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UNU-WIDER

September 2007

Online at <https://mpra.ub.uni-muenchen.de/9065/>

MPRA Paper No. 9065, posted 11 Jun 2008 07:21 UTC

Research Paper No. 2007/57

## **Post-Apartheid South Africa**

Poverty and Distribution Trends  
in an Era of Globalization

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September 2007

### **Abstract**

South Africa's transition to democracy in 1994 created new possibilities for economic policy. Economic liberalization brought sustained, if unspectacular, growth that reversed the long decline in per capita incomes, but left its scars in much job shedding associated with business becoming internationally competitive. This accords with international evidence that trade liberalization takes time to realize positive employment effects. Disappointing employment growth in the face of an expanding labourforce led to rising unemployment. However, using poverty estimates from a combination of sources, this study demonstrates that poverty nevertheless declined quite substantially after the turn of the century. Poverty dominance testing shows this conclusion to be insensitive to the selection of poverty line or measure. But empirical analysis does not allow strong conclusions to be drawn on causal relationships between globalization and poverty trends.

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Keywords: trade, labour, South Africa, globalization

JEL classification: F14, F16, I32

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This is a revised version of a paper originally prepared for the UNU-WIDER project conference on The Impact of Globalization on the Poor in Africa, directed by Professors Machiko Nissanke and Erik Thorbecke. The conference was organized in Johannesburg in collaboration with the Trade and Industry Policy Centre (TIPS), the Development Policy Research Unit (DPRU) of the University of Capetown, and the African Economic Research Consortium (AERC).

UNU-WIDER gratefully acknowledges the financial contribution of the Finnish Ministry of Foreign Affairs to this project, and the contributions from the governments of Denmark (Royal Ministry of Foreign Affairs), Norway (Royal Ministry of Foreign Affairs), Sweden (Swedish International Development Cooperation Agency—Sida) and the United Kingdom (Department for International Development) to the Institute's overall research programme and activities.

A polarization measure and a bi-polarization index are used to investigate whether income or wages have become increasingly polarizing forces. The polarization measure shows a modest increase in income polarization between 1995 and 2000, but no clearly discernable trend in wage polarization for 1995-2004, although the trend at low levels of  $\alpha$  is consistent with an amplified impact of qualifications and skills on wages. Income polarization amongst blacks is the highest and has widened further. The bi-polarization index tracks divergence in incomes or the ‘vanishing middle-class’. Thus increased upward mobility of black workers in post-apartheid South Africa may have dominated any bi-polarizing forces induced by globalization. This conjecture of two opposing forces is supported by a large increase in overall wage bi-polarization.

In summary, South Africa experienced declining poverty, increasing inequality and polarization, and falling bi-polarization during the first post-transition decade. There were both winners and losers from liberalization. The triad of political, trade and financial liberalization has had dramatic effects on the domestic economy and society, although it is impossible to disentangle these effects empirically. The most important impact of re-integration was sustained economic growth, without which all South Africans would have been significantly worse off. The counterfactual to re-integration into the global economy is not a different distribution of income, but an economy with a different production capacity.

### Acknowledgements

The authors wish to thank Derek Yu for his technical assistance.

### Acronyms

AMPS	all media and products survey
CDFs	cumulative density functions
IES	income and expenditure surveys
LFS	labourforce surveys
OHS	household surveys
SADC	Southern African Development Community

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The views expressed in this publication are those of the author(s). Publication does not imply endorsement by the Institute or the United Nations University, nor by the programme/project sponsors, of any of the views expressed.

## 1 Introduction

South Africa's political transition culminated in 1994 with the holding of the country's first democratic elections. This date can also be regarded as the turning point in South Africa's re-integration into the world economy. Under apartheid, protectionism was first an activist industrial policy instrument and later a defence against growing international isolation. The political realities of the time constrained policy choice and prevented progress in the first hesitant moves to open up the South African economy. Whatever liberalization impetus existed was strongly countered by the effect of threatened sanctions against the apartheid state—later de facto financial sanctions—and the debt standstill of 1985. Within this constellation of political events, policymakers could do no more than accept the reality of a relatively closed economy and continue with the industrial policy stance of import substitution.

Economic liberalization and South Africa's full acceptance into the international fold brought new possibilities for economic policymaking. In the main, re-integration brought sustained, if unspectacular, growth that reversed the long decline in per capita incomes. The continuing economic upswing is already the longest sustained one in South Africa's economic history. But economic performance has not been spectacular and the adjustment required by liberalization has left its scars in job shedding in much of industry—in order to become internationally competitive—and in mining, given rising mine wages and more recently a strengthening currency. This is in line with international evidence that the positive employment effects of trade liberalization take some time to be realized—although Rama (2003) contends that the initial loss of 'privileged' employment in monopolistic and state-owned industries is eventually counteracted by new export jobs. Disappointing employment growth in the face of an expanding labourforce have fed a trend of rising unemployment rates in an economy with only a small informal sector and no safety net of subsistence farming. This implies that formal sector unemployment has become a major cause of poverty.

The apparently adverse implications of such market-driven trends for the South African income distribution have been revealed in several recent studies. Using household survey data, Leibbrandt, Levinsohn and McCrary (2005) observe that the returns to human capital have collapsed in the post-transition period, while Hoogeveen and Özler (2004) find that poverty has worsened substantially. However, both of these studies are based on the income and expenditure surveys (IES) of 1995 and 2000: surveys that are known to suffer from serious deficiencies in terms of reliability and comparability. Indeed, the massive income decline implied by a comparison of these surveys—about 40 per cent in per capita terms in the first five years of the post-transition period—contradicts the trend observed in the national accounts and is also greatly at odds with other data. For instance, government revenues from VAT, income tax and company tax increased in real terms by 19 per cent, 26 per cent and 33 per cent respectively over the measurement period. Few observers of the South African scene regard such large income declines as credible, thus raising the need for alternative data sources to be able to assess whether money-metric poverty and polarization have indeed increased.

Given the known shortcomings of recently collected official datasets and the desire to evaluate poverty trends since the turn of the century, this study draws on an alternative source of data: the all media and products survey (AMPS). Evidence of a marked reduction in poverty during the second half of the first decade of democracy is presented, and largely attributed to the recent large-scale expansion of the social grants

system. Poverty dominance testing is used to show that the main conclusions reached are not sensitive to the selection of poverty line or poverty measure. However, a caveat applies when drawing inference regarding the link between globalization and poverty. No matter how well poverty is measured or how robust the findings are to the specification of a poverty line, empirical analysis does not allow one to draw strong conclusions on the role of globalization in determining the course of poverty. The reason for this is that it is extremely difficult to establish a causal relationship between globalization and changes in the income distribution.

Survey data are also used to construct a polarization measure developed by Duclos, Esteban and Ray (2004) and a bi-polarization index developed by Wolfson (1994). This analysis investigates claims that income has become an increasingly important polarizing force in South African society, and is—to the best of our knowledge—the first of its kind in the South African context. Polarization measures are distinct from standard inequality indicators because they consider not only the spread of the income distribution, but also what Duclos and Échevin (2003) refer to as the ‘clustering of income around local poles’. Polarization is usually interpreted as a measure of political and social stability, an issue of particular importance in a newly democratized society. The intuition behind this interpretation is that the existence of individual incomes far from the mean will not fuel social and political action on its own. Some degree of association between groups of observations located far above and far below the mean is required to prompt collective behaviour.

The paper continues with a brief review in section 2 of developments in trade and financial liberalization over the transition and post-transition period, proceeding to a discussion of the labour market implications of such changes. Section 3 turns to evaluating trends in poverty and inequality over the past decade, and speculates on how these could have been influenced by globalization. Section 4 concludes.

## **2 A brief history of South Africa’s trade and financial liberalization: 1994-2005**

### **2.1 Trade liberalization**

Efforts to liberalize South Africa’s trade regime were first undertaken during the 1970s, following the release of the Reynders Commission Report. It was already recognized at that time that a more outwardly oriented strategy was superior to the import-substituting industrialization strategy that had been in place since as early as 1925 (Ball 2001: 7). However, the increasing political and economic isolation of the country prevented much progress with the envisioned shift towards greater openness until the early 1990s. The move towards liberalization gained steam with the negotiations conducted by the transition government through the mechanism of the National Economic Forum, as the prospect of reintegration into the global economy grew more real.

When the new government took over in April 1994, the South Africa was emerging from the poorest decade of economic performance it had experienced during the post-War period (Du Plessis and Smit 2005: 26). Decades of isolation and protectionist policy had left the country with a legacy of production inefficiency and a skewed economic structure that was also associated with South Africa’s notoriously severe racial inequality. Embarking on a programme of trade liberalization was therefore

viewed as not only symbolic of South Africa's political transition but also as one of the key components of government's strategy to kick-start economic growth. The enthusiasm of the new government with respect to making further progress in trade liberalization was evident when South Africa became a signatory to the Marrakech Agreement of the General Agreement on Tariffs and Trade in 1994. Government thus took its first major step towards reforming the trade regime, committing to an initial five-year phased programme for reducing and rationalizing the country's complex and highly discretionary tariff structure. In terms of the agreement 10,000 tariff lines were to be decreased to 6,000, while tariff rates were to be standardized from more than 100 to only six, varying up to 30 per cent (Ball 2001: 8). Impressively, the largest tariff cuts were made in sectors that had previously enjoyed the most extensive protection, and South Africa's tariff reduction programme was more ambitious than required by the World Trade Organization (WTO). This policy stance is in line with government's 1996 GEAR framework, which set out an export-led growth strategy.

Initially, substantial progress was made in simplifying the tariff structure. The number of tariff lines was cut by a third from the very high level of 12,500 between 1990 and 1996, while the number of tariff rates was reduced from 200 to 49. The average tariff fell from 28 to 10 per cent during the same period, and the maximum tariff rate was cut to 61 per cent (Lewis 2001: 3). Since 1996, however, progress with liberalization has slowed: there have been small declines in the number of tariff bands and the level of the maximum tariff.<sup>1</sup> Furthermore, there has been less progress since 1990 in reducing *effective* protection than has been the case with nominal protection, given South Africa's tiered protection structure (i.e., high protection on consumer goods, moderate protection on intermediate goods, low protection on capital goods). In fact, research by Fedderke and Vaze (2001: 445) shows that half of South Africa's output is produced in sectors where effective protection actually rose over the period 1994-98; by contrast, only 15 per cent of output is produced in sectors where effective protection had fallen by 1998 relative to pre-transition levels. Continuing high levels of effective protection imply that South Africa's anti-export bias has not yet been eliminated.

To evaluate the impact of trade liberalization on the South African economy—and in particular its impact on employment and distribution—at least three issues need to be examined: (i) changes in the volume of trade flows, (ii) changes in the composition of trade, and (iii) the impact of trade on growth. Trade flows have undoubtedly increased. Total trade (measured as the ratio of exports plus imports to GDP) has risen throughout the post-transition period; by 2004, it stood at 54 per cent. This increase should be attributed not only to trade policy reform, but also to favourable world demand conditions and exchange rate depreciation - both factors that strongly influence South Africa's export performance (Tsikata 1999). Manufacturing exports rose rapidly after 1994, with the chemical, metal and machinery sectors showing the best performance within the sector (Lewis 2001: 7). Liberalization also caused the price of imports to fall as a result of continuing tariff reductions and the removal of sanctions, leading to

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<sup>1</sup> Bhorat, Lundall and Rospabe (2002: 3) suggest that this was because the dramatic initial cuts in trade protection were followed with 'more careful and nuanced adjustments that needed to be made in more sensitive industry and product lines'.

greater import penetration.<sup>2</sup> Consequently, both imports and exports increased after 1994. On balance the growth impact of this increased trade was positive: net trade contributed 10 per cent of the rise in gross output between 1993 and 1997 (Edwards 2001a: 478). However, in line with what appears to be a typical trade liberalization experience for developing countries, the bulk of the increase in South Africa's gross output during this period was due to rising domestic final demand—particularly demand for manufactured goods (Lewis 2001: 10-12).

Turning to the composition of South Africa's trade, it is interesting to note that the country's manufacturing exports are dominated by physical and human capital intensive goods, contrary to what one might expect given South Africa's abundance of unskilled labour. The share of skill-intensive manufactures in total exports has grown since the early 1990s, from 49.5 per cent in 1992 to 58.5 per cent in 1999 (Lewis 2001: 13). However, this share stagnated from 1996 onwards, at least partly due to a shortage of skilled managerial and technical labour (*ibid.*: 14). By contrast, manufacturing exports intensive in unskilled labour and natural resources have fallen in importance over the same period; in 1999 the former amounted to only 6.8 per cent of total exports while the latter contributed 19.6 per cent (*ibid.*: 13). Against the predictions of Heckscher-Ohlin trade models, trade liberalization has thus intensified the structural shift towards capital- and skill-intensive production in the South African economy. Labour market implications of the structural shift are discussed towards the end of this section.

Next, the impact of trade liberalization on economic growth is considered. Early international empirical studies arguing that trade is unambiguously good for growth have recently come under fire by authors including Rodriguez and Rodrik (1999), for reasons including measurement difficulties. Another issue relevant to the interpretation of empirical work on the relationship between trade and growth is drawing the distinction between trade openness and trade reform. Greenaway, Morgan and Wright (2001) note that there is more solid empirical evidence of trade openness being beneficial for growth than there is for trade reform. Investigating the issue further, these authors report the existence of a robust J-curve relationship: trade reform is growth enhancing, but its benefits are not reaped immediately.

## **2.2 Financial liberalization**

The South African government initiated financial liberalization following the release of the De Kock Commission reports (1978, 1985) that recommended a more market-oriented monetary policy. However, liberalization efforts were dealt a temporary but severe blow in 1985, with the international debt standstill resulting in a sharp cut in net capital inflows. The scope for pro-liberalization policymaking only broadened again almost a decade later with the election of the ANC-led government in 1994. During this year the trend in private capital flows was reversed as investors responded euphorically to the peaceful transition to democracy, and the South African government was able to re-enter global financial markets with a bond issue of US\$750 million (Cross 2003: 104). These substantial capital inflows allowed government to increase both the Reserve

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<sup>2</sup> Accounting for 40 per cent of total imports in 2000, the largest import category remains metal products and machinery (Bell 2001: 12). This reflects South Africa's continued reliance on imported intermediate inputs into capital-intensive production techniques.

Bank's holdings of gold and foreign exchange—which had been run down to critical levels during the pre-election period—and to sustain a modest current account deficit. Such inflows created substantial leeway for making further progress in liberalizing the financial sector. In addition, a macroeconomic burden of high and variable inflation and substantial public debt provided government with an urgent financial liberalization imperative.

During the years following 1985, government had issued a large number of foreign currency guarantees as a result of its lack of access to international capital markets: by March 1995 the net open forward position<sup>3</sup> stood at US\$28 billion (Cross 2003: 107). These high levels of public debt made the country vulnerable to currency attack and thus increased exchange rate risk. In March 1995 the financial rand system was abolished, ending the operation of a dual exchange rate mechanism. Foreign exchange flows linked to international transactions concerning assets in South Africa thus became available for reducing the Reserve Bank's forward book. During the late 1990s, following harsh criticism by the IMF of the government's intervention in the market through the forward book, the Reserve Bank decided to reduce the net open forward position to zero. Finally, in February 2004 the oversold forward book was closed out. Relaxation of exchange controls also brought benefits to the private sector. Capital controls on non-residents were effectively eliminated when the dual exchange rate system ended, and resident individuals and firms have been allowed to make increasingly large offshore investments since the mid 1990s. In addition, it was decided in 1995 that South African insurers, pension funds, unit trusts and fund managers could hold a limited proportion of their investments offshore. Collectively, these measures represent a large stride in the direction of capital account openness.

The maintenance of net inflows on the capital account after 1994 allowed South Africa to maintain a modest current account deficit once again. They also allowed the Reserve Bank to replenish its store of foreign exchange reserves. Previously the absence of foreign capital had imposed a balance-of-payments constraint in terms of which the country was forced to run a current account surplus. Together with the high interest rates maintained during the last decade of apartheid, this had placed a limit on South Africa's economic growth prospects. Aside from easing the balance-of-payments constraint, government was also able to promote growth through reducing interest rates. During the second half of the 1980s, the Reserve Bank had introduced money supply targets in an attempt to directly control spiralling inflation. However, use of this nominal anchor was unsuccessful in containing inflationary pressure: inflation figures remained double digits during the early 1990s. In 1998, the Reserve Bank replaced money supply targeting with an informal inflation targeting system. This system was formalized two years later, with national treasury setting an initial target band of 3-6 per cent. While the inflation rate has not always been kept strictly below the upper limit of the target range, it has been reduced significantly and has been maintained at stable and low levels for the past few years.

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<sup>3</sup> During the time of sanctions following 1985, South Africa's access to international credit was cut off. The only way in which the government could raise credit was through providing forward cover to the private sector to protect its access to trade credits, hence the establishment of the forward book. The net open forward position equals the oversold forward book less the Reserve Bank's net gold and foreign exchange reserves.

The gradualist approach adopted by the government in its financial liberalization programme appears to have paid off. Despite some exchange rate volatility, financial liberalization has progressed relatively smoothly and has not been accompanied by capital flight. The ANC government's high prioritization of macroeconomic stability—most strongly reflected in the GEAR policy framework—is arguably at least partly the reason for South Africa's successful post-transition financial liberalization experience.<sup>4</sup> It has become conventional wisdom that financial liberalization improves economic growth prospects only if reforms are sequenced correctly—i.e., that macroeconomic stability is achieved before the financial sector is liberalized—and if complementary financial sector policies are in place (see, for instance, Eichengreen 2001, Nyawata and Bird 2003). The question of whether financial liberalization has indeed enhanced growth in South Africa, empirically speaking, is not easily answered. In the international literature, little conclusive support has been found for the robust growth-enhancing impact of financial liberalization (Eichengreen 2001). Given the weakness of international conclusions on a growth-enhancing role for financial liberalization, additional less formal evidence on the impact of financial reform on South Africa's growth prospects is presented.

Analysing countries of the Southern African Development Community (SADC), Nyawata and Bird (2003: 14) argue that the available data do not support the hypothesis of a link between financial liberalization and growth. Their study indicates little change in saving or investment rates in South Africa during the second half of the 1990s; substantial post-transition investment inflows were largely offset by investment outflows of a similar size. Constituting 17.1 per cent of GDP, South Africa's investment spending still remains low by world standards (Du Plessis and Smit 2005: 19-20). Indeed, it is true that many aspects of South Africa's financial liberalization experience support Nyawata and Bird's position. While one might expect the liberalization of the capital account to promote investor confidence in the long term, foreign direct investment levels thus far have remained disappointingly low. Portfolio flows have been large and positive at times, although highly volatile, resulting in large fluctuations in the exchange rate, the key price of an open economy. Indeed, a slew of recent international financial crises have demonstrated just how risky globalization can be for government's efforts to maintain macroeconomic stability. On the other hand, it seems intuitive that recently lower interest rates, a stable low inflation rate, and improved availability of foreign capital have contributed positively to growth. In addition, Nyawata and Bird (2003: 29) show that some financial deepening has occurred over the past decade in South Africa. This has positive implications for long-term growth (Levine 1992, in Reinhart and Tokatlidis 2003).

While empirical support for the growth-enhancing effects of financial liberalization remains tenuous, there is stronger evidence of a link between financial liberalization and two key macroeconomic aggregates in South Africa. Aron and Muelbauer (2000) find that financial liberalization in South Africa has been associated with large increases in the ratios of both private consumption and household debt to income. The literature often argues that financial liberalization reduces credit constraints when consumption-smoothing households expect higher rates of future economic growth. However, Aron and Muelbauer point out that financial liberalization also increases household

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<sup>4</sup> Du Plessis and Smit (2005: 16) comment on what has been a 'remarkable improvement in macroeconomic stability' in South Africa over the past decade.

consumption and debt through its impact on mortgage markets. It does so by improving the availability of collateral-backed credit and by reducing the deposits required of first-time homeowners. These factors result in young consumers spending more as a result of being required to save for fewer years to accumulate a housing deposit, and consumers who own houses spending more as a result of being able to borrow more in a liberalized market.

### 2.3 The impact of globalization on employment

The picture outlined above is one where both trade and financial liberalization appear to have positively—albeit modestly—influenced economic growth in South Africa. Averaging 3 per cent per year in the decade following 1994 (Du Plessis and Smit 2005: 15), GDP growth has improved, implying that globalization has created some space for reducing unemployment. However, unemployment has not declined: by late 2004, the unemployed accounted for 26.4 per cent of the labourforce according to the narrow definition of unemployment, and 41.3 per cent by the expanded definition.<sup>5</sup> These figures are substantially higher than the comparable ones for the mid 1990s. Attempting to determine the extent to which job growth has proven inadequate requires careful consideration of the issues surrounding different sources of employment data, since trends in employment figures differ widely depending on which source is used.

The Statistics South Africa and South African Reserve Bank series of employment in non-agricultural sectors provide the most pessimistic trends, with the Reserve Bank suggesting that non-agricultural employment declined by 13 per cent over the period 1994 to 2003 (South African Reserve Bank 2002 in Van der Berg 2004: 218). However, the series from which this estimate is derived has major deficiencies, including a major discontinuity in the middle of 2002. The downward trend in employment seems doubtful, particularly given the recent strengthening in economic performance.

A second source of employment data comes from comparing employment figures in the October household surveys (OHS) and labourforce surveys (LFS) over the period 1995-2004. However, there is also a discontinuity between these two series, with the LFS capturing more informal sector participants. Using these two series would over-estimate the growth in employment over the period: employment growth of 26 per cent is recorded over the period, as against real GDP growth of 31 per cent. This may be viewed as surprisingly positive employment performance in light of the modest economic growth rates observed during the second half of the 1990s. (For a more complete discussion of the choice between these alternative employment series, see *inter alia*, Borat 2003, 2004.)

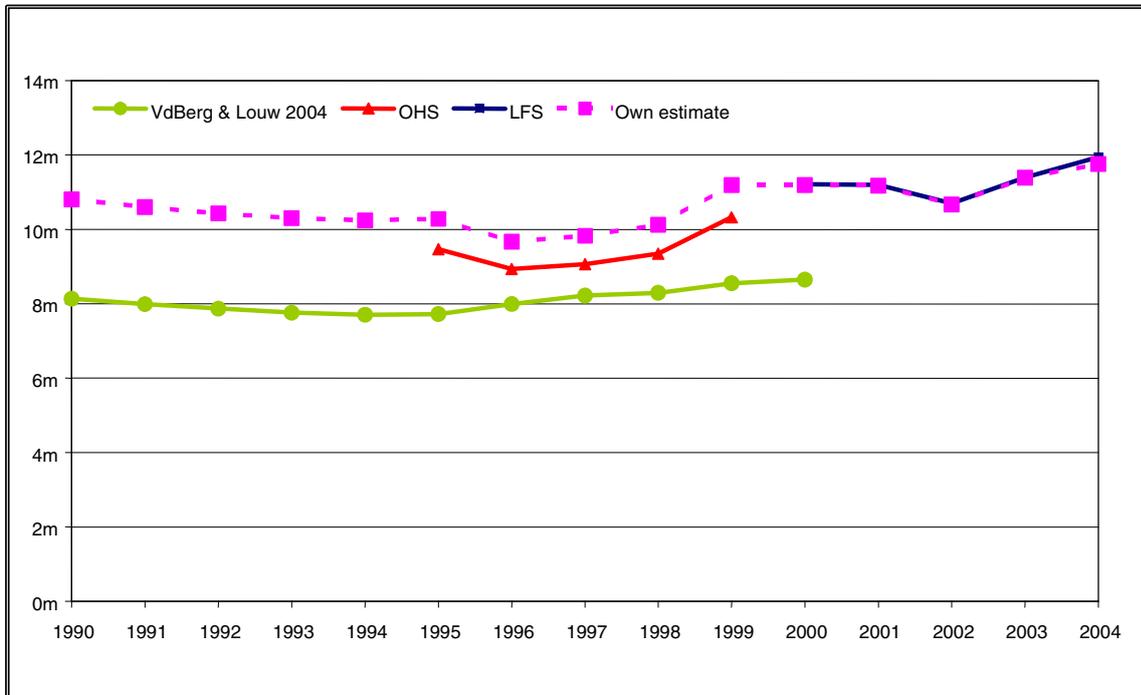
A third option is to accept the surveys as correct, but to take the position that the OHS and LFS are not comparable, i.e., to accept that part of the increase between the two series results from differences in methodology. To make them more comparable, the two series are spliced where they meet. The results of this exercise are displayed in Figure 1. Estimated employment growth is slower than in the previous case, at 23 per cent over 1995-2004, implying an average annual increase of 2.3 per cent per year. On

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<sup>5</sup> Own calculations based on the Labour Force Survey of September 2004.

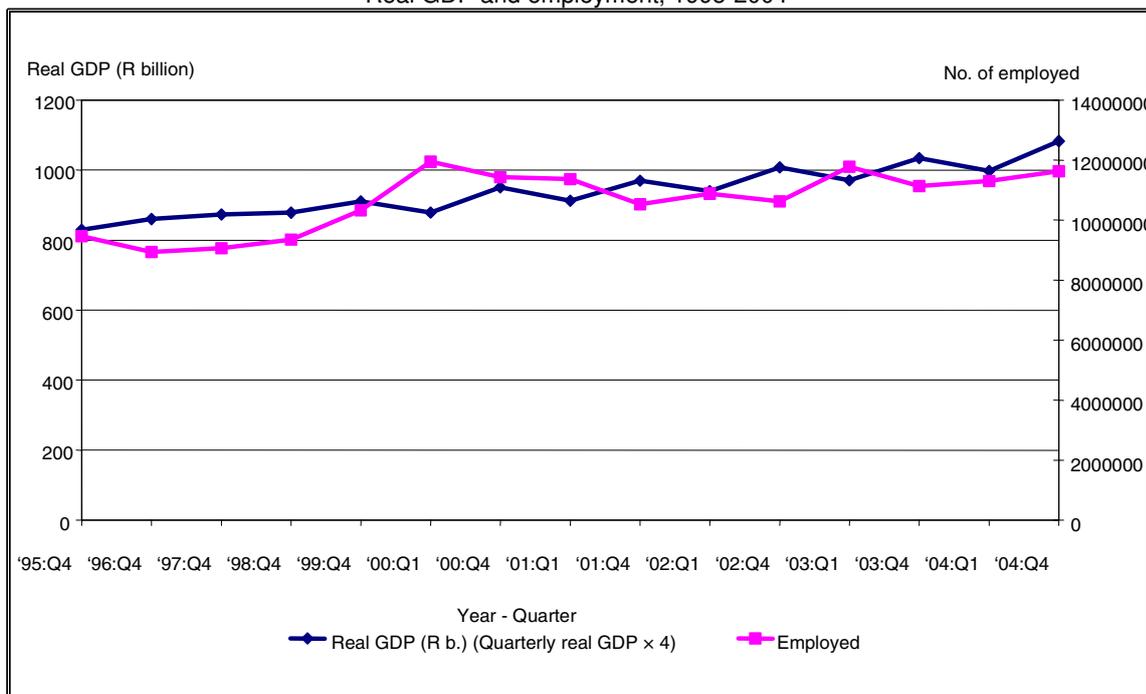
the basis of the spliced employment series (which may be the most accurate set of estimates available), regression analysis yields a relatively high employment elasticity of economic growth of 0.83 over the same period. This is illustrated in Figure 2: observe how closely the spliced employment series tracks real GDP over the past decade.

Figure 1  
Estimates of total employment, 1990-2004



Source: Van der Berg and Louw (2004) and own calculations based on OHS/LFS data for various years.

Figure 2  
Real GDP and employment, 1995-2004



Source: South African Reserve Bank, OHS and LFS data for various years.

While it would seem that the ability of the economy to generate jobs is surprisingly positive and robust, no related discussion would be complete without considering the skills content of employment opportunities recently created and lost. It was pointed out earlier that there has been a skill bias in the structural change of the economy over the past ten years. As a result, jobs have been shed at the lower end of the skill spectrum, reflected in the decline of the share of employment of unskilled labour in the total from 31 per cent in 1995 to 27 per cent in 2002. By contrast, the demand for skilled and semiskilled labour has risen, with the share of employment of each type of labour increasing by two percentage points over the same period<sup>6</sup> (Bhorat 2004: 954). Thus, the jobs that have been created are largely located towards the upper end of the skill spectrum. Furthermore, the pace of job creation has not managed to keep up with the very rapid growth in the labourforce, as Figure 1 indicates. Five million individuals entered the labour market between 1995 and 2002,<sup>7</sup> while only 1.6 million found employment. Modest employment growth of 16.75 per cent over the period is implied, contrasted with a much larger 52.38 per cent increase in the size of the labourforce (Bhorat 2004: 945-8). This has compounded an unemployment problem that was already large at the time of political transition. Clearly employment growth has proven insufficient to absorb more of the unemployed into the formal labour market, and to shift them from traditional (low wage) to modern (high wage) sectors—analogueous to Arthur Lewis’ model of economic development with unlimited supplies of labour. Consequently, the labour surplus has been rising rather than declining during most of the post-transition period. But the problem appears to be not so much the shift away from labour-intensive production as it is an economic growth rate lower than that required to accelerate labour absorption.

Recent developments in the labour market have not affected all groups in society equally. Black workers experienced the second largest percentage increase in employment over the period 1995-2002,<sup>8</sup> while white workers experienced the smallest increase. This trend can be partly attributed to the introduction of affirmative action policy. However, Bhorat (2004: 950) points out that the employment absorption rate was substantially higher for whites (55 per cent) than for blacks (28 per cent). This suggests that blacks joined the ranks of the unemployed in disproportionately large numbers. The cause of this perpetuation of racial inequality in the labour market can be traced to the interaction between the skills-biased nature of recent economic growth in South Africa and racial human capital stock: firms increasingly demand employees with high levels of education. Between 1995 and 2002, 64 per cent of individuals with tertiary education found work, contrasted with only 35 per cent of individuals with matric (high school) and a mere 14 per cent of individuals with incomplete secondary schooling (Bhorat 2004: 951). White workers remain best positioned in the competition for scarce employment in the South African economy, given their historically superior access to education. In 2004, white labourforce participants had an average of 12.4 years of schooling, compared with a much lower average of 8.6 years for black

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<sup>6</sup> Skilled labour accounted for 11 per cent of employment in 2002, while semiskilled labour accounted for 61 per cent in the same year (Bhorat 2003: 13).

<sup>7</sup> This calculation is made using the expanded definition of unemployment.

<sup>8</sup> Asians experienced the largest increase in employment (Bhorat 2003: 10).

labourforce participants.<sup>9</sup> Simkins (1998) describes this ongoing disparity as one of the most enduring ‘footprints’ of apartheid.

Amongst the (predominantly black) individuals who have borne the losses from the structural change associated with recent globalization, those who live in rural areas have been particularly hard hit. Instead of surviving on a purely agricultural basis, rural households in South Africa typically rely on a combination of remittances from urban areas and own access to land-based natural resources (including grazing rights, water, and wood). Indeed, only 5 per cent of household income in the former homelands is generated by subsistence production (Van der Berg 2004: 218). Members of impoverished rural households are at a particular disadvantage regarding access to education given the small number and often poor quality of schools in these areas. As a result of this lack of education and skill, they have been severely hit by the drop in unskilled employment in urban areas. On the other hand, the rural poor in South Africa are affected less by agricultural price shocks and changes in production associated with international competition than are the rural poor in other African countries, owing to the relatively low reliance of the former on agriculture for survival (Van der Berg 2004: 221). Indeed, simulations performed by Dieden et al. (2005) confirm that the adverse impact of trade liberalization on the poor has been relatively small, with the bulk of modelled job losses affecting workers in the middle of the income distribution.

The discussion above paints a picture in terms of which South Africans in the upper range of the income distribution appear to have reaped most of the gains to globalization—at least insofar as conditions in the labour market have evolved. However, research by Edwards (2001b) suggests that the most significant factors driving recent changes in the labour market are not directly linked to trade. This author employed an input-output decomposition to identify the determinants of changing employment over the early liberalizing years, 1993-97. Edwards (2001b: 55) finds that increasing domestic final demand expanded employment by 10 per cent during the period, while technological change caused a contraction in employment of 15 per cent. Net trade had a positive but very modest impact on employment, boosting it by only 1 per cent over the five-year period. Interestingly, the strongest driver of the observed change in the skills composition in the workforce over this period appeared to be technological change, rather than trade. Of course, it may be convincingly argued that changes in technology represent a response by domestic suppliers to the challenges associated with liberalization in domestic product markets. In this way trade liberalization has indirectly benefited affluent, highly skilled workers at the expense of poor, low skilled workers.

### **3 Trends in poverty, inequality and polarization**

The discussion has focused predominantly on the impact of recent liberalization on labour up to this point, given that wages constitute approximately two thirds of household income in South Africa (Leibbrandt, Woolard and Borat 2001: 30). It has been argued that globalization-related developments in the labour market have tended to favour better skilled workers, and would thus have exacerbated inequality, *ceteris*

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<sup>9</sup> These calculations are based on the LFS September 2004.

*paribus*. However, globalization may also have impacted on the South African income distribution through other mechanisms. In particular, the rising share of property income in household income is likely to be driving increased inequality. At the same time, rising economic growth rates (particularly in more recent years) have allowed for a concerted response from the government to the problem of ongoing widespread poverty. The poverty alleviation that has occurred has largely been achieved through expanding the social grant system, which has acted to reduce poverty and counter increases in inequality associated with recent structural trends.

To investigate these issues further, we draw on the results of empirical analysis. First, conventional measures of poverty and inequality are presented, along with stochastic dominance curves that test the robustness of poverty findings. In this subsection, attention is focused mostly on discerning reliable trends in poverty over the past decade, given the controversial findings of several recent studies on the topic. An assessment of poverty trends during an era of re-integration into the global economy is also of particular interest in the context of the globalization focus, even if accepting that the causal relationship cannot be clearly established empirically. Following this exercise, a closer look is taken at South Africa's unequal income distribution through the lens of polarization analysis. It is then asked whether re-integration has been accompanied by any change in the degree of polarization in an already highly economically polarized society.

### **3.1 Distributional analysis**

Given the problems associated with comparing income data from the post-transition sets of censuses or income and expenditure surveys<sup>10</sup> as well as a desire to extend the analysis beyond 2001, it was decided instead to draw data from the all media and products survey (AMPS).<sup>11</sup> This survey is conducted once or twice a year under the auspices of the South African Advertising Research Foundation. For the purposes of this research, unit data records for the variables of interest were obtained for the period 1993 to 2004. Each dataset contains approximately 25,000 observations, each relating to one individual who provided data for every household sampled. Before utilizing the AMPS datasets for distributional analysis, these were tested extensively for stability. Encouragingly, per capita incomes calculated from the data for the race groups deviated only once in 48 cases (four race groups times 12 years in which growth rates could be calculated) by more than 10 per cent from that in the previous year, indicating that data differences were not driven by large fluctuations caused by sampling and fieldwork questions in different years. Gini coefficients calculated for each race group were even more stable.

Before turning to the analysis of poverty trends, a brief overview of intra-racial inequality is provided. The trends in racial Gini coefficients in Figure 3 show increasing inequality of incomes over the period as a whole for each of the four race groups, consistent with most findings of rising within-group inequality in the literature.

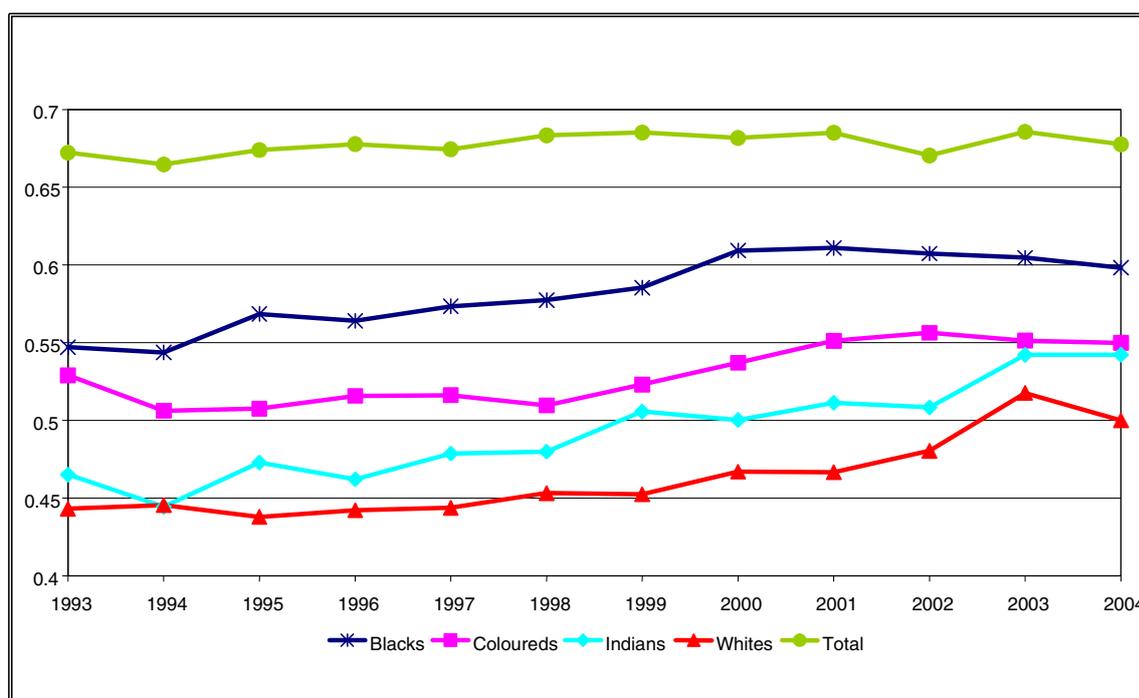
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<sup>10</sup> See Van der Berg et al. (2005) for a discussion of the hazards involved in a comparison of post-1994 income distributions constructed from either of these datasets.

<sup>11</sup> A study by Van der Berg and Louw (2004) that followed a similar methodology used the IES data to obtain the intra-group distribution.

However, all race groups show individual deviations from this broad pattern, with the most surprising deviation being the declining Gini coefficient of the black population since 2000. This decline, together with the later decline of the Gini for the coloured population, is consistent with a scenario in which the expansion of grants and widening employment opportunities have benefited the poor more than proportionately. Since almost all of the poor belong to the black or coloured groups, these groups would have experienced the greatest inequality-reducing benefits of additional transfer income during recent years. The Gini coefficient measuring overall inequality (the net effect of both intra-group inequality and inequality between the race groups) is large but has remained quite stable over the period, implying that the effect of rising intraracial inequality has been offset to a large degree by the impact of a decline in interracial inequality. This is a continuation of a longer-term trend in the South African income distribution that started in the 1970s.

Figure 3  
Estimated Gini coefficients, 1993-2004



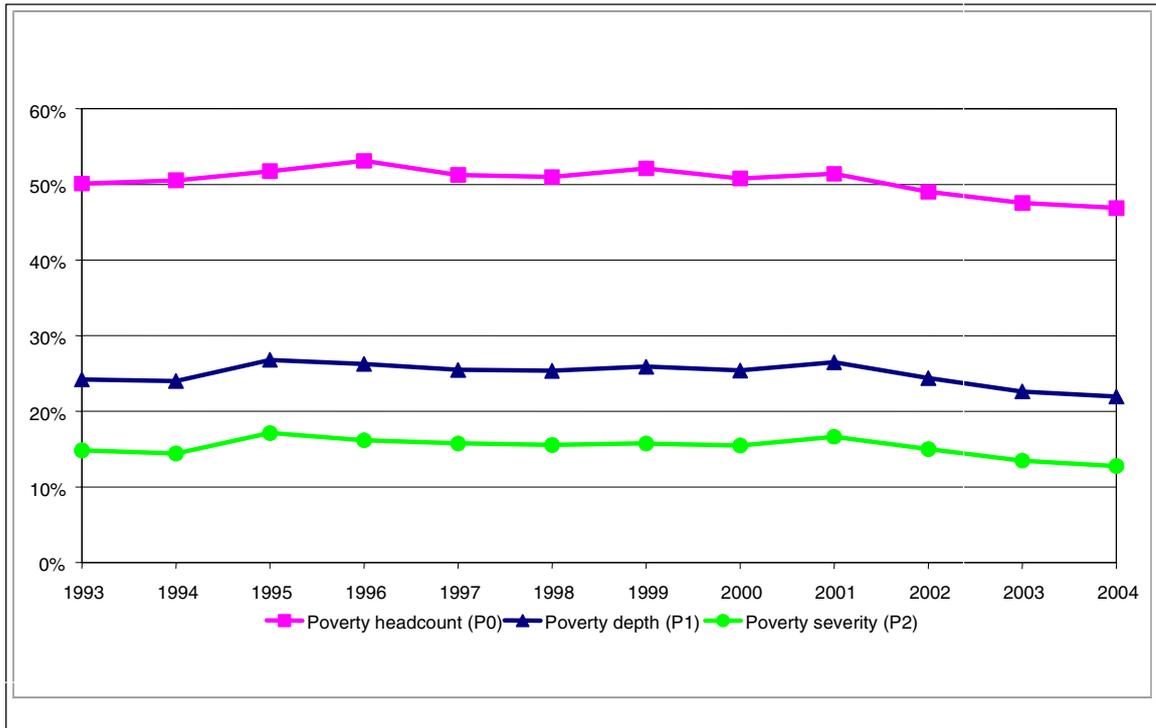
Source: Own estimates based on AMPS data for various years.

Table 1  
Selected indicators of poverty  
(poverty line set at R3,000 per capita per year in 2000 rand values)

	1993	2000	2004
$P_0$ (Headcount ratio)	0.50	0.51	0.47
$P_1$ (Poverty gap ratio)	0.24	0.25	0.22
$P_2$ (Squared poverty gap/Poverty severity ratio)	0.15	0.15	0.13
Number of poor (million)	20.0	22.7	21.8
Number of non-poor (million)	20.0	22.0	24.7

Source: Computed by authors.

Figure 4  
Trends in poverty, 1993-2004



Source: Own estimates based on AMPS data for various years.

The focus now shifts to determining whether poverty has improved or worsened since political transition. Here, following Van der Berg and Louw (2004), the poverty line is set at R250 household income per month or R3,000 per year in 2000 rand (approximately US\$4 per capita per day in 2002 PPP dollars), somewhat above the two dollar a day often used by the World Bank. The poverty line is a conservative measure in the sense that it will identify those living in relatively deep poverty, although it is judged to be high enough to act as a relatively realistic identifier of poverty. Stochastic dominance testing is used to determine the robustness of our conclusions to the specification of poverty line, given that the choice of poverty line is fairly arbitrary by construction. For purposes of measuring poverty, the Foster-Greer-Thorbecke measures are employed: the poverty headcount ( $P_0$ ) reflects the extent of poverty, the poverty gap index ( $P_1$ ) reflects the depth of poverty, and the squared poverty gap index ( $P_2$ ) reflects the severity of poverty.

Table 1 reveals that the headcount poverty rate and poverty gap index increased slightly over the first part of the period covered, and declined to below their starting levels towards the end of the period covered. The poverty severity ratio remained stable between 1993 and 2000, also dropping after the turn of the century. The proportion of people living in poverty increased over 1993-2000, probably as a result of sluggish economic growth and poor labour market prospects. However, in more recent years the proportion of poor people appears to have declined substantially, possibly due to a combination of faster growth, better labour market prospects and large-scale expansion of the social grant system. A similar trend applies in terms of the poverty headcount (i.e., the absolute number of people living in poverty), although the number of people living in poverty in 2004 was larger than in 1993 as a result of population growth. The trends in poverty drawn from the analysis on AMPS data are illustrated in Figure 4.

The speed at which poverty appears to have declined since 2002 is striking, and may be challenged as being the result of quirks in the AMPS data. To answer such claims, the issue is investigated further:

- The impact of the recent expansion of social grants on the poor is likely to have been major, considering that real transfers from the government increased by some R22 billion in the last two years (in 2000 rand), an amount well in excess of R1,000 per poor person. Bear in mind that poverty is defined as income of less than R3,000 per capita per year in this paper. The grants are supposed to be targeted through the means test, thus most of the additional R22 billion flows into poor households. Considering that the income of the poor was only R27 billion in 2000, an increase of such magnitude in social grants makes a great difference to the poor and may lift many of them out of poverty, if it is well targeted.
- The national accounts show that real remuneration rose by R53 billion between 2002 and 2004, representing an exceptionally large increase by South African standards of 11.7 per cent over this period. This must have had a strongly positive influence on the incomes of many of the poor, either through higher wages or through increased employment.
- Income distribution, particularly in the black population, is relatively clustered around the poverty line. This means that small shifts in the distribution could have large impacts on poverty. The poverty consequences of distributional shifts are particularly severe if black incomes change, given the size of this group and the observed clustering of black incomes near the poverty line. Thus, the impact of grants on poverty is strongest if grants contribute predominantly to black incomes.

The finding that poverty has fallen during the post-transition period stands in direct contrast with the arguments made in several recent studies, including those authored by Hooegeveen and Özler (2004) and Leibbrandt, Levinsohn and McCrary (2005). These papers argue that the extent of poverty has risen strongly during the post-transition period. However, there is reason to believe that the datasets on which these analyses are based (and particularly the IESs) are not directly comparable. The interested reader is referred to Van der Berg et al. (2005) for a discussion of the issues affecting the validity of inference drawn from a comparison of these household datasets. Moreover, the period covered by these studies ends before the major decline in poverty observed in this paper, and before the full expansion of social grant spending that largely brought this poverty reduction about.

Finally, the sensitivity of findings to the specification of a poverty line is tested using cumulative density functions (CDFs). In each of the CDF graphs, a vertical line is plotted at the level at which the poverty line is drawn, i.e., R3,000 per person per year. The CDFs are plotted with alternately income and the log of income on the horizontal axis—the latter allows one to get a better overview of the whole distribution. Figures 5(a) and 5(b) show that there is poverty dominance in 2004 relative to either of the other years shown, i.e., that poverty was lower in terms of extent, depth and severity in 2004 than in either of the preceding years. This finding is independent of the choice of poverty line or of the scale chosen (that is, income or the log thereof).

Figure 5(a)  
Poverty dominance testing  
(Scale: real per capita income)

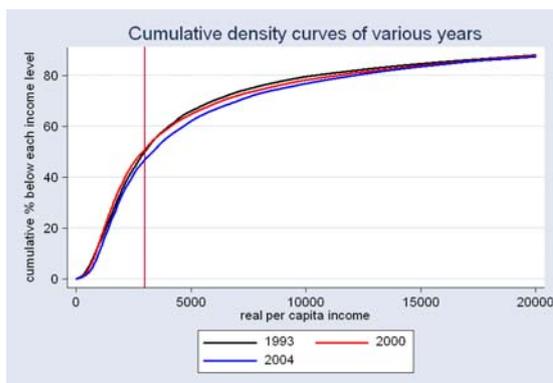
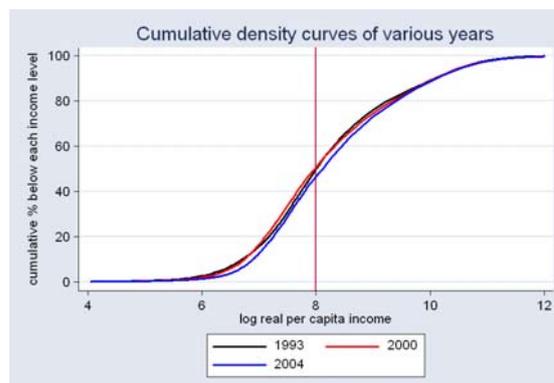


Figure 5(b)  
Poverty dominance testing  
(Scale: log real per capita income)



Source: Computed by authors.

In summary, a robust trend of declining poverty has emerged from the empirical analysis. It appears that government action to address poverty through social grants has been the most important contributor to poverty alleviation, although the improved employment trend may indicate that employment growth is now on course towards a greater sustainable reduction in poverty. This represents an improvement on the initially weak job-creating performance of the economy during the first few years after re-entering the world economy.

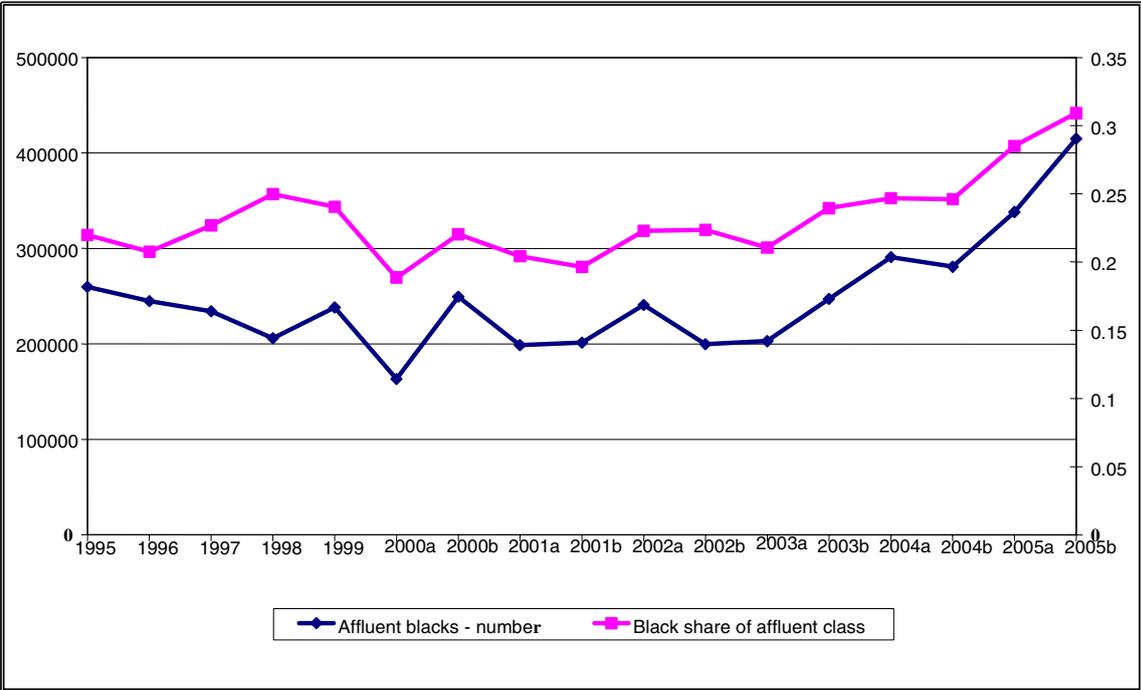
The flipside of declining poverty is a rise in the number of non-poor, as reflected in Table 1. In particular, a swelling black middle class has emerged as one of the most interesting distributional phenomena in recent years. Growth in black per capita incomes during the last two years has been very rapid, due *inter alia* to:

- An acceleration in aggregate black remuneration as a result of the improved performance of the economy in creating jobs. For the long-term sustainability of poverty reduction, further trends of this nature are essential. It is too early to determine whether the increased job creation indicates that the job shedding reaction of many firms in adjusting to international competition has completed its course.
- The rapid growth of transfer income from the government driven by the expansion of the CSG, increased uptake of other grants (particularly disability grants), and higher benefits;
- An increasing share of transfer income for the blacks, with the initially slow uptake of the CSG in rural areas having yielded to very rapid expansion;
- Slowdown in population growth amongst blacks, which has also meant that the gains from a growing overall income share of blacks have been spread amongst a smaller population, raising per capita incomes as a result.

In Figure 6, estimates of black workers likely to form part of the middle and upper classes is presented, both in terms of numbers of people and the black proportion of the total constituting this socioeconomic grouping. OHS and LFS data are used for this exercise, and middle and upper earners are identified as those workers earning at least R6,000 per month (2000 rand values) from their main job. As can be seen, the number

of black workers who are well established in the labour market has increased substantially since 2003. Indeed, approximately 150,000 black workers joined these ranks between 1995 and 2005. In addition, the proportion of the total well-earning subpopulation accounted for by the blacks has also risen recently.

Figure 6  
Black middle- and upper-income earners



Source: Own estimates based on OHS/LFS data for various years.

### 3.3 Polarization analysis

The paper examines trends in polarization as a supplement to the poverty and inequality analysis. As Duclos, Esteban and Ray (2004) and Wolfson (1997) demonstrate, polarization is a concept that is both theoretically and empirically distinct from inequality.<sup>12</sup> Wolfson (1997) and Seshanna and Decornez (2003) argue that polarization indicators are best suited for describing the distributional trends over which the public and media appear to be most concerned about. As Seshanna and Decornez (2003) suggest, polarization captures the ‘sharpening of the divide’ between income classes. According to Esteban and Ray (1994), a shortcoming of many of the conventional inequality indicators is that they do not reflect increases in the ‘tightness’ of clustering around local means.

These polarization measures are interesting in their own right. They reflect social integration more precisely and are thus better predictors of social stability than inequality measures. They can identify changes in social organization such as increased fracturing and marginalization, which often would not be reflected in inequality

<sup>12</sup> Duclos, Esteban and Ray (2004) show, for instance, that for a sample of 21 countries, the polarization measure yields country rankings that are vastly different from the rankings based on the size of the Gini coefficient.

indicators. Given the evidence that these measures generally produce rankings and trend lines that are distinct and even at odds with those produced using inequality indicators, the authors consider it vital to supplement the inequality and poverty analysis with an investigation of shifts in polarization in South Africa over the last ten years.

Polarization analysis is applied here to two series of datasets. To measure polarization trends for household income, we use the IES datasets for 1995 and 2000. (The AMPS data are not ideal for this purpose since this survey captures household income data in intervals.) The paper also examines polarization trends in wage income for individuals, using the OHS and LFS household surveys available from 1995 to 2005. Note that the OHS for 1996 is excluded from the analysis since incomes are reported in intervals, rendering this data unsuitable for calculation of polarization indices.

In the economics literature, two polarization measures are frequently used: the Wolfson index (1994) and the Duclos, Esteban and Ray (2004) polarization measure (hereafter referred to as the D-E-R measure). The D-E-R polarization indicator was designed to capture changes in clustering around a number of local means. It measures both the tightness of these identified groups and their distance from other data points, assuming that there are two vital factors underlying polarization: alienation and identification. The authors argue that a sense of detachment is not all that matters; the sense of togetherness and belonging within the isolated groups is a crucial factor to consider since this is expected to be correlated with the likelihood of social mobilization and action. Consequently, Duclos, Esteban and Ray (2004) describe the polarization index as the sum of all ‘effective antagonism’ in a society.

The alienation between two points is measured by the distance between the points, while the identification metric is captured by the density of observations at the point of interest. In this paper both the alienation of and identification among individuals are measured in terms of income. The algorithm suggested by Duclos, Esteban and Ray is:

$$P_{\alpha}(f) \equiv \iint f(x)^{1+\alpha} f(y) |y-x| dy dx.$$

where  $\alpha \in [0.25, 1]$ .

In the work reported below, the polarization-sensitivity parameter,  $\alpha$ , is set to 1. This parameter determines the power of the identification effect. When  $\alpha = 0$ , the index reduces to double the Gini coefficient. Changes in polarization can be attributed to changes in alienation (distance between incomes) and identification (densities at populated points), as well as to co-movements between these two dimensions; for instance, whether density increases have been at points that are far removed or near to other incomes. Duclos, Esteban and Ray (2004) explain that more variation and ‘spikiness’ are associated with higher polarization.

The Wolfson index is a bi-polarization index that can be used to detect trends in the divergence of incomes or the so-called ‘vanishing middle-class’. This index studies clustering around two extreme poles and is thus distinct from the D-E-R index that investigates the ‘tightness’ of observations around a number of prominent ‘lumps’ in the income distribution.

$$W = 2[2[0.5 - L(0.5)] - I_2] \frac{\mu}{Q(0.5)}$$

where  $Q$  is the quantile function,  $I_2$  is the Gini index and  $L$  is the Lorenz curve.

In Table 2, the calculated values of the D-E-R polarization index for household income per capita between 1995 and 2000 are reported, with  $\alpha$  set to 1. The most striking aspect of Table 2 is undoubtedly the high level of polarization suggested by the index values. For  $\alpha$  set to 1, household per capita polarization is 0.19 and 0.20 in 1995 and 2000 respectively. If South Africa had to be inserted into the D-E-R polarization ranking based on either of these two polarizations estimates, it would achieve the second highest position out of 22, placed after Russia and before Mexico.<sup>13</sup> The D-E-R ranking is based on the fourth wave of the Luxembourg Income Study.

With respect to trends, the calculations in Table 2 show that there was a modest increase in overall income polarization between 1995 and 2000. The D-E-R index was also calculated separately for each of the population groups. The within-race polarization calculations reveal that the trend on the aggregate level may be fuelled by the strong increase in income polarization among blacks. As might be expected given the high income inequality within this group, the level of polarization is highest among blacks. Due to a strong increase in income polarization within this group, the substantial racial gap in levels of polarization widened further between 1995 and 2000.

Over this period, income polarization increased in urban areas, but decreased in rural areas. In 1995 income polarization was more or less the same in urban and rural areas. Following the strong increase in polarization in urban areas, observe that polarization was higher in urban than in rural areas by 2000.

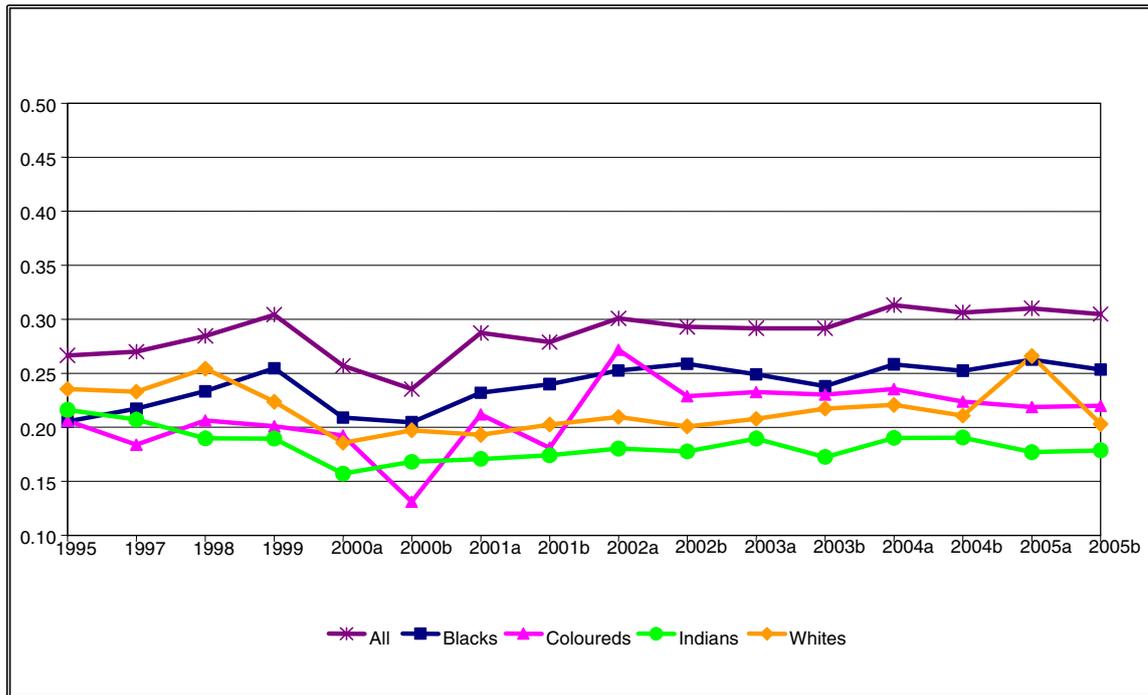
Table 2  
Polarization trends for household income per capita, 1995 to 2000  
(Duclos, Esteban and Ray index)

Survey	IES 1995	IES 2000
All	<i>n=29 586</i> 0.1912	<i>n=26 142</i> 0.2049
Race		
Blacks	0.1398	0.1923
Coloured	0.1088	0.1180
Indian	0.0998	0.0933
White	0.0952	0.0914
Area		
Urban	0.1447	0.1693
Rural	0.1535	0.1309

Source: Computed by authors.

<sup>13</sup> To make our calculated index values more comparable with the estimates of Duclos, Esteban and Ray (2004), we follow them by dividing the estimates by two. Note that the resulting index values are still not entirely comparable because Duclos, Esteban and Ray (2004) use post-tax income normalized by an adult equivalence scale.

Figure 7  
Trends in wage income polarization, 1995-2005  
(Duclos, Esteban and Ray index)



Source: Own estimates based on OHS/LFS data for various years.

Figure 7 indicates that between 1995 and 2000 the polarization of individual wage income declined, while household income polarization has increased. Comparable trends are observed for the separate race groups. After 2000, wage polarization rose beyond 1995 levels. As argued before, it is impossible to attribute these trends to any one specific event, although the results are consistent with strong unions and increased labour market regulation. Given the household income polarization results, it is not surprising that wage polarization is shown to be the highest among blacks.

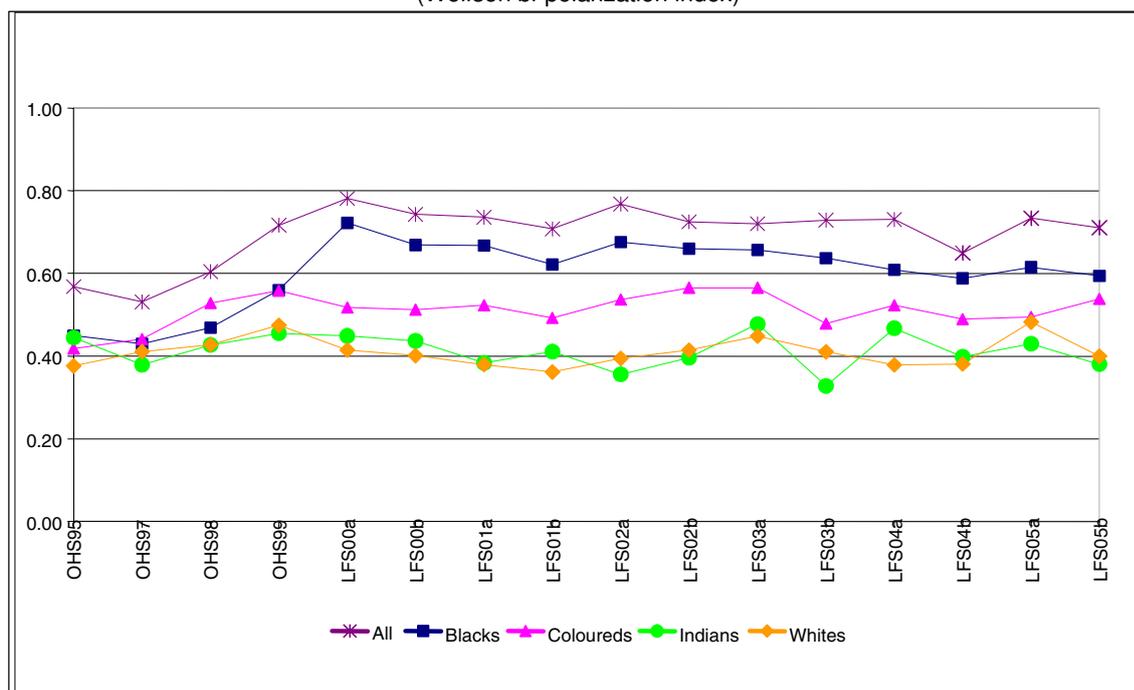
It is clear that the D-E-R and Wolfson indices measure different types of polarization. Using the same data, the Wolfson polarization index suggests a considerable decline in household income polarization between 1995 and 2000. This trend is reflected in Table 3, contrasting starkly with the noted moderate increase in the D-E-R index over the same period. As mentioned before, the Wolfson index captures bi-polarization, while the D-E-R index detects alienation and clustering around several local means.

Table 3  
Trends in Wolfson Bi-polarization index, 1995 to 2000

		Household income per capita	
Survey		IES 1995	IES 2000
All		0.8548	0.6906
Race	Black	0.5839	0.5451
	Coloured	0.4697	0.5159
	Indian	0.3959	0.4820
	White	0.3585	0.3841
Area	Urban	0.7353	0.7241
	Rural	0.5274	0.4526

Source: Compiled by authors.

Figure 8  
Trends in wage income polarization, 1995-2005  
(Wolfson bi-polarization index)



Source: Own estimates based on OHS/LFS data for various years.

The observed decline in income bi-polarization is indicative of an expanding middle-class. If there is a bi-polarizing force at work due to the greater openness of economy, it appears that other factors, such as the impact of the expansion of social grants and the increased mobility of black workers in post-apartheid South Africa have countered it. This conjecture of two opposing forces is further supported by the strong rising trend of wage bi-polarization, following the large tariff reductions that occurred between 1990 and 1996. In Figure 8 it is shown that this trend was reversed in 2000, with wage polarization starting to taper off again. Post-2000 wage polarization for the blacks has declined sharply and started to approach levels observed within other race groups.

The fall in bi-polarization in black and rural incomes between 1995 and 2000 suggests that transfers may have played a role in softening the starkness of disparities in the overall income distribution. Between 1995 and 2000 rural wage polarization grew from 0.60 to 0.81, while rural income polarization dropped from 0.53 to 0.45. However, some of the sharper changes observed here might be due to a deficiency in the comparability of the surveys.

#### 4 Conclusion

This paper has analysed possible links between South Africa's post-1994 globalization experience and the country's income distribution by treating globalization as a triad of political change, financial liberalization and trade liberalization. It has thus evaluated the likely impacts on the income distribution of a modest improvement in the country's economic growth prospects post-1994 and the implementation of the ANC-led government's poverty alleviation policy. While the process of opening up to

international markets has not resulted in a structural switch towards jobless growth, it has been accompanied by rising unemployment and a skills bias in employment creation favouring better educated workers. Thus, in spite of yielding an estimated employment elasticity of economic growth of approximately 0.8 over the period 1993-2004, it is improbable that the labour market has been responsible for any substantial increase in the incomes of those near the lower end of the income distribution. By contrast, a boost of R22 billion (in 2000 rand) to social grant expenditures between 2002 and 2004 is highly likely to have improved the material position of the poor, who as a group received only R27 billion in the year 2000.

A formal analysis of distributional trends shows a small increase in poverty between 1993 and 2000, followed by a marked reduction in poverty. While the recent expansion of the social grant system is the main source of this improvement, at over 3 per cent of GDP it is currently nearing its poverty alleviation ceiling. With respect to inequality, ongoing substitution of interracial for intraracial inequality is observed, continuing an earlier trend. Amongst groups, blacks continue to experience the highest level of inequality, although a small reduction has been observed since the turn of the century. Estimation of two polarization indices complements the inequality analysis by highlighting the extent to which unequal income distribution may be undermining social and political stability. Although one measure—the D-E-R index—provides evidence of increasing ‘effective antagonism’ within South African society, another—the Wolfson index—suggests that the improvements in living conditions associated with expanding grants and the emergence of a black middle class have dampened to some degree the social tensions associated with material inequality. Importantly, given the caveats required in any discussion of recent achievements in reducing poverty and inequality in South Africa, addressing widespread poverty associated with unemployment and the possible consequences of ongoing high levels of inequality remain critical policy focus areas in this country.

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