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**Unravelling the impact of the global
financial crisis on the South African
labour market**

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Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration 2008 on *Social Justice for a Fair Globalization, and[1]* which has now been widely adopted by the international community.

In order to support member States and the social partners to reach the goal, the ILO pursues a Decent Work Agenda which comprises four interrelated areas: Respect for fundamental worker's rights and international labour standards, employment promotion, social protection and social dialogue. Explanations of this integrated approach and related challenges are contained in a number of key documents: in those explaining and elaborating the concept of decent work[2], in the Employment Policy Convention, 1964 (No. 122), and in the Global Employment Agenda.

The Global Employment Agenda was developed by the ILO through tripartite consensus of its Governing Body's Employment and Social Policy Committee. Since its adoption in 2003 it has been further articulated and made more operational and today it constitutes the basic framework through which the ILO pursues the objective of placing employment at the centre of economic and social policies.[3]

The Employment Sector is fully engaged in the implementation of the Global Employment Agenda, and is doing so through a large range of technical support and capacity building activities, advisory services and policy research. As part of its research and publications programme, the Employment Sector promotes knowledge-generation around key policy issues and topics conforming to the core elements of the Global Employment Agenda and the Decent Work Agenda. The Sector's publications consist of books, monographs, working papers, employment reports and policy briefs.[4]

The *Employment Working Papers* series is designed to disseminate the main findings of research initiatives undertaken by the various departments and programmes of the Sector. The working papers are intended to encourage exchange of ideas and to stimulate debate. The views expressed are the responsibility of the author(s) and do not necessarily represent those of the ILO.

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[1] See http://www.ilo.org/public/english/bureau/dgo/download/dg_announce_en.pdf

[2] See the successive Reports of the Director-General to the International Labour Conference: *Decent work* (1999); *Reducing the decent work deficit: A global challenge* (2001); *Working out of poverty* (2003).

[3] See http://www.ilo.org/gea. And in particular: *Implementing the Global Employment Agenda: Employment strategies in support of decent work, "Vision" document*, ILO, 2006.

[4] See http://www.ilo.org/employment.

Foreword

The global financial crisis of 2008-2009 has deeply impacted South Africa due to its financial and trade links with the rest of the world. As a consequence, Africa's largest economy fell into recession half way through 2008.

Although almost 900,000 jobs have since been lost, the results presented in this paper show that the contraction did not initially translate into a surge in official unemployment. Rather, the main effect of the downturn in South Africa has been a rise in the number of discouraged individuals, from 1.08 million in the second quarter of 2008 to 1.63 million in the third quarter of 2009. Drawing on the micro estimates, discouragement has increased more for vulnerable segments of the population, namely, uneducated black South Africans (especially males). At the same time, employment in the informal sector has fallen over the crisis period, which contradicts the general assumption that this sector absorbs laid-off workers. Later in 2009, employers in the formal sector did start to shed workers at a much higher rate, which has pushed up the unemployment rate to 24.5 per cent in 2009Q3.

This paper makes an important contribution to better understanding the impact of the crisis in South Africa, which also has implications for other emerging economies. In particular, the findings highlight the need to look at changes to all labour force states, not just unemployment, and to analyse the role of socio-economic characteristics in driving vulnerability in the labour market using micro-data.

Though the economy has now registered positive growth in the third quarter of 2009, South African policymakers are still confronted with the challenge of formulating and implementing policies that encourage job search and self-employment among the low-skilled. Over the longer term, education and training for the low-skilled and an appropriate industrial policy should remain key priorities for the Government of South Africa.

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1. Introduction[5]

Since the end of Apartheid, the South African economy has struggled to reach its potential, constrained by a range of factors such as inadequate infrastructure, along with structural obstacles and historical legacies. Due to weak economic performance and long-term impediments, the creation of decent jobs has not kept up with the increase in labour supply over recent decades, and consequently, a large segment of the population remains marginalized in the labour market. This low level of labour utilization in turn reduces economic growth. Labour market exclusion in South Africa is driven by a combination of interrelated factors including race, gender and education.[6] Despite some improvements in employment outcomes in recent years, the country was still facing an unemployment rate of 25 per cent when the global financial crisis impacted the South African economy.

Owing to its strong links with the global economy, South Africa has been hit hard by the crisis, which has come on top of the longer term structural problems in its economy and labour market. Consequently, the country has been in a recession since the fourth quarter of 2008 and estimates indicate that that overall GDP growth in 2009 will be -2.1 per cent.[7] This severe slump has largely been driven by a decrease in the manufacturing sector, along with a fall in output in the mining, financial, real estate and business services, and wholesale and retail trade sectors (Statistics South Africa 2009a, South Africa Reserve Bank 2009). The South African government recognized the severity of the downturn and responded with a loosening of monetary policy and a fiscal stimulus package that aimed to support demand and create jobs.[8]

Real GDP growth was 0.9 per cent in the third quarter of 2009, suggesting that the South African economy may be exiting recession. This trend was

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[5] I gratefully acknowledge comments and suggestions from Hielke Buddelmeyer, Duncan Campbell, Sandrine Cazes and Theo Spareboom. The views in this paper are those of the author and do not necessarily represent those of the International Labour Organization (ILO).

[6] See Banerjee et al. (2006), Bhorat and Kanbur (2006), Bhorat et al. (2001), Devey et al. (2008), Kingdon and Knight (2007), Padayachee (2006), Valodia et al. (2005), and Valodia (2007) for a comprehensive discussion on the South African labour market.

[7] See IMF World Economic Outlook October 2009, http://www.imf.org/external/pubs/ft/weo/2009/02/weodata/index.aspx.

[8] The Monetary Policy Committee (MPC) of the South African Reserve Bank started reducing interest rates in December 2008. The cumulative reduction in the repurchase rate over the past nine months is 5 percentage points (the rate is now 7 per cent) (South Africa Reserve Bank 2009). The result of tripartite negotiations, the Framework for South Africa's Response to the International Economic Crisis, outlines the main pillars of the government's action plan to respond to the crisis, including major public investments programme, see www.info.gov.za/view/DownloadFileAction?id=96381.

largely due to a return to positive growth in the manufacturing sector, followed by general government and construction and personal services sectors (Statistics South Africa 2009a). In spite of this improvement in the economy, the situation in the South African labour market is, however, unlikely to improve rapidly because of the typical lag between economic and employment recovery.[9]

Moreover, the global downturn of the last two years has already demonstrated that translating the aggregate economic impact to outcomes in the labour market is complex and is influenced by a number of factors, not only the magnitude of the economic contraction. For this reason, a micro-level analysis of the labour market is crucial to provide policymakers with insights into how the South African labour market has been affected and which segments have been hit hardest. To this end, the focus of this paper is on consequences of the 2008-2009 downturn in terms of changes to labour force status in South Africa and how this varies across the population.

The remainder of the paper is structured as follows: section 2 explores the impact of the downturn on the labour market since the beginning of 2008 focusing on changes to aggregate statistics. Section 3 presents micro-estimates of the determinants of labour force status before and after the global financial crisis of 2008-2009 including the role of gender, race and education in driving vulnerability to poor outcomes in the labour market. Finally, section 4 concludes.

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[9] See, for example, IMF (2009), Reinhart and Rogoff (2009) and Verick (2009) for a discussion about this lag.

2. The labour market impact of the GFC: Rising unemployment or discouragement?

As witnessed in other affected countries, the impact of the global financial crisis on the labour market depends on a range of factors including not only the magnitude of the economic contraction, but also the sectoral composition of the collapse in aggregate demand, the role of existing labour market institutions and the nature of the policy response, to name a few key determinants.[10]

To identify the labour market impact in the South African context, this section reviews changes to key variables since the onset of the crisis, which involves comparing outcomes in the second quarter of 2008 (a recent peak in economic activity) to those in the second and third quarters of 2009 (after the South African economy went into recession in 2008). The variables reviewed in this section include employment and unemployment; discouragement and inactivity; informal sector employment; hours worked; and earnings. All statistics are weighted to provide population estimates and restricted to the working-age population (individuals aged 15-64).

This selection of variables captures the three main labour market channels for firms to adjust labour demand in response to a major economic shock: working time, employment and wages.[11] Generally, firms adjust hours of work more rapidly than the number of workers due to cost considerations and the need to retain workers, which remains a priority for employers, particularly due to skills shortages in better economic times. Ultimately, a sharp drop in economic activity leads to dismissals, mass layoffs, plant closures, and hiring freezes, which all contribute to rising unemployment. In addition to reducing working hours and employment, another channel for adjusting costs in a recession is through the level of wages, though this has adverse social outcomes.

2.1 Pre-crisis challenges in the South African labour market

The situation in the South African labour market has attracted considerable attention from both policymakers and academics, especially because of the challenges and puzzles it poses. In this regard, the labour market is characterized by both a low employment-population ratio (44.7% in 2007) and the high rate of unemployment in the country (around 25% in 2007). At the same time, the informal sector is relatively small, which is partly a legacy of

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[10] See ILO (2009) and Verick (2009) for a discussion on the impact of the crisis on unemployment rates in the OECD.

[11] See Cazes et al. (2009) for a more in-depth discussion on adjustment channels.

Apartheid policies that discouraged entrepreneurship. The high rate of unemployment is in turn a reflection of the underdeveloped informal sector (OECD 2008). Overall, there is a low level of labour utilization, which has suppressed the growth potential of the country. On top of these characteristics, real wages in South Africa have either remained stagnant or fallen over the post-Apartheid period, above all for low-skilled workers.[12]

More specifically, over the post-apartheid (but pre-crisis) period, the unemployment rate in South Africa surged, reaching 31.2 per cent in 2003. In recent years, unemployment began to fall as economic conditions further improved. Despite this recent trend, the persistently high level of unemployment and the lack of job opportunities in the formal economy continued to be a major challenge for the Government of South Africa, even before the recession of 2008-2009. The situation has been direr for youth, black South Africans, the less-skilled, and women, who continue to experience major barriers to participating in the labour market, especially in terms of finding jobs in the formal economy (Banerjee et al. 2006). Youth in particular have faced considerable hurdles in the labour market: according to the September 2007 Labour Force Survey, the unemployment rate of young people aged 20 to 24 stood at 44.7 per cent, which is globally one of the highest youth unemployment rates.

2.2 Changes in labour force status since the onset of the crisis

During the crisis-induced recession of 2008-2009, the subsequent impact on labour force status in South Africa was multifaceted and in some respects unexpected (see Table A1 in the Appendix). Overall, the number of South Africans employed has fallen from 13,729,000 in 2008Q2 to 12,855,000 in 2009Q3 (a drop of 6.1%), which has been driven by layoffs particularly in the wholesale and retail trade, repair; manufacturing; and agricultural sectors (Statistics South Africa 2009b). As a result, the employment-population ratio dropped from 44.7 per cent (2008Q2) to 41.3 per cent (2009Q3).

In addition to considering the aggregate adjustment in employment, it is also important to look at changes to employment in informal and formal sectors.[13] It is usually assumed that the urban informal sector absorbs workers who are unable to find a job in the formal sector, though the literature increasingly views the sector as consisting of both survivalists and entrepreneurs who chose to operate informally.[14] During a downturn,

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[12] See Banerjee et al. (2006) and OECD (2008) for an overview of issues in the South African labour market.

[13] This is defined in terms of registration/licensing of enterprise, excluding the agricultural sector.

[14] See, for example, Jutting and Laiglesia (2009)

particularly one that is driven by a global, synchronized crisis, it is expected that employment in a developing country will fall in the formal sector, accompanied by a rise in employment in the informal sector.

However, informal sector employment in South Africa has surprisingly fallen during the crisis, from 17 per cent of total employment in 2008Q2 to 15.5 per cent in 2009Q3. Altogether, the number of workers in the informal sector fell by 347,000. At the same time, formal sector employment has increased its share of total employment from 68.6 per cent in 2008Q2 to 70.6 per cent in 2009Q3 (though in absolute numbers, employment in the formal sector fell from 9,415,000 to 9,073,000). Over the period 2008Q2 to 2009Q2, the informal sector accounted for 64 per cent of job losses in comparison to 16 per cent in the formal sector (the rest occurred in private households and the agricultural sector). In the last quarter (2009Q3), this situation has reversed, and now the majority of job losses took place in the formal sector (55% versus 23% in the informal sector). This suggests that adjustment in the informal sector has been more rapid while employers in the formal sector are only more recently resorting to layoffs to cope with reduced demand.

The fall in employment levels in South Africa did not initially translate to an increase in official unemployment. In fact, the unemployment rate for the whole population only increased from 23.1 per cent in 2008Q2 to 23.6 per cent in 2009Q2. More recently, however, the situation has deteriorated further and the rate has since jumped to 24.5 per cent in 2009Q3 (Figure 1). The unemployment rate of youth increased by 3.9 percentage points over this period (from 44.5% in 2008Q2 to 48.4% in 2009Q3) compared with 3.0 percentage points for prime-age men and a fall of 0.3 percentage points for prime-age women.[15] Reflecting the long-term inequalities present in the labour market, unemployment has increased more for black and coloured South Africans.

Since employment has fallen while unemployment as remained relatively static (at least in the initial stages of the downturn), the change in labour force status during the crisis must be reflected by movements in inactivity. Indeed, the percentage of the working-age population that was classified as inactive or out-of-the-labour force (OLF) increased from 41.9 per cent in 2008Q2 to 45.2 per cent in 2009Q3. Delving further into inactivity reveals that the largest change has been for discouraged workers, i.e. those who are unemployed but have given up job search. This category accounted for 7.7 per cent of the inactive (including retirees, those in education, etc) prior to the crisis but has since increased to 11.6 per cent. Altogether, the number of discouraged workers increased from 1.08 million in 2008Q2 to 1.63 million in 2009Q3.

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[15] This impact on young men has been also found in the case of OECD countries as highlighted by Verick (2009).

Figure 1: Rising discouragement best describes the impact of the crisis in South Africa
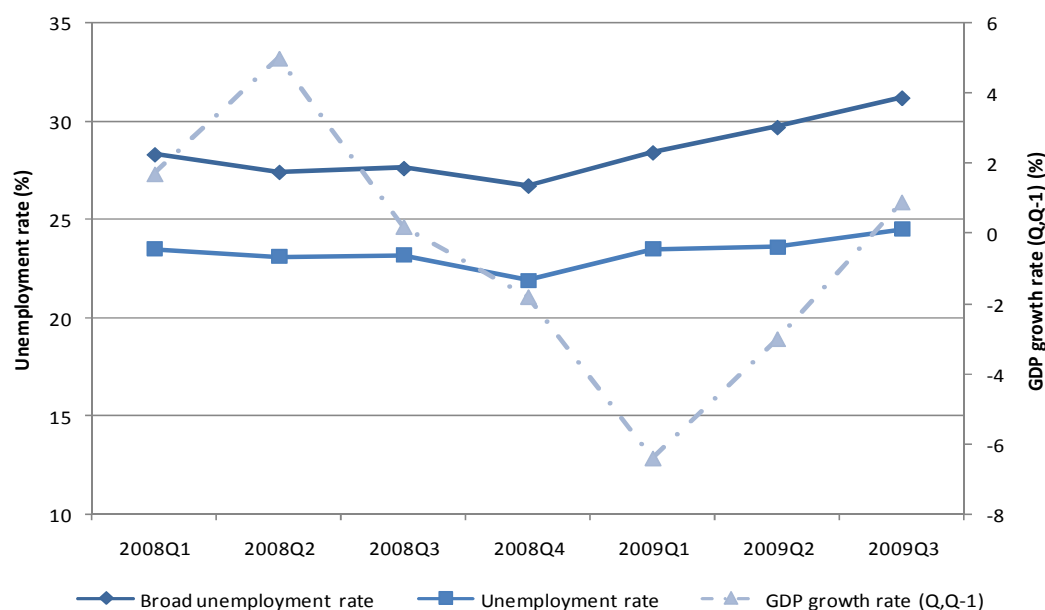
Notes: According the narrow unemployment definition, a person is unemployed if they: a) were not employed in the reference week; b) actively looked for work or tried to start a business in the four weeks preceding the survey interview; and c) would have been able to start work or would have started a business in the reference week. The broad unemployment rate equals the unemployed plus discouraged workers as a ratio of the labour force plus discouraged workers. Youth are individuals aged 15 to 24. All figures are population weighted.

These trends indicate that the impact of the 2008-2009 recession on the South Africa labour market is best reflected by a broader definition of unemployment, which includes discouraged workers. This is plotted in Figure 1, which illustrates the increase over the crisis period cited above, particularly since the first quarter of 2009. This rise in the broader unemployment rate has been most noticeable for youth (also for black South Africans) (see Table A1 in the Appendix).

2.3 Other adjustment channels: hours worked and earnings

As noted above, firms in more advanced economies typically adjust hours worked more rapidly than the number of workers over the business cycle, which has been strongly evident in European countries during the global financial crisis, particularly as a consequence of policy measures (Cazes et al. 2009). In comparison, working hours in South Africa appear not to have been adjusted downwards by any considerable margin: total hours usually worked have fallen only from an average of 43.8 hours in 2008Q2 to 42.8 hours in 2009Q3.

Turning to the third channel of adjustment, average monthly earnings (in constant 2000 prices) in the formal non-agricultural sector have remained pretty stagnant over the previous years, even prior to the onset of the 2009 crisis (Figure 2). This trend has continued during the recession, even in the case of the manufacturing industry, which has been badly hit by the downturn. In the

financial intermediation, insurance, real estate and business services industry earnings have fallen, but these occurred mostly early on in 2008 before South Africa had slipped into recession, and have more recently increased. Though the mining industry in South Africa has been severely hit by the fall in commodity prices, workers in this sector have nonetheless experienced rising real wages over the last year or so, suggesting that adjustment to lower commodity prices was achieved via layoffs.

In summary, reviewing the aggregate labour force and employment statistics reveals a number of unexpected labour market outcomes as a consequence of the global financial crisis and the ensuing South African recession. Firstly, while employment levels have fallen, this did not at first translate into a substantial rise in unemployment, but rather into a surge in discouragement. Secondly, workers were initially leaving the informal sector at a greater rate, which is consistent with the view that the informal sector in South Africa does not act as an absorber of laid-off workers who do not have any form of income support and the means to find alternative employment in the formal sector (see, for example, OECD (2008)). That said, there is considerable variation in labour market outcomes across different groups in society. Unemployment rates have increased more for men in general and youth in particular. Hours have fallen by a small amount, while real earnings have remained stagnant, continuing the pre-crisis trend.

Figure 2: Stagnation in real monthly earnings across selected industries (constant 2000 prices)
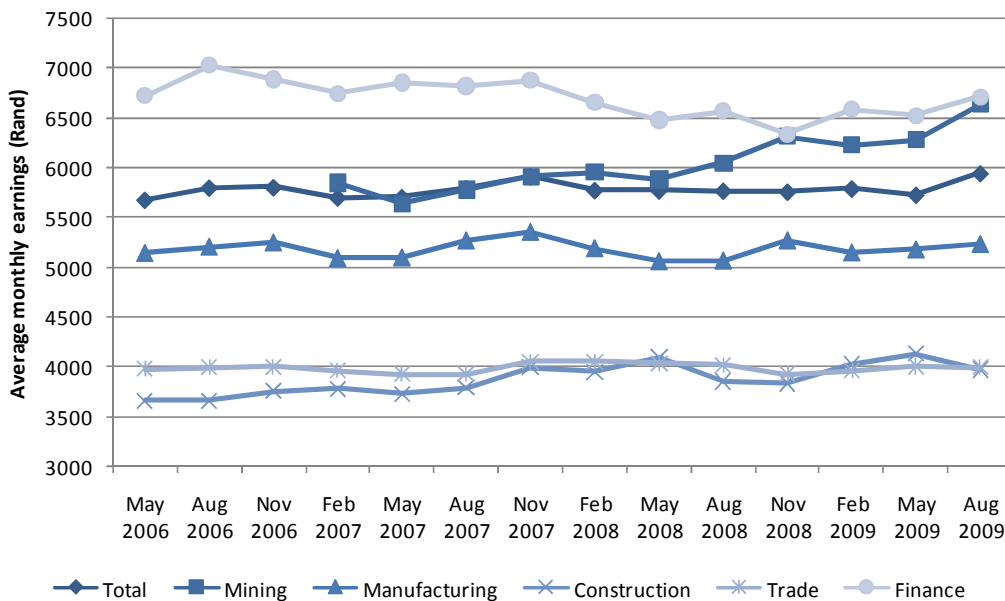
Source: Statistics South Africa Quarterly Employment Statistics, September 2009.

Notes: Average monthly earnings are in Rand (constant 2000 prices) and include bonuses and overtime. Mining = Mining and quarrying industry; Manufacturing = manufacturing industry; Construction = construction industry; Trade = Wholesale and retail trade, repair of motor vehicles, motor cycles and personal and household goods, hotels and restaurant industry; and Finance = financial intermediation, insurance, real estate and business services industry. All figures are population weighted.

3. Micro findings on the impact of the crisis on labour force status in South Africa

3.1 Determinants of labour force status

This section presents estimates of the determinants of labour force status using three waves of micro-data from the South African Quarterly Labour Force Survey (QLFS): the second quarter in 2008, representing the pre-crisis period, and the second and third quarters of 2009, which captures the deterioration in the labour market since the onset of the recession. The sample used for estimation consists of all individuals aged between 15 and 64 (i.e. the working age population). The dependent variable used in this section consists of five labour force states: formal sector employment; informal sector employment (including private households); unemployment; discouraged workers; and other forms of inactivity.

As per Statistics South Africa, the definition of informality used in this paper is based on the size of the firm and whether the employer is registered for VAT and income tax. In addition, employment in a private household is also categorized as informal sector employment (in comparison to the figures presented in section 2). Population weights are used in deriving all summary statistics and estimates to reflect different sampling probabilities.

Table 1 summarizes the key explanatory variables by labour force state, which identifies some of the main drivers of employment status.[16] These figures indicate that there are significant disparities by gender, household size, education, marital status, and race, which have been well documented in the literature (see, for example, Banerjee et al. (2006)). In particular, those working in the formal sector tend to be older, male, better educated, married, and have a smaller family. Black South Africans are over represented in the informal sector, unemployment, discouragement and other forms of inactivity.

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[16] Summary statistics for the sample are reported in Table A2 in the Appendix, which show that labour force status has changed over time, while other socio-economic variables are more similar over the three waves.

Table 1: Summary statistics by labour force status, average for 2008Q2, 2009Q2, 2009Q3

| Variable | Labour force status | | | | | |
	F	**I**	**U**	**D**	**OLF**	**Total**
Age (years)	37.2	38.2	30.0	30.7	30.1	33.3
Female (% of sample)	40.3	56.7	51.1	58.4	60.6	52.3
Number of household members	4.1	4.4	5.3	6.0	5.6	5.0
Married (% of sample)	55.1	45.9	27.8	27.9	25.4	37.6
Primary school or no education (% of sample)	9.1	27.0	11.7	22.5	20.8	16.1
Less than year 12 education (% of sample)	32.3	52.6	50.6	54.2	61.7	49.5
Year 12 education (% of sample)	35.0	17.4	32.4	21.5	15.1	24.3
Tertiary education (% of sample)	23.6	2.9	5.2	1.8	2.5	9.6
Black/African (% of sample)	63.2	88.7	86.6	94.5	81.2	77.6
Coloured (% of sample)	13.0	7.4	9.4	3.5	8.2	9.6
Indian/Asian (% of sample)	4.3	1.1	1.6	0.8	2.9	2.9
White (% of sample)	19.6	2.8	2.4	1.2	7.8	10.0

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: F = Employed in the formal sector; I = Employed in the informal sector; U = Unemployed; D = Discouraged; OLF = Other out-of-the-labour force. All figures are population weighted.

The next step is to estimate the determinants of labour force status of workers using a multinomial logit model separately for before and after the onset of the crisis (2008Q2 versus 2009Q2 and 2009Q3), conditioning on age, education, marital status, household size, population group and province. Due to differences in labour force participation, the model is estimated separately for women and men. The results from this model are presented in Table A3 (female) and Table A3 (male) in the Appendix as average partial effects (APE), which are more easily interpreted than coefficients from a multinomial logit model.[17]

The estimated averaged partial effects for females indicate that a range of individual and household characteristics drive labour force status. Based on the average partial effect at the mean age (34.6 years), an additional year would increase the probability of both formal and informal sector employment, while it would lead to a decrease in the likelihood of unemployment and other forms of inactivity.[18] The impact of an additional year on the probability of discouragement is not consistent over the crisis period.

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[17] As noted by Bartus (2005), average partial effects provide a more realistic interpretation of the estimation results and more consistent estimates than marginal effects at the mean. The Stata *margeff* command was used to calculate the average partial effects. The *svy* command in Stata was employed to take into account the use of survey data (standard errors are adjusted accordingly).

[18] The combined effect of age has to take into account the squared term used in the model. This can be calculated as: $\beta_{age} + 2 \times mean(age) * \beta_{age}^2$.

Education plays a dominant role in differences across labour force status of South African women. In particular, the less education a women has, the less likely they are to be employed in the formal sector and the more likely they are to be employed in the informal sector, unemployed, discouraged and inactive. Most striking is the situation for females with at most a primary education who have a much lower probability of formal sector employment than those with a tertiary education (a difference of more than 52 percentage points in 2008Q2).

Turning to different population groups, the estimates confirm the disparities that have long been present in the South African labour market. In comparison to whites, black South African women are more likely to be informally employed, unemployed and discouraged, while they are less likely to be formally employed or inactive for other reasons. Coloured women are more likely to be employed in the informal sector (only since the onset of the crisis) and unemployed, and less likely to be out of the labour force than white women. Finally, Indian/Asian women have a lower probability of being employed in the formal sector (only significant since 2009Q2) and informal sector (only pre-crisis). At the same, Indian/Asian women have a higher probability of unemployment and other forms of inactivity.

The specification used in Table A3 also includes two variables reflecting household status. Firstly, being married or cohabiting decreases the likelihood of formal sector employment, unemployment and other forms of inactivity for women, while its impact on other states is not significant. Secondly, there is a significant correlation between household size and labour force status. That is, a larger household is associated with a lower probability of employment of women (in both the formal and informal sector) but a higher chance of being unemployed, discouraged or out of the labour force. This result suggests that intra-household transfers play an important role in helping South African women who are jobless, an issue returned to below when investigating the reasons behind discouragement.

Similar to the findings for women, education has the largest average partial effect on the probability of being in a labour force state for men, though the APEs tend to be smaller than for females. Having less education (compared to tertiary education) reduces the likelihood of formal sector employment, while it increases the likelihood of all other states. Like the estimates for females, this result is strongest for South African men who have at most a primary education: the probability of formal sector employment for these individuals is 35 percentage points lower than those with a tertiary education.

In general, the estimates of the effect of race on male labour market outcomes are broadly in line with the results for women. More specifically, being a black South African man reduces the probability (in comparison to white males) of formal sector employment and other forms of inactivity, while it raises the likelihood of informal sector employment, unemployment, and discouragement (only significant at the 10% level). The results for coloured South African males are similar to those found for black males, though the APEs are mostly smaller.

In comparison to women, marital status appears to have a much larger association with labour market outcomes for South African men. In particular, being married or cohabiting increases the probability of formal sector employment by 12.7 percentage points in 2008Q2, which increases to 17.5 percentage points in 2009Q3 (i.e. well into the crisis period). At the same time, this characteristic reduces the likelihood of unemployment, discouragement and other forms of inactivity. The impact of household size on the probabilities is similar to the findings for women.

To highlight the changes over the crisis period, it is more illustrative to consider these results in terms of average predicted probabilities based on the estimates of the multinomial logit model (tables 2 and 3). In this part, the focus is on the predicted probabilities of unemployment, discouragement and informal sector employment by education status and race to highlight the most significant changes.

Overall, the predicted probabilities for females suggest that there has been little change over the crisis period (Table 2). The only significant changes are for black females (the probability of informal sector employment fell for these women from 14.8% in 2008Q2 to 12.8% in 2009Q3) and those with less education. In the latter case, the likelihood of discouragement increased by 1.6 percentage points for women with less than a year 12 education (and more than a primary level), while the probability of informal sector employment fell by 3 percentage points for women with at most primary education. One explanation for the fall in informal sector employment is that these women were working in sectors, which were badly hit, namely, the manufacturing and wholesale and retail trade sectors.

Table 2: Selected average predicted probabilities of labour force states, 2008Q2, 2009Q2, and 2009Q3: females

Independent variable	Unemployment			Discouragement			Informal sector employment		
	Predicted probabilities (%)								
	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3
Black	14.0	12.6	12.8	4.8	5.5	5.9	14.8	14.0	12.8**
Coloured	10.2	9.4	9.9	2.4	3.3	3.5	7.2	7.3	6.5
Indian/Asian	7.8	4.8	5.8	0.5	1.2	1.5	1.8	2.5	1.8
Primary or none	8.5	7.7	7.4	4.9	5.2	5.4	13.4	11.7	10.4**
Less than year 12	11.7	10.2	10.9	3.8	4.6	5.4**	13.0	12.8	11.6
Year 12	15.6	13.6	13.7	3.4	4.3	4.7	9.5	9.8	8.7

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: Based on the estimates from the multinomial logit model, the specified independent variable is set to a certain value while the others are held at their mean. Predicted probabilities for formal sector employment and other forms of inactivity are not displayed. ** - Indicates that the change from 2008Q2 to 2009Q3 is significant at the 95% level.

Table 3: Selected average predicted probabilities of labour force states, 2008Q2, 2009Q2, and 2009Q3: males

Independent variable	Unemployment			Discouragement			Informal sector employment		
	Predicted probabilities (%)								
	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3
Black	17.1	18.5	18.6	3.4	4.6	4.8**	13.9	12.1	12.1**
Coloured	16.1	14.9	14.8	1.4	1.9	3.0	11.4	10.9	10.0
Indian/Asian	12.7	13.6	14.7	0.9	2.2	2.2	8.4	7.6	7.5
Primary or none	14.3	15.1	15.2	4.2	6.1	7.0**	15.9	13.7	13.6
Less than year 12	15.5	16.4	16.7	2.7	4.0	4.5**	14.3	13.2	12.5
Year 12	16.2	18.5	17.1	1.9	3.0	3.6**	9.6	9.0	8.4

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: Based on the estimates from the multinomial logit model, the specified independent variable is set to a certain value while the others are held at their mean. Predicted probabilities for formal sector employment and other forms of inactivity are not displayed. ** - Indicates that the change from 2008Q2 to 2009Q3 is significant at the 95% level.

Turning to the average predicted probabilities for men, the results indicate that changes over the crisis period were stronger in comparison to females (Table 3). However, most of the significant changes are evident in the case of the probability of discouragement. More specifically, the likelihood of being in this state has increased for black males and those with less than a tertiary education. Mirroring the results discussed above, the largest change was for South African males with at most a primary education. In this case, the average predicted probability of discouragement rose from 4.2 per cent in 2008Q2 to 7 per cent in 2009Q3. The likelihood of informal sector employment fell for black South African men from 13.9 per cent to 12.1 per cent.

To further underscore the changes since the onset of the recession in South Africa, it is useful to view the predicted probabilities of employment status for females and males in a graphical form (again focusing on informality, unemployment and discouragement) and plotting them against age. Age is used because of the known disparities facing young people in the labour market and the overall changes in employment status over the life-cycle. This is done for all three waves, 2008Q2, 2009Q2 and 2009Q3, holding other characteristics constant. To highlight the strongest impact of the crisis, the different effects of race, education status along with marital status are combined to demonstrate the situation for one of the most vulnerable groups in the South African labour market (uneducated, unmarried black South African females and males).

Based on the predicted probabilities for this vulnerable group, Figure 3 illustrates that the probability of unemployment has decreased slightly for black, uneducated, unmarried women since the start of the crisis, particularly for those aged between 20 and 40 (however, these changes are not significant). For this group of women, the maximum predicted probability of unemployment in 2008Q2 was 21.9 per cent, which was reached at 31 years of age. This maximum probability fell to 20.1 per cent in 2009Q3, reflecting the drop in the unemployment rate for women. In comparison, for black, unmarried, uneducated South African men, the maximum predicted unemployment

probability increased from 24.6 per cent (reached at 31 years) in 2008Q2 to 28.1 per cent (at 33 years) in the latest quarter (2009Q3).

In line with the findings presented above, the most prominent change in labour force status over the crisis period has been in terms of discouragement. The change in predicted probabilities of discouragement displayed in Figure 4 illustrate that the likelihood of being in this state has increased for both men and women who are uneducated, unmarried, and black. The rise has been larger for men though the predicted probabilities for males in this group still remain less than for their female equivalents. The maximum probability of discouragement for women in this vulnerable group increased from 10.0 per cent in 2008Q2 (reached at an age of 30 years) to 12.0 per cent in 2009Q3 (at 31 years). For men, the peak in the probability of discouragement rose by a greater amount, from 7.4 per cent prior to the crisis to 11.5 in the latest quarter (2009Q3).

Figure 3: Predicted probability of unemployment rises slightly for black, uneducated, unmarried men across the age distribution, but falls for women
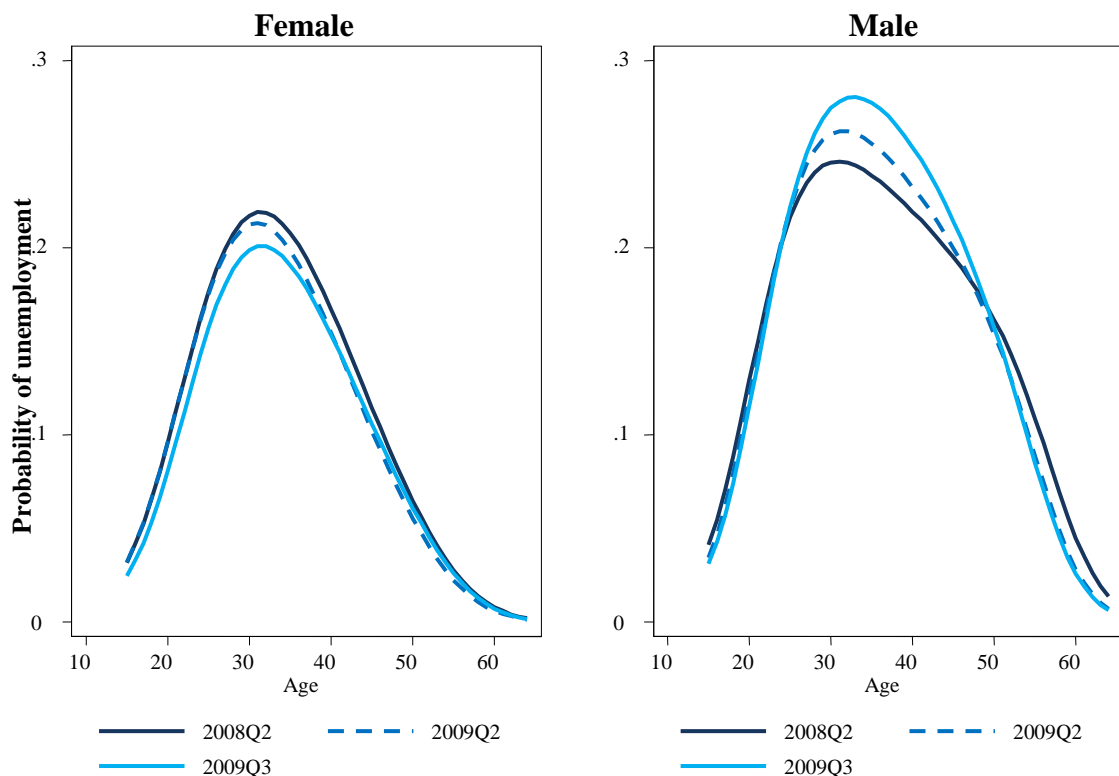
Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: The predicted probabilities derived from the multinomial logit estimates are graphed on age by gender for uneducated, unmarried black/Africans. All other variables are held at their means.

Looking at the likelihood of being employed in the informal sector (Figure 5), the model predicts that the probability has decreased marginally for both men and women who are uneducated, unmarried and black (though the difference is not strongly significant). In contrast to the predictions for unemployment and discouragement, the predicted probabilities for informal sector employment reach a maximum at a much later age (over 45 years).

Figure 4: Predicted probability of discouragement rises for both men and women
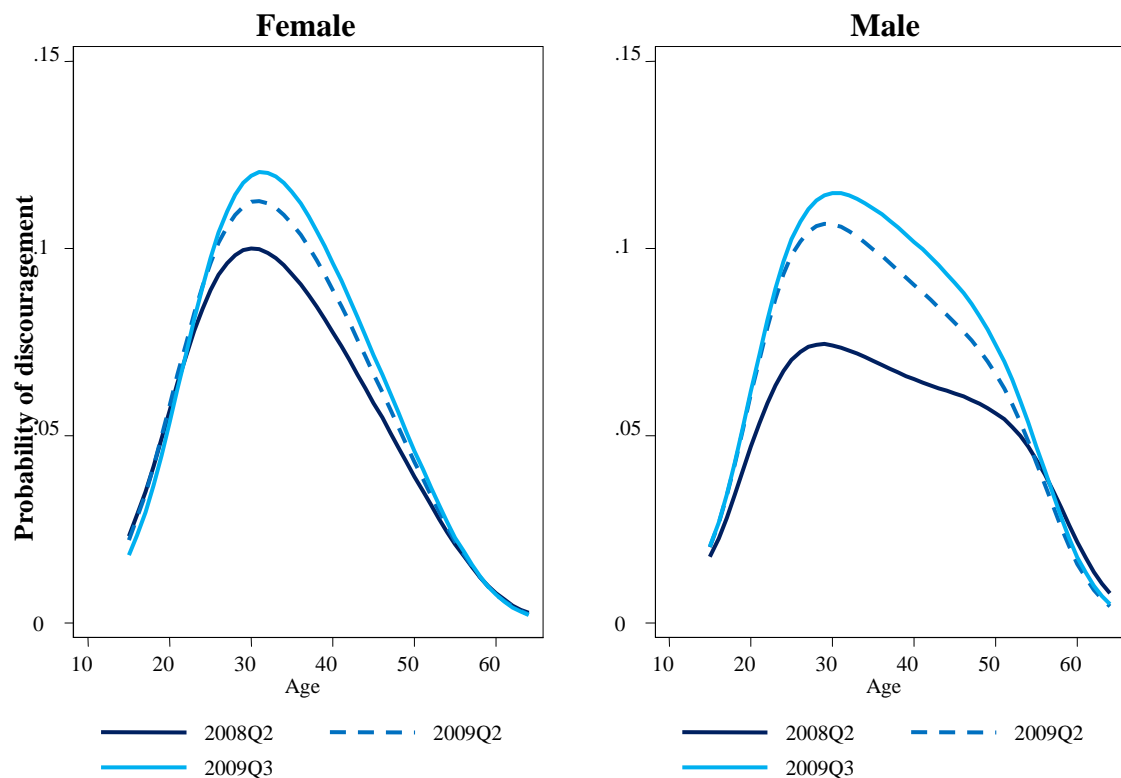
Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: The predicted probabilities derived from the multinomial logit estimates are graphed on age by gender for uneducated, unmarried black/Africans. All other variables are held at their means.

In summary, these estimates generated from the multinomial logit specification confirm that the impact of the crisis in South Africa is mainly evident in an increase in discouragement, which has important gender, education and racial dimensions.

Figure 5: Predicted probability of informal sector employment has fallen marginally for men and women
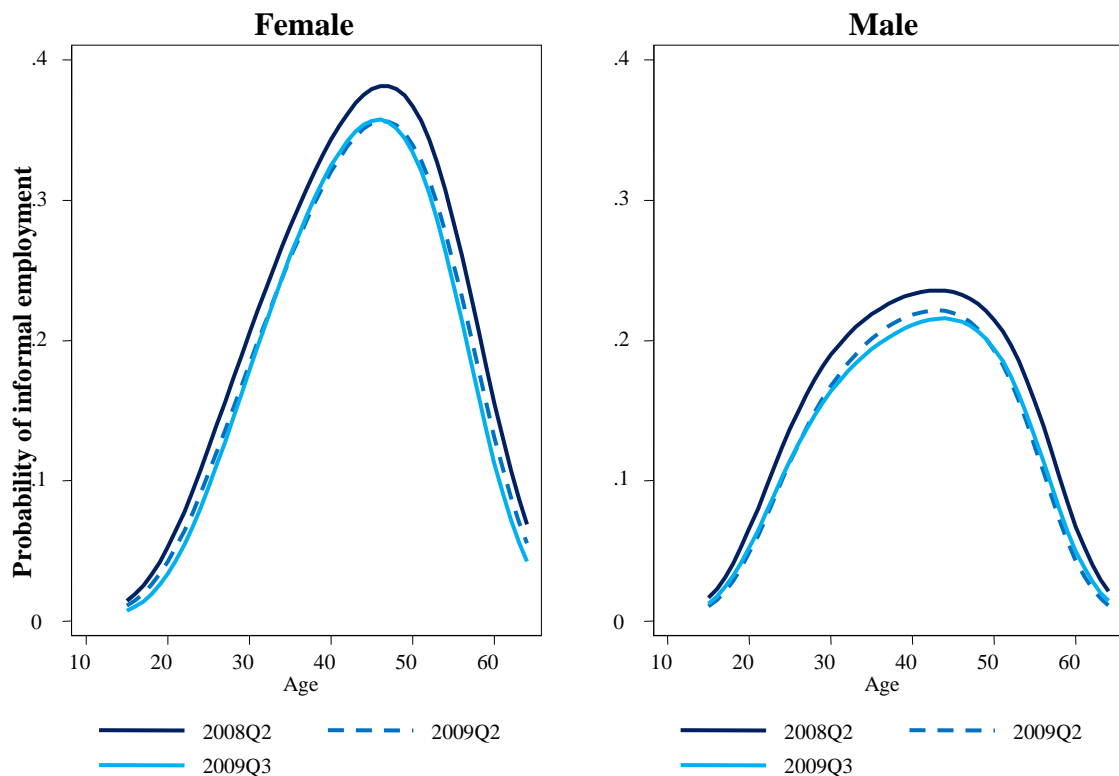
Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: The predicted probabilities derived from the multinomial logit estimates are graphed on age by gender for uneducated, unmarried black/Africans. All other variables are held at their means.

3.2 Explaining rising discouragement over the crisis period

The rise in discouragement in South Africa during the global financial crisis of 2008-2009 is both surprising and disconcerting, especially for policymakers. Being discouraged implies that individuals of working age are no longer actively searching for a job due to the costs of job search or belief that it is not worth looking for employment. The discouraged do not, therefore, include individuals who are voluntarily inactive because of education, family responsibilities, retirement, etc. Thus, discouraged workers would like to work but just have given up searching (this can be called a marginal attachment to the labour force). To elicit further insights, this section investigates the characteristics of discouraged workers in South Africa in comparison to the unemployed and how these individuals are able to survive outside the labour market. This exercise also illustrates whether unemployed and discouraged individuals are indeed different in terms of individual and household characteristics.

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Table 4 reports the forms of income support reported by discouraged and unemployed individuals, before and since the onset of the crisis. These population weighted figures indicate that the main form of income support for both the unemployed and discouraged is provided overwhelming by other persons in the household. 74.8 per cent of discouraged workers received such support prior to the onset of the crisis, which has increased to 80.8 per cent in 2009Q2, before dropping again to 78.3 per cent in 2009Q3. The number of unemployed receiving this type of support is at a similar level but has decreased over the crisis period. Support from persons not in the household and child support/foster care grants are also important sources but have not been increasing in a consistent manner since the start of the recession in South Africa. Savings are a minor form of support for those without a job.

Table 4: Forms of income support for the discouraged and unemployed, both sexes

| Form of support	Percentage receiving support prior to the crisis (%)		Percentage receiving support after the crisis has started (%)			
	2008Q2		2009Q2		2009Q3	
	Unemployed	Discouraged	Unemployed	Discouraged	Unemployed	Discouraged
Persons in the household	78.9	74.8	78.5	80.8	77.1	78.3
Persons not in the household	19.8	20.9	19.9	17.7	19.6	19.0
Child support/foster care grants	13.8	22.5	12.1	20.9	13.0	22.9
Savings	4.6	2.2	5.1	1.3	5.5	1.8
Unemployment Insurance Fund (UIF)	0.6	0.5	1.0	0.3	1.2	0.6
Pension	0.6	1.5	0.7	1.0	0.6	1.3
Welfare grants	0.5	0.3	0.7	0.1	0.4	0.2
Other (bursary, study loan)	0.4	0.5	0.4	0.3	0.3	0.4
Charity	0.1	0.3	0.05	0.01	0.2	0.09

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

The other forms of support are only reaching a very small minority of the population of discouraged and unemployed workers. In general, only around a quarter of discouraged individuals are provided support through government social security payments (child grants, benefits from the Unemployment Insurance Fund (UIF), pension, plus welfare grants). This situation has not changed significantly over the crisis.[19]

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[19] At the same time, employment protection legislation (EPL) in South Africa is relatively weak (though in practice it is more difficult than suggested by the de jure measure of protection)

Looking beyond the receipt of support, it would be inaccurate to view both unemployed and discouraged workers as idle. Indeed, the data reveals that these individuals are engaged in a number of activities (farming, fetching water, producing household goods, doing construction, and catching food). For instance, 6.7 percent of the unemployed and 10.5 per cent of the discouraged reported that in the last week, they undertook work on their own or the household's plot or farm. 12.2 per cent of the unemployed and 21.7 per cent of the discouraged also indicated that they fetched water. There is, however, no indication that these non-market activities have changed significantly over the crisis period.

The next step is to estimate the impact of receiving such forms of support on the probability of being discouraged (as opposed to being unemployed and actively searching for a job – the key difference is thus job search). As reported in tables A4 (females) and A5 (males) in the Appendix, a range of individual and household characteristics are associated with being discouraged. However, most of the average partial effects reported are small.

Using the base specification for females (columns 1 to 3 of Table A4), the estimates suggest that prior to the start of the recession in South Africa, being poorly educated, married and living in a large household increased the probability of discouragement over unemployment. Surprisingly, there isn't a consistently strong impact of race (after controlling for age, gender, education, etc). Increasing the age by one year (from the mean) implies a marginal fall in the likelihood discouragement over unemployment.

Moving to the crisis period (2009Q2/Q3), the most significant change in the average partial effects is for the education dummies. In particular, compared to females with a tertiary education, having at most a primary education increases the probability of discouragement over unemployment by 18.6 percentage points in 2008Q2. This figure increases to 21.4 percentages points in 2009Q3 after the onset of the crisis. A similar rise is evident in the effects of the other education dummies. This suggests that the poorest educated have become more likely to give up job search during the recession in South Africa. This finding is consistent with observations made in previous studies such as Banerjee et al. (2006) that there has been a structural shift in the South African labour market towards more skilled workers. This would increase discouragement for the unskilled, which in turn has accelerated during the recent economic downturn.

In terms of regional variation (APEs not reported in tables A4 and A5), the estimates indicate that the probability of discouragement over unemployment has changed more in certain provinces. In particular, the probability of discouragement for women has increased in Eastern Cape, Free State, KwaZulu-Natal, Mpumalanga, and Limpopo, while it has decreased in

(OECD 2008). Thus, workers are neither provided protection of jobs through EPL nor protection of income via unemployment benefits.

Western Cape. For example, women in the KwaZulu-Natal province had a higher probability of discouragement of 2.1 percentage points in 2008Q2 (over those in Gauteng province). Since the onset of the recession, this has increased to 15.7 percentage points (2009Q3).

The estimates for the male subsample are broadly similar to those for females. The largest increase is also for the education dummies: having at most a primary education reduced the likelihood of discouragement over unemployment 7.2 percentage points in 2008Q2, which surged to 21.6 percentage points in 2009Q3. There are similar province effects: for example, in 2008Q2, men in Eastern Cape had an increased likelihood of discouragement in comparison to those in Gauteng province (by 4.5 percentage points), which has since risen to 19.6 percentage points (2009Q3).

The expanded specification, which include dummies for the type of support received by individuals (columns 4 to 12), reveals that there is some evidence of an impact of receiving transfers on the decision to give up job search. More specifically, receiving intra-household transfers reduces the probability of discouragement for females, but has weakened in magnitude over the crisis period. For men, the APE of intra-household transfers switches from negative in 2008Q2 to positive in 2009Q2. The dummy for child grants is positively and significantly correlated with the probability of discouragement for females (and for males in 2008Q2); though the average effect is small (receiving the grant increases the probability by 1.9 per cent in 2009Q3). Overall, these estimates indicate that these forms of support have an impact on discouragement, but there isn't a significant trend over the crisis period.

4. Conclusion

The global financial crisis of 2007-2009 has deeply impacted South Africa due to its financial and trade links with the rest of the world. As a consequence, Africa's largest economy was in recession from the third quarter of 2008 to the second quarter of 2009. Although almost 900,000 jobs have been lost, the results presented in this paper reveal that the impact of the global financial crisis on the South African labour market is more evident in terms of rising discouragement, rather than a surge in official unemployment. Indeed, the main effect of the downturn in South Africa has been a rise in the number of discouraged individuals, from 1.08 million in the second quarter of 2008 to 1.63 million in the third quarter of 2009. Drawing on the micro estimates, discouragement has increased more for uneducated black South Africans (especially males).

In general, these findings stress the importance of looking at the impact of the crisis on all labour force states, not just unemployment, and of analysing the role of socio-economic characteristics in driving vulnerability in the labour market using micro-data.

Even though the South African economy has emerged from recession late in 2009, the main challenge for policymakers is to ensure that interventions are effective in tackling discouragement, especially for the unskilled. In this respect, the Government of South Africa should continue to address this problem by increasing demand for the less-skilled through appropriate industrial and macroeconomic policies (i.e. supporting the growth of labour-intensive sectors that would absorb this segment of the population). At the same time, more efforts are required to improve education and training for all South Africans in order to increase the overall skills level and reduce a mismatch between skills demanded by employers and those supplied by prospective workers. In addition, more needs to be done to increase mobility of job-seekers through investment in public transport and subsidies to encourage individuals away from urban centres to travel in search of employment. These measures would reduce job search costs (and reservation wages), and hence, help reduce discouragement.

While these recommendations are not new for the South African context, the findings of this paper stress the importance of tackling these issues over both the short term during a crisis and the longer term.

Appendix

Table A1: Labour force status in South Africa, 2008Q1 to 2009Q3

Variable	2008Q1 Jan-Mar	2008Q2 Apr-Jun	2008Q3 Jul-Sep	2008Q4 Oct-Dec	2009Q1 Jan-Mar	2009Q2 Apr-Jun	2009Q3 Jul-Sep
Labour force participation rate (%)	58.2	58.1	57.7	57.3	57.5	56.3	57.7
Employment-population ratio (%)	44.5	44.7	44.3	44.8	44.0	43.0	41.3
Unemployment rate (%)	23.5	23.1	23.2	21.9	23.5	23.6	24.5
Men	20.6	19.9	20.6	18.9	21.2	21.8	22.9
Women	26.9	26.8	26.3	25.3	26.2	25.7	26.5
Aged 15-24	46.1	44.5	46.6	44.9	47.8	48.1	48.4
Black/African	27.7	27.0	27.4	25.9	27.7	27.9	28.8
Coloured	19.1	19.5	19.1	17.9	19.5	19.5	21.6
Indian/Asian	11.8	12.7	11.7	11.7	12.7	11.4	12.7
White	5.3	4.6	4.1	3.0	4.6	4.6	4.9
Broader unemployment rate (%)[a]	28.3	27.4	27.6	26.7	28.4	29.7	31.1
Men	24.1	23.2	23.9	22.8	25.0	26.7	28.4
Women	33.0	32.2	31.7	31.1	32.1	33.0	34.2
Aged 15-24	52.2	50.3	52.2	51.2	54.4	56.2	57.3
Black/African	33.3	32.2	32.6	31.7	33.6	35.1	36.5
Coloured	21.5	21.2	20.7	19.4	20.7	21.4	23.9
Indian/Asian	13.1	13.3	12.2	12.5	14.2	13.9	15.3
White	5.7	5.0	4.7	3.5	5.0	5.3	6.0

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

All figures are weighted.

Notes: a – Broad unemployment rate is defined as unemployed plus discouraged workers as a ratio to the sum of employed, unemployed and discouraged workers.

Table A2: Statistics for key variables, 2008Q2, 2009Q2 and 2009Q3

Variable	Mean - 2008Q2	Mean - 2009Q2	Mean – 2009Q3
Formal sector employed (% of sample)	28.8	28.3	26.9
Informal sector employed (% of sample)	11.8	11.0	10.6
Unemployed (% of sample)	13.6	13.1	13.4
Discouraged worker (% of sample)	3.9	5.1	5.4
Other OLF (out-of-the labour force) (% of sample)	41.9	42.5	43.7
Age (years)	33.9	34.0	34.0
Household size	4.8	4.7	4.7
Female (% of sample)	54.6	54.5	54.8
Married (% of sample)	36.9	36.4	36.1
Primary school or no education (% of sample)	17.4	16.4	18.6
Less than year 12 education (% of sample)	49.4	49.5	50.1
Year 12 education (matric) (% of sample)	24.0	24.4	22.5
Post-secondary education (% of sample)	9.1	9.8	8.9
Black/African (% of sample)	79.0	79.0	79.4
Coloured (% of sample)	11.1	11.1	11.3
Indian/Asian (% of sample)	2.6	2.5	2.2
White (% of sample)	7.3	7.4	7.2
Western Cape (% of sample)	12.1	11.4	10.8
Eastern Cape (% of sample)	10.8	11.5	11.3
Northern Cape (% of sample)	5.4	5.3	5.7
Free State (% of sample)	8.5	8.8	9.2
KwaZulu-Natal (% of sample)	17.3	17.0	17.2
North West (% of sample)	8.3	8.4	8.6
Gauteng (% of sample)	17.2	17.1	16.2
Mpumalanga (% of sample)	9.5	9.6	9.9
Limpopo (% of sample)	10.9	11.1	11.2
Number of observations	58,067	56,025	54,542

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Table A3: Multinomial logit estimates (average partial coefficients) – female labour force status before (2008Q2) and since the onset of the crisis (2009Q2 and 2009Q3)

	Formal sector employment			Informal sector employment			Unemployment			Discouragement		
	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age	0.033***	0.037***	0.036***	0.023***	0.022***	0.024***	0.025***	0.023***	0.023***	0.005***	0.008***	0.010***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Age^2	-0.0004***	-0.0004***	-0.0004***	-0.0002***	-0.0002***	-0.0003***	-0.0004***	-0.0004***	-0.0004***	-0.0001***	-0.0001***	-0.0002***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Primary school or no education (ref: tertiary education)	-0.520***	-0.500***	-0.499***	0.066***	0.046***	0.042***	0.017***	0.014**	0.014**	0.012***	0.007***	0.016***
	(0.009)	(0.009)	(0.009)	(0.010)	(0.008)	(0.007)	(0.006)	(0.006)	(0.007)	(0.003)	(0.002)	(0.005)
Less than year 12 education	-0.358***	-0.343***	-0.342***	0.058***	0.054***	0.046***	0.012*	0.008*	0.012**	0.007***	0.006***	0.017***
	(0.008)	(0.008)	(0.007)	(0.010)	(0.009)	(0.008)	(0.006)	(0.005)	(0.006)	(0.003)	(0.002)	(0.005)
Year 12 education	-0.228***	-0.202***	-0.210***	0.031***	0.027***	0.022***	0.047***	0.033***	0.037***	0.007***	0.006***	0.013***
	(0.015)	(0.013)	(0.013)	(0.006)	(0.005)	(0.004)	(0.009)	(0.007)	(0.008)	(0.002)	(0.002)	(0.004)
Married	-0.0555***	-0.0598***	-0.0630***	0.0009	0.0003	0.0000	-0.0039**	-0.0048***	-0.0069***	0.0003*	0.0001	0.0002
	(0.0072)	(0.0071)	(0.0079)	(0.0007)	(0.0004)	(0.0005)	(0.0016)	(0.0018)	(0.0020)	(0.0002)	(0.0001)	(0.0002)
Household size	-0.009***	-0.007***	-0.006***	-0.008***	-0.010***	-0.009***	0.005***	0.003***	0.003***	0.001***	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)
Black/African (ref: White)	-0.104***	-0.131***	-0.146***	0.035***	0.031***	0.034***	0.103***	0.121***	0.128***	0.009**	0.008**	0.008**
	(0.018)	(0.018)	(0.020)	(0.007)	(0.006)	(0.007)	(0.019)	(0.021)	(0.021)	(0.004)	(0.004)	(0.003)
Coloured	0.022	-0.000	-0.004	0.004	0.007***	0.006**	0.040***	0.054***	0.057***	0.002	0.003	0.002
	(0.015)	(0.016)	(0.018)	(0.003)	(0.003)	(0.003)	(0.012)	(0.014)	(0.016)	(0.002)	(0.002)	(0.002)
Indian/Asian	-0.0369	-0.0954***	-0.1136***	-0.0071***	0.0012	-0.0012	0.0411**	0.0325**	0.0475*	-0.0009	0.0011	0.0003
	(0.0229)	(0.0258)	(0.0239)	(0.0018)	(0.0023)	(0.0022)	(0.0178)	(0.0157)	(0.0250)	(0.0010)	(0.0013)	(0.0014)
Observations	31450	30313	29688	31450	30313	29688	31450	30313	29688	31450	30313	29688

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Dummies for province were also included in all specifications but are not reported here. The average partial effects (APE) are based on a multinomial logit regression where the dependent variable is labour force status. The APEs are presented as percentage point changes in the probability of an outcome.

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Table A3: continued

	Other OLF		
	2008Q2	**2009Q2**	**2009Q3**
Variables	**(13)**	**(14)**	**(15)**
Age	-0.086***	-0.090***	-0.092***
	(0.001)	(0.001)	(0.001)
Age^2	0.0011***	0.0012***	0.0012***
	(0.0000)	(0.0000)	(0.0000)
Primary school or no education (ref: tertiary)	0.425***	0.433***	0.427***
	(0.016)	(0.014)	(0.015)
Less than year 12 education	0.282***	0.274***	0.268***
	(0.015)	(0.014)	(0.015)
Year 12 education	0.143***	0.136***	0.138***
	(0.016)	(0.014)	(0.015)
Married	0.0581***	0.0641***	0.0696***
	(0.0064)	(0.0066)	(0.0073)
Household size	0.011***	0.011***	0.009***
	(0.001)	(0.001)	(0.001)
Black/African	-0.043***	-0.029**	-0.023*
(ref: White)	(0.008)	(0.012)	(0.012)
Coloured	-0.069***	-0.063***	-0.061***
	(0.008)	(0.011)	(0.012)
Indian/Asian	0.0036	0.0605***	0.0670***
	(0.0154)	(0.0220)	(0.0237)
Observations	31450	30313	29688

Table A4: Multinomial logit estimates (average partial coefficients) – male labour force status before (2008Q2) and since the onset of the crisis (2009Q2 and 2009Q3)

	Formal sector employment			Informal sector employment			Unemployment			Discouragement		
	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age	0.044***	0.041***	0.039***	0.014***	0.014***	0.012***	0.014***	0.017***	0.020***	0.002***	0.005***	0.006***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Age^2	-0.0005***	-0.0005***	-0.0005***	-0.0002***	-0.0002***	-0.0001***	-0.0002***	-0.0003***	-0.0003***	-0.0000***	-0.0001***	-0.0001***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Primary school or no education (ref: tertiary education)	-0.347***	-0.355***	-0.352***	0.058***	0.065***	0.042***	0.020**	0.029***	0.027***	0.006**	0.018***	0.030***
	(0.019)	(0.016)	(0.016)	(0.011)	(0.012)	(0.009)	(0.008)	(0.010)	(0.009)	(0.002)	(0.007)	(0.011)
Less than year 12 education	-0.274***	-0.270***	-0.262***	0.055***	0.077***	0.041***	0.017**	0.026***	0.024***	0.003*	0.011**	0.022**
	(0.015)	(0.014)	(0.014)	(0.012)	(0.014)	(0.009)	(0.008)	(0.009)	(0.009)	(0.002)	(0.005)	(0.009)
Year 12 education	-0.146***	-0.160***	-0.135***	0.024***	0.035***	0.018***	0.030***	0.052***	0.038***	0.002*	0.007*	0.015**
	(0.020)	(0.017)	(0.020)	(0.006)	(0.008)	(0.005)	(0.008)	(0.010)	(0.009)	(0.001)	(0.003)	(0.006)
Married	0.1274***	0.1570***	0.1751***	-0.0005	-0.0018**	-0.0014*	-0.0249***	-0.0252***	-0.0252***	-0.0005***	-0.0024***	-0.0020***
	(0.0055)	(0.0060)	(0.0068)	(0.0009)	(0.0008)	(0.0008)	(0.0013)	(0.0015)	(0.0017)	(0.0001)	(0.0003)	(0.0002)
Household size	-0.015***	-0.014***	-0.017***	-0.003***	-0.005***	-0.004***	0.007***	0.007***	0.007***	0.002***	0.003***	0.004***
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)
Black/African (ref: White)	-0.111***	-0.122***	-0.107***	0.027***	0.019***	0.021***	0.113***	0.117***	0.130***	0.008*	0.008*	0.005*
	(0.022)	(0.021)	(0.021)	(0.006)	(0.005)	(0.005)	(0.022)	(0.024)	(0.023)	(0.004)	(0.004)	(0.003)
Coloured	-0.052**	-0.045**	-0.012	0.016***	0.012***	0.012**	0.092***	0.075***	0.080***	0.003	0.001	0.002
	(0.024)	(0.022)	(0.022)	(0.006)	(0.004)	(0.005)	(0.023)	(0.020)	(0.020)	(0.002)	(0.002)	(0.002)
Indian/Asian	-0.0376	-0.0132	-0.0059	0.0077	0.0036	0.0052	0.0629***	0.0591**	0.0754***	0.0012	0.0011	0.0000
	(0.0272)	(0.0293)	(0.0315)	(0.0058)	(0.0046)	(0.0045)	(0.0221)	(0.0234)	(0.0268)	(0.0016)	(0.0026)	(0.0019)
Observations	26024	25260	24346	26024	25260	24346	26024	25260	24346	26024	25260	24346

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Dummies for province were also included in all specifications but are not reported here. The average partial effects (APE) are based on a multinomial logit regression where the dependent variable is labour force status. The APEs are presented as percentage point changes in the probability of an outcome.

… Continued on the next page

Table A4: continued

	Other OLF		
	2008Q2	**2009Q2**	**2009Q3**
Variables	**(13)**	**(14)**	**(15)**
Age	-0.075***	-0.077***	-0.078***
	(0.001)	(0.001)	(0.001)
Age^2	0.0010***	0.0010***	0.0010***
	(0.0000)	(0.0000)	(0.0000)
Primary school or no education (ref: tertiary)	0.264***	0.243***	0.254***
	(0.025)	(0.022)	(0.025)
Less than year 12 education	0.199***	0.156***	0.174***
	(0.022)	(0.019)	(0.023)
Year 12 education	0.090***	0.067***	0.063***
	(0.021)	(0.017)	(0.022)
Married	-0.1016***	-0.1276***	-0.1465***
	(0.0050)	(0.0054)	(0.0062)
Household size	0.009***	0.010***	0.009***
	(0.001)	(0.001)	(0.001)
Black/African	-0.037***	-0.023*	-0.050***
(ref: White)	(0.012)	(0.014)	(0.015)
Coloured	-0.059***	-0.043***	-0.080***
	(0.013)	(0.016)	(0.017)
Indian/Asian	-0.0342*	-0.0506**	-0.0747***
	(0.0190)	(0.0205)	(0.0234)
Observations	26024	25260	24346

Table A5: Drivers of discouragement before (2008Q2) and since the onset of the crisis (2009Q2 and 2009Q3) (logit model) (average partial effects) – female

Dep. Var: discouragement	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Age	-0.018***	-0.016***	-0.013***	-0.021***	-0.018***	-0.015***	-0.020***	-0.018***	-0.015***	-0.022***	-0.020***	-0.017***
	(0.004)	(0.005)	(0.005)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Age^2	0.0002***	0.0002***	0.0002***	0.0003***	0.0003***	0.0002***	0.0003***	0.0003***	0.0002***	0.0003***	0.0003***	0.0002***
	(0.0001)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Primary school or no education (ref: tertiary)	0.186***	0.142***	0.214***	0.218***	0.161***	0.236***	0.197***	0.153***	0.225***	0.199***	0.150***	0.216***
	(0.042)	(0.034)	(0.049)	(0.030)	(0.025)	(0.035)	(0.028)	(0.024)	(0.034)	(0.029)	(0.024)	(0.034)
Less than year 12 education	0.122***	0.135***	0.191***	0.150***	0.159***	0.216***	0.134***	0.151***	0.206***	0.132***	0.146***	0.196***
	(0.034)	(0.033)	(0.046)	(0.026)	(0.025)	(0.033)	(0.024)	(0.024)	(0.032)	(0.024)	(0.024)	(0.032)
Year 12 education	0.035**	0.043***	0.072***	0.044***	0.048***	0.079***	0.037***	0.044***	0.073***	0.038***	0.044***	0.072***
	(0.017)	(0.015)	(0.027)	(0.014)	(0.011)	(0.020)	(0.011)	(0.010)	(0.019)	(0.012)	(0.010)	(0.019)
Married	0.014***	0.007***	0.018***	0.022***	0.009***	0.023***	0.015***	0.007***	0.020***	0.016***	0.008***	0.020***
	(0.005)	(0.002)	(0.006)	(0.004)	(0.002)	(0.005)	(0.003)	(0.002)	(0.004)	(0.004)	(0.002)	(0.004)
Household size	0.003	0.009**	0.008**	0.005***	0.011***	0.010***	0.004**	0.010***	0.010***	0.003	0.010***	0.007***
	(0.003)	(0.004)	(0.004)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
Black/African	0.019	0.023	0.001	0.023	0.026	0.000	0.020	0.024	-0.000	0.018	0.023	-0.001
(ref: White)	(0.024)	(0.021)	(0.019)	(0.019)	(0.016)	(0.014)	(0.016)	(0.015)	(0.013)	(0.016)	(0.015)	(0.013)
Coloured	-0.001	0.012	-0.016	-0.003	0.014	-0.020*	-0.002	0.013	-0.018*	-0.003	0.013	-0.018*
	(0.019)	(0.018)	(0.015)	(0.015)	(0.014)	(0.011)	(0.012)	(0.012)	(0.010)	(0.013)	(0.013)	(0.010)
Indian/Asian	-0.032***	0.001	-0.028**	-0.044***	0.001	-0.033***	-0.034***	0.001	-0.030***	-0.037***	0.002	-0.029***
	(0.011)	(0.014)	(0.012)	(0.009)	(0.010)	(0.009)	(0.007)	(0.009)	(0.008)	(0.008)	(0.010)	(0.009)
Support: household				-0.011***	-0.002*	-0.006**						
				(0.003)	(0.001)	(0.003)						
Support: non-household							0.004	0.001	0.009**			
							(0.003)	(0.001)	(0.004)			
Support: child grants										0.017***	0.006***	0.019***
										(0.004)	(0.002)	(0.004)
Observations	5538	5350	5358	5538	5350	5358	5538	5350	5358	5538	5350	5358

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Dummies for province were also included in all specifications but are not reported here. The average partial effects (APE) are based on a logit regression where the dependent variable is labour force status. The APEs are presented as percentage point changes in the probability of an outcome.

Table A6: Drivers of discouragement before (2008Q2) and since the onset of the crisis (2009Q2 and 2009Q3) (logit model) (average partial effects) – male

Dep. Var: discouragement	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3	2008Q2	2009Q2	2009Q3
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**
Age	-0.011***	-0.013***	-0.017***	-0.014***	-0.015***	-0.020***	-0.014***	-0.016***	-0.020***	-0.014***	-0.016***	-0.020***
	(0.003)	(0.004)	(0.004)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age^2	0.0002***	0.0002***	0.0002***	0.0002***	0.0002***	0.0003***	0.0002***	0.0002***	0.0003***	0.0002***	0.0002***	0.0003***
	(0.0000)	(0.0001)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Primary school or no education (ref: tertiary)	0.072**	0.146**	0.216***	0.089***	0.142***	0.229***	0.080***	0.163***	0.235***	0.079***	0.160***	0.234***
	(0.030)	(0.059)	(0.058)	(0.018)	(0.030)	(0.033)	(0.017)	(0.033)	(0.033)	(0.017)	(0.033)	(0.033)
Less than year 12 education	0.055**	0.097*	0.170***	0.073***	0.095***	0.188***	0.066***	0.112***	0.192***	0.065***	0.109***	0.192***
	(0.027)	(0.052)	(0.056)	(0.018)	(0.027)	(0.033)	(0.016)	(0.031)	(0.033)	(0.016)	(0.030)	(0.033)
Year 12 education	0.015	0.011	0.066*	0.018***	0.010	0.068***	0.016***	0.013	0.071***	0.016***	0.012	0.070***
	(0.011)	(0.027)	(0.036)	(0.007)	(0.012)	(0.020)	(0.006)	(0.015)	(0.021)	(0.006)	(0.015)	(0.020)
Married	0.001	-0.013*	-0.013*	0.001	-0.012***	-0.013***	0.001	-0.015***	-0.014***	0.001	-0.015***	-0.014***
	(0.002)	(0.008)	(0.006)	(0.001)	(0.004)	(0.004)	(0.001)	(0.004)	(0.004)	(0.001)	(0.004)	(0.004)
Household size	0.005**	0.009***	0.011***	0.007***	0.008***	0.013***	0.005***	0.009***	0.013***	0.005***	0.010***	0.013***
	(0.002)	(0.003)	(0.003)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.002)
Black/African	0.030	-0.012	-0.020	0.037***	-0.009	-0.021*	0.033***	-0.010	-0.022*	0.033***	-0.013	-0.022*
(ref: White)	(0.021)	(0.027)	(0.020)	(0.013)	(0.012)	(0.011)	(0.012)	(0.015)	(0.012)	(0.012)	(0.015)	(0.012)
Coloured	0.002	-0.050***	-0.032	0.003	-0.045***	-0.035***	0.003	-0.055***	-0.036***	0.003	-0.055***	-0.036***
	(0.010)	(0.015)	(0.020)	(0.006)	(0.006)	(0.011)	(0.005)	(0.008)	(0.011)	(0.005)	(0.008)	(0.011)
Indian/Asian	-0.001	-0.044**	-0.045***	-0.002	-0.040***	-0.048***	-0.001	-0.048***	-0.050***	-0.001	-0.048***	-0.050***
	(0.010)	(0.021)	(0.015)	(0.006)	(0.009)	(0.008)	(0.005)	(0.011)	(0.008)	(0.006)	(0.011)	(0.008)
Support: household				-0.002**	0.022***	0.004						
				(0.001)	(0.007)	(0.005)						
Support: non-household							-0.001	-0.015***	-0.000			
							(0.001)	(0.005)	(0.005)			
Support: child grants										0.025***	0.006	0.017
										(0.008)	(0.014)	(0.019)
Observations	4258	4543	4567	4258	4543	4567	4258	4543	4567	4258	4543	4567

Source: Statistics South Africa Quarterly Labour Force Survey, 2008Q2, 2009Q2, 2009Q3; author's calculations.

Notes: Standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1. Dummies for province were also included in all specifications but are not reported here. The average partial effects (APE) are based on a logit regression where the dependent variable is labour force status. The APEs are presented as percentage point changes in the probability of an outcome.

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