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STRUCTURAL UNEMPLOYMENT IN SOUTHERN AFRICA

CHARLES SIMKINS AND DUNCAN CLARKE

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Measuring and Predicting Unemployment in South Africa 1960-1977

Charles Simkins

Foreign Labour Inflows to South Africa and Unemployment in Southern Africa

Duncan Clarke

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The Development Studies Research Group was established within the Department of Economics, University of Natal, Pietermaritzburg, in October 1976. Its focus is on South African development as a whole, of which the process of labour allocation is held to be the central feature. The DSRG seeks to promote interdisciplinary, as well as purely economic, studies in this area.

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Foreword

by

Norman Bromberger

The sharp increases in unemployment in South Africa during the current recession, especially among black workers, have created some public awareness of the problems posed by unemployment. This recent concern, arising from visible evidence of workers being laid off and of long queues forming at labour bureaux highlighted the fact that good statistics of black unemployment, both past and current, were not available. Economists did not even possess reliable *estimates* of its level or trend, and they certainly did not know how unemployment was distributed over age, sex and educational categories.

In response to these gaps in our statistical picture of unemployment a number of useful estimates of aggregate, regional and sectoral unemployment have recently been made, using such data as are available. Some of these were presented at the *Workshop on Unemployment and Labour Reallocation* organised by the Development Studies Research Group under Professor R.T. Bell at the University of Natal in Pietermaritzburg in March 1977. Revised versions of two papers produced by research workers at the Development Studies Research Group are presented in this volume as a contribution to the study and discussion of unemployment in Southern Africa by a wider audience. Simkins, who has pioneered systematic estimates in this field, takes the investigation back in time as far as 1960; and Clarke extends it in space to include other states in Southern Africa.

These studies therefore are not confined to estimating the effects of the current recession on South African workers. They raise the question whether unemployment here is essentially temporary and periodic or whether it is chronic and structural. If the latter is the case, questions about the existence, scale and character of unemployment have a considerable importance in South and Southern Africa. The unemployment of (say) 20% of the labour force represents a massive loss of potential production and hence of potential material welfare in an environment where poverty is widespread. If a major part of this unemployment is involuntary, if - that is to say - most of the jobless are job-seekers or at least job-wanters, their unemployment must represent a colossal frustration of human potential, hopes and desires. In political terms, strains on the social and political system from this source may (at least in the long run) be severe. In an ideological context it is of some relevance to know whether the South African economy within something like its current

capitalist framework is capable of absorbing its rapidly growing labour force into productive employment. If not, then it will become an urgent task to understand and explain this fact and to attempt to prescribe a range of remedial policies, both more and less radical in character.

Moreover, there are puzzling features of labour supply decisions: evidence of grinding rural poverty coexists with reports that rural workseekers are turning down certain types of jobs; and this latter phenomenon (and other similar evidence) suggested to some observers that so-called 'unemployment' is, in some sense, a 'preferred state'.

Neither Simkins nor Clarke takes this view, the former concluding that the unemployment rate in South Africa was high even in the sixties and has risen since then; to reduce the number of unemployed would require (given current productivity trends) a sustained rate of economic growth never before achieved. Clarke estimates that in the states which supplied labour to South Africa between 1969 and 1976 there were close to a million fewer new jobs created in the wage-sectors of their economies than there were net new male entrants to the adult labour force. The emergence of a 'labour surplus' and of a 'marginalised labour force' in these areas has been aggravated by the tendency in recent years for South Africa to displace foreign labour.

It will be clear to readers that both papers contain controversial features and that they do not claim to be the last word on unemployment in Southern Africa. Indeed, they point the way to further research. Simkins shows the sensitivity of some of his statistical results to variations in several key factual assumptions; and he is also explicit about the choices he has made at the conceptual level. It must be asked: is it legitimate to reduce several types of 'underemployment' and 'unemployment' to a single measure? Clarke's paper raises the question of whether the concept of a 'marginal labour force' is well defined-and if so, is it useful? What are we to make of the 'informal sector' and how much will improved information about it modify our overall picture?

Fortunately we may have improved data available fairly soon which should narrow the range of estimates and reduce grounds for disagreement. The Department of Labour has at last begun collecting survey data about black urban unemployment on a regular basis. Several empirical studies are investigating the social characteristics of the unemployed and will try to establish more satisfactorily labour force participation intentions and the nature of job search behaviour. Before too long we should also know more about the 'informal sector', at least in urban areas.

It is only too easy to feel overwhelmed by the complexity and scale of the problems of Southern Africa. It is encouraging to find considerable talents such as these bent to the difficult task of identifying and understanding some of those problems - as an integral part of a creative struggle with them. May they be joined by many others.

Measuring and Predicting Unemployment in South Africa 1960-1977

by
Charles Simkins

INTRODUCTION AND REVIEW OF PAST ESTIMATES OF UNEMPLOYMENT IN SOUTH AFRICA[1]

As is the case in many African economies, South Africa produces no regular official statistics measuring unemployment for the population as a whole. Regular figures for registered non-African unemployed are published and these can be taken to be an indicator of the state of the business cycle. They are no guide to overall unemployment, however, unemployment being disproportionately concentrated among Africans.

The lack of unemployment statistics for the population as a whole means that an important indicator of South Africa's economic performance is missing. Ordinarily the increase in unemployment resulting from deflationary macro-economic policies (which may be pursued to bring down the rate of inflation or to reduce a balance of payments deficit) is regarded as their most important cost; such a cost is rendered less visible if unemployment figures are unavailable. Also, it may be the case that South Africa is on an insufficiently labour-intensive growth path; if this is so, increasing numbers of people will be condemned to the chronic poverty which accompanies a shortage of opportunities for earning a living at a modest or better level. Such immiseration will affect for the worse the prospects of all South Africans, whether or not they are directly affected; without unemployment figures, however, it becomes very difficult to determine whether or not a problem of this sort exists.

Despite the lack of regular official statistics, attempts to estimate total unemployment have been made; six methods, and their deficiencies, will be reviewed in this section. These are:

(a) Occasionally, it has been suggested that the number of registered African workseekers may be used as a measure of African unemployed. From time to time estimates of these workseekers are produced and, if official statistics for registered non-African unemployed are added to

TABLE 1 *Registered Unemployment 1970-1974* (thousands)

Date	Non-Africans	Africans	Total (no.)	Total (%)
Dec 1970	6	70	76	0,9
Mar 1971	9	87	96	1,1
Jul 1972	13	87	100	1,1
Jun 1973	11	60	71	0,8
Dec 1974	7	94	101	1,1

Notes: (i) *Source:* Non-Africans: *Quarterly Bulletin of Statistics*, June 1972, 1973, 1974, 1975.

Africans: *S.A. Institute of Race Relations Annual Survey*, 1971, 1972, 1973, 1974, 1975.

(ii) Percentages calculated of total economically active population as presented in Table 9.

TABLE 2 *Census Estimates of Unemployment* (thousands)

1960 Census

	Total	Whites		Coloureds		Asians		Africans	
		M	F	M	F	M	F	M	F
Employed assigned	5 234	825	281	317	148	92	10	2 829	732
Employed unassigned	70	6	3	11	3	1	0	39	8
Unemployed	417	25	12	48	27	22	1	184	98
Total econ. active	5 721	855	296	376	178	114	12	3 051	839
Unemployment %	7,29	2,93	4,07	12,73	15,07	19,07	12,10	6,03	11,73

1970 Census

	Total	Whites		Coloureds		Asians		Africans	
		M	F	M	F	M	F	M	F
Employed assigned	7 557	1 031	441	420	222	138	27	3 520	1 758
Employed unassigned	341	27	7	37	25	8	7	115	116
Unemployed	216	3	0	6	5	2	1	83	115
Total econ. active	8 114	1 061	448	464	252	148	35	3 718	1 989
Unemployment %	2,67	0,31	0,10	1,39	2,42	1,38	1,64	2,23	5,79

Notes: (i) *Source:* Tables A10, B10, C10, D10 of vol. 6 *(Industry)* of the 1960 census report and of 1970 census report 02-05-09.

(ii) Figures may not add exactly to total because of rounding.

them, total unemployment estimates are obtained. Table 1 displays the results of such an exercise. What it shows is that no sensible picture of the unemployment problem can be obtained from the study of registered workseekers; no other capitalist economy runs at 1% unemployment and there is no reason to suppose that South Africa is an exception to the general rule.

(b) The 1960 and 1970 censuses divide economically active persons into three categories:

> employed and assigned to a specific industrial sector
> employed but unassigned to any industrial sector
> unemployed.

Table 2 sets out the figures obtained.

Table 2 suggests that the level of unemployment in 1960 was 7,9% and in 1970 2,7%. These estimates are in accordance with the state of the business cycle at the time of the censuses; September 1960 was during a downswing while May 1970 was during an upswing.[2] However, inspection of the 'employed unassigned' and 'unemployed' rows in 1960 and 1970 respectively suggests that the criteria used to identify a person as unemployed may have been generally more stringent in 1970; if that is so, the figures are not strictly comparable.[3]

This approach has two defects. Firstly, it generates estimates of unemployment only at census dates ten years apart. Secondly, it is uncritical with respect to the employment figures in the various industrial categories; this study will demonstrate how fatal a flaw that is.

(c) Maree and de Vos[4] have undertaken sample surveys in two 'homelands' and have concluded that underemployment was at least 9,6% in the Ciskei at the end of 1964 and at least 22,5% in the Transkei during the second half of 1968. Their definition of underemployment is as follows:

> Workers in the underemployed category were those who were doing absolutely no work at the time of the survey nor had been doing any work over the previous four months. They owned no land, had no right of land use anywhere, did not work as farm assistants, nor did they fulfil household tasks (in the case of women). Underemployment is therefore defined here as the case where, at most, people worked for eight months during the year in which each of the surveys was carried out and includes the unemployed.

There are two problems with this study. Firstly, it was a *once-off* affair, which did not cover the whole country or even all the homelands. Secondly, the definition of underemployment leads to paradoxes: for instance, if a worker has worked for a short time in the four months before the survey and not at all in the eight months before that, he is not counted as underemployed, whereas someone who has done much more work by working right throughout the earlier eight months but not during the later four, is so counted.

Nevertheless, the survey represents a unique attempt at field investigation of unemployment in recent times. An improved set of questions administered

at regular intervals throughout South Africa would yield valuable data on the nature of the unemployment problem and would serve as a basis for evaluating efforts to solve it.

(d) Seven editions of the Economic Development Programme (EDP) 1964/69, 1965/70, 1966/71, 1968/73, 1970/75, 1972/77 and 1974/79 respectively, have been published by the South African government.[5] The programme seeks to establish a feasible growth rate over a five year period by taking into account possible rates of capital formation, the balance of payments constraint and manpower situation. Although the time span considered in each programme is quite short, no consideration is given to the business cycle fluctuations about the secular growth trend. The manpower section is dealt with as follows:

(i) population growth is projected for each racial group
(ii) activity rates (i.e. the proportion of the total population desiring to work) are projected for each group
(iii) labour supply projections are obtained
(iv) the growth rate for the economy as a whole is translated into growth rates for sectors of the economy
(v) estimates of increases of labour productivity are made for these sectors
(vi) labour demand is obtained for each sector and aggregated
(vii) projected unemployment is the difference between projected labour supply and labour demand.

The Economic Development Programmes deal in projected rather than realised figures (though recent editions do assess predictions of earlier programmes by referring to realised figures). They have also suffered from the consequences of a major change in definition of economic activity among Africans between the 1960 and 1970 censuses. Knight summarises the change as follows:

> In the . . . 1960 census a male aged 16 or over in the homelands was classified as a *peasant farmer* unless another occupation was specified: a female in the same position was classified as *housewife*. In the 1970 census the homeland wives of household heads were classified as *housewives* and thus *not economically active*, but other females aged 16 or over were classified as *peasant farmers*.[6]

This census definition leads to overestimation of people employed in subsistence agriculture among males in 1960 and among males and females in 1970; it also leads to an underestimate of the economically active African female population in 1960. Finally, the EDPs pay no attention to other methodological problems associated with measuring agricultural employment; nor, indeed, do they discuss problems in other sectors. Accordingly, although they provide some useful clues on how to proceed, no reliable results can be obtained from the EDPs as they stand.

(e) Van der Merwe[7] has made estimates of *increases* in unemployment among Coloureds and Africans for each year from 1970/71 until 1975/76.

No estimate of the total *level* of unemployment is given, as no level figures are calculated for Africans in the homelands. In the case of Africans, level figures are given for urban areas and *white farms;* unemployment is estimated to have dropped from 227 000 (8,4%) in 1970 to 151 000 (4,8%) in 1976 in the former and to have risen from 25 000 (1,7%) to 377 000 (22,1%) in the latter, so that unemployment in urban areas and white farms together has risen from 252 000(6,1%) to 528 000 (10,9%). In addition, the unemployment and cumulative increase in underemployment in the homelands is estimated to have risen from 32 000 in 1970 to 396 000 in 1976.[8] It is instructive to take the argument one step further. Adding the increase in unemployment in urban areas and on white farms from 1970 to 1976 of 276 000 to the corresponding figure of 364 000 for the homelands, one obtains a total increase in African unemployment of 640 000 in six years. Given van der Merwe's estimate that the African labour force increased by 1 132 000 over the same period, this means that no less than 57% of the increment have not been provided with employment, an alarming conclusion of which more might have been made. The picture is not much less bleak when we turn to Coloured unemployment; the increase in labour force between 1970 and 1976 is estimated at 196 900, while the increase in unemployment is estimated at 101 300,[9] which means that 51% of the increment have joined the unemployed.

Van der Merwe has taken his figures for employment outside agriculture from the monthly and quarterly series of the Department of Statistics, which, on the basis of a footnote to an article in the South African Reserve Bank's *Quarterly Bulletin,* he takes to represent 94% of all such employment.[10] This figure appears to be too high; these series do not cover private sector transport, business services, domestic servants and most other non-government community, social and personal services and it is questionable whether they cover all construction employees (see below). Jointly these omissions account for a good deal more than 6% of non-agricultural employment. Accordingly, employment growth is underestimated and the growth of unemployment overestimated.

There are also objections to be raised to the estimates of the geographical location of African unemployment; it is odd that urban unemployment should have dropped while unemployment on white farms and in homelands rose so steeply, especially in the light of an increasing rural-urban wage gap which should lead to increasing *urban* unemployment as people migrate to the cities in response to the changing relative wage. It would appear that the breakdown of labour force increases does not take this effect into account;[11] also it is assumed that all non-agricultural employment increases are confined to the urban areas,[12] which may lead to relatively little percentage error in employment growth estimates, but which leads to much bigger relative errors in unemployment growth.

Finally, the six year series that van der Merwe provides is not particularly

long and cannot be used with much certainty to answer the question about the labour-intensity of the South African growth path raised at the beginning of this section.

(f) Knight[13] has considered the problem in a paper which uses the concept of *residual labour*, defined as labour supply less employment outside homeland agriculture. He then defines underemployment as residual labour less productive employment in homeland agriculture. He provides a comprehensive discussion of data sources and their limitations, concluding that 'the data available do not permit clearcut answers to the important questions.'[14] Nonetheless, Knight 'tentatively concludes that there appears to have been a significant growth in absolute numbers of residual labour since 1951. When residual labour is expressed as a proportion of the corresponding labour force, the evidence is ambiguous.'[15] He also believes that 'the evidence suggests a significant growth in the extent of African underemployment over the postwar period',[16] this conclusion being 'even less firm than (the conclusions) drawn for residual labour.'[17] Further reference will be made to the details of Knight's discussion in the course of this study. However, he discusses only the census years 1946, 1951, 1960 and 1970 (apart from a passing criticism of the seventh EDP) and his work does not go as far as it might in identifying the structural factors on which the labour-absorptive capacity of the economy depends. While the points he makes about data problems are important, it is the contention of this study that additional information and hypotheses can be brought into play in order to construct a rather more complete picture of unemployment.

GENERAL PRINCIPLES OF UNEMPLOYMENT ESTIMATION

A modification of the method of measuring labour force underutilisation suggested by A. D. Smith[18] will be used here. What he calls *underutilisation* will be referred to as *unemployment*, the unit of measurement being man-years rather than people out of work at any point in time.[19]

Such an approach involves identifying the economically active population and then dividing it into the fully employed, the underemployed and the openly unemployed. The degree of underutilisation can then be calculated, counting each openly unemployed person as one and each underemployed person as less than one, the figure reflecting the degree of underemployment. Smith divides underemployment into three categories:

(a) *visible underemployment*, which involves persons involuntarily working *part-time* or for shorter than usual periods
(b) *disguised underemployment*, where *earnings* are abnormally low
(c) *potential underemployment*, where a person is employed in an establishment or economic unit whose *productivity* is abnormally low.[20]

In each case, one establishes a norm (working time, earnings or productivity), establishes the number of people below that norm (X) and the average degree of underemployment (Y) in terms of that norm and multiplies to get

the underemployment in number equivalents (XY). Smith provides a hypothetical example to illustrate how the calculation would be carried out:[21]

Form of under-employment	Numbers affected (X)	Norm	Average actual	Average degree of under-employment (Y)	Underemployment in number equivalents (XY)
Visible	50	40 hours/week	24 hours/week	0,4	20
Disguised	40	200 currency units/week	100 currency units/week	0,5	20
Potential	30	50 output units /man-week	20 output units /man-week	0,6	18
TOTAL	120				58

The difficulty about this approach, as Smith admits, is that it lacks the quality of 'mutual exclusivity'[22] because a worker who is underemployed in terms of one criterion is likely also to be underemployed in terms of another. To count such a worker under both (or all three) heads would be double or triple counting, but he cannot be allocated unambiguously to any one. The way out of this difficulty proposed here is to consider workers on a sectoral basis and to use only *one* underemployment criterion for each sector, the criterion varying with the sector.[23] A further modification is that unemployment and underemployment are not estimated directly; instead, a *difference* method is used (i.e. unemployment = labour supply *less* employment). The employment unit is the *full-time job equivalent,* in the calculation of which the underemployment in number equivalents is removed.

Turning to the problems of estimating labour supply, one finds that three categories of worker give rise to difficulties:

(a) A person who desires to work continuously, but only part of the day will add one to the number of economically active people, whereas the logic of our approach dictates he should count as less than one. This imparts an upward bias to labour supply; in all sectors except agriculture, however, a corresponding bias will appear in employment, as a result of the method of this study. If the additional assumption is made that all agricultural workers desire to work full-time, the number of unemployed will not be affected (although the rate will have a downward bias).

(b) People may wish to work part of the year only; if rest periods are randomly distributed throughout the year and the mean fraction of the year is rested is r, then only $(1 - r)$ N, where N is the number of such people, will be picked up as economically active at any point in time. But $(1 - r)$ N is the number of man-years of work done by this group, i.e. the full-time equivalent of their work. However, the censuses do pick up a number of people who sometimes work, but are neither seeking work nor

TABLE 3 *Age-Sex Distribution in Census Years* (percent)

	1960		1970		1980	
	M	F	M	F	M	F
Whites	(a)		(b)		(b)	
<20	42,1	40,3	40,7	39,2	38,6	37,5
20-24	7,7	7,5	9,0	8,6	8,7	8,4
25-34	13,5	13,2	15,5	14,6	16,3	15,5
35-44	12,4	12,5	11,6	11,4	13,3	12,7
45-64	18,3	18,8	17,9	18,5	16,6	17,2
≥65	5,9	7,5	5,5	7,6	6,6	8,7
	100,0	100,0	100,0	100,0	100,0	100,0
Coloureds	(c)		(d)		(d)	
<20	55,4	55,3	57,0	56,0	53,8	52,6
20-24	8,7	8,7	8,7	8,7	10,0	9,9
25-34	13,6	13,6	12,7	12,9	14,3	14,4
35-44	9,3	9,0	9,1	9,4	9,1	9,4
45-64	10,4	10,5	9,9	9,6	10,1	10,4
≥65	2,5	2,8	2,7	3,4	2,7	3,2
	100,0	100,0	100,0	100,0	100,0	100,0
Asians	(e)		(f)		(f)	
<20	54,8	56,3	52,4	52,3	48,9	47,9
20-24	9,7	9,8	10,3	10,5	9,6	9,6
25-34	14,1	14,4	15,2	15,5	17,0	17,0
35-44	9,5	9,5	9,8	10,1	11,4	11,7
45-64	9,6	8,8	10,3	10,0	10,8	11,6
≥65	2,1	1,4	1,9	1,6	2,2	2,2
	100,0	100,0	100,0	100,0	100,0	100,0
			Dom.*	For.**	Dom.	For.	Dom.	For.	Dom.	For.
Africans	(g)		(h)	(i)	(h)	(i)	(h)	(i)	(h)	(i)
<20	49,4	51,8	54,4	6,1	53,6	10,1	53,5	6,1	52,1	10,1
20-24	9,4	8,6	8,6	22,8	8,5	5,6	9,9	22,8	9,7	5,6
25-34	15,8	14,4	13,5	32,8	13,4	17,4	13,9	32,8	13,7	17,4
35-44	11,1	10,1	9,8	19,9	9,8	22,8	9,6	19,9	9,7	22,8
45-64	11,6	11,9	10,3	16,3	10,8	31,7	10,4	16,3	11,2	31,7
≥65	2,6	3,1	3,2	2,1	4,0	12,4	2,7	2,1	3,6	12,4
	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Notes: (i) Totals may not add up to 100% because of rounding.

(ii) *Source:* (a) S.A. *Statistics 1968*, p. A-27.
(b) Report 02-06-01, table A5* (c) Sadie p. 25†.
(d) Report 02-06-01, table B3*. (e) Sadie, p. 17†.
(f) Report 02-06-01, table C3*. (g) Sadie, p. 186.
(h) Report 02-06-01, table D3*. (i) Report 02-02-02.
02-06-01, table D3*. (i) Report 02-02-02, table 1‡.
*See note 24 †See note 25 ‡See note 26.

(iii) In all cases except (a), the percentages have been obtained by dividing each race sex-age number by the appropriate race-sex total.
*Dom.—Domestic **For.—Foreign

working on the census date (see note 3). To the extent that they do, activity rates are biased upwards. Insofar as the random distribution condition is not met, there will also be an element of bias in estimates of labour supply. This study assumes that the random rest condition *is* met (in fact only the weaker assumption that the proportion of people resting in September and May is not significantly different from the year average is needed).

(c) Since we are estimating unemployment as the difference between labour supply and the full-time employment equivalent, it is desirable that our estimate of the labour supply be independent of the unemployment rate. Where there is substantial unemployment, this is not likely to be the case; some workers become so *discouraged* that although they would take a job if offered one, they do not actively seek work and so may not be counted as economically active. Inspection of Table 4, where activity rates are set out for each race-sex group for 1960, 1970 and 1980, suggests that this effect may not be particularly large; for males of all races between 25 and 64, activity rates are over 90% and in many cases exceed 95%, while the activity rates for women generally rose between 1960 and 1970. In any case, there is no way in which the size of the phenomenon can be estimated, so it will have to be left out of account.

LABOUR SUPPLY ESTIMATES

Average activity rates for each race-sex category are obtained in three stages for 1960, 1970 and 1980:

(a) Age-sex distributions are calculated for each racial group in each of the three years and are set out in Table 3.

(b) Activity rates for 1960 and 1970 are obtained from the population censuses by dividing the number of economically active persons by the total number in each race-sex-age category. This procedure assumes that the activity rates so obtained (based only on enumerated persons) are unbiased estimates of the actual rates. The 1980 rates are projected using extrapolation formulae set out by Vermaak.[27] The results appear in Table 4.

(c) Average activity rates for each race-sex category can then be calculated by taking weighted averages of the age-specific rates, the weights, of course, being the proportion of persons in each age group for the category. The average activity rates are set out in Table 5.

It is now possible to compare the estimated economically active population with the economically active population recorded in the censuses. The estimates are obtained by multiplying the average activity rates by population estimates. Table 6 sets out the results.

The source of the discrepancies between estimated economically active and census economically active population is, of course, the discrepancy between the census estimate of total population and the more recent population

Continued on p. 15.

TABLE 4 *Activity Rates in Census Years* (percent)

	1960			1970		1980	
	M	F		M	F	M	F
Whites							
<20	7,8	7,1		8,6	7,4	8,7	7,5
20-24	91,5	50,3		89,2	57,8	89,0	58,4
25-34	99,0	29,1		98,4	36,8	98,4	37,3
35-44	99,2	28,8		98,9	37,6	98,9	38,2
45-64	94,2	24,8		93,7	31,2	93,6	31,7
≥65	40,4	5,1		38,1	6,4	37,5	6,5
Coloureds							
<20	14,2	11,8		13,2	11,4	12,4	10,5
20-24	97,5	57,7		94,1	60,1	93,8	60,7
25-34	99,1	40,1		95,7	44,5	94,8	45,0
35-44	98,4	34,6		96,8	39,4	96,7	39,9
45-64	94,3	29,1		92,6	31,4	92,5	31,8
≥65	37,9	6,1		29,8	4,7	29,1	3,9
Asians							
<20	10,3	1,7		8,5	5,1	7,7	5,5
20-24	92,0	11,4		85,9	27,2	85,5	28,5
25-34	99,0	3,4		95,3	18,8	94,3	19,6
35-44	99,3	3,4		96,5	14,6	95,6	15,0
45-64	94,8	9,2		90,6	9,6	90,3	9,7
≥65	33,6	3,0		28,3	2,4	27,6	1,6
Africans		original	revised				
<20	14,6	6,1	10,1	12,0	11,2	11,2	11,3
20-24	96,9	32,7	54,0	93,8	65,4	93,6	66,1
25-34	99,4	26,1	43,1	97,9	48,4	97,6	49,0
35-44	99,4	24,5	40,5	98,4	39,9	98,3	39,3
45-64	98,3	23,5	38,8	95,0	30,5	94,6	29,8
≥65	64,3	12,8	21,1	48,4	6,0	47,6	5,6

Notes: (i) *Source:* 1960 - Tables A10, B10, C10, D10 of vol. 6 of the 1960 census report.

1970 - Tables A4, B4, C4, D4, of 1970 census report 02-05-09.

(ii) The 'original' column for African females in 1960 has been obtained in the same way as the other 1960 figures. The basis of the 'revised' column is discussed in the text; the revised 1960 column and the 1970 column are used to project the 1980 column.

TABLE 5 *Average Activity Rates in Census Years* (percent)

	1960		1970		1980	
	M	F	M	F	M	F
Whites	55,67	19,16	57,01	23,81	58,25	24,37
Coloureds	49,78	23,36	46,60	24,23	48,54	25,22
Asians	47,86	4,92	47,16	10,91	49,31	11,62
Africans - Domestic	-	-	48,89	25,47	49,39	26,36
- Foreign	-	-	90,31	32,72	90,02	32,47
		orig. rev.				
- Total	56,19	15,41 25,46	51,17	25,51	51,12	26,39
African - Domestic	-	-	7688	7740	10069	10296
Population (thousands) - Foreign	-	-	447	43	447	43

Notes: (i) Sources for African population estimates:

1970 - foreign: 1970 census report 02-02-02, table 1

- domestic: Midyear Estimates of Population - Republic of South Africa, *Statistical News Release, P. 11,* 25 October 1976, Pretoria, Dept. of Statistics, 1976, for total, then foreigners subtracted.

1980 - foreign: assumed to be the same as in 1970. (The figures for 1971 to 1976 fluctuate around a mean very close to the 1970 figure).

- domestic: Report 02-06-01, table D3.

(ii) The total African activity rates are a weighted average of the foreign and domestic rates, the weights being the relative population sizes.

TABLE 6 *Economically Active Population in Census Years* (thousands)

1960	Whites		Coloureds		Asians		Africans		
	M	F	M	F	M	F	M	F	
Estimated	851,8	294,9	371,9	175,9	115,3	11,6	3423,1	922,3	601,1
Census	855,3	295,7	375,9	178,1	114,3	11,6	3051,4	838,6	-
Estimated Census	0,996	0,997	0,989	0,988	1,009	1,000	1,122	1,100	-
1970									
Estimated	1092,9	455,7	477,7	254,2	150,4	35,2	4162,7	1985,4	
Census	1060,9	448,0	463,8	252,4	147,6	34,7	3717,9	1989,0	
Estimated Census	1,030.	1,017	1,030	1,007	1,019	1,014	1,120	0,998	

Source: Census figures - 1960: 1960 Census report vol. 6, table 2.

- 1970: 1970 Census report 02-05-09, table 3.

TABLE 7 *Revised Estimate of Economically Active African Females in 1960*

Africans (thousands)

1960 - Agriculture			*1970 - Agriculture*		
	Census	Corrected		Census	Corrected
Male	1349,7	1561,6	Male	1215,9	1383,7
Female	859,5	914,5	Female	188,6	209,7
Female Male		0,586	Revised female		810,8
			Correction		+601,1
			Revised estimate - econ. active population		1523,4
			Revised estimate Original estimate		1,652

Notes: (i) *Source:* 1960 - 1960 Census report vol. 6, table 2.
1970 - 1970 Census report 02-05-09, table 3.

(ii) Corrected figures are calculated by using the method detailed in note 33.

TABLE 8 *Foreign African Labour Supply Adjustments* (thousands)

Date	Population			Adjustment to economically active population
	Total	Male	Deviation Male	Male
1971	467	426	-21	- 9
1972	503	459	+12	+ 5
1973	542	494	+47	+19
1974	549	501	+54	+22
1975	470	429	-18	- 7
1976	423	386	-61	-25

Source: *Statistical News Release, P.11,* 25 October 1976.

estimates. Part of the difference lies in the difference of date (census estimates are of the population at the census date while the others are of the population at 30 June of the census year); part lies in census enumeration errors which have been compensated for in the recent estimates.

Two revisions are necessary before we can proceed to the calculation of the economically active population for all years. These are:

(a) A correction of the 1960 activity rates for African females needs to be made. Recall that the source of error lies in the 1960 classification of African females in subsistence agriculture. The assumption will be made that the ratio of males to females employed in agriculture and hunting was the same in 1960 as in 1970; a revised estimate of African females employed in this sector can then be made for 1960 and compared with the census estimate. The difference so obtained will be added to the estimate of economically active African females in 1960. Table 7 sets out the calculation. The ratio of the revised to the original estimate is 1,652 and this factor is applied to each African female activity rate in Table 4 to get revised activity rates for 1960. These are quite close to the rates for 1970 (except in the over 65 age category) which increases our confidence in the procedure just applied.

(b) The assumption has been made in calculating average activity rates that the foreign African population has remained and will remain constant at 490 000 from 1970 to 1980. In fact, figures are available of the number of foreign Africans at mid-year for the years 1971 to 1976.[28] To the extent that these figures deviate from the assumed figure, there will be an error in the estimate of economically active Africans. Although the estimates of *total* African population are based on the year-by-year figures, the impact on *economically active* Africans of the deviations is underestimated, activity rates for foreign Africans being higher than for domestic (see Table 5). Assuming the male/total ratio to remain constant, adjustments can be made to the number of economically active African males by multiplying the difference between foreign, and average activity rates (0,41) by the deviations. (The adjustment for females is negligible). This is done in Table 8.

It is now possible to estimate the labour supply in each race-sex category for each year between 1960 and 1977. Population estimates are available for each category in each year and the corresponding activity rates are estimated by using a Lagrange interpolating polynomial. Table 9 tabulates the labour supply by race and sex from 1960 to 1977.

Table 9 is one of the principal tables in this study and deserves a little interpretation. The economically active population increased from 6,77 million in 1960 to 10,00 million in 1976, an average annual increase of 2,47%p.a. Interestingly, the white labour force rose from 16,9% of the total in 1960 to 17,8% in 1976, the Coloureds and Asians accounted for 10,0% of the total in 1960 and 11,0% in 1976 while the African share dropped from

TABLE 9 *Economically Active Population* (thousands)

Date	Whites			Coloureds			Asians			Africans			Total
	M	F	T	M	F	T	M	F	T	M	F	T	EAP
1960	852	295	1147	372	176	548	115	12	127	3423	1524	4947	6769
1961	868	310	1178	381	183	564	118	14	132	3479	1562	5041	6915
1962	886	325	1211	389	190	579	121	16	137	3537	1602	5139	7066
1963	908	341	1249	399	197	596	124	19	143	3599	1645	5244	7232
1964	930	358	1288	410	205	615	126	21	147	3666	1688	5354	7404
1965	960	375	1335	422	213	635	130	23	153	3736	1733	5469	7592
1966	988	391	1379	433	221	654	134	26	160	3812	1780	5692	7785
1967	1014	408	1422	445	230	675	138	28	166	3892	1828	5720	7983
1968	1039	424	1463	458	238	696	142	30	172	3977	1879	5856	8187
1969	1067	440	1507	469	245	714	146	33	179	4069	1932	6001	8401
1970	1093	456	1549	478	254	732	150	35	185	4163	1985	6148	8614
1971	1119	471	1590	490	262	752	154	37	191	4230	2046	6276	8809
1972	1146	485	1631	504	270	774	159	39	198	4353	2110	6463	9066
1973	1170	498	1668	517	279	796	163	41	204	4485	2178	6663	9331
1974	1193	510	1703	532	287	819	168	42	210	4597	2247	6844	9576
1975	1219	521	1740	549	296	845	173	44	217	4646	2317	6963	9765
1976	1247	533	1780	567	306	873	178	45	223	4729	2392	7121	9997
1977	1275	543	1818	586	315	901	183	46	229	4867	2468	7335	10283

Source: Tables 5 and 8; *Statistical News Release P.11.* 25 October 1976

73,1% in 1960 to 71,2% in 1976. Differential rates of population growth (3,02%p.a. for Coloureds and Asians, 2,75%p.a. for Africans and 2,16%p.a. for Whites)[30] are important in explaining the growth in the Coloured and Asian component; they do not explain the relative changes between Whites and Africans. Table 5 shows, however, that average activity rates have risen for white males and dropped for African males and have risen faster for white females than for African females. Tables 3 and 4 together suggest that the principal reason for the different movements for White and African male activity rates is differing tendencies in the respective age distributions (especially, that while the proportion of males under 20 has dropped for whites, it has risen for Africans). This is reinforced by marked drops in the activity rates for the less than 20 and older than 65 age groups in the case of Africans. The proportion of women in the labour force rose from 29,7% in 1960 to 32,8% in 1976, reflecting increasingly average activity rates for women of all races (see Table 5).

EMPLOYMENT ESTIMATES AND RELATIONSHIPS BETWEEN EMPLOYMENT GROWTH AND OUTPUT GROWTH

In this section the programme of estimating employment for each of the nine 1-digit Standard Industrial Classification categories is carried out.[31] Except in the cases of agriculture (SIC 1) and domestic service (part of SIC 9) the principal source is the set of annual employment series published by the Department of Statistics;[32] employment figures from periodic industrial censuses are then used to fill in gaps wherever possible. In one or two cases, employment series have had to be constructed from population census figures.[33] Where industrial or population census figures are used, it becomes necessary to interpolate or extrapolate, since these figures are not available for each year. One of the following two methods is used in each case:

(a) An average annual growth rate is found by solving the equation:

$$E_0 (1 + g)^t = E_t \quad \ldots (1)$$

for g, where E_r is the level of employment in year r. This growth rate is used to generate employment figures for other years.

(b) A relationship of the form $\dot{E}_r = a\dot{Q}_r$ is assumed,

where $\dot{E}_r = \frac{E_r - E_{r-1}}{E_{r-1}}$ and $\dot{Q}_r = \frac{Q_r - Q_{r-1}}{Q_{r-1}}$ and a is a constant. Then

$$E_t = E_0 (1 + \dot{E}_1)(1 + \dot{E}_2) \ldots (1 + \dot{E}_t)$$

$$= E_0 (1 + a\dot{Q}_1)(1 + a\dot{Q}_2) \ldots (1 + a\dot{Q}_t)$$

$$\frac{E_t}{E_0} = \prod_{i=1}^{t} (1 + a\dot{Q}_i) \quad \ldots (2)$$

and, since a $\dot{Q}_i$ series exists,[34] equation *(2)* can be solved for a, using numerical methods.[35]

The first method assumes that employment growth is constant and independent of output growth; the second assumes that employment growth is directly proportional to output growth. In both cases, one arrives not only at a basis for interpolation, but also at an employment growth/output growth relationship.

Where one is able to build up a sectoral employment series with little or no recourse to these interpolation methods, it is possible to estimate employment growth/output growth relationships, using regression analysis. The quality of the data[36] does not justify complicated econometrics; a simple relationship of the form

$$\dot{E}_r = a_0 + a_1 \dot{Q}_r + e_r$$

will be used as the regression model. Three output growth measures, however, could be used as the independent variable:

(a) $\dot{Q}_r$, the sectoral output growth for the same period as the sectoral employment growth. Here, the hypothesis is that fluctuations in employment are virtually contemporaneous with fluctuations in output;

(b) $\dot{Q}_{r-1}$, the sectoral output growth for the period preceding that of the sectoral employment growth. This model could be justified by supposing that there is always a small margin of labour underutilisation which is decreased in the short-run when increased output is required; more labour is then hired to restore the margin to its *normal* level so that employment growth takes place after output growth;

(c) $\dot{Q}^*$ the output growth for the economy as a whole for the same period as the sectoral employment growth. An explanation for this model would be that labour is hired on the basis of expected demand, and the level of expectations depends on how the economy as a whole is faring.

The simplest way to select an output growth measure in each case is to compute correlation coefficients between $\dot{E}_r$ and $\dot{Q}_r$, $\dot{E}_r$ and $\dot{Q}_{r-1}$ and $\dot{E}_r$ and $\dot{Q}^*$ to select the measure associated with the greatest coefficicient.

To arrive at the simplest form of the employment growth/output growth relationship, the coefficient and intercept are tested for significance at the 5% level. If either is insignificant, the model is simplified, until all estimated parameters are significant.[37]

In cases where we have an employment growth/output growth relationship of the form $E_t = aQ_t$ or aQ_{t-1}, the coefficient a tells us something about labour productivity increases. Normally, one would expect $0 \leqslant a \leqslant 1$: if $a = 0$, all output growth is attributable to growth in labour productivity and if $a = 1$, all output growth is attributable to growth in employment. If a lies between these extremes, output growth is attributable to both factors.

It is implicitly assumed in the specification of the employment growth/output growth relationships that factors other than output growth do not significantly affect employment growth. In particular, the effect of relative price changes

is ignored. It is sometimes argued[38] that the substantial increases in real wages for unskilled labour since the early seventies have made the economy less labour-absorptive than before. Usually, however, the argument is put forward on theoretical grounds only; no empirical work has appeared to estimate the extent of the effect.

Some of the error arising from a slow variation in the factors assumed to be constant in the regression analysis may be eliminated by only going so far back in time as one needs to do in order to get a reasonable number of points for the regression. Accordingly, no more than eight observations will be used in each case. Given the difficulties involved, it will be important to subject the estimated parameters to a *plausibility test* by seeing whether they depict the sort of situation one would expect to find.

The sectoral analyses follow:

Agriculture, Hunting, Forestry and Fishing

Two difficulties stand in the way of any discussion of employment in South African agriculture — one theoretical and one practical:

The theoretical difficulty is that it is much harder to draw a sharp dividing line between employment and unemployment in agriculture than in other sectors. The treatment of casual labour and subsistence agriculture poses special problems; the detailed techniques based on the general methodology of this study are described below.

The practical difficulty is the lack of data. Employment figures for 1966, 1967, 1968 and 1970 are missing from the agricultural census series; figures for fishing are available only for 1961, 1962, 1963, 1964 and 1967; and figures for agricultural output in the homelands are available only from 1965 to 1973. Rather extensive reconstruction is therefore necessary, with a corresponding drop in reliability.

For the purposes of this analysis, agricultural employment is divided into five categories:

(a) White working owners and employees in agriculture, forestry and fishing;

(b) Coloured, Asian and African regular employees outside the homelands in agriculture and forestry;[39]

(c) Coloured, Asian and African casual employees outside the homelands in agriculture and forestry;

(d) *Subsistence* farmers in the homelands;

(e) Coloured, Asian and African fishermen.

The employment series is constructed as follows:

(a) Corrected census figures for White employment in agriculture will be taken for 1960 and 1970; figures for other years will be obtained by constant growth rate interpolation and extrapolation.

TABLE 10 *Regular and Casual Wages During August 1965*

	Coloureds	Asians	Africans
1. Regular Employees			
Remuneration in cash (R)	1 385 052	113 788	4 801 273
Employment	105 471	5 354	710 353
Days worked per worker (assuming 5½ day week)	24,36	24,36	24,36
Total days worked	2 569 274	130 423	17 304 199
Cash wage/day (R)	0,54	0,87	0,28
Remuneration in kind / Remuneration in cash	0,24	0,23	0,38
Wage/day (incl. kind) (R)	0,67	1,07	0,39
2. Casual Employees			
Remuneration in cash (R)	445 404	15 268	1 427 543
Total days worked	664 626	19 060	4 331 059
Cash wage/day (R)	0,69	0,80	0,33
Remuneration in kind / Remuneration in cash	0,11	0,35	0,25
Wage/day (incl. kind) (R)	0,77	1,08	0,41

Source: Agricultural Census 39, 1964/65.

(b) Agricultural census data on regular employees will be used.

(c) It seems unsatisfactory to count each casual agricultural job as a full-time employment opportunity, when by definition, it is not. One looks for a way to reduce the casual employment figures to a full-time job equivalent. The obvious way of doing this is to assume that there is a *per diem* wage applicable to both regular and casual employees, which differs from year to year and racial group to racial group. The annual wage can be established by dividing total annual payments to each group of regular employees in each year by the number of employees in that group. The total annual payments to casual employees in each group are then divided by the appropriate annual wage to get the full-time job equivalent of casual employment. In this case, then, an earnings criterion is being used to deal with labour underutilisation, the argument being that this yields the same results as would a working time criterion. The assumption underlying this procedure may be tested against data from the 1964/65 agricultural census. This census contained tables on employment and remuneration (in cash and kind) for regular and casual employees and days worked (for casual employees) which permit the construction of Table 10.

Table 10 demonstrates that the regular and casual wages per day (including remuneration in kind) are similar, especially in the case of Asians and Africans and that, if anything, the casual wage per day is slightly higher than the regular wage for Coloureds. So the assumption is corroborated and may be used in the manner indicated.[40]

Table 11 sets out the regular and casual employee estimates for 1965, 1969, 1971, 1972 and 1973.

(d) A special procedure must also be devised to deal with employment in subsistence agriculture in the homelands. I propose to base employment estimates on estimates of the gross value of homeland agricultural production and on imputed income per earner arrived at as follows:

The Tomlinson Commission came 'to the conclusion that a farm unit producing an average gross income of £57 is large enough to attract a Bantu to full-time farming in mixed farming and pastoral areas, and to bind him permanently to the land.'[41] Assuming a farm unit is worked by a family (whose average size was assumed by the Commission to be 6), the average number of economically active persons per unit (using 1960 activity rates) is 2,46 so the average income per earner associated with this figure is R46,3 (£1 = R2) in 1951/52 prices. The income/earner in later years is taken at the same *real* level, i.e. is adjusted by using the consumer price index. Table 12 sets out the employment estimates resulting from this procedure.

Here, an earnings criterion is used to deal with labour underutilisation, the implicit assumption being that all subsistence farmers earn not more than the Tomlinson norm. If this assumption is false and the increase in production has been secured by expansion among relatively few farmers, then the figures in Table 12 will be overestimates of employment.[42] *Continued on p.23*

TABLE 11 *Regular and Casual Employment Outside the Homelands in 1965, 1969, 1971, 1972, 1973 and 1974*

	1965				*1969*				*1971*			
	Coloureds	Asians	Africans	Total	Coloureds	Asians	Africans	Total	Coloureds	Asians	Africans	Total
Regular employment at 31st Aug. (thousands).	105,5	5,4	710,4	821,3	102,5	4,5	708,5	815,5	92,4	4,0	636,5	732,9
Regular remuneration (cash and kind - R thousand) 1.7.64. - 30.6.65., 1.7.68. - 30.6.69., 1.3.70. - 28.2.71. *or* 1.7.70. - 30.6.71.....	20 116,4	1 590,8	75 749,2		25 464,2	1 800,4	95 938,5		28 231,2	1 906,8	109 835,1	
Estimated annual wage (R)	190,7	294,6	106,6		248,4	400,1	135,4		305,5	476,7	172,6	
Casual remuneration (cash and kind - R thousand) Periods as regular ...	4 630,4	303,4	15 973,6		5 877,8	138,9	23 621,7		6 304,1	123,6	28 389,1	
Estimated casual employment(thousands) ..	24,3	1,0	149,8	175,1	23,7	0,3	174,5	198,5	20,6	0,3	164,5	185,4
	1972				*1973*				*1974*			
Regular employment at 31st Aug. (thousands)..	94,0	3,7	626,7	724,4	92,9	3,6	618,5	715,0	95,1	3,7	601,6	700,4
Regular remuneration (cash and kind - R thousand) 1.3.71/72/73 - 28.2.72/73/74 *or* 1.7.71/72/73 - 30.6.72/73/74	30 748,8	2 172,8	116 230,1		35 909,2	2 584,6	134 107,2		42 162,6	3 707,3	160 766,3	
Estimated annual wage (R)	327,1	587,2	185,5		386,5	717,9	216,8		443,4	1 002,0	267,2	
Casual remuneration (cash and kind - R thousand) Periods as regular ...	6 707,0	63,4	29 512,0		7 695,6	121,8	32 602,7		8 668,2	75,2	40 463,2	
Estimated casual employment(thousands) ..	20,5	0,1	159,1	179,7	19,9	0,2	150,4	170,5	19,5	0,1	151,4	171,0

Source: Agricultural Censuses. 39. 43. 44. 45. 46 and 47.

TABLE 12 *Employment in Homeland Subsistence Agriculture 1965-1973*

Date	Gross agricultural production in homelands (R thousand)	Consumer price index	Income/ earner (R)	Employment estimate (thousands)
1951/2	-	60,6	46,3	-
1965	44 880	85,0	64,9	691,5
1966	52 548	88,1	67,3	780,8
1967	60 340	91,0	69,5	868,2
1968	49 619	92,6	70,7	701,8
1969	58 231	95,3	72,8	799,9
1970	54 045	100,3	76,6	705,5
1971	66 044	106,4	81,3	812,3
1972	74 343	113,3	86,6	858,5
1973	84 348	124,1	94,8	889,7

Source: (i) Agricultural production — Bureau for Economic Research into Bantu Development, *Black Development in South Africa*, Pretoria, Benbo, 1976, Table B.9.4. Figures are not given for certain homelands in 1965-1967; the figures above are arrived at by assuming that the proportion of output contributed by Transkei, Ciskei, KwaZulu and Bophuthatswana in those years is the same as their mean proportion in 1968-1973.

(ii) Consumer price index - Republic of South Africa, Department of Statistics, *S.A. Statistics 1974*, p. 8.4.

TABLE 13 *Employment in Agriculture, Hunting, Forestry and Fishing 1960-1976* (thousands)

Date	(a) Whites	(b) Regular	(c) Casual	(d) Subsistence	(e) Fishing	TOTAL
1960	119,7					(1862,6)
1961					4,2	(1862,6)
1962					4,8	(1862,6)
1963					6,0	(1862,6)
1964					5,2	(1862,6)
1965	111,3	821,3	175,1	691,5	(5,0)	1804,2
1966	109,6	(819,9)	(181,0)	780,8	(5,0)	1896,3
1967	108,0	(818,4)	(186,8)	868,2	4,8	1986,2
1968	106,5	(817,0)	(192,7)	701,8	(5,0)	1823,0
1969	104,9	815,5	198,5	799,9	(5,0)	1923,8
1970	103,4	(774,2)	(192,0)	705,5	(5,0)	1780,1
1971	101,9	732,9	185,4	812,3	(5,0)	1837,5
1972	100,4	724,4	179,7	858,5	(5,0)	1868,0
1973	99,0	715,0	170,5	889,7	(5,0)	1879,2
1974	97,5	700,4	171,0	(853,5)	(5,0)	1827,4
1975						(1862,6)
1976						(1862,6)

Notes: (i) The 1960 and 1970 figures for whites are corrected census figures

(ii) The bracketed figures for regular and casual employees are obtained by linear interpolation between the 1965 and 1969 figures (for 1966-1968) and between 1969 and 1971 (for 1970)

(iii) The bracketed figures for fishing (all 5,0) are the mean of the available observations, which cover 1961, 1962, 1963, 1964, 1967. *(S.A. Statistics 1976).*

(iv) The 1974 figure for subsistence agriculture is the mean of the preceding three years.

(e) Available fishing statistics are displayed in Table 13, where the various components of agricultural employment are assembled.

Reasonably reliable employment growth figures can be obtained for 1965/66, 1966/67, 1967/68, 1968/69, 1971/72 and 1972/73 only, as regular and casual employment has had to be interpolated for 1970 and subsistence employment extrapolated for 1974. Regressing these employment growth figures on the three output measures, and eliminating insignificant parameters as described above, one arrives at the equation $E_t = 0$, i.e. expected employment growth in agriculture is nil. This being so, the average employment level for 1965—1974 is entered as the employment figure for 1960—1964 and 1975—1976.

All Other Sectors

In each of these sectors (except SIC 5 — construction) no correction will be made for labour underutilisation. The justification for this is that the hours worked in these sectors are long, many employees working close to the 46 hour maximum week laid down in the Factories Act. Earnings, too, are relatively high compared with the norms used in estimating agricultural employment.

A series of annual employment figures for **mining and quarrying** is available. These exclude employment in salt-works;[43] an estimate of salt-works employment of 2,6 thousand can be obtained from the 1970 census and this is added for all years. The resulting figures appear in Table 14.

Two series of annual employment figures for **manufacturing** are available; the first, based on the old Standard Industrial Classification runs from 1960 to 1970 and the second, based on the current SIC, from 1970 to 1976.[44] Figures from 1960 to 1969 are converted to the new SIC basis by multiplication by $\frac{\text{1970 employment — new SIC}}{\text{1970 employment — old SIC}}$ and the series appears in Table 14.

A series of annual employment figures is available which covers 'private establishments and public corporations which have as their main activity the generation and/or distribution of **electricity, gas and steam**'.[45] Employees in the water sector are not counted; however, many of them will be in the service of municipalities and thus they will be counted under local authorities.[46] This series is entered in Table 14.

A series of annual employment figures is available for **private construction.**[47] The corrected census figures in 1960 and 1970 are considerably higher than the corresponding figures from the annual series; the explanation for this would seem to lie in the fact that 'the construction sector is notorious for its

TABLE 14 *Employment* (thousands)

Date	Mining	Manufacturing	Electricity, Gas & Steam	Construction		Commerce, Catering and Accommodation				
				A	B	Wholesale	Control Boards	Retail	Motor	Licensed Accommodation
1960	601,8	629,2	14,3	121,2	89,2	(118,4)	(1,4)	(213,1)	(64,0)	(32,2)
1961	619,1	648,4	14,9	117,2	(91,0)	123,8	(1,5)	215,9	(66,7)	(33,5)
1962	607,5	681,4	15,8	124,4	(92,9)	(129,4)	(1,5)	(218,7)	(69,5)	(34,9)
1963	611,3	718,8	16,7	136,6	(94,8)	(135,3)	(1,6)	(221,5)	(72,4)	(36,3)
1964	630,3	795,6	17,1	171,2	(96,8)	(141,4)	1,7	(224,4)	75,4	37,7
1965	636,7	879,8	17,3	193,4	(98,8)	(147,8)	1,8	(227,3)	78,6	42,5
1966	636,7	902,0	18,3	227,9	(100,8)	154,5	2,0	230,3	(81,9)	43,6
1967	621,6	937,5	19,5	252,8	(102,9)	161,1	1,9	240,1	(85,3)	43,5
1968	635,6	952,5	21,3	267,5	(105,0)	170,4	2,1	255,8	(88,9)	44,1
1969	628,2	1 004,1	21,8	294,0	(107,2)	177,8	2,2	273,9	92,6	45,6
1970	657,9	1 068,9	22,5	317,8	(109,4)	183,0	2,1	289,1	98,1	48,0
1971	654,9	1 107,0	24,2	344,4	(111,7)	189,7	2,2	306,1	103,8	48,5
1972	625,7	1 127,5	26,2	343,9	(114,0)	193,2	2,2	316,7	106,7	53,4
1973	687,3	1 171,3	28,2	376,6	(116,3)	197,5	2,2	327,8	109,7	54,0
1974	676,6	1 223,9	29,9	422,2	(118,7)	202,1	2,3	341,9	108,6	54,9
1975	642,1	1 254,1	32,7	446,8	(121,2)	205,0	2,3	352,8	108,9	55,4
1976	673,8	1 269,7	37,3	446,9	(123,7)	207,2	2,5	359,8	110,5	55,7

Notes: (i) Sources as in text.

(ii) Brackets denote interpolated or extrapolated figures.

illegal employment of blacks'[48] and that the illegally employed are missing from the returns from which the annual series is constructed. But, as has already been noted, the population census figures are likely to be overestimates. Accordingly, half the difference between the population census figures and the annual series is added to the annual series in 1960 and 1970. These figures are entered in column B under construction in Table 14 and the remainder of this series is filled in using constant growth rate interpolation and extrapolation.

Series of annual employment figures are available as follows for **commerce, catering and accommodation:**

Coverage	*Years available*
(a) Wholesale trade, excluding wholesale trade in motor vehicles and accessories, commercial agencies and allied services and specialised services	1966 — 1976
(b) Agricultural control boards excluding board and commission members	1964 — 1976
(c) Retail trade, excluding specialised repair services and motor trade	1966 — 1976
(d) Motor trade excluding tyre rebuilders and retreaders, automotive electricians, radiator repairers and panel beaters and spray painters	1969 — 1976
(e) Licensed accommodation establishments	1964—1976[49]

Employment estimates for other years are arrived at as follows: in the cases of wholesale and retail trade, employment figures for 1961 are available;[50] figures for 1962—1965 are interpolated assuming constant employment growth rates from 1961—1966 and these rates are also used to extrapolate to 1960. In the case of control boards and licensed accommodation establishments a constant employment growth rate is assumed for the period 1960—1964 equal to the average growth rate from 1964—1968. In the case of the motor trade, an employment figure for 1964 is available;[51] figures for 1965—1968 are interpolated assuming a constant employment growth rate from 1964 to 1969 and this rate is used to extrapolate to 1960. Again, the employment figures are entered in Table 14.

Two series of annual employment figures are available in the **transport and communication** sector-one for South African Railways and Harbours and one for the Post Office.[52] Figures are available for private transport[53] and air transport[54] in 1970 and it will be assumed that the proportion of total transport and communication employment of these two subsectors is constant over the entire period 1960—1976. The resulting employment estimates are entered in Table 15.[55]

TABLE 15 *Employment* (thousands)

Date	Transport and Communication				Finance, Insurance and Real Estate					Government Services				
	SAR & H	Post Office	Air	Private	Banks	Building Societies	Insurance	Other	Total	Central	Bantu Homelands	Provincial	Local	Universities
1960	217,2	41,5	7,8	66,8					123,7	181,5	-	(143,5)	151,5	(8,7)
1961	214,9	42,4	7,8	66,4					(129,2)	187,4	-	145,4	148,9	(9,3)
1962	215,4	43,7	7,9	66,9					(135,0)	198,1	-	149,3	148,5	(9,9)
1963	220,2	44,0	8,0	68,2					(141,1)	218,5	-	154,1	151,7	(10,5)
1964	223,7	44,0	8,1	69,1					(147,4)	222,9	-	152,0	160,8	(11,2)
1965	226,9	43,9	8,2	69,9	36,6	6,3	(33,4)	(77,7)	154,0	223,3	-	154,4	167,2	11,9
1966	225,6	46,0	8,2	70,1	38,4	6,5	(33,4)	(79,8)	158,1	274,3	-	158,7	174,2	12,5
1967	221,1	46,9	8,1	69,2	41,1	7,0	(33,4)	(82,6)	164,1	273,9	-	161,3	174,2	13,3
1968	223,6	48,8	8,3	70,3	42,7	7,6	(33,4)	(85,3)	169,0	269,3	-	168,5	181,7	14,2
1969	224,6	52,8	8,4	71,6	45,6	8,3	(33,4)	(88,4)	175,7	277,7	-	179,9	185,2	15,3
1970	221,7	55,3	8,4	71,5	48,5	9,0	(33,4)	(92,6)	183,5	272,8	-	185,4	191,3	16,2
1971	227,7	59,8	8,7	74,2	50,7	9,9	30,3	(92,5)	183,5	287,9	-	190,6	201,6	18,0
1972	228.4	60,4	8,8	74,5	51,1	10,4	33,9	(97,2)	192,6	255,8	42,0	198,6	209,9	19,5
1973	229,9	62,8	8,9	74,6	54,7	11,3	33,9	(101,8)	201,7	258,0	90,0	201,3	210,6	20,8
1974	231,9	64,3	9,0	76,5	57,6	12,5	34,0	(106,0)	210,1	261,9	111,7	210,4	220,8	23,1
1975	250,2	67,7	9,6	82,1	59,0	13,5	34,3	(108,8)	215,6	272,4	122,0	220,2	232,0	25,4
1976	255,9	68,9	9,8	83,8	59,3	13,6	33,8	(108,7)	215,4	269,5	125,4	222,9	228,0	26,8

Notes: (i) Sources as in text.

(ii) Brackets denote interpolated or extrapolated figures.

Series of **finance, insurance and real estate** employment figures are available as follows:

Coverage	*Years available*
(a) Banking institutions, including the S.A. Reserve Bank and the Land and Agricultural Bank of S.A.	1965 – 1976
(b) Building societies	1965 – 1976
(c) Insurance companies	1971 – 1976[56]

Insurance company employment seems not to have grown at all over the period 1971 – 1976, so the average of these observations is entered for each year from 1965 to 1970. Real estate and business services and leasing of machinery are not covered, so a corrected figure is taken from the 1970 population census for these subsectors and it is assumed that employment in them is a constant proportion of total sectoral employment from 1965 – 1976. The corrected 1960 census employment figure is also used for the whole sector and figures for 1961 to 1964 are interpolated, assuming a constant employment growth rate over the period 1960 to 1965. The resulting figures are entered in Table 15.

Community, social and personal services are divided into two parts – government service and other community, social and personal services. The following annual employment series are available in the *government* sub sector:

Coverage	*Years available*
(a) Central government, excluding S.A. Railways and Harbours, the Post Office and elected office-bearers and part-time members of commissions.	1960 – 1976
(b) Bantu homeland authorities	1972 – 1976
(c) Provincial administrations	1961 – 1976
(d) Local authorities	1960 – 1976
(e) Universities	1965 – 1976[57]

The assumption is made that the growth in provincial administration employment was the same from 1960 to 1961 as it was from 1961 to 1962 and that university employment grew at a constant rate from 1960 to 1965 equal to the average growth rate from 1965 to 1970. The employment figures are entered in Table 15.

Employment growth/output growth relationships are calculated from the data in Table 16. In each case, employment growth is shown as well as growth in the output measure most highly correlated with it, and the final form of the relationship is shown. Interestingly, in two cases, employment growth is best correlated with current sectoral output growth (mining and

TABLE 16 *Employment Growth/Output Growth Relationships (SIC 2-4, 5A, 6-8 and 9A)*

Date	SIC 2 - Mining		SIC 3 - Manufacturing		SIC 4 - Electricity etc.	SIC 5A - Construction		SIC 6 - Commerce etc.		SIC 7 - Transport etc.	SIC 8 - Finance etc.		SIC 9 - Government	
	$\dot{E}_t$	$\dot{Q}_t$	$\dot{E}_t$	$\dot{Q}^*_t$	$\dot{E}_t$	$\dot{E}_t$	$\dot{Q}^*_t$	$\dot{E}_t$	$\dot{Q}_{t-1}$	$\dot{E}_t$	$\dot{E}_t$	$\dot{Q}_t$	$\dot{E}_t$	$\dot{Q}_{t-1}$
1969	-1,2	3,9	5,5	6,5	2,3	9,9	6,5			1,8	4,0	9,0	3,9	6,6
1970	4,7	5,4	6,5	4,9	3,2	8,1	4,9	4,8	7,9	-0,1	4,4	4,6	1,2	1,0
1971	-0,5	-1,5	3,6	4,2	7,6	8,4	4,2	4,8	6,4	3,8	0,0	2,9	4,9	3,0
1972	-4,5	-4,0	1,9	3,3	8,3	-0,1	3,3	3,4	2,3	0,4	5,0	4,1	4,0	4,3
1973	9,8	3,7	3,9	3,5	7,6	9,5	3,5	2,8	2,4	1,4	4,7	6,3	7,6	9,8
1974	-1,6	-0,4	4,5	7,1	6,0	12,1	7,1	2,7	4,7	1,2	4,2	4,3	6,0	5,1
1975	-5,0	-2,1	2,5	2,3	9,4	5,8	2,3	2,1	4,4	7,3	2,6	1,8	5,3	7,3
1976	4,9	2,3	1,2	1,4	14,1	0,0	1,4	1,6	2,0	2,2	-0,1	2,0	3,1	6,4
	$\dot{E}_t = 1{,}14\dot{Q}_t$		$\dot{E}_t = 0{,}86\dot{Q}^*_t$		$\dot{E}_t = 7{,}31$	$\dot{E}_t = 1{,}65\dot{Q}^*_t$		$\dot{E}_t = 0{,}68\dot{Q}_{t-1}$		$\dot{E}_t = 2{,}25$	$\dot{E}_t = 0{,}67\dot{Q}_t$		$\dot{E}_t = 0{,}77\dot{Q}_{t-1}$	
	(0,36)		(0,09)			(0,22)		(0,08)			(0,12)		(0,09)	
	$R^2 = 0{,}57$		$R^2 = 0{,}60$			$R^2 = 0{,}61$		$R^2 = 0{,}58$			$R^2 = 0{,}35$		$R^2 = 0{,}53$	

Notes: (i) *Source:* Employment growth rates - Tables 14 and 15.
Output growth rates - *Statistical News Releases P.12.1*, 7 October 1976 and 24 March 1977.

(ii) *Notation:* $\dot{Q}_t$ - current sectoral output growth
$\dot{Q}_{t-1}$ - sectoral output growth lagged by a year
$\dot{Q}^*_t$ - current total output growth
The brackets underneath the coefficients indicate the estimated standard errors

(iii) The 1969 observation is left out in SIC 6, as the 1968 employment figure is not as reliable as those from 1969 onwards.

finance), in two more, it is best correlated with lagged sectoral output growth (commerce and goverment), in two, it is best correlated with total output growth (manufacturing and construction) and in two infrastructural sectors (electricity and transport), no significant correlation can be found between any of the output growth measures and employment growth.

For the *non-goverment* subsector of other community, social and personal services, annual employment figures are available only for laundry and drycleaning services.[58] Employment estimates have to be based on corrected census figures, the subsector not being adequately covered by industrial censuses. In this case, however, it does not seem sensible to base interpolations and extrapolations on growth of output in the sector. This is because the sector consists of a few highly-paid professions (such as doctors) and a vast mass of poorly-paid domestic servants. Output figures will therefore vary as the situation of the highly-paid segment; employment figures will vary as the demand for low-paid services. Instead Q_t^* is used with the equation:

$$\frac{E_{70}}{E_{60}} = \prod_{t=61}^{70} (1 + aQ_t^*)$$

from which a is estimated at 0,42. The results are tabulated in Table 17.[59]

Total employment, finally, is calculated and is displayed in Table 18, which is the second main table in this study. In order to appreciate its significance, one needs to note how the sectoral composition has changed between 1960 and 1969 (during a high growth period) and between 1969 and 1976 (when economic growth was appreciably lower). Table 19 contains the sectoral compositions in 1960, 1969 and 1976 as well as the average sectoral employment growth rates for 1960-1969 and 1969-1976.

Table 19 suggests a division of industrial sectors into four categories:
(a) *Primary industries,* viz. agriculture and mining, in which total employment growth over the period 1960-1976 has been negligible.

(b) The private community, social and personal services sector, the greater part of which is made up of *domestic servants.* Although employment has grown, the share of the sector in the total has declined slightly from 1960 to 1976.

Despite their declining share of total employment, these three sectors still account for nearly half of it (59,9% in 1960 and 47,3% in 1976).

(c) Predominantly *privately-owned sectors* (manufacturing, construction, commerce and finance) where employment growth has been consistently above average, but *lower* in the second period than in the first, as a consequence of a reduction in the economic growth rate. These sectors increased their share of total employment from 25,2% in 1960 to 35,6% in 1976

Continued on p. 33

TABLE 17 *Employment in Other Community, Social and Personal Services* (thousands)

Date	Employment (corrected census)	$\dot{Q}^*_t$	Estimated Employment
1960	843,6		843,6
1961		4,1	858,2
1962		5,4	877,8
1963		7,7	906,4
1964		6,7	932,1
1965		6,1	956,1
1966		4,5	974,3
1967		7,4	1004,7
1968		4,3	1023,0
1969		6,5	1051,1
1970	1072,9	4,9	1072,9
1971		4,2	1091,9
1972		3,3	1107,2
1973		3,5	1123,6
1974		7,1	1157,3
1975		2,3	1168,5
1976		1,4	1175,4

Source: 1960 - Population Census, vol. 6, table 2.
1970-Population Census Report 02-05-09, table 3.
The 1960 figure is obtained by adding and correcting religous organisations, welfare organisations, labour relations, promotion of business interests, art, culture and political associations, entertainment and recreation, domestic, laundries, cleaning, dyeing etc. The 1970 figure is obtained from welfare organisations, business and labour associations, religious organisations, social and related community services, n.e.c., motion pictures and other entertainment services, amusement and recreational services n.e.c., personal and household services.

TABLE 18 *Total Employment, 1960-1977* (thousands)

Date	SIC 1 - Agriculture	SIC 2 - Mining	SIC 3 - Manufacturing	SIC 4 - Electricity etc.	SIC 5 - Construction		SIC 6 - Commerce etc.	SIC 7 - Transoort etc.	SIC 8 - Finance etc.	SIC 9 - Community Services etc.		TOTAL
					A	B				Govt.	Non-Govt.	
1960	1863	602	629	14	121	89	429	333	124	485	844	5533
1961	1863	619	648	15	117	91	441	332	129	491	858	5604
1962	1863	607	681	16	124	93	454	334	135	506	878	5691
1963	1863	611	719	17	137	95	467	340	141	535	906	5831
1964	1863	630	796	17	171	97	481	345	147	547	932	6026
1965	1804	637	880	17	193	99	498	349	154	557	956	6144
1966	1896	637	902	18	228	101	512	350	158	620	974	6396
1967	1986	622	937	19	253	103	532	345	164	623	1005	6589
1968	1823	636	952	21	267	105	561	351	169	634	1023	6542
1969	1924	628	1004	21	294	107	592	357	176	658	1051	6812
1970	1780	658	1069	23	318	109	620	357	183	666	1073	6856
1971	1837	655	1107	24	344	112	640	370	183	698	1092	7062
1972	1868	626	1127	26	344	114	672	372	193	726	1107	7175
1973	1879	687	1171	28	377	116	691	377	202	781	1124	7433
1974	1827	677	1224	30	422	119	710	382	210	828	1157	7586
1975	1863	642	1254	33	447	121	724	410	216	872	1169	7751
1976	1863	674	1270	37	447	124	736	418	215	899	1175	7858
1977	1863	692	1285	40	457	127	743	427	218	943	1182	7977

Source: Tables 13, 14, 15 and 17.

TABLE 19 *Sectoral Compositions and Growth Rates of Employment, 1960-69 and 1969-76* (percent)

SIC	Share in 1960 (%)	Share in 1969 (%)	Share in 1976 (%)	Growth Rate 1960-69 (% p.a.)	Growth Rate 1969-76 (% p.a.)	
1	33,7	28,2	23,7	0,4 (-)	-0,5 (-)	-
2	10,9	9,2	8,6	0,5 (-)	1,0 (-)	+
3	11,4	14,7	16,2	5,3 (+)	3,4 (+)	-
4	0,3	0,3	0,5	4,6 (+)	8,4 (+)	+
5	3,8	5,9	7,3	7,5 (+)	5,2 (+)	-
6	7,8	8,7	9,4	3,6 (+)	3,2 (+)	-
7	6,0	5,2	5,3	0,8 (-)	2,3 (+)	+
8	2,2	2,6	2,7	4,0 (+)	2,9 (+)	-
9A	8,8	9,7	11,4	3,4 (+)	4,6 (+)	+
9B	15,3	15,4	15,0	2,5 (+)	1,6 (-)	-
	100,0	100,0	100,0	2,34	2,06	

Notes: (i) A + in the right-hand column denotes a higher growth rate from 1969-1976 than from 1960-1969 and a − the converse. A + in the growth rate columns denotes a sectoral growth rate higher than the mean and a − the converse.

(ii) *Source:* Table 18.

(d) Predominantly or wholly *state-owned sectors* (electricity, transport and communication and government service) where employment growth has generally been above average and *higher* in the second period than in the first, despite the drop in economic growth. Employment in these sectors increased from 15,1% to 17,2% from 1960 to 1976.

The effect of the shift in shares on total employment growth may be assessed by calculating the average rate over the period 1969 to 1975, assuming the shares in 1969 had been the same as in 1960. In this case, the average employment growth rate turns out at 1,78% p.a. so that the shift in shares between 1960 and 1969 made the economy about 16% more labour-absorptive each year than it otherwise would have been.

The level of employment may be predicted for 1977 if three assumptions are made, viz. that the economic growth rate for 1977 is the same as for 1976 (1,4%), and that the 1976 pattern of sectoral output growth rates is repeated. Sectoral figures and the total are entered at the bottom of Table 18. A rise in employment of 107 000 or 1,5% is predicted.[60]

UNEMPLOYMENT

Tables 9 and 18 may be combined to yield unemployment figures for each year from 1960 to 1977. These are shown in Table 20.

It appears that there has been an increase in unemployment during the entire period 1960 - 1977, the *number* almost doubling from 1,2 million in 1960 to 2,3 million in 1977. The trend rate of unemployment was stable from 1960 to 1968 at around 19%, but has shown a tendency to rise since the latter date and now lies above 22%. Three further pieces of analysis will advance our understanding of the situtation:

(a) Table 21 displays the mean annual growth in output, labour supply, employment and productivity.

In the second period, there appears to be a slight rise in the rate of increase of the labour supply coupled with a drop in the rate of increase of employment. The drop in employment growth, however, is not nearly as great as the drop in output growth; if it had been, the rise in numbers of unemployed would have been much more spectacular.

(b) The unemployment figures may be divided roughly into *agricultural under-employment* and non-agricultural unemployment. The basis for doing this is the assumption that the 1960 and 1970 corrected census figures can be used to divide labour *supply* into *agricultural and non-agricultural.* Labour supply figures for agriculture in non-census years are estimated using the model $L_t = aQ_t$ (a is estimated at 0,52). The results are tabulated in Table 22 and displayed on Figure 1. Continued on p. 39.

TABLE 20 *Unemployment in South Africa, 1960-1977* (thousands)

Date	Labour Supply	Employment	Unemployment		5-year moving average	
			(No.)	(%)	(No.)	(%)
1960	6769	5533	1236	18,3		
1961	6915	5604	1311	19,0		
1962	7066	5691	1375	19,5	1340	19,0
1963	7232	5831	1401	19,4	1383	19,1
1964	7404	6026	1378	18,6	1398	18,9
1965	7592	6144	1448	19,1	1402	18,5
1966	7785	6396	1389	17,8	1451	18,6
1967	7983	6589	1394	17,5	1493	18,7
1968	8187	6542	1645	20,1	1555	19,0
1969	8401	6812	1589	18,9	1627	19,3
1970	8614	6856	1758	20,4	1726	20,0
1971	8809	7062	1747	19,8	1777	20,1
1972	9066	7175	1891	20,9	1857	20,4
1973	9331	7433	1898	20,3	1908	20,5
1974	9576	7586	1990	20,8	1986	20,8
1975	9765	7751	2014	20,6	2069	21,1
1976	9997	7858	2139	21,4		
1977	10283	7977	2306	22,4		

Source: Tables 9 and 18.

These results are represented graphically on Figure 1.

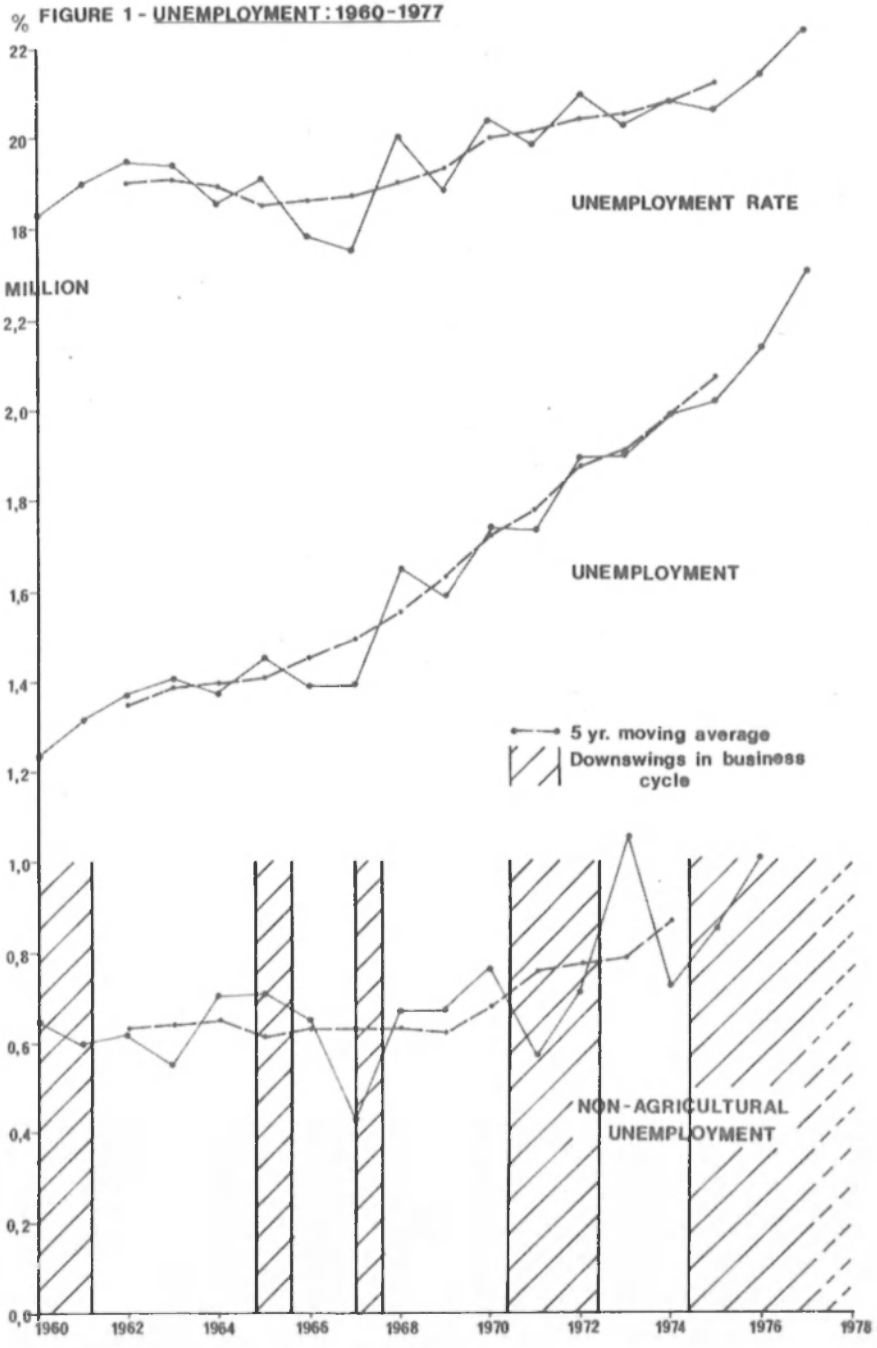

% FIGURE 1 - UNEMPLOYMENT: 1960-1977
22
20
18
UNEMPLOYMENT RATE
MILLION
2,2
2,0
1,8
1,6
1,4
1,2
UNEMPLOYMENT
5 yr. moving average
Downswings in business cycle
1,0
0,8
0,6
0,4
0,2
0,0
NON-AGRICULTURAL UNEMPLOYMENT
1960
1962
1964
1966
1968
1970
1972
1974
1976
1978

TABLE 21 *Mean Annual Growth in Output, Labour Supply, Employment and Productivity*

Mean annual growth in:	1960-69	1969-76	1960-76	Second period compared with the first
Output	5,86	3,89	4,99	drop
Labour supply	2,43	2,52	2,47	rise
Total employment	2,34	2,06	2,22	drop
Labour productivity	3,52	1,83	2,77	drop

Source: Tables 9 and 18, *Statistical News Release P.12.1* (7 October 1976)

TABLE 22 *Agricultural Underemployment and Non-Agricultural Unemployment 1960-1976* (thousands)

Date	Agricultural labour supply (corrected census)	Q_t (agriculture)	Estimated labour supply (agriculture)	Agricultural Underemployment		Non-agricultural unemployment	
				Number	%	Number	%
1960	2452		2452	589	24,0	647	15,0
1961		9,9	2579	716	27,8	595	13,7
1962		3,4	2625	762	29,0	613	13,8
1963		6,2	2710	847	31,3	554	12,3
1964		-12,0	2540	677	26,7	701	14,4
1965		0,2	2543	739	29,1	709	14,0
1966		6,7	2632	736	28,0	653	12,7
1967		23,7	2959	973	32,9	421	8,4
1968		-10,5	2796	973	34,8	672	12,5
1969		2,8	2837	913	32,2	676	12,1
1970	2776	-4,1	2776	996	35,9	762	13,1
1971		16,3	3013	1176	39,0	571	9,9
1972		1,7	3040	1172	38,6	719	11,9
1973		-19,7	2726	847	31,1	1051	16,0
1974		25,8	3095	1268	41,0	722	11,1
1975		-4,6	3020	1157	38,3	857	12,7
1976		-1,4	2998	1135	37,9	1004	14,3

Source: 1960 and 1970 population censuses; *Statistical News Release P.12.1* (7 October 1976); Tables 9,18,20.

TABLE 23 *Variation of Employment Growth with Output Growth 1976/77*

(a)Sectors where employment is independent of output growth

SIC	Employment Growth (thousands)
1	0
2	0
4	3
5B	3
7	9
Subtotal	15

(b)Sectors where employment growth is dependent on sectoral output growth in the preceding period.

SIC	Employment Growth (thousands)
6	16
9A	46
Subtotal	62

In these cases Qt-1 is assumed to be the mean of the realised figures from 1969 to 1976.

(c) *Sectors where employment growth is dependent on sectoral or total output growth in the current period:*

	Employment growth (thousands) based on growth rates in							
SIC	1969	1970	1971	1972	1973	1974	1975	1976
2	30	41	-12	-31	28	-3	-16	-18
3	71	54	46	36	38	78	25	15
5A	48	36	31	24	26	52	17	10
8	13	7	4	6	9	6	3	3
9B	32	24	21	16	17	35	11	7
Sub-total	194	162	90	51	118	168	40	17

Source: Text, Table 16, *Statistical News Release, P.12.1 (7.10.76)*

From (a), (b) and (c):

Total output growth (%)	Total employment growth	
	(No.)	(%)
6,5	271	3,4
4,9	239	3,0
4,2	167	2,1
3,3	128	1,6
3,5	195	2,5
7,1	245	3,1
2,3	117	1,5
1,4	94	1,2

and the regression model with insignificant coefficients eliminated fitted to these data is $E_t = \underset{(0,03)}{0,53Q^*_t}$

$R^2 = 0,85$

TABLE 24 *Alternative Estimates of Agricultural Employment 1965, 1969, 1971, 1972 and 1973* (thousands)

Date	Regular Employment	Revised Regular Employment	Variation	Effect on Unemployment Rate	Homeland Employment	Revised Homeland Employment	Variation	Effect on Unemployment Rate
1965	821,3	1232,0	+411	-5,4%	691,5	421,0	-271	+3,6%
1969	815,5	1223,3	+408	-4,9%	799,9	430,1	-370	+4,4%
1971	732,9	1099,4	+367	-4,2%	812,3	382,6	-430	+4,9%
1972	724,4	1086,6	+362	-4,0%	858,5	400,8	-458	+5,1%
1973	715,0	1072,5	+358	-3,8%	889,7	389,1	-501	+5,4%

Source: Tables 9, 11 and 12.

TABLE 25 *Alternative Estimates of Construction Employment 1960, 1965, 1970 and 1975* (thousands)

Date	Estimated Employment	Estimated Employment (low alternative assumption)	Estimated Employment (high alternative assumption)	Variation	Effect on Unemployment Rate
1960	210,3	121,2	299,5	± 89,2	± 1,3%
1965	328,7	227,9	429,5	±100,8	± 1,3%
1970	427,2	317,8	536,6	±109,4	± 1,3%
1975	570,6	446,9	694,3	±123,7	± 1,3%

Source: Tables 14 and 18.

TABLE 26 *Alternative Estimates of Other Community, Social and Personal Services 1960, 1965, 1970 and 1975* (thousands)

Date	Estimated Employment	Estimated Employment (alternative assumption)	Variation	Effect on Unemployment Rate
1960	843,6	750,3	- 93,3	+ 1,4%
1965	956,1	866,6	- 89,5	+ 1,2%
1970	1072,9	989,7	- 83,2	+ 1,0%
1975	1168,5	1092,0	- 76,5	+ 0,8%

Source: Tables 17 and 18.

The picture that emerges is one of increasing agricultural underemployment and of non-agricultural unemployment which fluctuates around 600 000 in the 1960s and around a trend which rises to 900 000 (and probably beyond) in the 1970s. The picture is probably more accurate for the 1960s (where labour supply estimates are based on interpolation) than for the 1970s: the puzzle is, why should people stay on the land in the context of increasing underemployment and an increasing real wage gap between agricultural and non-agricultural sectors? The puzzle probably arises because the oversimple agricultural/non-agricultural dichotomy leaves out of account the 'men of two worlds'-migrant labourers; it is likely that some of the rising unemployment reflects shorter periods of productive activity among them.

(c) By considering how employment growth would have varied had alternative output growth rates been realised between 1976 and 1977, one may arrive at estimates of the economic growth rates currently required to stabilise the number of unemployed and the unemployment rate. The alternative growth rates considered are those realised for each year from 1969 to 1976. Table 23 sets out the calculation.

If the unemployment rate is to be stabilised, E_t = 2,81% and $\dot{Q}_t^*$ = 5,3%; if the number is to be stabilised, $\dot{E}_t$ = 3,58% and $\dot{Q}_t^*$ = 6,7%.

SENSITIVITY ANALYSIS

Three important assumptions have been made in deriving the employment figures; alternative assumptions might plausibly be made in each case and so the sensitivity of the results to these variations is tested in this section.

(a) Two assumptions may be varied in the field of agricultural employment.

Firstly, we have assumed that the agricultural census correctly enumerates regular farmworkers. The alternative assumption is that the actual number is 50% above the census figure (see note 39). Secondly, we have assumed that the Tomlinson Commission estimate (made on data collected 25 years ago) of real income per farming unit required 'to attract a Bantu to full-time farming . . . and to bind him permanently to the land', is still valid. The alternative assumption is that the income required is the same as the African wage for regular employment on *white farms.* Table 24 displays the effects of these variations in years for which the relevant data are available.

These are very large variations and identify the agricultural sector clearly as the one where more information is most urgently needed. Ignorance of conditions in subsistence agriculture, in particular, is very great; it has been treated here in the conventional manner, which assumes it is a serious production sector rather than (not to put too fine a point on it) a ***dumping ground.*** It would be reasonable to divide subsistence farming units into two broad categories:

(i) Those which have a reasonably balanced set (in terms of age and sex) of labour inputs and which are capable of producing at a level which will sustain the unit without outside assistance;

(ii) those which have *unbalanced* labour inputs (consisting of the very old and the very young and far more women than men) and which cannot survive in the long-run without income from other sources.

In terms of production levels and alternative employment possibilities, these categories will exhibit rather different characteristics and a more satisfactory picture would be obtained if they were analysed separately. Such an exercise must await more detailed analyses of conditions in contemporary subsistence agriculture.

(b) We have assumed that half the difference between the annual employment series and the corrected population census figures in construction represents employment. Two alternative assumptions could be made: that employment is limited to that given by the annual employment series and that the whole difference represents employment. Table 25 shows the difference that these assumptions make in 1960, 1965, 1970, and 1975.

The alternative assumptions, therefore, make a constant difference of 1,3% either way in the unemployment rate.

(c) We have used corrected census figures to estimate employment in other community, social and personal services; uncorrected figures might be used on the assumption that the census correctly enumerated employment in this subsector. In this case, the level of employment was 750 300 in 1960 and 989 700 in 1970 and the coefficient a in the model

$\frac{E_{70}}{E_{60}} = \prod_{t=61}^{70} (1 + a\dot{Q}^{*}t)$ is estimated at 0,49. Table 26 shows the difference that the alternative assumptions make in 1960, 1965, 1970 and 1975.

The alternative assumption adds a declining amount to the unemployment rate, ranging from 1,4% in 1960 to 0,8% in 1976.

SUMMARY OF RESULTS, AND CONCLUSIONS

The following principal results emerge from this study:

(a) The labour supply increased from 6,77 million in 1960 to 10,28 million in 1977. The rate of increase has itself been increasing, the current rate being 2,81% p.a. The racial composition of the workforce has shifted slightly in favour of Whites, Coloureds and Asians who formed 26,9% of the total in 1960 and 28,8% in 1976. High rates of African population growth in the sixties and seventies have yet to make their impact on labour supply and a reversal of the trend just noted can be expected in the future. Activity rates have been increasing amongst women of all races, women forming 29,7% of the labour force in 1960 and 32,8% in 1976.

(b) Total employment increased from 5,53 million in 1960 to 7,98 million in 1977. The rate of increase over the period 1960-1976 was 2,22% p.a.; from 1960-1969, it was 2,34% p.a. and from 1969-1976, it was 2,06% p.a. The drop is a result of two factors working in opposite directions: firstly, an increase in the labour-absorptive capacity of the economy (at a given growth rate) arising from a shift in sectoral employment shares and secondly a decrease in labour-absorption arising from a lower average growth rate in the second period. The second factor predominated: however, more remarkable than the drop in the growth of employment was the drop in labour productivity growth. The economy, therefore, shows ability to adapt to lower growth rates in such a way that a large drop in the employment growth rate is avoided. One way in which this has been achieved in the 1970s is that employment growth in predominantly or wholly state-owned sectors of the economy has been increased, despite the slowdown in the growth rate; such a trend cannot be maintained indefinitely without financing difficulties being experienced.

(c) Unemployment increased from 1,24 million in 1960 to 2,30 million in 1977. For most of the sixties, unemployment fluctuated around the 19% level; in the seventies it has risen to beyond 22%. The increase in unemployment results from two factors working in the same direction; a rising growth rate of labour supply and a falling employment growth rate. Non-agricultural unemployment has certainly been rising in the seventies, though it is difficult to say precisely how fast. At present, if the unemployment rate is to be stabilised, the economy needs to grow at 5,3% and if the number is to be stabilised a 6,7% growth is required. Compared with the permanent *structural* unemployment, cyclical variations are relatively unimportant (with the exception of the current deep recession which has lasted since late 1974). This is a consequence of an economic structure where employment in primary production and by the state accounts for a large proportion (59,7% in 1960 and 49,5% in 1976) of the total.

(d) The defects of this investigation fall into two categories. The first set of problems has specifically to do with *marginal workers* and marginal

jobs. Marginal workers (or the *secondary labour force)* are those who enter the labour market only under certain conditions (usually when, relatively speaking, the market is a sellers' one) i.e. at certain times of year (where the demand is seasonal) or at certain points on the business cycle. The question of the size of the secondary labour force cannot be settled on the basis of the information used in this study. Marginal jobs have been discussed in agriculture and it has been seen that these introduce a substantial element of uncertainty into the analysis. The *informal sector* has not been trated at all; our ignorance of conditions in it is almost complete.

The second set of problems relates generally to the inaccuracies and limitations of the data on which the study is based. These are considerable; it is to be hoped that they will be progressively reduced. As more comprehensive and accurate information becomes available, parts of this model could be reworked and, as this process continues, more accurate results should emerge.

What of the future? In the short-run it appears that the unemployment rate could be stabilised, indeed, perhaps a little lowered, if a return to the growth rates of the sixties could be effected. If this cannot be done, a continuously deteriorating situation seems to be inevitable. In any case the number of unemployed will not be reduced (except, perhaps, at the peak of the business cycle), since at no time has the South African economy grown at a sustained rate of over 6½%. A high growth rate is necessary for the economic system to reproduce itself, but it cannot deal with the underlying problem of labour underutilisation now in excess of 20%. While the precise links between unemployment and income distribution have yet to be traced out, it is certain that this degree of underutilisation will give rise to the continued existence of a *poverty tail* which cannot be eradicated merely by increases in the wage level, no matter how substantial. It follows that South Africa is on too labour-saving a growth path; if so, we have a problem in common with many non-metropolitan capitalist countries. The *systems perspective* of Leijonhufvud[61] provides a framework within which possible explanations may be discussed; according to it, high levels of unemployment would be a consequence of communication failure within the economic system. Signals presupposed in the standard economic adjustment mechanisms are not being transmitted.
One possible explanation might lie in the fact that South Africa depends condiserably on the importation of technologies developed in economies with different factor endowments from ours; in this case the communication failure is between domestic factor prices and techniques employed. Another might be sought in the difficulty that a section of the labour force (located in the rural areas) has in entering the labour market.

Barriers to entry are adminstratively imposed and the age, sex and educational levels may make this section particularly unable to transmit the

necessary signals for their absorption.[62] Much more investigation will be needed before the evidence becomes available to settle the relative importance of these or other hypotheses. This study, I hope, indicates more detailed work on labour absorption is urgently required.

NOTES AND REFERENCES

1 'South Africa' is taken to denote the territory specified in the Act of Union, i.e. excludes South West Africa and includes the *Bantu homelands* (among which is the Transkei).

2 See G.de Kock, 'The Business Cycle in South Africa-recent tendencies,' *South African Journal of Economics,* Vol. 43, March 1975, p.1.

3 This is confirmed in J. Knight, 'Labour Supply in the South African Economy and its Implications for Agriculture,' *Saldru Farm Labour Conference,* University of Cape Town, 1976, p.23:'. . . the 1960 census report states that some of the unemployed were voluntarily unemployed or 'resting' and that 'it is not always possible to classify persons correctly as unemployed on the little or inadequate information furnished on the questionnaire'. In 1970 a resting migrant who specified an industry and occupation was not classified as unemployed'. Yet further evidence is provided by the implausibly low unemployment percentages in some race-sex categories for 1970.

4 J. Maree and de Vos, *Underemployment, Poverty and Migrant Labour in the Transkei and Ciskei,* S.A. Institute of Race Relations, 1975.

5 An eighth, for 1976/81 was published too late for consideration here.

6 Knight.*op.cit.*, p.7.

7 P.J. van der Merwe, 'Black Unemployment Problems in South Africa,' and 'Unemployment Statistics', *Workshop on Unemployment and Labour Reallocation,* Pietermaritzburg, March 1977. (The former paper has also appeared as Bureau of Economic Policy and Analysis *Report No.6,* Pretoria, 1976).

8 Van der Merwe, 'Unemployment Statistics,' Table 3.

9 *Ibid., Table 4.*

10 Van der Merwe, 'Black Unemployment Problems,' p.13.

11 *Ibid.*, Table 1.

12 *Ibid.*, p.13.

13 Knight, *op.cit.*

14 *Ibid.*, p.4.

15 *Ibid.*, p.27.

16 *Ibid.*, p.38.

17 *Ibid.*

18 International Labour Office, *Concepts of Labour Force Underutilisation,* Geneva, ILO, 1971. pp.43-63.

19 It might be objected that the identification of unemployment with

underutilisation is too cavalier a step and that the term *unemployment* should be reserved for *open unemployment* (i.e. cases where economically active persons do not work at all). This should be distinguished from *underemployment* (where economically active persons work for shorter periods than they desire). Such a distinction is, however not possible to make on the basis of presently available South African information, as should become clear in the course of this study. And, even if it were possible, it questionable whether it would be desirable. In countries where there is little in the way of social security, open unemployment is likely to be relatively rare, as workers are obliged to obtain some income in order to survive; people in this position share enough of the characteristics of the openly unemployed to make the open unemployment/underemployment dichotomy of dubious value. From the point of view of the origins of poverty and waste of labour time, the underutilisation problem *is* the unemployment problem in a society like ours.

20 International Labour Office, *op.cit.*, p.44.

21 *Ibid.*, p.45.

22 *Ibid.*, *loc.cit.*

23 The initial division will be in to the nine Standard Industrial Classification categories (as defined in Dept. of Statistics *Standard Industrial Classification of all Economic Activities (SIC),* Pretoria, Dept. of Statistics, 1974). Further subdivisions are considered where necessary.

24 Republic of South Africa, Dept. of Statistics *Population Projections for the Republic of South Africa, 1970-2020,* (Report 02-06-01), Pretoria Dept. of Statistics, 1976.

25 J.L. Sadie, 'Demographic Data Pertaining to the Non-White Population of South Africa'. *South African Journal of Economics.* vol.38, Nos 1 and 2, March and June 1970.

26 Republic of South Africa, Department of Statistics, *1970 Census, sample tabulations: Bantu* (Report 02-02-02).

27 J.A. Vermaak, *Die Vraag na en Aanbod van Mannekrag in die Republiek van Suid-Afrika, Deel 1.* Pretoria, Human Sciences Research Council, 1974,pp.8-10. The formulae are:

$$a_{80} = a_{70} \cdot \frac{100 + \Delta_{60,70}}{100} \qquad \text{(rates in fractional form)}$$

where $\Delta_{60,70} = \dfrac{a_{70}^2 (1 - a_{70})}{a_{60}^2 (1 - a_{60})}$ if $a_{70} > a_{60}$

$$a_{80} = 1 - (1 - a_{70}) \frac{(100 + \Delta_{60,70})}{100}$$

where $\Delta_{60,70} = \dfrac{a_{70} (1 - a_{70})^{12}}{a_{60} (1 - a_{60})^{12}}$ if $a_{70} < a_{60}$

$a_{80} = a_{70}$ if $a_{70} = a_{60}$

The effect of these extrapolation formulae is to make a_{80} closer to a_{70} than a_{60} i.e. predicts more *a* conservative change in the activity rate than the change measured between the base years.

28 Republic of South Africa, Department of Statistics, 'Midyear Estimates of Population-Republic of South Africa,' *Statistical News Release, P.11.* 25 October 1976, Pretoria, Dept. of Statistics, 1976, p.2.

29 See B. Carnahan and J.O. Wilkes, *Digital Computing and Numerical Methods,* New York, Wiley, 1973, pp. 303-306. The interpolating polynomial is in this case:

$$a_2(t) = \sum_{i=0}^{2} L_i(t)\, a(t_i)$$

where $L_i(t) = \prod_{j \neq i}^{2} \frac{(t - t_j)}{(t_i - t_j)}$. If $t = 0$ at 1960

$$L_0(t) = \left(\frac{t - 10}{0 - 10}\right)\left(\frac{t - 20}{0 - 20}\right) = \frac{t^2 - 30t + 200}{200}$$

$$L_1(t) = \left(\frac{t - 0}{10 - 0}\right)\left(\frac{t - 20}{10 - 20}\right) = \frac{t^2 + 20t}{100}$$

$$L_2(t) = \left(\frac{t - 0}{20 - 0}\right)\left(\frac{t - 10}{20 - 10}\right) = \frac{t^2 - 10t}{200}$$

$$\therefore a_2(t) = \left(\frac{t^2}{200} - \frac{3t}{20} + 1\right)a_0 + \left(\frac{t^2}{100} + \frac{t}{5}\right)a_{10} + \left(\frac{t^2}{200} - \frac{t}{20}\right)a_{20}$$

$$a_2(t) = a_0 + \frac{t}{20}(-3a_0 + 4a_{10} - a_{20}) + \frac{t^2}{200}(a_0 - 2a_{10} + a_{20})$$

30 These rates are calculated from *Midyear Estimates of Population,* p.1.

31 There are various degrees of disaggregation within the 1-digit SIC categories; this is necessitated by the form of the available information.

32 These are published in *S.A. Statistics 1976,* Pretoria, Dept. of Statistics, 1977, and *Quarterly Bulletin of Statistics,* June 1977. The former source is used wherever possible.

33 The reason why population census employment figures are avoided wherever possible is that some of the instructions to enumerators were:

1 A male who described himself as unemployed and who was living in a rural area, had to be classified as employed in agriculture.
2 A man who indicated the occupation and industry of his last job, but who was unemployed, had to be classified as employed in the industry specified.
3 All females of 16 or over in rural areas who were unemployed, had to be classified as farm workers, unless they were wives of household heads.
4 A woman who gave her occupation as a domestic servant and who was unemployed, had to be classified as employed as a domestic servant.'

Republic of South Africa, Department of Statistics, *Circular to Enumerators No.* 14/71, 11 May 1971, quoted in L.Loots, 'Alternative Approaches to the Estimation of Unemployment," *Workshop on Unemployment and Labour Re-allocation.* Pietermaritzburg, 1977, pp. 10-11.

This means that there is a tendency for the population census to overestimate employment; there is no basis for establishing the degree of overestimation. Two other sources of error have been noted-the discrepancies between the census population counts and the best recent estimates of population (noted in Table 6) and existence of employed persons who could not be assigned to specific industrial sectors (see Table 2). On the assumption that uncounted and unassigned persons are distributed between sectors in the same proportions as the counted and assigned, correction factors for population census sectoral employment figures are calculated below:

	Whites		Coloureds		Asians		Africans	
	M	F	M	F	M	F	M	F
Estimated population 1960 Census	0,996	0,997	0,989	0,998	1,009	1,000	1,122	1,100 (1)
Total employed Assigned employed	1,007	1,011	1,035	1,020	1,011	1,000	1,014	1,011 (2)
Correction factors	1,003	1,008	1,024	1,008	1,020	1,000	1,138	1,112
Estimated population 1970 Census	1,030	1,017	1,030	1,007	1,019	1,014	1,120	0,998 (1)
Total employed Assigned employed	1,026	1,016	1,088	1,113	1,058	1,259	1,033	1,066 (2)
Correction factors	1,057	1,033	1,121	1,121	1,078	1,277	1,157	1,064

Source: (1) Table 6

(2) Table 2

Then $E = \Sigma C P$

where E is estimated employment in sector

C_i is the correction factor for race-sex category i

P_i is the census estimate of sectoral employment in category i and the sum is taken over all race-sex categories.

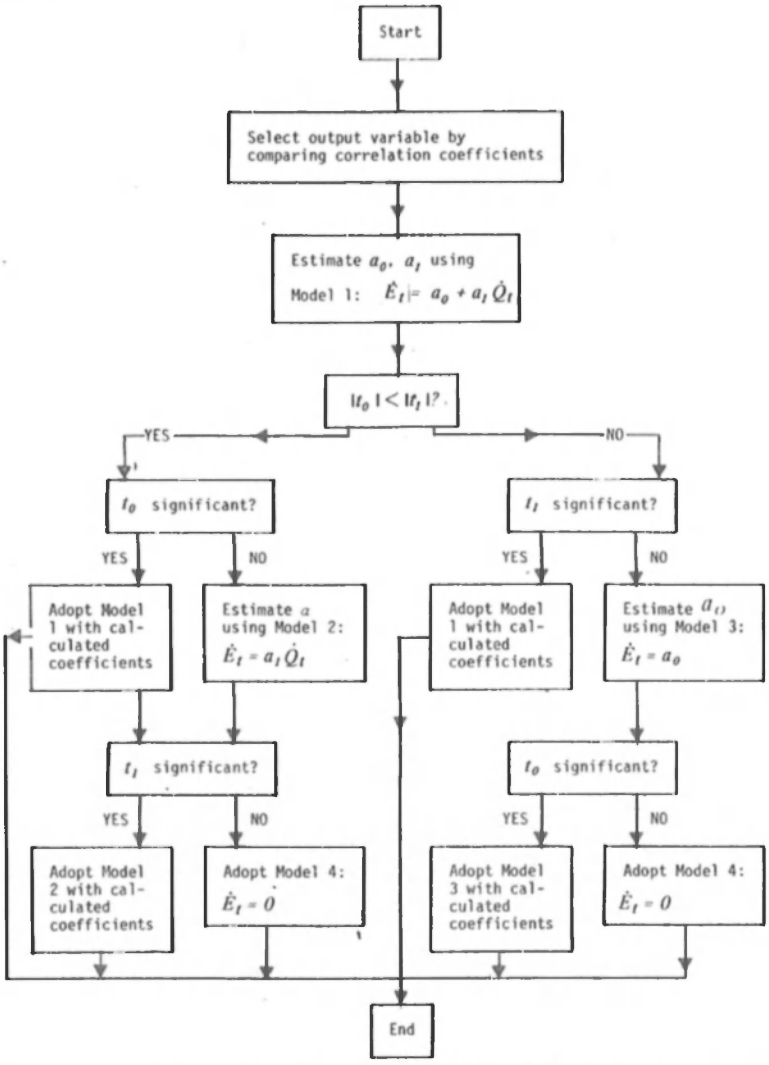
34 Republic of South Africa, Department of Statistics, *Statistical News Release P12.2*, 7 October 1976, Pretoria, Dept. of Statistics, 1976.

35 The half-interval method is used. See Carnahan and Wilkes, *op.cit.*, pp. 267-268.

36 P.le Roux (in 'Korttemyn Indiensnemingstatistiek :'n Kritiese Beskouing,' *South African Journal of Economics*, Vol. 43, June 1975, pp. 139-161) shows that the annual and monthly statistics of employment in manufacturing (over the period 1964-1970) were unreliable because of errors in estimation techniques (which the Department of Statistics was reported as revising). Because the estimation techniques led to changing bias in the statistics, econometric analyses must be regarded

as suspect. No analysis is available of the short-term statistics in other sectors, but it is possible that similar errors appear in them.

37 The regression procedure can be summarised in the following decision tree:



38 See, for instance, P.J. Nel,'The Non-White Worker in South Africa,' *Volkskas Finance and Trade Review*, Vol XI, No.4, December 1975,pp. 147-149, and J.L. Sadie, 'R.S.A.-Homelands Labour Relations', *Workshop on Unemployment and Labour Reallocation*, Pietermaritzburg, March 1977,pp.15-16.

39 There is a disturbing indication of possible under-reporting of regular employees in the agricultural census. 'The two sources (a S.A. Agricultural Union Survey carried out in 1969 and the 1968/69 agricultural census-C.S.) also diverge considerably on the number of regular employees, the S.A.A.U. estimate being higher (for male regular employees-C.S.) by no less than 278 000 (53%). It is possible that the difference represents under-reporting and poor coverage in the agricultural census; since the census is undertaken by the police force, farmers may have an incentive not to report labour employed illegally'. Knight, *op.cit.*, p.19.

40 Knight provides further corroboration (based on the S.A.A.U. 1969 survey) that the assumption is approximately correct. See Knight, *op.cit.*, p. 22 and Table 9.

41 Union of South Africa, *Summary of the Report of the Commission for the Socioeconomic Development of the Bantu Areas within the Union of South Africa*, (U.G. 61/1955), Pretoria, Government Printer, 1955, p.113.

42 A formal proof of this proposition is offered. We have supposed that all subsistence farming labour is underutilised. If the number of persons involved in subsistence farming is n and the earning norm is q, then, if total production is Q, the average degree of underutilisation is $\frac{nq - Q}{nq}$

i.e. $1 - \frac{Q}{nq}$, so that the unemployment among persons is $n(1 - \frac{Q}{nq})$ $= n - \frac{Q}{q}$, i.e. employment is $\frac{Q}{q}$, as in Table 12. Now suppose that n^* persons earn more than q, so their average earnings are $q^* > q$. They are counted as fully employed. The average degree of underutilisation among the rest is $\frac{n^*q - (Q - n^*q^*)}{(n - n^*)q}$ so that unemployment among the underutilised is $(n - n^*)\left(\frac{n^*q - (Q - n^*q^*)}{(n - n^*)q}\right)$ i.e. $n^* + \frac{n^*q^*}{q} - \frac{Q}{q}$

i.e. employment among this group is $n - n^* + n^* - \frac{n^*q^*}{q} + \frac{Q}{q}$ and total employment is $n^* - \frac{n^*q^*}{q} + \frac{Q}{q} = \frac{Q}{q} + n^*\left(1 - \frac{q^*}{q}\right) < \frac{Q}{q}$ since $q^* > q$.

43. *S.A. Statistics, 1976*, p. 7.25.

44 *Ibid.*

45 *Ibid.*

46 Loots, *op.cit.*, p.34.

47 *S.A. Statistics, 1976*, p. 7.25.

48 Loots, *op.cit.*, p.34 the corrected census figures are 299,6 thousand in 1960 and 536,5 thousand in 1970.

49 *S.A. Statistics, 1976*, p. 7.26.

50 *Census of Wholesale and Retail Distributive Trade, 1960-61*, Pretoria Dept. of Statistics.

51 *1963-64 Census of the Motor Trade*, Pretoria, Dept. of Statistics.

52 *S.A. Statistics, 1976*, p. 7.26.

53 *1970 Census of Transport and Allied Services*, Pretoria, Dept of Statistics.

54 *1970 Population Census.*

55 The reconciliation of this series with the corrected 1960 population census figures presents an unresolved puzzle; the series gives an employment figure of 333,3 thousand while the census found only 212,9 thousand.

56 *S.A. Statistics, 1976*, p. 7.26

57 *Ibid.*, p.7.26 - 7.27.

58 *Ibid.*, p.7.27.

59 It is certainly the case that this procedure leads to an overestimate in that the number of domestic servants is overestimated. (See note 33 for the reason why this should be so). Counts of domestic servants in white houses in metropolitan areas and on white farms are available, but there are no statistics for domestic servants employed in flats or in smaller towns by whites or for employees of other races. It does not seem to me, therefore that one can get a more reliable estimate than the one offered, on the basis of presently available information.

60 If anything, this prediction is too optimistic; special circumstances associated with the fact that 1977 is the third year of a severe recession may reduce employment growth in most sectors to below the levels predicted by the model.

61 See A. Leijonhufvud, *Keynes and the Classics*, London, Institute of Economic Affairs, 1969, pp.24-26.

62 Through lack of effective demand. Leijonhufvud makes the point that the offer of labour services by the unemployed does not constitute *effective* demand. The point might also be made that this section of the labour force is unable to make (except by desperate measures) the politically effective demands to call forth state policies aimed at their absorption.

Foreign African Labour Inflows to South Africa and Unemployment in Southern Africa

by

Duncan Clarke

This study, examining some relationships of international labour migration to unemployment in Southern Africa, consists of a number of inter-related parts: firstly, a note on some theses regarding foreign African labour supply; secondly, a comment on historical phases of labour supply; thirdly, notes on some implications for theories of unemployment and/or *marginalisation;* fourthly, an examination of the historical trend in the origins and supply of foreign African workers in the context of prevailing trends in labour surpluses inside South Africa; fifthly, a brief review of sectoral-specific aspects and *problems of displacement* of foreign African labour; sixthly, a comment on the broad character of changing policies for such displacement - in their statutory, contractual, and administrative forms; and, finally, a specification of some of the implications of prevailing trends and policy for both South Africa and supplier states. The study ends by drawing some broad conclusions relevant to theoretical, empirical and policy debates on the subject.

SOME THESES ON FOREIGN AFRICAN LABOUR SUPPLY

In a recent lengthy review of contemporary labour supply in South Africa, Knight has posited the question: 'Is it time for government to accelerate *further* the replacement of foreign Africans with South African nationals?'[1] The same author has also noted, in a somewhat contradictory statement, that the South African government may (now) well *choose* to implement a policy of replacement 'should it espouse a path of self-interested reformism to give Blacks a better deal.'[2]

More overt recommendations for the displacement of foreign labour have been made by van der Merwe who, in advocating a policy on lay-offs,

proposes, 'in the general and local interest', that priority be given to the 'the lay-off of *contract* workers from neighbouring territories.'[3] This author advances an additional perspective, *viz.* there should be 'close co-operation between the different countries in Southern Africa including the Black homelands within the borders of the Republic, so that the burden of unemployment can be equitably shared and economic development be promoted in labour surplus areas.'[4]

In one way or another, these statements raise four debatable propositions. Firstly, there is the notion that policy on displacement, even if it exists, has not been long-lived. Secondly, there is the suggestion that reformism is to be equated with the implementation of a displacement policy, the full consequences of which are not made apparent. Thirdly, it is pre-supposed that the essential issue for economic policy is one of mere unemployment *per se.* And, finally, the rather novel perspective is put forward that unemployment, itself the consequence of policy and/or structural disorder, should be, or indeed even could be, formally shared between *labour reserves.*

In contradistinction, this study will argue that foreign labour displacement in various forms has been a structural component of the economic system; that its manifestations have not been limited to unemployment in peripheral supplier states, but that, in addition, there has steadily emerged a marginalised labour force located mainly but not exclusively in these states; and that a new irreversible phase appears to have started in which various conditions have made less critical the dependence of South Africa on foreign sources of labour supply.

It will also be apparent that the study is less concerned with moral aspects of the question as to whether or not foreign labour displacement should be advised, or on what terms. Rather, the concern is to demonstrate the historical fact itself, together with aspects of its systemic roots and complexity whilst at the same time examining some related labour supply trends in historical perspective.

A BRIEF HISTORICAL PERSPECTIVE

In the past, foreign African labour supplies entered South Africa under a variety of arrangements.[5] The earliest form, that of slavery in the Cape, was soon followed by a period of voluntary migrancy during which time independent migrants (e.g. from Ndebeleland and Damaraland in the nineteenth century) responded to relatively high wages. Such movements were also founded upon a relatively flourishing peasant economic base in various parts of Southern Africa.

Subsequently workers arrived as a consequence of forced labour codes in the dependencies of the British and Lusitanian Empires. An era of *underdevelopment* changed the internal structure of the economic system, hastening the decline of significant strata of the Southern African peasantry. Rapid proletarianisation, in the form of a contracted, circulating flow of labourers , soon followed, involving a more substantial *necessary* exodus from supplier areas. Institutionalised private recruitment networks facilitated, and on occasion intensified, these movements. Soon thereafter, these agencies were aided or regulated by inter-state contracts, this culminating in a steady monopolisation of contract labour bureaux. Both processes responded to the imperatives of efficient labour *canalisation* and an expanding demand of the primary industry base of the economic system.

In recent decades there has arisen a problem of acute *structural dependency* in the case of certain supplier states which now find extreme difficulty in asserting an independent economic policy over labour, wages and employment. This, the current phase, has produced new patterns of labour supply.

STRUCTURAL DEPENDENCY: UNEMPLOYMENT AND MARGINALISATION

Structural dependency has been closely associated with the development of substantial labour surpluses throughout Southern Africa. This has not been inconsistent with job-specific shortages in certain areas, sectors or classes of work. It has also continued to be associated with a policy determining *regularised and planned* displacement and re-absorption of foreign labour under an internationally organised contract labour system.

Displacement policy has been an enduring component of all foreign labour supply phases of the twentieth century. It has become more employer-determined in the latest phase - that of growing labour surplus. Indeed, in the case of typical contractual forms of international labour migration in Southern Africa, displacement clauses have been a *sine qua non* of international agreements. That supplier states and recruitees have agreed to such terms makes this point no less valid.

Nonetheless, for conceptual purposes, various forms of displacement might be distinguished. In the pure theory of contract labour supply, labourers displaced at the end of contract might be re-contracted after a period of time. The interstitial period of unemployment between contracts may be functional to both employer and workers within such a system. Furthermore, a *recycling* of labour might occur in such a process, in which the same contractees are continuously recruited over time, the only variation in compostion stemming from natural demographic change or alterations in the level and/or form of demand. Displacement would here

be regarded as responding to particular phases of the economic cycle, changing techniques of production and changes in the division of labour or *labour process*. Such a model, although reflecting elements of the situation in Southern Africa would, however, be devoid of an historical perspective.

Since about 1960, this contractual displacement pattern has been augmented by the selective absorption and displacement of certain workers from different supplier states. This has arisen because in the past low wages tended to cause relative supply constraints while higher wages now act to eliminate such constraints. Demand patterns articulated by management now condition inter-state supply volumes and patterns.

Two further qualitative aspects of the displacement of foreign workers may be noted: firstly, a *relative* displacement (that is, in relation to the level of productive employment in South Africa); and secondly, an *absolute* displacement (considered simply in terms of the actual numbers of such productive workers *deliberately* allowed by policy to remain within the system). If dates could be given to these two new phases, then the relative displacement trend could be regarded as probably starting in the late 1950s whilst the absolute displacement tendency has been most marked since around 1972.

This displaceable foreign African labour force has, however, only reflected part of the overall labour supply process. It has been the most visible component; and hence to some extent it has been a natural focus for the analyst's attention. But for each migrant there exists a non-migrant component.

In addition, because of the specific composition and form of demand for foreign labour as well as recent changes therein in the dominant sectors in South Africa, the displaceable foreign labour force employed inside the recipient economy has been reflected by the reproduction of a marginalised stratum in the supplier states. This has been most evident in the case of the principal sector using foreign African labour - the mining industry. In this sector, the age/sex/health characteristics of demand have been closely circumscribed to fit a carefully pre-conceived and planned pattern of demand for adult men between, say, 18-40 years, in a specific state of health, with *good* employment records, certain basic skills and a specific country of origin. The *residual component* of the family and/or social unit either not employed (for failure to meet such restrictive criteria) or not within the demographic bounds of employability have constituted a marginalised stratum who have in the main (but not necessarily completely) been excluded from direct absorption into production in the dominant capitalist sector. Their indirect contribution to the costs of subsistence and social reproduction should not, however, be ignored. At the same time, this has not been the only cause of a marginalised labour force nor have such persons come to constitute its only element.

The advent of an intensified relative displacement of foreign labour from the core productive area of the sub-continental economic system has made relatively more significant the emergence of the new phenomenon of a marginalised labour force (as understood in the broader sense). The effect of relative displacement is that such persons, who would even qualify for inclusion as employable labour under the old criteria, are now losing in a permanent way the possibility of being absorbed into these *hegemonic levels of production*. This element of the labour force, growing in size, has thus become more and more excluded, even where many have indirectly depended for subsistence on the wages paid out *through* the capitalist sector. These tendencies have thus re-enforced the marginalisation which has emerged primarily from the unevenness of accumulation in Southern Africa and the growth of labour surpluses in the periphery.

It is of course important to assess correctly the nature of exclusion. For instance, marginalisation as understood here could not be said to be appplicable in the case of workers displaced merely by short-term recessionary conditions and who later found themselves re-absorbed. Such a reserve labour supply usually fulfills other functions in the economic system. Thus the degree to which labour surplus has become evident in a structural form, and the extent to which elements of it have become excluded from absorption into production in the dominant sectors, both within supplier states and South Africa, remain critical factors in any assessment of marginalisation. Before considering such dimensions of the issue, it will be useful to review historical trends in foreign African labour supply in South Africa.

THE ROLE OF FOREIGN AFRICAN LABOUR IN SOUTH AFRICA

At the outset it is necessary to bear in mind the origins, sources and limitations of available data on the foreign African labour supply in South Africa.

Firstly, there is no central record of reliable data.[6] However, various primary and secondary sources can be utilised to provide a reasonable picture of the foreign African labour supply.[7] From these sources, various deficiencies of information are apparent, even though the number of studies has increased of late and the subject is now better covered than before.[8] Even so, it is hard to escape the view that foreign labour supply remains a badly under-researched issue. Analysis based on contemporary data should help formulate questions for further research as well as point to areas in which information is weak or non-existent at the moment.

TABLE 1 *Number of Foreign-Born Africans in South Africa, 1911-1977*

Year	Total Number	Women		Men	
		Number	Annual Average % Change	Number	Annual Average % Change
1911	229 000	41 000	-	188 000	-
1921	280 000	64 000	+ 2,23	216,000	+ 0,95
1936	334 000	73 000	+ 1,28	261 000	+ 1,38
1946	539 000	104 000	+ 6,14	435 000	+ 6,66
1951	606 000	121 000	+ 2,47	485 000	+ 2,29
1960	836 000[1]	186 000	+ 4,22	550 000	+ 0,34
1960	586 320[2]	102 360[6]	- 2,24	483 960	- 0,02
1965	494 000[3]	n/a	n/a	n/a	n/a
1970	600 000[4]	n/a	- 2,82[7]	n/a	n/a
1970	486 060[5]	43 060	+ 0,04[8]	443 000	- 0,85
1977	n/a	n/a	n/a	290 000[9]	- 4,93

Notes: (i) *Source:* W.J Breytenbach, *Migratory Labour Arrangements in Southern Africa*, Pretoria, Africa Bureau, 1972, p.16; Ken Owen, *Foreign Africans*, Johannesburg, South African Institute of Race Relations, 1963.

(ii) 1 Froneman estimate.
2 1960 Census estimate.
3 From Froneman Report.
4 Breytenbach's figure.
5 1970 Census estimate.
6 1960 Census estimate.
7 1960-70 annual average estimate using 1960, 1.
8 1960-70 annual average estimate using 1960, 2.
9 Own estimate of foreign African *workers* in mining (210 000: based on published figures for the Chamber of Mines affiliates plus 10 000 estimated for non-affiliated mines); agriculture (estimated at 40 000); domestic labour (estimated at 10 000); all other employment (estimated at 30 000).

The Historical Trend

Because of these difficulties of definition and classification as well as the absence of various consistent and reliable time series, it is difficult to evaluate accurately trends in the numbers of foreign Africans (and by deduction foreign African workers) in South Africa. Nonetheless, an examination of the best available data can enable the trend to be isolated.

A series of data for 1911-1970 is found in Table 1, the reliability of all of which could perhaps be questioned. Nonetheless, in so far as a recent trend can be discerned, it is that the total number of foreign-born Africans appears to have decreased since 1960; in the case of men only, notably since 1970. The latter trend suggests that a similar pattern applies to foreign African *workers* (as most men are in employment-this being the *rationale* for their very presence in South Africa).

No figures of an official and reliable nature are available for 1977, at the time of writing, but assuming that in non-mining sectors the level of employment of foreign Africans was no more than the census recorded in 1970, and that 10 000 represents a fair figure for foreign Africans in *non-affiliated* mining employment, then it would seem that as of early 1977 there were probably around 290 000 foreign African men in employment in South Africa.[9] This would represent a significant reduction from 1970. The trend exhibited is consistent with known tendencies in mining employment and other labour supply patterns found elsewhere in the economy.

What must also be appreciated is the rapidly changing situation regarding the numbers of foreign African workers employed in South Africa, especially with regard to the mining industry. Indeed, the Chamber of Mines has in the recent past set itself the target of a 50% South African content in its African labour supply for April 1977.[10] At a level of employment of (say) 415 000 workers, this would mean a 17,6% rise in the April 1977 component of South Africans over recorded figures for June 1976. With developing labour surpluses in South Africa, it is not difficult at this stage to envisage the Chamber pushing up its South African content to an even higher level by year-end.

The Foreign African Work-force in South Africa: Character and Composition

The foreign African labour supply inside South Africa meets certain specific requirements in the economic system. This is evidenced in its special character in terms of socioeconomic composition as well as its history of incorporation into the overall labour supply pattern. The socioeconomic composition has a bearing on the question of displaceability. Whilst these characteristics have been examined in greater depth elsewhere, only a few pertinent points will be recorded here.[11] For present purposes, use will be made only of the data derived from the 1970 census in South Africa.

Table 2 shows the numbers of foreign-born Africans in South Africa. It is not possible to obtain recorded data for *local-born foreigners,* i.e. those of *foreign origin* from the state's perspective, but who are really born *of* South Africa. Altogether 443 000 African men and 47 060 African women were identified as foreign-born in 1970. Since 1970 the country composition has altered much, largely as a result of changes in patterns in the mining complex (for data see Table 7). Most strikingly, there existed a high masculinity ratio (9,4:1), reflecting the extreme sex-selective bias of foreign labour demand and the severe constraints on entry of foreign women into employment in South Africa.

TABLE 2 *Country of Birth of Foreign-Born Africans in South Africa, 1970*

Country	Men	%	Women	%	Ratio Men/Women
Namibia	1 240	0,3	180	0,1	6,8
Zimbabwe	11 060	2,6	580	0,1	19,0
Malawi	106 580	24,0	60	0,1	1776,3
Lesotho	118 920	26,8	28 480	60,5	4,2
Swaziland	15 840	3,6	8 420	17,8	1,9
Botswana	40 840	9,2	6 520	13,8	6,3
Tanzania	180	0,1	0	-	n/a
Mocambique	142 800	32,2	2 100	4,5	68,0
Angola	3 440	7,8	0	-	3440,0
Other	1 840	0,4	140	0,1	13,1
Total	443 000	100,0	47 060	100,0	9,4

Source: Republic of South Africa, Department of Statistics, *Population Census* (Report No. 02-05-01), Pretoria, Department of Statistics, 1971.

The age-sex specific composition and location of foreign workers (see Table 3) reveals further their assigned role in South Africa. Most if not all were in the country for purposes of work. Indeed, prohibitions apply to the entry of traders and self-employed foreign Africans. A high concentration is thus found in the economically active age groups 20-50 years. This overall demographic profile fits a labour supply pattern of predominantly single-men migrancy. A noticeable bunching is found for instance in the age group 20-34 years, 55% of men being placed in this category. Significantly, too, most were located in *white* areas though some foreign men were also found in *homelands*. Another striking fact is that in 1970 foreign African men accounted for fully 15-16% of male African workers aged 20-29 years.

TABLE 3 *Foreign-Born Africans in South Africa as a Proportion of all Africans by Age-Sex Specific Group and by Area of Location, 1970.*

Age	Men		
	RSA	White Areas	Homelands
0-4	0,1	0,1	0,0
5-9	0,1	0,2	0,0
10-14	0,1	0,2	0,0
15-19	3,2	5,1	0,5
20-24	16,1	20,2	3,1
25-29	15,2	18,6	2,6
30-34	13,6	17,2	2,4
35-39	12,3	15,6	1,5
40-44	10,9	14,1	1,8
45-49	10,2	13,8	1,7
50-54	9,4	13,0	1,5
55-59	6,6	10,6	1,2
65-69	3,9	7,3	1,0
75+	3,9	7,6	1,3
Total	6,0	9,6	0,7
Women	0,6	1,1	0,1

Source: Republic of South Africa, Department of Statistics, *Population Census* (Report No. 02-02-02), Pretoria Department of Statistics, 1973.

The sectoral composition of foreign-born Africans for 1970 is shown in Table 4. Mining has been and indeed remains the most significant sector, particularly for men (accounting for 80% thereof), followed by agriculture. Very few foreign African men were designated as inactive whilst a relatively large portion of women were so classified.[1] For the most part, working women were found in low-paid agricultural or domestic work. It is significant too that some foreign African men and women were recorded as being unemployed in 1970.

TABLE 4 *Sectoral Composition of Foreign-Born Africans in South Africa 1970.*

Sector	Men	%	Women	%
Agriculture	39 580	8,9	5 140	10,9
Mining	352 480	79,6	40	0,1
Manufacturing	11 020	2,5	660	1,4
Electricity	900	0,2	0	0
Construction	6 080	1,4	20	0,1
Commerce	5 120	1,2	340	0,7
Transport	3 420	0,8	0	0
Financing	660	0,1	40	0,1
Services	11 660	2,6	9 620	20,4
NEA, ? and Unemployed	12 020	2,7	31 200	66,3
Total	443 000	100,0	47 060	100,0

Notes: (i) *Source:* Republic of South Africa, Department of Statistics, *Population Census*, (Report No. 02-05-01), Pretoria, Department of Statistics, 1971.

(ii) NEA denotes *not economically active* (as defined), whilst ? denotes *unspecified*. No disaggregated data are provided for this lumped category.

At a subsectoral level, foreign Africans accounted for 67% of workers in gold and uranium, 53% in non-gold metallic ores, 47% in coal mining, 21% in other mining, 7% in forestry and logging and 5% in agricultural and livestock production. There has thus been a high degree of sectoral concentration, notably in the relatively low-paid primary sectors.

However, not all foreign workers have been unskilled and/or without formal education. In 1970, 28% had had schooling beyond standard 3 whilst 960 were classified as professionals. Others had technical or artisan qualifications.

These rudimentary facts confirm the view earlier advanced that the foreign African labour supply has been of a special character, despite its diminishing relative significance in the context of total employment. By implication too, those missing from what would be the normal demographic profile have been located inside supplier states, presenting in the periphery a similarly uneven but dependent social grouping.

Foreign African Labour and Local Labour Surplus

The extent to which the displaceable foreign African labour force might actually be displaced can only really be assessed in the light of knowledge about the volume and composition of present labour surpluses in South Africa.

Simkins, for instance, has calculated an all race 21% unemployment rate for South Africa for 1976, this rate implying a level of 2 139 000 workers.[13] This estimate has of course been subject to some criticism, notably by Loots.[14] In applying more restrictive assumptions and a more rigid sensitivity analysis, the latter has nonetheless reached the conclusion that local South African unemployment probably still exceeds one million whilst the rate is around 10-15% of labour supply. Furthermore, Loots's analysis confirms the rising trend of unemployment, a point on which there appears little disagreement amongst a wide range of economists.

Knight, too, has reached similarly oriented and independent conclusions regarding South Africa's African labour supply. Indeed, he argues that 'the replacement of all foreigners would not nearly exhaust the total amount of underemployment.'[15] This conclusion, however, is qualified by the view that such exhaustion would be 'more complete' in the case of substitution by the available surplus of African men, especially those in the age group 20-39 years for which the mining industry exerts a specific demand. Indeed, for this calculation Knight was using figures for 1970, when foreign African supply was noticeably above and local surpluses well below currently prevailing levels. Even then, a labour pool of economically active African men aged 20-39 years numbered 351 000 potential workers in rural homelands alone. Whilst it would be quite correct to qualify this level by a reducing factor eliminating those who would not meet normal health (and other) requirements for mine work (the sector in which most foreigners have been and remain employed), qualifications in the alternative direction

(1) the inflation of the 1970 level of 351 000 men aged 20-39 years by the would substantially magnify the estimates of available labour surplus. These latter qualifications would appropriately include:
addition of recorded demographic increases in numbers in this age cohort for 1970-1977;
(2) the inclusion of (the not inconsiderable number of unemployed) men aged 18-20 years in the calculation;
(3) the inclusion of a proportion of unemployed men in excess of 39 years but aged less than (say) 45 years;
(4) a small allowance for the surplus of African women now available to work in selected occupations currently using foreign men (in both mining and other sectors);

(5) The fact of some available labour surplus on white-owned farms and in urban areas.[16]

Further, it is significant to note that for the most part these points still hold even when relatively conservative unemployment estimates are used to estimate ranges of substitutable local labour. Thus van der Merwe, who calculated African unemployment for 1976 at round 528 000, also cites *underemployment* in homelands at a level of at least 396 000 workers.[17]

Clearly, a different question is thus now raised. If substitutable surpluses of local labour have existed in the past, and manifestly do exist now, what explains the fact that the displaceable foreign African labour force has not been earlier displaced, or why has it not been more significantly reduced in volume? Put slightly differently, why the apparent paradox of continued and substantial labour import amidst conditions of growing structural labour surplus?

Firstly, is such a movement of labour unique? In the recent past, Southern Africa has been fertile ground for such paradoxical movements. Thus, for instance, Southern Rhodesia continued to import foreign (Malawian) contract workers through the Rhodesian African Labour Supply Commission right up until April 1974, even though evidence of local African unemployment had been officially acknowledged in the late 1950s and the unemployment situation had grown steadily worse throughout the period of the 1960s and 1970s. Now of course, Rhodesia has taken to exporting its labour surplus to the South African gold mines under contract with Wenela; and still the RALSC remains in mothballs, presumably awaiting resuscitation if, or when, Dr Banda decides to rescind a previous ban on Malawian labour exports.

Secondly, can some explanation be found for such a paradoxical movement of labour? A variety of inter-related reasons appear to help explain the apparent paradox of import amidst surplus in the South African case:

(1) For *strategic reasons*, connected with the diversification of labour supply sources both between foreign supplier states and local reserves

and within South Africa itself, the Chamber of Mines has attempted through its supply policy to minimise the prospects of supplier state/area collusion in wage-fixing or bargaining over conditions of labour supply.

(2) The Chamber has pursued a policy of international-cum national *polyvalency* (under which has been sought a maximum number of supply sources and bonds) in order to secure maximum variability in contract forms and a substantial discretion in controlling the degree of dependence on any one source.

(3) The displaceability of foreign African workers has served to facilitate relatively low-cost adjustment of the supply volume and composition to changing levels of demand which have been largely dictated by prices set on world markets.

(4) The utilisation of foreign labour has had an effect of diminishing the liability of both employers and the state, (a) for workers' subsistence during periods of lay-off and unemployment both of the cyclical and contract-determined variety; (b) for meeting certain of the necessary costs of subsistence consumption of dependents, and (c) for the provision of necessary post-employment subsistence consumption.

(5) Related to (4), the rate of accumulation has been raised in the short and longer term by avoiding such liabilities whilst re-investment occurs either in a local context or, if located as foreign investment inside foreign supplier states, under international agreements or conditions which effectively guarantee capital and dividend repatriation.

(6) Certain foreign workers have possessed non-substitutable skills or at least skills which could not be easily substituted for in the short-term. The demand for such workers has remained if not increased as the labour process has changed from a high unskilled/skilled ratio.

(7) Localised farm labour shortages, largely dictated by managerially-determined wage policies, have been found in the vicinity of international boundaries, thereby facilitating a substantial use of foreign casual labour.

(8) The structural dependence of certain supplier states on policies of labour export-for reasons of their need for foreign exchange earnings, the securement of lower levels of domestic unemployment and thereby *stability* has provided South Africa with a degree of international leverage on the sub-continent.

(9) Some *concealed* foreign workers have successfully insulated themselves against detection, with or without employer collusion.

(10) The utilisation and concentration of foreign labour supply in various sectors, notably in the mining complex, has probably helped reduce the prospective incidence of effective unionism and collective worker action.

(11) Foreign contractees have on average provided a longer period of service per contract than local workers, thereby raising the amount of

labour-time supplied associated with the fixed costs of recruitment; further, in recent years the average contract length of South African miners has been shortening.

(12) A foreign *and* migrant labour supply has acted as a long-term insurance against significant adverse trends potentially of detriment to the gold mining industry which, if they materialised and led to that sector's rapid demise, would have created major problems of labour re-allocation if workers were localised and/or stabilised in employment *in situ*.

Nonetheless, as has been argued, local labour absorption is proceeding apace, albeit in a gradual and/or selective fashion. In 1970 foreign African men in employment, numbering around 443 000, constituted about 15,3% of the total number of Africans recorded as being in permanent (non-casual) employment and 7,8% of the economically active African men at that time. By early 1977 the (estimated) 290 000 foreign African men in wage-jobs constituted probably only 8,7% of the Africans in recorded permanent employment and 4,2% of such persons defined as economically active. Relative and absolute displacement has thus been evidenced.

These trends also illustrate how the response of the economic system has been calculatedly gradual in character. Indeed, it will probably continue to be so, as was the policy response of the state and employers in the Rhodesian case (post-1958) and as a consequence of which there still remain (for somewhat different reasons) around 200 000 foreign African workers in that country.

What then of *secular reversiblility* in the trends ascertained about the displacement of the foreign African labour supply in South Africa? Here the conclusion reached in part must depend on an assessment of the causes of contemporary conditions. At this juncture, economists normally divide up into those concerned with *proximate* determinants and those more or less inclined towards assessment at the level of *structural* determinants.

In the former instance, it is possible to see the present cuts in the employment level of foreign workers as a product merely of recessionary conditions. Here reversibility becomes largely a function of the timing and extent of the upturn of the economic cycle as well as its sectoral demand compostion. However, it would be as well to remember at this point that displacement from the mining complex has taken place at a time of Chamber-determined rising real wages, recovery in the prices of many basic minerals and a relatively satisfactory stabilisation of the gold price (for the short-term at least). Moreover, the strategic reasons underpinning the new labour policy of the Chamber of Mines tend to discount the reversibility prospect in the light of politico-economic conditions inside South Africa and the international sub-continental economy.

Perhaps more significant though is the fact that domestic African labour supply growth will undoubtedly be substantial over the period up to the year 2000 (see here Table 5) at which time it is estimated by the Department of Statistics that there will be nearly twice as many local-born Africans in the country (34,7 million) as compared to 1975.

TABLE 5 *Population Projections for South Africa: South African-Born Africans, 1970-2000* (Millions)

Year	Number	Percent of Population	Quinquennial Increment	Annual Average Percent Growth
1970	15,428	70,36	2,275	2,95
1975	17,703	70,69	2,662	3,01
1980	20,365	71,30	3,034	2,98
1985	23,399	71,72	3,377	2,89
1990	26,776	72,22	3,777	2,82
1995	30,553	72,77	4,195	2,75
2000	34,748	73,37		

Notes: (i) *Source:* Calculated from: Republic of South Africa, Department of Statistics, *Population Projections for the RSA: 1970 to 2020*, (Report No. 02-06-01), Pretoria, Department of Statistics, 1976.

(ii) 1 The Department of Statistics notes that these are the 'most likely projections', that the degree of uncertainty increases the further the date considered moves away from the base year (1970).

2 No calculation is made in respect of foreign-born Africans living in the RSA (estimated by the Department of Statistics at 'approximately 500 000 for 1970').

3 Assumptions regarding mortality, fertility and migration have been derived from historical trends.

Allied to this global trend is the probability that, in the relevant age groups 20-44 years (see here Table 6), the numbers of local African men will rise from 2 832 000 to around 4 525 000 by 1990. And, according to Sadie, the 15-20 age group alone will number 1 970 000 then compared to 990 000 in 1975.[18]

TABLE 6 *Age-Specific Population Projections for South Africa: South African-Born African Men, 1970-1990* (Thousands)

Age Group	1970	1975	1980	1985	1990	Increment	
						1975-85	1975-90
20-24	663,8	783,5	1 000,0	1 095,3	1 187,4	311,8	403,9
25-29	563,3	648,3	765,9	979,4	1 072,7	331,1	424,4
30-34	478,3	547,7	630,8	745,9	954,3	198,2	406,6
35-39	411,7	461,4	528,8	609,5	722,2	148,1	260,8
40-44	343,6	391,1	440,2	506,6	586,4	115,5	195,3
Total	2 460,7	2 832,0	3 365,7	3 936,7	4 523,0	1 104,7	1 691,0

Source: Republic of South Africa, Department of Statistics, *Population Projections for the RSA: 1970 to 2020*, (Report No. 02-06-01), Pretoria, Department of Statistics, 1976.

It is hard to foresee just how this increment in prospective work-seekers will find direct subsistence from wage-labour unless employment growth rates run at exceedingly high annual rates on a sustained basis over the long-term. The required rate of growth in GDP and investment necessary to attain such levels of growth would also have to be secured under conditions of *downwardly-sticky* wage rates, rising levels of minimum necessary subsistence, coupled with known capital-intensive biases in the contemporary and implied investment patterns in the capitalist sector. Such requirements could possibly strain the existent capabilities of the present system's adjustment. And, furthermore, all this neglects the current level of unemployment and under-employment as well as the trend of a rising labour participation rate for women. It also pre-supposes an immediate recovery from the currently deepening economic recession, the end of which cannot yet be foreseen, especially where employment is concerned.

It would appear then that proximate determinants of the prevailing labour surplus (e.g. those associated with the current economic recession) are re-enforcing determinants of a more deeply-imbedded structural character. While forecasting is often an unwise venture, it would not therefore seem too amiss to anticipate a continuation of the pattern of relative displacement of foreign African labour supply as well as a more gradual but discernible absolute displacement, the latter process being largely a function of the growth in domestic labour surpluses and imperatives which will most likely arise from the local system's stabilisation.

FOREIGN AFRICAN LABOUR DISPLACEMENT: SECTORAL ASPECTS

In this section, a few notes are made on selected aspects of the displacement policy of various employers, particular attention being given to recent critical variations in the policy of the mining complex.

A key structural trend in South Africa, and an explicit policy consideration of the mining industry, has been the generalised displacement of labour in production. This process has manifested itself in two forms: the substitution of local for foreign workers and the substitution of capital for labour in production. Here the concern is with the former process which, however, is not independent of the latter.

TABLE 7 *Chamber of Mines: Origin of Africans Employed as at 31st December, 1969-1976* (Thousands)

Year	South Africa	Lesotho	Botswana	Swaziland	Mocambique	Tropicals[1]	Total
1969	116,5	65,0	14,8	5,0	99,8	69,9	371,1
1970	96,9	71,1	16,3	5,4	113,3	98,2	401,2
1971	86,5	68,7	16,0	4,8	102,4	107,8	386,2
1972	87,2	78,5	17,5	4,3	97,7	129,2	414,3
1973	86,2	87,2	16,8	4,5	99,4	128,0	422,2
1974	90,1	78,3	14,7	5,5	101,8	73,1	363,5
1975	121,8	85,5	16,6	7,2	118,0	15,5	364,7
1976[2]	176,7	89,1	22,7	13,1	72,3	23,4	395,4
1976[3]	193,0	98,5	30,2	10,0	63,8	23,4	414,9
1976[4]	142,1	85,3	18,8	8,3	44,1	30,3	331,0

Notes: (i) *Source:* Mine Labour Organisations (Wenela) Ltd., *Reports and Financial Statements*, (1969-1976 inclusive), Johannesburg.

(ii) 1 *Tropical* areas are those N. of Lat. 22°S. The data refer to Malawian workers up to 1974 and to Rhodesian *and* Malawian workers (but only a small number of the latter) thereafter.

2 As of June 1976.

3 As of September 1976 for Gold, Copper and Platinum Mines but using June 1976 figures for coal mines (the latter derived from P.J. van der Merwe, *Black Employment in South Africa*, Pretoria, B.E.P.A., 1976, Table 2). Note the total does not round.

4 As of December 1976. Total does not round. These figures are heavily invluenced by seasonal variations typical of the end of the fourth quarter.

It has been noted that the Chamber of Mines has in recent years set itself the explicit objective of raising the local content of labour supply. The obvious consequence is the displacement of foreign workers. This policy, although now applied more than a decade after the Froneman Committee's recommendations were put forward, stands in tune with the latter, but with some important qualifications. Thus whilst the Froneman Committee sought the elimination of dependence on foreign labour supplies within five years following 1963, the Chamber has taken a more calculatedly hard-headed approach: its strategy rests on gradual displacement, the selective absorption of a measured volume of supplies from selected foreign states, the application of implicit or explicit quotas on those states included in the system, and the siphoning-off of the more able or skilled elements of available foreign labour supplies.

On the latter issue the Chamber of Mines would appear to be working towards the definition of a *safe level* of South African recruits in selected/strategic/ skilled job categories, in so doing assessing prospective costs of rapid local replacement in the event of a crisis in labour supply caused by withdrawal against the costs of operating above the margin in the sense of incurring higher investment or wage costs to retain such a labour supply within the industry. It is also seeking the introduction of a policy of *differential stabilisation* in respect of labour supplies under which it is hoped that South African workers will form the core of a stable labour component in the industry. Such strategic planning perspectives have become the order of the day as a result of both confrontationist politics in Southern Africa and previous experience with supplier state withdrawal. However, they do not affect all producers equally. Some mining houses have consciously retained a low foreign/local labour content (especially of Tropicals) for a number of years, e.g. Anglo American, JCI, and Union Corporation.

The rapid changes in foreign/local composition during 1969-76 are recorded in Table 7. The present tempo of change is further highlighted by a reading of recent changes in the *monthly* rate of recruitment from different supplier states and areas, as shown in the latest MLO *Reports and Financial Statements*. The pattern which emerged for 1976 has been one of rapid build-up in supplies from South Africa and substantial deceleration in those from foreign states (when considered in aggregate) with the marked decline being heavily influenced by the prevailing trend for Mocambique. In the case of the latter country, whilst recruitment in the beginning of 1976 was around 67% of the level for the equivalent month of 1975, by mid-year it was at an 11% level.[39] This downward trend continued throughout 1976, thereby substantially reducing the prospective Mocambican complement for 1977. Indeed, the total recruitment during 1976 numbered 28 994 workers, just over one quarter the level for 1975.

From the industry's viewpoint, however, it appears clear that a total displacement of foreign labour would not be desired in the foreseeable future. Indeed, many inside the industry argue persistently that the industry faces a labour shortage. It could even be envisaged that, in the event of much growth in local unemployment, the Chamber might well resist pressures on it to displace labour beyond a certain minimum point, if only because of the wage savings this would imply (assuming here, probably realistically, that *real* wages are sticky in a downward direction). Indeed, in the Rhodesian case, the Chamber of Mines (Rhodesia) has resisted such state pressure in the past, offering at best to reduce new hirings of foreign African workers. There, however, the African labour supply does not form an overwhelmingly migrant/contract labour pattern.

In agricultural employment, the issue of foreign labour would seem a less critical variable, given evidence of an emerging labour surplus on farms themselves, a falling agricultural employment level and trends towards mechanisation. But certain special conditions will probably continue to apply where there is some localised dependence on foreign labour in areas adjacent to international boundaries (e.g. certain O.F.S. farms). As in Rhodesia, it is likely that state policy will continue to be used to direct displaceable foreign workers, particularly those whose legal residence or employment elsewhere becomes abrogated, towards the labour-scarce areas of agriculture. This functional adjustment, found explicitly enunciated in various provisions of existing policy, seeks to make use of the process of displacement in the satisfaction of labour shortages caused by low wage policies.

In domestic employment, policies of replacement have already been set in motion under various initiatives: the regularisation of illegal Rhodesian workers on the Rand (most of whom are believed to be in domestic work); the exclusion of foreign workers from entering South Africa to take up such work under state policy; and the greater control now exercised over the clandestine entry of labour into South Africa. On a more general level, civil conflicts on a number of borders have already made clandestine entry more difficult than before. Clearly there would be relatively little difficulty for employers in substituting local for foreign workers in this sector, notwithstanding widespread and typical myths about the superiority of the foreign domestic workers, a myth which articulates the superiority of Malawian (domestic) *boys* in Salisbury and an assumed equivalent superiority of Rhodesian (domestic) *boys* in Johannesburg.

Similarly, the state stands in a unique position to implement its own declared policy of local preference in respect of the rather small number of foreign Africans it employs directly. Its leverage over manufacturing employers would also seem to be of sufficient magnitude to anticipate that it could be equally effective in this latter area. The relatively high wages applicable in the manufacturing sector also suggest marginal adjustment constraints.

Even so, it should be remembered that, whilst displacement has been in process for some considerable time, this mechanism for the creation of employment for local workers and the absorption of unemployment has only had limited significance. Tentatively estimated, it is probable that from 1970-77 about 130 000-140 000 jobs have been provided for local workers as a consequence of this policy, mostly in the last three years. This would appear to equal about 30% of the *increase* in the recorded volume of permanent African employment (excluding foreign workers in mining) in South Africa over the seven-year period.[20] But, at least on the basis of van der Merwe's (conservative) estimates for the growth of African unemployment in *non-reserve* areas (i.e. outside homelands), job-provision through this substitution effect would have met only around 50% of the *growth* in African unemployment. Clearly, for longer-term policy requirements, there are diminishing returns associated with reliance on such mechanisms of displacement and absorption. In short, it is a one-way street. Such has been found in Rhodesia, too, where the displacement of foreign African workers accounted for around 26,3% of the 133 000 jobs provided for local Africans between 1969 and 1975[21].

On the basis of higher estimates of the level of unemployment growth, the assessed relative significance of the substitution policy would of course be proportionately reduced. Furthermore, it might be reasonably expected that the direct costs of additional displacement would rise for employers in the forms of new recruitment costs, a possible shortening of average contract lengths, difficulties in obtaining employees with job-specific skills, and in (prospectively) higher wage rates needed in the mining sector which might be required to secure a much larger volume of local labour.

RECENT POLICY ON DISPLACEMENT: STATUTORY, CONTRACTUAL AND ADMINISTRATIVE FORMS

It will not be possible here to go into great detail on the recent changes in policy on foreign labour inflows, displacement and re-entry. It will suffice for present purposes to note some broad characteristics.

Various forms of policy might be distiguished - statutory, contractual and administrative. In general these forms have been used to articulate collectively-assessed employer requirements under quickly changing social and economic conditions.

Firstly, foreign workers have increasingly become regarded and treated as supplementary to local labour. Selected areas, e.g. the Western Cape, as well as other prescribed zones, have been closed off to foreign labour, as have certain classes of work in relation to new inflows. Such a pattern is not dissimilar to the *Closed Labour Areas* policy which has been in effect in Rhodesia since 1958.

Secondly, the concept of the foreign worker (or 'alien Bantu' labour, as officialdom knows it) has become more embracing over time. Thus the position of workers from Botswana, Lesotho and Swaziland has become more intensively controlled since 1961, whilst now, with initiatives aimed at the *internal balkanisation* of South Africa, it is likely that important changes are to be introduced *vis-a-vis* workers from the Transkei (already subject to a gazetted Labour Treaty) and, by year's end, those from Bophuthatswana. Further changes along the latter lines could soon follow.

Thirdly, labour agreements which in earlier years reflected negotiated contracts between foreign states and private recruitment organisations in South Africa, have become almost wholly subject to inter-state agreements, themselves regularly reviewed in the light of state policy on the overall labour supply position.

Fourthly, the catchment areas of states, presently both contracted on a *de jure* and *de facto* basis into the international migrant labour system with South Africa, has become steadily circumscribed. This has not, however, only been a consequence of policy formulated in South Africa. Hence for effective purposes Tanzania, Zambia and Angola no longer form part of this supply network, whilst Malawi has lingered on the fringes for the last three years.[5] Overall, this reflects the steady internalisation of labour supplies.

Fifthly, the regularisation of illegal/illegitimate/concealed workers has had as its longer-term objective their eventual displacement. An objective of this nature has for instance been a feature of schemes in 1968 and 1976 to regularise illegal Rhodesian workers in South Africa.

Sixthly, greater justification is now being required of employers wishing to contract foreign African workers. And penalties are now being applied to employers who overtly transgress defined policy. The latter are also being required to assume a greater liability for repatriation costs.

Seventhly, a more selective policy on the continued legal residence of foreign workers is now being applied. Thus, for example, in the case of Malawians, various administrative categories, defined by length of work/residence in South Africa, determine areas of legitimate work and the acceptable duration of legal employment before eventual repatriation.

Finally, stricter controls are now exercised over what are regarded as *systems deficiencies* found in the foreign migrant labour system. A number of recent initiatives appear to parallel recommendations of the Froneman Committee.

IMPLICATIONS OF EXISTING TRENDS IN LABOUR SURPLUS FOR SOUTHERN AFRICA

The growth of a labour surplus and new shifts in policy by employers and the state in South Africa have major implications for supplier states presently contracted under agreement into the supply system as well as those states (e.g. Malawi) actively considering re-contracting. This is especially pertinent for those states (e.g. Lesotho, and to a more limited extent, Botswana) which are planning on the basis of an increased volume of labour exports to South Africa. All this is made more critical by evidence of a not inconsiderable labour surplus emerging inside all supplier states.

Some *tentative* estimates of labour surpluses in Southern Africa are shown in Table 8.[23] The wage-labour force of present supplier states is shown in column (a), indicating that at present foreign African men in employment in South Africa account for roughly 20% of all such African labour employed in the capitalist sector in these areas (excluding Malawi). On the basis of 1973 levels, this proportion was probably about 30-35%. In column (b) the growth of numbers of African men in formal wage-labour in supplier states is indicated for the period 1969-76. Column (c) indicates the growing numbers of new entrants (of African men) of working age (15-65 years) in supplier states over the period. These figures, indicating a growth of approximately 1 290 000 persons, are shown after allowance for mortality, those retiring and out-migration from supplier states. The numbers in this category exceeded the increase in numbers who obtained wage-jobs by a ratio of roughly 4:1. Column (d) has been derived by subtracting the numbers who obtained wage employment from the increased numbers in the working age-group. The result for the six countries considered is a growth of around 971 000 persons over these seven years. It would be wrong to conclude that such persons are merely unemployed, even if their numbers were substantially reduced by the application of a relatively high inactivity rate. To do so, would be a misapprehension of the processes operative and a misunderstanding of the inter-relationship of the various forms of production found in Southern Africa.[24] Column (d) could thus best be regarded as an indication of the volume of potential labour surplus in the sub-continental economy. (It cannot be a strict estimate because the latter should be measured in terms of labour-time). Further, it is to be noted that such estimates ignore labour surpluses relevant to juvenile labour and women workers, as well as those who at the outset of the period constituted a properly-defined pool of unemployed.

The figures also suggest that the number of foreign workers displaced from South Africa over 1970-77 probably constituted around 35-37% of the growth in the wage-labour force of African men in supplier states; and they constituted about 11% of the new entrants into working age groups in these areas. On the other hand, they probably accounted for about 13%

TABLE 8 *Tentative Estimates on Southern African Labour Surpluses: Adult African men, 15-65 Years, 1969-1976*

Country	(a) Wage-Labour in Paid Employment 1976	(b) Growth in Employment 1969-76	(c) Net New Entrants to Working-Age Group 15-65 Years, After Allowance for Mortality, Those Retiring and Emigration, 1969-76	(d) = (c)-(b) Growth in Numbers Not Obtaining Wage-Labour in Domestic Economy 1969-76
Rhodesia[1]	755 000	133 000	318 000	175 000
Botswana[2]	52 000	23 000	27 000	4 000
Lesotho[3]	28 500	9 500	22 000	12 500
Swaziland[4]	59 000	19 000	26 000	7 000
Sub-Total	894 500	184 500	393 000	198 500
Mocambique[5]	503 000	57 000	550 000	493 000
Malawi[6]	220 000	80 000	350 000	280 000
TOTALS	1 617 500	321 000	1 293 000	971 000

Notes:

(i) *Sources:*

1 Data from D.G. Clarke, 'The Growth and socioeconomic Composition of African Unemployment in Rhodesia in the 1970s' Rhodesian Journal of Eco- forthcoming).'

2 Estimates based on Republic of Botswana, *Manpower and Employment in Botswana,* Gaborone, Ministry of Finance and Development Planning, 1973; and more recent data from various sources.

3 See especially, Central Planning and Development Office, Employment Projections and Manpower Development in Lesotho, 1975-1980, Maseru, September 1976, (mimeo).

4 See Swaziland Government, *Economic Review 1974,* Mbabane, C.S.O., 1975; and also Swaziland Government, *Swaziland's Survey of Manpower Resources and Requirements, April 1969 - March 1974,* Mbabane, December 1970

5 See, for example, C. Da Silva Peres, The Mocambique Economy with Special Reference to its Interdependence with South Africa, MBA, University of the Witwatersrand, 1975.

6 *Inter alia,* see Anon, Aspects of Wage Policy in a Labour Surplus Economy; the Case of Malawi, *Circa* 1974, (mimeo).

Table 8 Notes (Cont.) Page 75

of the growth in labour surplus in supplier states during 1969-76. This is not to suggest, however, that the impact was even in terms of displacement, significance in relation to labour surplus level and employment growth. A variety of conditions can be found, as a brief resume of selected features of labour supply conditions in the supplier states will illustrate.

In Rhodesia, structural deterioration in regard to unemployment has been evident for two decades at least, the origins, magnitudes and effect being relatively comprehensively documented in academic debate.[25] The onset of civil war has further retarded immediate short-term employment growth prospects as have the negative growth rates in GDP for 1975, 1976 and (as expected) for 1977. Indeed, since early 1976 there have been absolute falls in African employment recorded. Reliance on petty production has become visibly heightened in the 1970s, despite substantial labour export to South Africa. Within two years Wenela has boosted its *off-take* of labour from Rhodesia from zero to around the 33 000 level at present. This has been done with almost no effect on domestic wage rates and with a minimal recruitment drive, the vast bulk of workers merely walking through Wenela's gates in the *urban* areas of Salisbury, Bulawayo and Fort Victoria.

In Botswana, recent surveys have recorded massive (12-15% per annum) rates of growth of population in urban areas even though annual urban employment growth has been limited.[26] Many of these *in-migrants* depend on various forms of informal employment. Exports of farm and mine labour to South Africa have been rising without any evidence of local supply constraint and with no effect on local wage rates which remain, under government regulated minimum wage policy, at a level of 14 cents per hour for unskilled labour. These rates compare with cash earnings of R2,20 per shift for unskilled underground labour on South African gold mines.

Table 8 Notes (Cont.)

(ii) (a) The estimates are based on the above sources as well as others. They are tentative because the author wishes to produce a more rigorous set of estimates.

(b) The data in column (d) are cited *exclusive* of the application of age-specific labour participation rates for activity/inactivity.

(c) The data exclude juveniles, African women, as well as persons who at the outset might have formed part of a pool of unemployed (estimated between 30 000 - 55 000 in the Rhodesian case alone).

In Swaziland a not dissimilar pattern is found with local employment growth lagging behind local labour supply growth. However, because of the relatively small-sized labour market. the re-location of South African labour demand for foreign mineworkers could easily take up a relatively large element of the surplus - except, however, those persons who do not fit the specific demand pattern required by the Chamber of Mines.

Lesotho is perhaps in the worst predicament, its Second National Development Plan for 1975-80 in fact being predicated on an assumption that labour exports to South Africa would rise in this period by 25 000 (or 36% of the growth in internal and external employment) in order to enable stabilisation of the existent local unemployment level.[27] Here too higher wages in South Africa are a big factor in the distribution of labour supply. Thus, for Lesotho it is not only a problem of creating more jobs but also employment meeting relatively high wage levels. The Lesotho Government is acutely aware of its vulnerability and is concerned at the possible effects of a prospective cut-back (even if only temporary) in South Africa's foreign labour demand. Undoubtedly, ramifications would be widespread, affecting not only the unemployment rate, domestic savings as generated by compulsory deferred pay channelled through the Lesotho National Bank but also the rural sector (where much re-absorption would in effect have to take place) and the informal sector (the size of which in 1975 was estimated by its employment level of 22 500 persons).

In Mocambique, evidence of unemployment growth has also been recorded, although conditions have become different in character to elsewhere in Southern Africa.[28] Such conditions have not been assisted, it would seem, by the rapid dis-employment of Mocambican workers from South African mines since early 1976. Further, the elimination of the gold premium secured as a consequence of the 1928 Mocambique Convention will probably aggravate conditions by reducing foreign exchange earnings (perhaps by as much as R100 million) and thereby placing constraints on employment growth.

It is not only a growth in foreign labour surplus that is of relevance since in that sector which is most dependent on foreign African labour - mining - real wage rates have recently risen well above the levels received by most wage earners in peripheral supplier states. This in effect makes a sizeable portion of the formally employed African work-force a prospectively recruitable labour pool for the mines. To take the Rhodesian case alone, this would add to the labour pool of the unemployed, almost all local men employed in plantation agriculture (around 150 000 workers), as well as 130 000 domestic workers and the 60 000 Africans employed in mining, a sector in which minimum rates are about 20% of the South African level. Such an argument is still more applicable for BLS states where even lower wage policies apply in most sectors. It would seem that this facet has been overlooked in the evaluation of supplies available to be

drawn upon to meet either mine labour shortages or increases in demand. Even if constraints do exist on mineowners siphoning off what they claim to be underemployed surpluses of labour from white-owned farms in South Africa, the same type of restriction has not applied in respect of most supplier states.

Even without the fact of an absolute foreign labour displacement from South Africa from 1972 onwards, supplier economies would not have been able to absorb fully all prospective new entrants onto the labour market. This is because they have faced problems of a structural surplus of labour. Displacement policies in South Africa have simply aggravated these conditions, notably in those economies where absolute falls in the levels of outflow of labour have been recorded. Even where, as in the case of the BLS states and Rhodesia, the numbers of workers recruited for South Africa have increased from 1974 onwards, these economies, too, have had to face the deteriorating likelihood of achieving the objective of full employment in productive sectors.

A major consequence of the sub-continental accumulation and employment pattern, i.e. of large numbers of new and largely unskilled entrants to the labour market, increasing stabilisation of those workers already in employment, limited job growth and investment rates in the periphery and capital-intensification in both primary and secondary industries, has been the need for subsistence to be secured from either non-wage sources or indirectly through wages by access to the expenditure of wage-earners. A prime growth area in this regard has been in petty production, trade and services, the so-called *informal sector*, in both urban and rural areas.[39] A steadily increasing portion of the labour force now without a complete dependence on peasant production, itself becoming less significant in overall terms *vis-a-vis* agrarian capitalist sectors both in South Africa and many supplier states, has become more marginal to the dominant-cum-monopolistic sectors of production. This tendency does not seem to have emerged as a temporary phenomenon of the recent cyclical depression. Historical evidence of such a pattern exists (at least in the Rhodesian case) since the 1940s.[40] The failure of post-independence agrarian policies in these economies has also contributed to this pattern. An upturn in the present economic cycle is thus in itself not likely to reverse the trend towards a growth in labour surplus and a larger segment of the populace forming a marginalised labour force.

Consequently, the form of structural change now manifest in the periphery of Southern Africa has not been one simply of a rising level of unemployed in relation to wage-earners. Such a manifestation does certainly exist, but it is only part of the overall process in which a marginalised labour force has been created. The existence of such a component in the sub-continental economy both reflects and conditions the reality of generalised labour surplus in Southern Africa.

CONCLUDING PERSPECTIVES

Apart from the general theses advanced here, a number of related points might be made by way of conclusion.

Firstly, the limits to the potential displacement of foreign African labour from South Africa (and possibly Rhodesia) do not appear yet to have been reached. Continued recession could accentuate this process, but equally, and independently of such a cyclical pattern, key employers might well decide on their own or in concert with the government in South Africa to further internalise labour supplies. It is likely that strategic policy considerations will play a major part in these decisions. Depending on how the reduced volume of demand for foreign labour might be re-distributed, should it actually take place, there could be critical difficulties for certain supplier states, especially in the absence of viable or attainable local employment growth policies.

Secondly, recent diminution in South African utilisation of foreign-based labour supplies indicates a further redefinition in the pattern of accumulation in the extractive industries which in the past have relied more on the primitive form of accumulation.

Thirdly, conditions of surplus labour would seem to make less feasible today currently discussed strategies of supplier state collusion in their allocation of labour supplies to South Africa. Given that changes in the volume of foreign labour have largely (though not exclusively) been employer-determined, there appears to be only a limited prospect for the success of strategies advanced by supplier states which are designed to increase the price of labour exports. Undoubtedly, however, such policies could have a revenue effect on supplier states but this is most likely to do very little to restore what might be called an equilibrium in the balance of accumulation in the sub-continent or even to provide a sufficient fund to enable investment to generate substantial local employment growth inside supplier states.

Finally, and a point that should not be under-stressed, the fact that international movements of both labour and capital have been evidenced in Southern Africa makes at best limited in usefulness and at worst probably merely fictional, current estimates of *South* African unemployment, as used by most economists. Undeniably these measures provide a partial picture of the local situation, but only in a limited way when these are (perhaps illegitimately) considered abstractly from broader and equally pertinent international conditions.

The international reshuffling of unemployment on a sub-continental scale would appear to have significantly disguised the real depth and character of the Southern African unemployment focus to the relative exclusion of consideration of the problematic existence and realities of a growing marginalised labour force.

NOTES AND REFERENCES

1 J.B. Knight, 'Labour supply in the South African Economy and its Implications for Agriculture.' Saldru Farm Labour Conference, University of Cape Town, 1976, p.56 Emphasis added.

2 *Ibid.*, p.57.

3 P.J. van der Merwe, *Black Employment Problems in South Africa,* University of Pretoria, Bureau for Economic Policy and Analysis, 1976, p.28. Emphasis added. It should be noted that not all foreign workers in South Africa are *contract* workers. The latter, however, are more easily reduced in numbers.

4 *Ibid.*, p.28.

5 For some details here see S.T. van der Horst, *Native Labour in South Africa,* OUP, 1942; F.Wilson, *Labour on the South African Gold Mines,* CUP, 1972; W.J. Breytenbach, *Migratory Labour Arrangements in Southern Africa,* Pretoria, Africa Institute, 1972.

6 No supplier states in Southern Africa keep and make available sufficiently good records of labour emigration to the Republic; none could be have a reliable socioeconomic profile of its labour supplies outside the country, whether in South Africa or elsewhere. Nor apparently do international organinsations such as the International Labour Office or the International Bank for Reconstruction and Development possess such data. Indeed, both these latter institutions, possibly for different reasons, are now committed to on-going analyses of international and domestic labour migration in Southern Africa, their prime foci being supplies to the Republic. On the other hand, there is no comprehensive central record of foreign workers in the Republic. Indeed, as the Froneman Committee found when it examined these issues in the early 1960s, the questions of domicile and who is foreign or otherwise are vexed ones (see here Ken Owen, *Foreign Africans,* Johannesburg, South African Insitute of Race Relations, 1963). Further, despite the great plethora of labour studies conducted in and on South Africa in the post-1960s, relatively little attention has been given to this subject. These observations remain true for empirical as well as theoretical work, except, that is, for a number of more limited studies dealing with bilateral analysis of labour supply to South Africa.

7 Probably the best available data can be found in the records of the South African Census, both that of 1960 and the most recent in 1970. Although this information is slightly dated (for 1977), it can be significantly improved in a number of ways with supplementation: by data derived from the Central Statistical Offices of supplier states; through industry recruitment records (notably those of the Mine Labour Organisations, Wenela and NRC, for the mining industry); by use of the findings of the Froneman Committee (the report of which was never fully published, but the essence of which is contained in the

comprehensive summary produced by Owen); by field surveys which incidentally cover the subject; and by attempts at an overall evaluation of selected issues (notably in W.J. Breytenbach, *op.cit.*, and G.M.E. Leistner, 'Foreign Bantu Workers in South Africa: Their Present Position in the Economy,' *South African Journal of Economics*, Vol. 35,1, March 1967). These secondary works and primary sources can be improved by reference to draft reports of the IBRD/ILO studies - also the most recent work of late - and certain published and unpublished materials of governments and private researchers.

8 The principal deficiencies of available data have been more fully revealed elsewhere (see D.G. Clarke, *Foreign African Labour Supply in South Africa, 1960-1977*, Pietermaritzburg, Development Studies Research Group, 1977). Here it will be sufficient to note the major shortcomings. These appear to be as follows: problems with the definition of reliable annual series for certain overall bits of information for which at present only inter-censal records exist; the fact that records are not comprehensive or even on an industry-by-industry or a country-by-country basis; the omission of data on certain key pieces of the puzzle (e.g. turnover rates in non-mining sectors, inter-sectoral movements of foreign workers *inside* South Africa, the occupational origins and changing job status of foreign worker inflows, the basic soeicoeconomic characteristics of illegal/illegitimate/concealed/clandestine workers, the incidence of migrant women,etc.); the difficulties of interpolating various changes recorded in inter-censal variations; the non-consistent status of workers defined as foreign; the fact that there exists a sectoral bias towards a *more* reliable data base mining complex, especially in the case of the gold mining industry; and the impossibility of imputing or estimating concealed foreign labour supplies and unrecorded flows across various international borders.

9 This estimate is not considered to be at variance with a recent statement on the number of foreign African workers in South Africa made on 10 February 1977 by Mr M.C. Botha (Minister of Bantu Administration and Development) in which it was noted that the number stood at 382 848. There was no precise date attached to the figure, but from an assessment of its composition on a country of origin basis, it appears that the data refer to around September 1976. Subsequently there has been a marked fall-off in Mocambican labour supply.

10 See various reports in the press, e.g. *Financial Mail*, 16 December 1976.

11 D.G. Clarke, *op.cit.*

12 Care should be exercised in the interpretation of inactivity rates. They refer essentially to specific kind of relationship to the *formal* labour market and do not necessarily mean that inactive persons (so defined) play no economic role, or even indeed one supportive of actively employed labourers.

13 Charles Simkins, 'Measuring and Predicting Unemployment in South Africa,' 1960-1977,' in Charles Simkins and D.G. Clarke, *Structural Unemployment in Southern Africa*, Pietermaritzburg, Natal University Press, 1978.

14 Lieb Loots, 'Alternative Approaches to the Estimation of Unemployment,' *Workshop on Unemployment and Labour Reallocation*, Pietermaritzburg, Development Studies Research Group, 1977.

15 J.B. Knight, *op.cit.*, p. 57.

16 The existence of a surplus of labour on white-owned farms is a point of dispute between the Chamber of Mines and the South African Agricultural Union; but the former now recruit in these areas on a controlled basis. It would seem that the real issue is the actual size and/or composition of the surplus of labour.

17 P.J. van der Merwe, *op.cit.*

18 See J.L. Sadie, *Projections of the South African Population 1970-2000*, Johannesburg, IDC, 1972.

19 Mine Labour Organisations (Wenela) Ltd., *Reports and Financial Statements for the Year Ended 31 December 1976*, Johannesburg, 1977.

20 For estimates of employment used in these calculations, van der Merwe's figures have been used.

21 See D.G. Clarke, 'The Growth and Socioeconomic composition of African Unemployment in Rhodesia in the 1970s,' *Rhodesian Journal of Economics*, (forthcoming).

22 This remains broadly true despite the fact that in December 1976 there were just over 2000 Angolan workers on mines affiliated to the Chamber of Mines.

23 The estimates need to be regarded as tentative at this stage. It is the intention to re-work the analyses necessary in order to produce the country-by-country estimates in a more rigorous fashion.

24 It would also raise the thorny question of just how it was that such persons (designated as unemployed) found adequate means of subsistence? This is a question which appears much overlooked in the literature on unemployment in South Africa, where the proportion of the unemployed who has access to, and is able to subsist on the basis of, Unemployment Insurance Fund disbursements is relatively small.

25 See *inter alia* A.M.K. Hawkins, 'African Labour Supplies in the Rhodesian Economy,' *Rhodesian Journal of Economics*, Vol. 10,2, June 1976.

26 University of Botswana and Swaziland, National Institute for Research on Development and African Studies Documentation Unit. *Gaborone Migrations Survey: December 1975*, Working Paper No.6, Gaborone, 1976.

27 See Government of Lesotho, Central Planning and Development Office, *Employment Projections and Manpower Development in Lesotho. 1975-1980*, Maseru, September 1976.

28 See various reports in the *Financial Mail*, but also C. Da Silva Peres, The Mocambican Economy with Special Reference to its Interdependence with South Africa, MBA Thesis, University of the Witwatersrand, 1975.

29 For some evidence on one supplier state see Republic of Botswana, *The Rural Income Distribution Survey in Botswana, 1974/75*, Gaborone, 1976; and National Institute for Research on Development and African Studies Documentation Unit, *op.cit.*

30 See here for instance evidence on the growing numbers of petty producers as documented in the *Annual Reports* of the Chief Native Commissioner. Unfortunately, Southern African economic historians have not yet moved onto the examination of this phenomenon, at least for the period following the Great Depression, 1930-33.

STRUCTURAL UNEMPLOYMENT IN SOUTHERN AFRICA

Charles Simkins & Duncan Clarke

This book is important because it presents the results of the most carefully researched study of unemployment in South Africa and because it provides an interesting analysis of labour movements in Southern Africa as a whole.

What Simkins has managed to do is construct a coherent index of unemployment for the entire economy, capitalist and non-capitalist, on the basis of fragmentary data and various assumptions about conditions of employment in different parts of the economy. One of his most important findings is that structural unemployment (in comparison with which cyclical unemployment is relatively unimportant) has been high and rising over the period from 1960 to the present.

The basic objective of Clarke's study, on the other hand, is to explain the impact of unemployment in South Africa on the use of foreign workers, mostly in mining. Though there are factors setting limits to the displacement of foreign workers from the mines, he suggests that in recent times, even able-bodied workers meeting the mines' selection criteria have been increasingly excluded from employment in South Africa. Structural dependence on South Africa thus makes surrounding countries doubly vulnerable to economic recession.

Both studies call attention to, and analyse, a growing problem which will require much greater attention over the coming decade than hitherto.

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