. Since the placement of the underemployed within the labour market has been established, it can be emphasized that underemployment is somewhat complex in nature in relation to the way it is defined and due to the fact that different types of underemployment exists.

## 2.2 Conceptual framework

Over the years, how underemployment has been understood has differed from person to person. For this reason the derivation of this variable to a large extent can be considered as being subjective. The results obtained from an analysis of underemployment are predominantly dependant on the way in which it is defined. A formal definition of underemployment has also been adopted by Stats SA since 2008. It was only with the introduction of the QLFS in 2008 that the new variable of underemployment became

available. Underemployment definitions may differ in terms of certain specifically defined criteria that must be satisfied. Since the aim of the paper is to study underemployment in the context of South Africa, it is important to know how underemployment is defined both locally as well as internationally.

Underemployment affects the employed segment of the labour force when it occurs. There are two common approaches which have been adopted in terms of differentiating between different types of underemployment, namely time-based (or time-related) approach and the inadequate employment situations approach. According to the time-based definition, underemployed refer to those employed who work fewer hours than they wished for. For this paper, the inadequate employment situations approach will solely investigate over-qualification and skills mismatch. It generally refers to the situation where workers find themselves in professions or jobs where their skills, training and experience are under-utilised (Bonnal, Lira and Addy, 2009:217). This in turn implies that these persons are not being given the opportunity to fully utilise their productive ability.

Based on the QLFS, Stats SA defines underemployment as the situation where persons who are willing and available to work additional hours, only actually worked less than 35 hours during the reference week (Yu, 2009:20). These individuals must be able to start work within the next four weeks. In other words, the time-based approach is adopted by Stats SA. With reference to the South African context, statistics prove that underemployment is on the rise and in the face of an increasing unemployment rate should raise concern about the state of the country's labour market.

The crux of underemployment in terms of a formal definition which is considered to be the internationally accepted definition refers to persons who has a job during the reference week or had worked during the reference week who were both available as well as willing to work "more effectively" (Greenwood, 1999:3). In relation to the terms "more effectively", this in essence refers to the situation where the labour provided by workers are not utilised as effectively as it could have and should have been utilised (Wilkins and Wooden, 2011:14). The concept of underemployment can be considered to be sort of complex in nature as it is not always easy to define and measure.

According to the International Labour Organization (ILO), those defined as underemployed according to the time-based definition refer to individuals who, during the reference week, were both willing to work additional hours and were available to work these additional hours. However, in reality they worked fewer than a certain number of hours (Greenwood, 1999:4). Based on this definition, the threshold with respect to the number of hours a person must work before they are considered to be underemployed is not specified in the international context. This threshold therefore differs from country to country and is determined via collective agreements or legislation. As earlier mentioned, this threshold in South Africa is deemed to be 35 hours a week.

The ILO defines the inadequate employment approach as the situation where persons who during the reference week desired to change their existing work situation. This had to firstly be on condition that their current work situation limited both their competencies and their well-being and secondly on condition that they were actually available to do so (Greenwood, 1992:8). As stated by Wilkins and Wooden (2011:16), the ILO actually noted that the definition related to the inadequate employment approach is in reality unable to be implemented. For this reason, they endorsed the development of indicators to measure three explicit types of inadequate employment situations namely, skills-related underemployment; excessive working hours and income-related underemployment. For the purpose of this study, the inadequate employment approach will only examine skills-related underemployment which will specifically examine skills under-utilisation or over-qualification.

Skills under-utilisation or over-qualification is not uncommon within the labour market. It often occurs if persons find themselves in a particular work situation where the qualifications and skills they possess are too advanced (Kazan, 2012:1). The reason for this is due to the fact the tasks and competencies their job requires them to do and have respectively, does not require “that level” of expertise and skill. As a result, the person is likely to find themselves in a job where their full productive capacity is not being utilised as it should hence, it being referred to as the under-utilisation of skill as the person is over-qualified for the position. The ILO has often dubbed skills under-utilisation as invisible underemployment, reason being that it is not easy to ascertain and as a result measure (Wilkins and Wooden, 2011:16).

Underemployment has also been defined according to visible and invisible underemployment. By definition, visible underemployment refers to persons who work less

than normal hours on an involuntary basis. These are individuals who are seeking, or desire working additional hours or on a full-time basis. On the other hand, invisible underemployment refers to the situation where there is a misallocation of labour resources. This misallocation implies workers with low levels of productivity or the underutilisation of skills (Barker, 2007: 177). It can therefore be noted that visible underemployment in essence refers to time-based underemployment while invisible underemployment refers to skills-related underemployment.

Based on these definitions, it is possible to identify characteristics that underemployment is associated with. Some of the characteristics that have been identified by researchers include low levels of remuneration, low working hours, over-education, skill-underutilisation and a mismatch between skills and knowledge (Reynolds, 2012:7). By considering these characteristics alone, it is evident that various economic along with social consequences will follow. For that reason, amidst the rising unemployment rate, underemployment should not be disregarded. Even though the underemployed may be employed in the true sense of the word, underemployment paints a picture of a labour market that is inefficient.

In certain instances, few studies have actually referred to the unemployed as being part of the underemployed (Clogg, Mutchler and Sullivan 1986; Slack and Jensen 2002). Based on the way in which underemployment has been defined in this paper, the unemployed does not form part of the underemployed. Underemployment can only occur on condition that an individual is employed.

Underemployment brings about a number of consequences relating to economic outcomes as well as measures of the general well-being of individuals. More specifically, these consequences refer to life satisfaction and job satisfaction in terms of the general well-being of individuals while negative effects on wages or income are associated with consequences relating to economic outcomes of individuals (Wilkins and Wooden, 2011: 25).

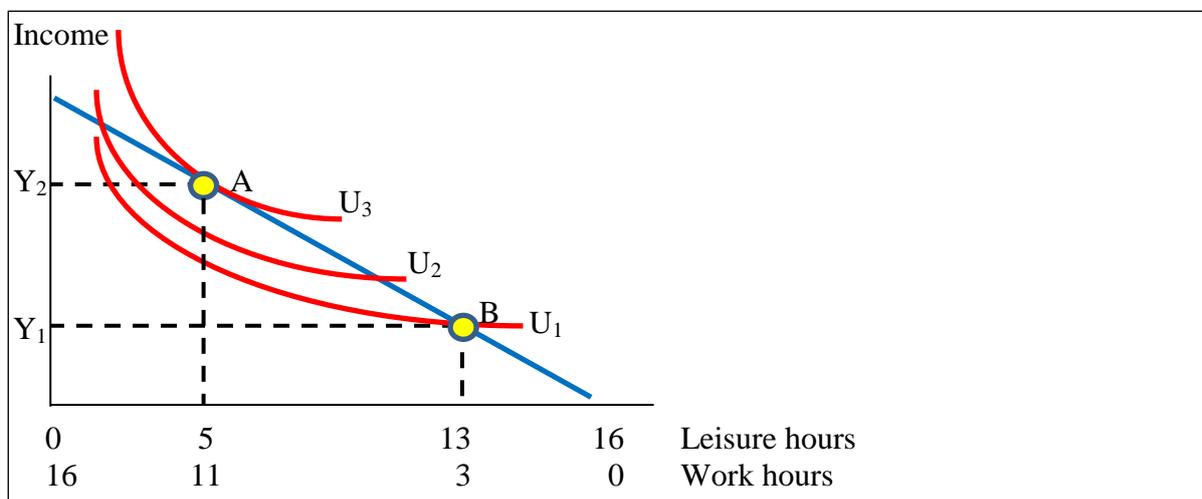
### 2.3 Theoretical Framework

One would initially consider the underemployed to be better off than the unemployed. The reasoning behind this belief is that these individuals still receive an income as they form part of the labour force (Wilkins, 2007: 284). This type of reasoning is however misleading and does not really take into account both the economic and social implications of

underemployment. These individuals are more likely to be associated with fewer working hours, lower wages and as a result, a lower level of welfare. From a theoretical point of view, it has already been established that the underemployed are considered to be outsiders within the context of labour market theory.

First, Figure 2 represents a graphical illustration of those who are underemployed according to the time-based definition. Assume the person sleeps 8 hours per day and spends the remaining 16 hours on either work or leisure. This person, who is currently employed, would have preferred to work 11 hours per day (as indicated by the equilibrium at point A), attaining a utility level of  $U_3$ . However, this individual is unfortunately only offered employment that requires him or her to work only 3 hours per day (represented by point B). As a result, this person only attains a lower utility level of  $U_1$ . In other words, the person is underemployed at point B, as he/she would have loved to work an additional 8 hours every year. It is also evident that fewer hours of employment are associated with a lower wage income ( $Y_1$ ) as compared to the prospective income that the individual could have received ( $Y_2$ ) had he been fully employed (working 11 hours).

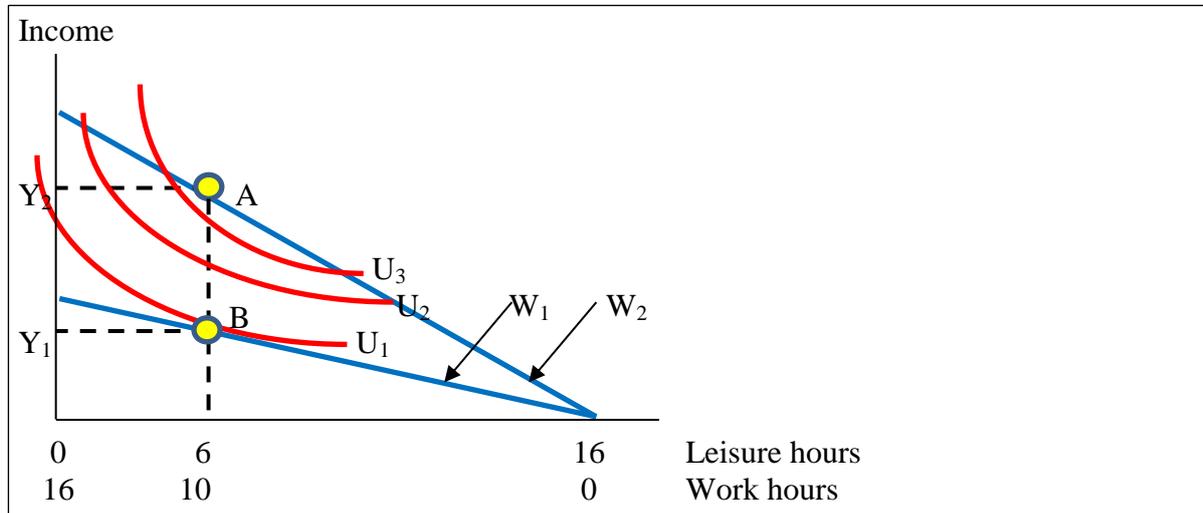
**Figure 2: Underemployment: Time-based approach**



The examination of skills under-utilisation or over-qualification may spark thoughts of the human capital theory. As stated by the theory, one would expect the investment in education and training to bring about better labour market outcomes. The presence of skills-related underemployment therefore may implicitly contradict this theory. To make this clearer, Figure 3 represents a graphical illustration of those who are underemployed under the over-qualification definition. As mentioned previously, this refers to the situation where a person

finds himself or herself in a particular job where the skills requirements are below their level of qualification (Sengenberger, 2011:11).

**Figure 3: Underemployment: Over-qualification approach**



In this case one can recall the human capital theory which states that the investment in education is likely to be about an increase in both productive potential as well as incremental earnings. With reference to the figure, in the case where the individual has a Bachelor Degree, he or she would want to be offered a higher wage ( $W_2$ ) which in turn implies that this individual is expected to be employed in a highly-skilled occupation. The individual therefore hopes to attain a utility of  $U_3$  which is found at equilibrium point A, and earns a total wage income of  $Y_2$  by working 10 hours per day. However, the individual eventually could only find employment in a semi-skilled occupation which actually requires a lower educational qualification (e.g. Matric) than the level he possesses (Bachelor Degree). This job is in turn accompanied by a lower wage ( $W_1$ ) which means that the equilibrium point will now be at point B. This point is also associated with a much lower level of utility ( $U_1$ ) and total wage income ( $Y_1$ ), even though the daily work hours remains the same at 10 hours.

Researchers, from a theoretical perspective, have also associated this under-utilisation of skills with notions of misalliance in terms of person-job fit. Person-job fit, as the name indicates how well the skills and competencies of an employee matches their job and its demands (McKee-Ryan and Harvey, 2011:971). Based on this theory, underemployment indicates a lack of fit and as a result is associated with negative labour market outcomes. Relating this back to the budget line/indifference curve analysis, the fact that the employee

was only able to find semi-skilled employment instead of highly-skilled employment related to his or her field of study verifies the situation of a misalliance between the skills and competencies of the person and their job. Furthermore, in line with the analysis, negative labour markets outcomes can refer to the lower level of utility experienced by the employee and lower remuneration, as already discussed above.

And so it can be said that time based and skills-related underemployment in the context of this paper can be related to theoretical foundations relating to human capital, welfare and person-job fit. The analysis conducted indicates that both time-related and skills-related underemployment brings about less favourable labour market outcomes and proves the presence of labour market inefficiencies.

### 2.3 Review of past studies

There are only three local studies at the time of writing. In the study by Yu (2009), underemployment is briefly discussed. Yu (2009) found that the first three QLFS data sets of 2008 provided an inaccurate account of the underemployed as the underemployed variable was derived incorrectly. He however found that the underemployed according to the time-based definition accounted for about 4.5% of all employed. The majority of underemployed are Blacks and females (approximately 85% and 60% shares respectively). Yu (2009:20) also found that nearly 60% of underemployed are involved in unskilled occupations.

In an unpublished study by Mathebula (2013), he considered the determinants of time-related underemployment using the 2012 QLFS 3rd quarter data. Univariate as well as multivariate analysis was done. Mathebula (2013:3) found that females, those without post-Matric qualifications, residing in urban areas, with limited or unspecified contract duration were more likely to be underemployed. Underemployment likelihood was also the highest for those involved in the community, social, personal services as well as real estate, financial intermediation, insurance and business services occupation categories (Mathebula, 2013:4).

Schoeman, Botha and Blaauw (2010) noted that structural shifts and technological change has caused a shift in output from primary to service sectors and technological adjustment has led to an increase in capital/labour ratios. The objective of their study was to analyse the role that labour conflict plays in macro underemployment in South Africa. Two forms of labour conflict were considered, namely distributional and relational conflicts. Their model set out to

determine capital/output ratios as explained by distributional and relational conflict (Schoeman et al, 2010: 279). Data was obtained from the South African Reserve Bank and Quantec Research for the period 1970-2004. Variables included capital/output ratios; compensation for employees; gross value added; interest rates; and inflation rates. Data on the frequency of strikes was obtained from Van der Velden. Schoeman et al (2010: 286) found that labour conflict originates from an overregulated labour market and bad labour relations. Underemployment results through a switch in technology being the channel. Bad labour relations have shown to contribute to the choice of more capital-intensive techniques and hence less labour absorptive measures. The co-integration analysis showed that once labour has been replaced by capital, a reversal is not likely (Schoeman et al, 2010: 286). Capital is highly inflexible even in the long run. Thus the long-term effects on underemployment due to structural reasons in an economy cannot be easily remedied.

Despite the lack of local studies, quite a lot of studies were conducted internationally. First, in the study by Ansah (2012), a review of Ghana's national employment policy was undertaken. Like South Africa, Ghana has experienced improved economic growth; however this has not translated into job creation. Various issues such as poor absorptive capacity by the formal sector and structural transformation are highlighted (Ansah, 2012: 107). Most of employment activities take place in agriculture and the informal economy. The Core Welfare Indicators Survey for Ghana indicates that the rate of underemployment as defined by the ILO is higher in urban areas at 7.6% versus rural areas at 3.5% (Ansah, 2012:109). This is largely attributed to youth migrating to urban areas. In a report presented at the G20 Labour and Employment Ministerial Meeting (OECD 2014:7), underemployment is noted to be characterised by workers employed in informal, low paid, low productivity employment.

Golub and Hayat (2014) examined employment, unemployment and underemployment in Africa. They cited the main reason for underemployment is a dualistic labour market that is deficient of labour demand. A predominance of informal sector employment and agricultural activities exists, which results in underemployment rather than open unemployment (Golub and Hayat, 2014: 2). Informal activities were typically characterised by agriculture, non-wage employment and part-time work. They showed that informal employment in many low-income Sub-Saharan African (SSA) countries accounts for 80% of total employment. Individuals are too poor to not work, even if this is insecure, low-paying and too few hours.

The formal sector has been weak in creating sufficient jobs to absorb a growing workforce, thereby resulting in growing underemployment<sup>1</sup>.

Raubaud and Torelli (2013) studied the working conditions in urban labour markets in SSA. Underemployment was considered under the time-based definition and invisible underemployment where workers earned less than minimum wage. They found that time-based underemployment was about 10-15% of the labour force; however invisible underemployment accounted for above 50% of the labour force in Francophone Africa.

Galvan and Beltran (2013) addressed the issues of defining and measuring unemployment and underemployment. In many countries differences in defining official unemployment rates and labour underutilization exists, although conventions exist in providing adjustments for comparability purposes. As mentioned previously, underemployment has various definitions ranging from the time based, skills-underutilization, and those overqualified and low wage employments. Given that there are those that are counted as employed, although an underutilization of their labour is occurring, not counting these workers as unemployed bias the official estimates of unemployment down (Galvan and Beltran, 2013: 215). This is similar to Golub and Hayat (2014) findings that open unemployment rates are much lower, and don't truly represent lost labour capacity.

In the study by Bell and Blanchflower (2013), the time-based definition was used, asking workers if they feel constrained by their working hours. Bell and Blanchflower created an underemployment index to capture excess labour capacity. Their index was a more general unemployment rate as the willingness of workers to supply extra hours was counted (Bell and Blanchflower, 2013:5). Quarterly LFS data from the United Kingdom for the period 2001Q2 to 2013Q1 was used. Those individuals under 18 years working more than 40 hours, and those older than 18 working more than 48 hours were filtered out of the sample. The results showed that underemployment has risen sharply since the recession in 2008. In 2013Q1 the underemployment rate was 9.8%. This rate measured the ratio of net unemployed hours as proportion of total available hours. Many of the additional hours came from those in full-time employment. Younger workers worked fewer working hours than what they desired as

---

<sup>1</sup> No clear definition is provided for underemployment in this study. However the informal sector, which accounts for most employment activities, is defined as non-wage, part-time and agricultural activities. This allows us to infer that both time-based underemployment and loss of income define underemployment.

opposed to older workers. Female unemployment rates were lower than men's however female underemployment rose substantially. This is possibly due to female being employed in more part-time work.

Addy, Bonnal and Lira (2012) constructed a more comprehensive measure of labour underutilization in Alabama. The US Bureau of Labour Statistics (BLS) does not consider labour under-utilization among full-time workers. Thus it does not fully reflect the extent of underemployment. Surveys conducted from the Alabama working-age population shows that underemployment existed among full-time workers. Underemployed was defined in terms of over-qualification, skills-underutilization or income loss. Workers were asked if they considered themselves underemployed and why they thought so. The measure that was constructed consists of voluntary part-time, underemployment among full-time workers plus the BLS U-5 measure<sup>2</sup>. The BLS 35-hour week threshold distinguished full-time from part-time workers. Survey results showed that full-time workers ranged from 78.1% to 81.5% therefore part-time workers from 18.5-21.9% of the employed (Addy et al, 2012: 224). Underemployment rates ranged between 24.0 and 25.2%. Primary reasons of underemployment as cited were the lack of job opportunities and low wages. The Comprehensive Measure of Labour Underutilization 5 (CMLU5) combined self-reported underemployed data among the employed and the BLS U-5<sup>3</sup>. For the period 2005-2009 the labour-underutilization as determined by the CMLU5 ranged between 27.0-33.9%.

Mosca and Wright (2011) considered graduate underemployment for individuals in the UK. A panel dataset was constructed from the Higher Education Statistical Agency for those graduating 2002/3. The rate of "non-graduate job" employment was calculated at 6 months and 42 months after graduation. In order to determine what classified as a non-graduate job, the skills requirement for various occupations as stipulated by the Standard Occupation Classification was consulted (Mosca and Wright, 2011:3). If a graduate was employed in an occupation with a skills requirement lower than a Bachelor Degree, it constituted underemployment. A logistic regression was run to understand what the determinants of underemployment were. The results showed that graduate underemployment was prevalent and persistent in the UK. Although graduate underemployment declined, about a quarter of

---

<sup>2</sup> The US BLS publishes 6 alternative measure of labour underutilization from Current Population Surveys (Addy et al. 2012:215).

<sup>3</sup> The U-5 measure includes the total number unemployed, plus discouraged work seekers and all other marginally attached to the labour force (Addy et al. 2012:215).

graduate employed were still involved in non-graduate jobs 3.5 years later (Mosca and Wright, 2011:7). Individual characteristics were more so important at explaining underemployment at 6 months as opposed to 42 months. Explanatory variables such as quality of institution, subject of study, award classification were all statistically significant. An important conclusion drawn from the study was that being in graduate employment at 6 months after graduation had a significant effect on being in graduate employment at 42 months. The first job a graduate found themselves in may have an effect on occupational attainment later in their career path.

Other researchers have found similar results as those of Mosca and Wright; that over-education may have lasting effects on graduate employment in the future. Reynolds (2012) examined the incidence, causes and consequences of youth underemployment in Canada in 1997-2011. An interdisciplinary view of underemployment was taken. This includes involuntary part-time, over-qualification, involuntary temporary work, low-wage employment and unemployment (Reynolds, 2012:8). The youth was defined as those aged 15-24 years. The results indicated that youth experienced a greater chance of labour underutilization through temporary work and minimum wages (Reynolds, 2012:11). Youth underemployment was found to be significantly higher than those aged 25-54 years.

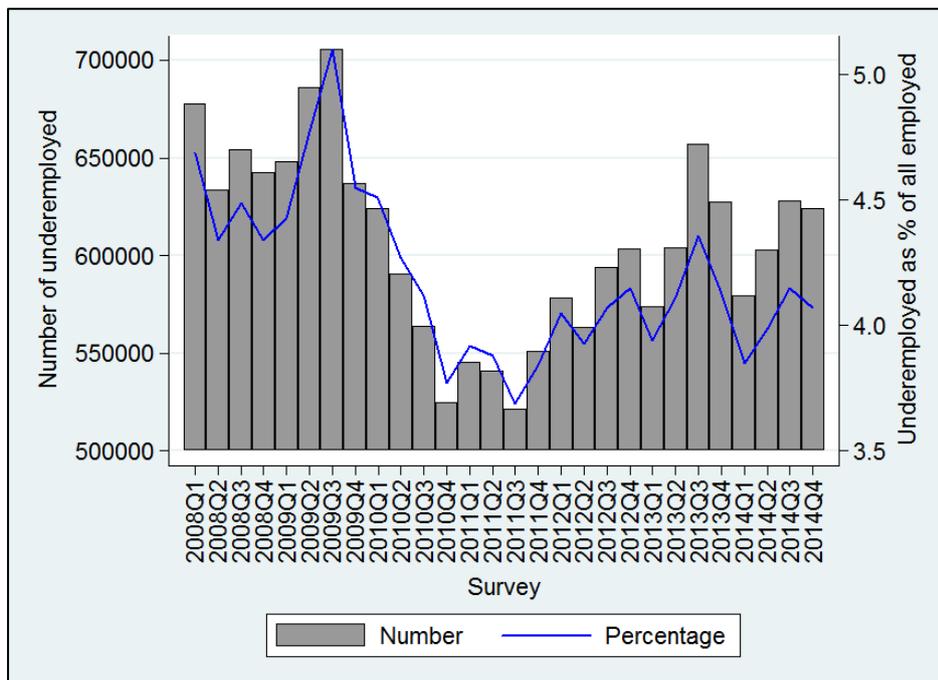
In the study by Cam (2014), the UK LFS data was used to explore the socio-economics predictors of underemployment using the time-based definition of underemployment. A logistic regression was conducted with the dependent variable being a binary variable indicating the desire for working extra hours. Similar to the paper by Bell and Blanchflower (2013), those individuals under 18 years working more than 40 hours per week, and those older than 18 working more than 48 hours were filtered out of the sample. Explanatory variables included demographic information, workplace characteristics, flexible work, union membership and work status nominators (Cam, 2014:10). It was found that underemployment likelihood was typically higher for women than men, but varies across demographics and work related factors. Those involved in part-time jobs, sales, and customer services were associated with a greater likelihood of underemployment (Cam, 2014:15). The logistic regression analysis revealed that involvement in low-paying jobs in hotels, restaurants increased the chance of underemployment. Working in smaller establishments, and flexible work arrangements also led to greater probability of underemployment.

Kazan (2012) examined how underemployment impacted the work organisations. Since the recession employers have been making use of more part-time staff, leading to the under-utilization of the workforce. Involuntary part-time workers were derived by manipulation of the various under-utilization measure of the BLS. Between 2005 and 2011 this ranges between 5.0% and 6.6% of the workforce. A concern raised by Kazan (2012) was that organisations should seek to address the risks associated with the under-utilization of labour. These risks include, amongst others, low morale, workplace stress, and low productivity.

### **3. Empirical findings**

This section adopts the time-based and over-qualification approaches in determining the nature, extent and trends of underemployment in South Africa, using data from the 1995-1999 October Household Surveys (OHSs), 2000-2007 Labour Force Surveys (LFSs) and 2008-2014 Quarterly Labour Force Surveys (QLFSs) conducted by Stats SA. Unfortunately, as mentioned in Section 2.2, it was only since the introduction of QLFS in 2008 that the questions relevant to time-based underemployment have been asked. It can be seen from Figure 4 shows that the number of underemployed has been fluctuating between 520,000 and 700,000 since 2008. These under-employed accounts for 4-5% of all employed.

**Figure 4: Underemployment derived from the time-based approach, 2008-2014**



Source: Own calculations using QLFS 2008-2014 data.

The other way in which one can measure underemployment is using the inadequate employment definition. As discussed in Section 2, there are quite a number of ways in which employees are generally restricted from productively performing their tasks or duties. These barriers could either be directly limiting their capacities or indirectly affecting their well-being. Over-education is one of the approaches to reflect this type of skills underutilization. Over-education implies a situation whereby an employee is employed in an occupation where the required educational attainment is below what the employee currently holds (McGuinness, 2006: 391).

Table 1 outlines the required education level at each broad occupation category, as indicated in the Stats SA document “South African Standard Classification of Occupations” (SASCO). Hence, an employed worker is classified as underemployed if he/she is employed in an occupation where the required education level is below his/her educational attainment level. For example, if person A has a Bachelor degree but is employed under the clerks category (which only requires up to Matric qualification), he/she is classified as underemployed. Similarly, if someone with a Matric certificate is involved in an elementary occupation (which only requires primary education level up to Grade 7), he/she would also be classified as underemployed.

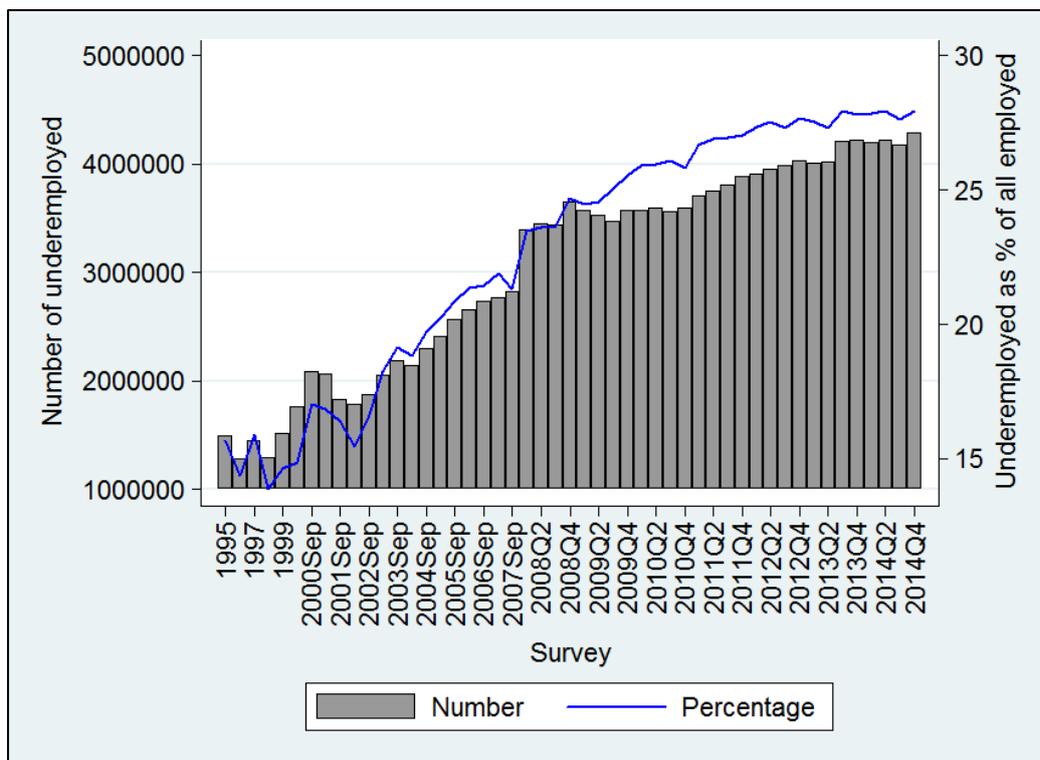
**Table 1: Distinction of underemployed under the over-qualification definition**

<b><u>Broad occupation category</u></b>	<b><u>Skills level</u></b>	<b><u>Education level required</u></b>
Legislators, senior officials and managers	Most highly-skilled	Tertiary (degree or above)
Professionals	Most highly-skilled	Tertiary (degree or above)
Technicians and associate professionals	Highly-skilled	Tertiary (NOT equivalent to degree)
Clerks	Semi-skilled	Secondary (Up to Matric)
Service workers and shop and market sales workers	Semi-skilled	Secondary (Up to Matric)
Skilled agricultural and fishery worker	Semi-skilled	Secondary (Up to Matric)
Craft and related trade workers	Semi-skilled	Secondary (Up to Matric)
Plant and machinery operators and assemblers	Semi-skilled	Secondary (Up to Matric)
Elementary occupations	Unskilled	Primary (Up to Grade 7)
Domestic workers	Unskilled	Primary (Up to Grade 7)

Source: South African Standard Classification of Occupations (SASCO), Stats SA.

Figure 5 shows that there is an upward trend in underemployment under the over-qualification approach, with the number of under-employed increasing from 1.5 million in 1995 to 4.3 million in the last quarter of 2014. On the other hand, the share of underemployed as a proportion of all employed increased from 15.7% to 27.9% during the same period. This outcome is quite different from the general trend observed in Figure 4 regarding time-related underemployment. Also, the results obtained from both figures reflect huge overall changes in the loss of productive capacity in South Africa.

**Figure 5: Underemployment derived from the over-qualification approach, 1995-2014**



Source: Own calculations using OHS 1995-1999, LFS 2000-2007 and QLFS 2008-2014 data.

Table 2 presents the demographic, education and work characteristics of the following three groups of employed in 2008 and 2014: (1) underemployed derived under the time-based approach; (2) underemployed derived under the over-qualification approach; (3) other employed (who were not distinguished as underemployed in the two abovementioned approaches).

Table 2: Characteristics of the various groups of employed, 2008 vs. 2014

	Underemployed: Time-based definition		Underemployed: Over-qualification		Other employed (Not underemployed)	
	2008	2014	2008	2014	2008	2014
<u>Race</u>						
Black	85.40%	85.83%	78.33%	81.19%	67.87%	69.54%
Coloured	8.57%	10.29%	9.46%	9.49%	11.29%	11.14%
Indian	1.74%	0.74%	1.89%	1.75%	3.78%	3.97%
White	4.29%	3.14%	10.31%	7.58%	17.06%	15.34%
<u>Gender</u>						
Male	39.69%	40.95%	45.33%	46.70%	61.27%	60.27%
Female	60.31%	59.05%	54.67%	53.30%	38.73%	39.73%
<u>Age</u>						
15-24 years	14.36%	9.10%	13.73%	9.70%	10.21%	7.74%
25-34 years	31.44%	29.14%	39.28%	35.68%	31.61%	29.83%
35-44 years	27.81%	28.52%	28.29%	32.38%	28.13%	30.41%
45-54 years	19.87%	25.09%	14.09%	16.71%	20.83%	21.35%
55-65 years	6.52%	8.15%	4.62%	5.53%	9.21%	10.67%
Mean (years)	36.80	38.95	35.16	36.87	38.25	39.30
<u>Province</u>						
Western Cape	11.70%	12.35%	13.34%	13.72%	14.21%	14.85%
Eastern Cape	10.35%	14.93%	9.50%	9.67%	8.90%	8.44%
Northern Cape	2.47%	3.08%	2.19%	2.34%	2.12%	1.87%
Free State	7.56%	6.50%	5.88%	5.45%	5.53%	4.70%
KwaZulu-Natal	25.84%	18.23%	17.67%	15.73%	17.11%	16.60%
North West	4.87%	4.93%	5.52%	6.20%	6.46%	5.91%
Gauteng	24.23%	25.38%	32.02%	30.05%	32.53%	32.79%
Mpumalanga	8.57%	8.30%	6.75%	7.49%	7.02%	7.45%
Limpopo	4.39%	6.30%	7.13%	9.35%	6.12%	7.38%
<u>Area type</u>						
Urban formal	N/A	56.42%	N/A	64.62%	N/A	70.14%
Urban informal	N/A	12.07%	N/A	10.67%	N/A	8.75%
Tribal areas	N/A	28.44%	N/A	19.38%	N/A	16.70%
Rural formal	N/A	3.08%	N/A	5.33%	N/A	4.41%
<u>Educational attainment</u>						
Primary	33.78%	26.82%	0.00%	0.00%	25.26%	17.99%
Secondary	59.39%	67.18%	70.21%	68.36%	59.32%	64.17%
Matric + Cert/Dip	4.25%	3.37%	17.70%	17.07%	8.69%	8.47%
Degree	1.74%	1.63%	12.08%	14.58%	5.08%	7.82%
Unspecified	0.84%	1.00%	0.00%	0.00%	1.65%	1.56%
Mean (years)	8.45	8.93	11.32	11.58	9.69	10.45
<u>Broad occupation category</u>						
Managers	1.78%	2.26%	0.00%	0.00%	10.19%	12.47%
Professionals	2.55%	1.51%	0.00%	0.00%	7.39%	7.87%
Technicians	6.56%	4.89%	8.36%	8.79%	11.58%	10.90%
Clerks	3.66%	3.36%	9.87%	9.94%	11.05%	11.48%
Sales workers	9.46%	9.64%	5.09%	5.51%	15.20%	19.22%
Skilled agriculture	0.59%	0.36%	0.49%	0.22%	0.85%	0.61%
Trade workers	12.12%	11.24%	3.10%	3.81%	17.53%	14.97%
Operator	3.51%	1.64%	1.02%	1.36%	11.42%	11.42%
Elementary occupations	32.94%	40.31%	56.65%	55.63%	10.76%	8.08%
Domestic workers	26.81%	24.80%	15.42%	14.75%	4.03%	2.97%
Others	0.02%	0.00%	0.00%	0.00%	0.01%	0.01%

Table 2: Continued

	<b>Underemployed: Time-based definition</b>		<b>Underemployed: Over-qualification</b>		<b>Other employed (Not underemployed)</b>	
	<b>2008</b>	<b>2014</b>	<b>2008</b>	<b>2014</b>	<b>2008</b>	<b>2014</b>
<u>Broad industry category</u>						
Agriculture	3.35%	1.79%	7.11%	6.37%	5.22%	4.02%
Mining	0.10%	0.07%	1.77%	2.97%	2.72%	2.84%
Manufacturing	6.80%	3.67%	10.55%	9.21%	15.79%	12.79%
Electricity	0.28%	0.03%	0.63%	0.75%	0.75%	0.81%
Construction	9.12%	11.51%	5.72%	5.81%	9.03%	8.94%
Wholesale & retail trade	20.28%	16.73%	21.51%	18.32%	23.26%	22.34%
Transport	3.40%	2.48%	4.16%	4.59%	6.20%	6.86%
Financial intermediation	6.00%	6.52%	10.81%	10.10%	12.91%	14.94%
Community services	14.12%	22.55%	19.22%	24.32%	18.99%	22.52%
Private households	36.55%	34.59%	18.48%	17.51%	5.12%	3.91%
Others	0.00%	0.06%	0.05%	0.06%	0.02%	0.01%

Source: Own calculations using QLFS 2008Q1-Q4 and 2014Q1-Q4 data.

Note: The area type variable is not available in QLFS 2008.

Firstly, it can be seen that for all three groups, the black share is the highest reflecting that a greater proportion of the underemployed were blacks. However, this share was clearly the lowest (below 70%) in both years for Group (3). In contrast, the white share was the lower for Group (3) (above 15%) in both years. Secondly, males accounted for the lower share of underemployment at approximately 40% for Group (1) and 45% for Group (2). This finding perhaps signals that females are more willing to work extra hours. This could be due to the fact that women are highly associated with the involuntary part-time work. In Group (3), the female share was lower (38% and 39%) than the male share (61% and 60%) in both years. In addition, it can be seen that the majority of employed in all three groups were aged 24-44 years at the time of the surveys. Also, the mean age was the lowest for Group (2).

Across both underemployment definitions, the majority of the underemployed resided in Gauteng, Kwa-Zulu Natal and Western Cape. Interestingly, they are also the provinces that typically have lower unemployment rates. This could point to a situation of underemployment rather than open unemployment as noted by Golub and Hayat (2014).

Information on area type was not available in QLFS 2008. In 2014, those residing in the urban formal areas accounted for the highest share of underemployed at 56% and 64% for Group (1) and Group (2) respectively. This could be an indication of all those who migrate from rural to urban areas in search of work. When adequate work does not materialise, many are forced to enter informal work activities which is characterised by insecure wages, hours,

and an under-utilization of skills. The migration effect is supported by the highest share of Group 3 urban formal area type.

Under both underemployment definitions, the greater proportion of the underemployed were lowly educated with primary and secondary education. Those with secondary education were highly associated with underemployment than those with primary education<sup>4</sup>. Under all groups beyond the secondary level, as educational attainments increases, the proportion of the underemployed decreases in both years. This is to be expected for Group (1) and Group (2) as prior one would expect that as education increases, individuals would become more fully employed. Furthermore, it can be seen from the table that people from Group (2) have the highest mean years of education (above 11 years).

By broad occupation category, those involved in elementary workers hold the greater share of the underemployed according to both definitions for both years. This is followed by domestic workers. Cam (2014) reported similar results, that lower level occupations displayed a higher share of the underemployed. In Group (3), the prevalence of being underemployed increased for managers, clerks, professional and sales workers over the years. Broad industry categories which account for the greater share of underemployed are those also typically characterised by lower skilled occupations, including private households, community services as well as wholesale and retail trade.

The preceding analysis is limited in that it takes into account only one variable at a time when describing the characteristics of the underemployed. However, many variables act together to determine whether the employed person is classified as underemployed. Probit regressions were therefore run to estimate the marginal fixed effects (MFXs) of different potential influences on the likelihood of a worker being classified as underemployed (regardless of whether the worker was distinguished as underemployed under the time-based or over-qualification approach) in the fourth quarter 2008 and 2014. The independent variables in the regressions are the demographics (gender, race and age), educational attainment, years of work experience, geographical location (province), broad occupation and industry categories, whether employed in the public or private sector, formal or informal sector, or as employee or self-employed/employer. The results are presented in Table 3.

---

<sup>4</sup> Note that for the over-qualification definition no one is classified as underemployed with a primary education as the basic occupation require a primary education according to the SASCO classifications.

Table 3: Probit regressions on underemployment likelihood of employed, 2008 and 2014

Explanatory variables	Marginal fixed effects	
	QLFS 2008Q4	QLFS 2014Q4
Gender: Female	0.0564***	0.0584***
Race: Black	0.0446***	0.0887***
Race: Coloured	0.0300*	0.0586***
Race: Indian	-0.0216	-0.0602**
Age in years	0.0519	-0.1564**
Age in years squared	-0.0002***	-0.0006***
Province: Eastern Cape	-0.0135	-0.0055
Province: Northern Cape	0.0360**	0.0363
Province: Free State	0.0511***	-0.0106
Province: KwaZulu-Natal	0.0497***	-0.0087
Province: North West	-0.0028	-0.0328*
Province: Gauteng	0.0120	-0.0029
Province: Mpumalanga	0.0246	-0.0185
Province: Limpopo	0.0199	-0.0117
Years of education	0.0352	0.3222***
Years of education squared	0.0009***	-0.0008
Years of experience	-0.0471	0.1781***
Years of experience squared	0.0003***	0.0005***
Occupation: Elementary	0.8808***	0.9015***
Occupation: Domestic workers	0.8207***	0.8109***
Industry: Mining	0.0439	0.1302***
Industry: Manufacturing	0.0654***	0.0699**
Industry: Water & Electricity	0.1262	0.1057
Industry: Wholesale & Retail	0.1133***	0.1457***
Industry: Construction	0.0221	0.0077
Industry: Transport	0.0648***	0.1081***
Industry: Finance	0.0328*	0.0063
Industry: Community services	0.0687***	0.0316
Industry: Private households	0.2066***	0.1330***
Employee	-0.0125	-0.0171
Informal sector	0.1400***	0.1196***
Public sector	0.0246*	0.0541***
Sample size	24 410	20 663
Pseudo R2	0.4801	0.5026
Prob. > Chi-squared	0.0000	0.0000
Predicted probability	0.1720	0.2221

\*\*\* Significant at 1%    \*\* Significant at 5%    \* Significant at 10%

Source: Own calculations using QLFS 2008Q4 and 2014Q4 data.

Reference groups: Gender: Male; race: White; province: Western Cape; occupation category: Any category other than elementary occupation and domestic worker; industry category: skilled agricultural worker

First of all, females were associated with about 6% greater likelihood of being underemployed relative to their male counterpart. Accounting for race, blacks and coloureds were more significantly likely to be underemployed than white people. This likelihood almost doubled for both races over the six years. The Indians were 6% less likely to be underemployed relative to white people in 2014, however the relationship was insignificant in 2008. There was a significant and concave relationship between age in years and the probability of being underemployed in both surveys. This implies that as one got to be a middle-aged worker, there was a greater likelihood to be underemployed. This econometric finding is consistent with what was observed from Table 2.

Accounting for place of residence, in 2008 people residing in the Northern Cape, Free State and KwaZulu-Natal provinces were more likely to be underemployed relative to those staying in the Western Cape. The MFX was the greatest for KwaZulu-Natal. For the other provinces the results were insignificant. In 2014, only people staying in the Northern West province were significantly less likely to be underemployed than those in the Western Cape. For the other provinces with insignificant results, their MFXs were negative.

In 2008, there was a significant, convex relationship between years of education and the likelihood of underemployment. This result suggests that those employed with fewer years of education were less likely to be underemployed, and those with a higher education attainment were more likely to experience a sharp increase in underemployment likelihood. In 2014, the years of education squared variable was insignificant but the significant result of the years of education variable suggests that there was a linear relationship between education and likelihood of underemployment in 2014.

Accounting for occupation, it was indicated that those involved in elementary occupations and domestic work were significantly more likely to be underemployed in both years. This finding is consistent with the result on Table 2. Also, the MFX was higher for elementary workers in both years. With regard to industry of the employed, those workers engaged in activities in the manufacturing, wholesale and retail, transport and private household industries were significantly more likely to be underemployed relative to those employed in the skilled agriculture sector in both years. This likelihood increased over the years except for the workers employed in the private household sector. It was only in 2008 that workers in the

finance and community services were significantly more likely to be underemployed, and in 2014 mining workers were significantly more likely to be underemployed.

Employees were less likely to be underemployed in both years as compared to self-employed/employers but such result was statistically insignificant. In contrast, those working in the informal and public sectors were significantly more likelihood to be underemployed, with the MFX being greater (more than 10%) for the informal sector dummy variable.

#### **4. Conclusion**

Since 1994, the South African government has made huge investments and policy changes in order to improve labour productivity as well as the efficiency in the operation of the labour market. However, after two decades, the economy still shows a great slack in production and failure to fully assimilate all available labour. This raises questions like how much economic prosperity is lost due to the loss in the productive capacity. This paper had discussed the nature, level and trends of underemployment in South Africa. This was done to provide an understanding of the employment dynamics in the South African labour market.

The snapshot of time-based approach shows that 4% to 5% of employed are underemployed. Whilst for the inadequate employment approach reflected 15.7% to 27.9% of employed to be underemployment. Under both definitions the prevalence of underemployment was greater on individuals who are blacks, females, urban formal dwellers, with secondary education, working in elementary occupations or domestic workers, in the manufacturing, wholesale and retail, transport and private household industries, and in the informal sector or public sector.

## **References**

- Addy, S. N., Bonnal, M. and Lira, C. (2012). Toward a more comprehensive measure of labour underutilization: The Alabama case. *Journal of Business Economics*. 47(3): 214-227.
- Ansah, J. W. (2012). Our jobs, our survival: A review of the national employment policy of Ghana. *International Journal of Sociology and Anthropology*. 5(4): 107-115.
- Banerjee, A., Galiani, S., Levinsohn, J., McLaren, Z. and Woolard, I. (2008). Why has unemployment risen in the New South Africa? *Economics of Transition Journal*. 16(4): 715-740.
- Barker, F. (2007). *The South African Labour Market: Theory and Practice*. 5th edition. Pretoria: Van Schaik Publishers.
- Bell, D. N. F. and Blanchflower, D. G. (2013). *How to Measure Underemployment?* Peterson Institute for International Economics Working Paper Series 13-7. Washington, DC: Peterson Institute for International Economics
- Bhorat, H. (2009). *Unemployment in South Africa: descriptors and determinants*. Conference proceedings, the Fourth IZA/World Bank Conference on Employment and Development, May 2009.
- Bhorat, H. (2012). *A nation in search of jobs: six possible policy suggestions for employment creation in South Africa*. Development Policy Research Unit Working Paper 12/150. Cape Town: Development Policy Research Unit.
- Bhorat, H. and Van Der Westhuizen, C. (2009). *A synthesis of current issues in the labour regulatory environment*. Development Policy Research Unit Working Paper 09/135. Cape Town: Development Policy Research Unit.
- Bonnal, M., Lira, C. and Addy, S.N. (2009). Underemployment and local employment dynamics: New evidence. *The Review of Regional Studies*. 39(3): 317 – 335.
- Cam, S. (2014). *The underemployed: Evidence from the UK labour force survey*. Cardiff School of Social Sciences Working Paper Series No.152. Cardiff: School of Social Sciences.
- Clogg, C.C., Sullivan, T.A. and Mutchler, J.E. (1986). Measuring underemployment and inequality in the work force. *Social Indicators Research*. 18(4): 375–393.
- Fourie, F. (2011). *The South African unemployment debate: three worlds, three discourses?* SALDRU Working Paper Series No.63. Cape Town: Southern African Labour and Development Research Unit.

- Galvan, R.T. and Beltran, M.T.G. (2013). *Unemployment and Underemployment. Encyclopedia of Race and Racism*. 2nd Edition. 4(4): 213-220.
- Golub, S. and Hayat, F. (2014). *Employment, unemployment, and underemployment in Africa*. WIDER Working Paper 2014/014. Helsinki: World Institute for Development Economics Research (WIDER).
- Greenwood, M. A. (1999). *International definitions and prospects of underemployment statistics*. Proceedings for the Seminario sobre Subempleo, Bogota, 8-12 November.
- Kazan, M. (2012). *Underemployment: Implications for organizations*. Economic Research Institute. [Online] Available: [http:// downloads.erieri.com.s3.amazonaws.com/pdf/Underemployment.pdf](http://downloads.erieri.com.s3.amazonaws.com/pdf/Underemployment.pdf)
- Kingdon, G.G. and Knight, J. (2004). Unemployment in South Africa: the nature of the beast. *World Development*. 32(3): 391-408.
- Mathebula, I. (2013). *The determinants of time-related underemployment in South Africa*. Pretoria: Statistics South Africa.
- McGuinness, S. (2006). Over-education in the labour market. *Journal of Economic Surveys*. 20(3): 387-481.
- McKee-Ryan, F.M. and Harvey, J. (2011). "I Have a Job, But..." A Review of underemployment. *Journal of Management*. 37(4): 962-996.
- Mosca, I. and Wright, R.E. (2011). *Is graduate under-employment persistent? Evidence from the United Kingdom*. The Institute for the Study of Labour (IZA) Discussion Paper Series No. 6177. Bonn: The Institute for the Study of Labour.
- Organization for Economic Cooperation and Development (OECD). (2014). *Preventing unemployment and underemployment from becoming structural*. Report prepared for the G20 Labour and Employment Ministerial Meeting, Melbourne, 10-11 September.
- Raubaud, F. and Torelli, C. (2013). Employment, unemployment and working conditions in urban labour markets in Sub-Saharan Africa: Main stylized facts. In De Vreyer, P and Roubaud, F. (eds.), *Urban Labour Markets in Sub-Saharan Africa*. Washington, DC: World Bank.
- Reynolds, L. (2012). The incidence and persistence of youth underemployment: The Canadian Context. *Public Policy and Governance Review*. 4(1): 5-18.
- Schoeman, C.H., Botha, I. and Blaauw, P.F. (2010). Labour conflict and the persistence of macro underemployment in South Africa. *South African Journal of Economic and Management Sciences*. 13(3): 272-292.

- Sengenberger, W. (2011). *Beyond the measurement of unemployment and underemployment: The case for extending and amending labour market statistic*. Geneva: International Labour Organisation.
- Slack, T and Jensen, L. (2002). Race, Ethnicity, and Underemployment in Nonmetropolitan America: A 30-Year Profile. *Journal of Rural Sociology*. 67(2): 208-233.
- Wilkins, R. (2007). The consequences of underemployment for the underemployed. *Journal of Industrial Relations*. 49(2): 247–275.
- Wilkins, R. and Wooden, M. (2011). ‘Economic Approaches to Studying underemployment’. In Feldman, D. & Maynard, D. (eds.), *Underemployment: Psychological Economic and Social Challenges*. New York: Springer.
- Yu, D. (2009). *The comparability of Labour Force Survey (LFS) and Quarterly Labour Force Survey (QLFS)*. Stellenbosch Economic Working Papers 08/09. Stellenbosch: Stellenbosch University.

## Appendix

Table A.1: Number of underemployed, 1995-2014

	[A]	[B]	[C]	[D] = [A] + [B] + [C]	As % of all employed
OHS1995	N/A	1 490 903	N/A	1 490 903	15.69%
OHS1996		1 287 651		1 287 651	14.36%
OHS1997		1 446 717		1 446 717	15.91%
OHS1998		1 297 727		1 297 727	13.85%
OHS1999		1 514 860		1 514 860	14.63%
LFS2000a		1 762 182		1 762 182	14.84%
LFS2000b		2 082 584		2 082 584	17.04%
LFS2001a		2 062 948		2 062 948	16.83%
LFS2001b		1 828 160		1 828 160	16.37%
LFS2002a		1 790 866		1 790 866	15.43%
LFS2002b		1 875 415		1 875 415	16.62%
LFS2003a		2 059 394		2 059 394	18.23%
LFS2003b		2 186 338		2 186 338	19.16%
LFS2004a		2 144 307		2 144 307	18.85%
LFS2004b		2 296 838		2 296 838	19.75%
LFS2005a		2 409 590		2 409 590	20.26%
LFS2005b		2 565 676		2 565 676	20.88%
LFS2006a		2 653 643		2 653 643	21.34%
LFS2006b		2 740 303		2 740 303	21.43%
LFS2007a		2 765 235		2 765 235	21.89%
LFS2007b	2 830 749	2 830 749	21.29%		
QLFS2008Q1	447 721	3 164 873	229 779	3 842 373	26.59%
QLFS2008Q2	413 774	3 228 326	219 813	3 861 913	26.44%
QLFS2008Q3	425 537	3 215 625	228 806	3 869 968	26.58%
QLFS2008Q4	395 034	3 405 396	247 305	4 047 735	27.38%
QLFS2009Q1	398 626	3 327 985	249 263	3 975 874	27.17%
QLFS2009Q2	413 595	3 259 269	272 522	3 945 386	27.45%
QLFS2009Q3	413 463	3 177 208	291 849	3 882 520	28.05%
QLFS2009Q4	365 310	3 301 285	271 604	3 572 889	25.55%
QLFS2010Q1	370 676	3 325 631	253 228	3 949 535	28.58%
QLFS2010Q2	354 764	3 357 894	236 061	3 948 719	28.54%
QLFS2010Q3	317 648	3 318 842	246 104	3 882 594	28.40%
QLFS2010Q4	309 833	3 376 626	214 695	3 901 154	28.03%
QLFS2011Q1	308 552	3 473 595	237 108	4 019 255	28.88%
QLFS2011Q2	311 314	3 521 877	229 574	4 062 765	29.16%
QLFS2011Q3	319 193	3 609 721	202 224	4 131 138	29.23%
QLFS2011Q4	305 845	3 638 366	245 328	4 189 539	29.20%
QLFS2012Q1	337 366	3 670 938	241 047	4 249 351	29.72%
QLFS2012Q2	322 169	3 710 893	241 075	4 274 137	29.79%
QLFS2012Q3	339 561	3 729 965	254 304	4 323 830	29.65%
QLFS2012Q4	336 456	3 760 063	267 238	4 363 757	30.01%
QLFS2013Q1	313 279	3 753 034	260 443	4 326 756	29.70%
QLFS2013Q2	340 462	3 754 765	263 813	4 359 040	29.64%
QLFS2013Q3	377 704	3 932 742	279 166	4 589 612	30.47%
QLFS2013Q4	377 550	3 973 581	249 722	4 223 303	27.79%
QLFS2014Q1	329 415	3 948 900	250 209	4 528 524	30.04%
QLFS2014Q2	335 901	3 956 192	266 719	4 558 812	30.17%
QLFS2014Q3	349 691	3 905 097	278 144	4 532 932	29.93%
QLFS2014Q4	340 633	4 006 091	283 487	4 630 211	30.16%

[A]: Time-based definition only      [B]: Over-qualification definition only      [C]: Both definitions