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SOUTH AFRICAN DEVELOPMENT IN
INTERNATIONAL PERSPECTIVE, 1950-1975.

C.E.W. Simkins

DSRG WORKING PAPER NO. 8.

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ABSTRACT

Two well-known attempts to characterise South African development in terms of an internationally based perspective, have relied on Rostow's five-stage theory of economic growth. More recent international studies, however, are better than Rostow's in three respects: they work with a richer concept of development, they do not force the evidence into a rigid 'stages' model and they are better based empirically. The limitations of these studies are their loose ties to theories of development and their assumption that all countries follow a similar development trajectory - this assumption is necessary for one to be able to draw conclusions about development trajectories from cross-sectional studies.

Comparison of observed values of 27 variables in South Africa with 'expected' values predicted from a study by Chenery and Syrquin leads to the conclusions that relative to its expected position, South Africa (i) has an unequal distribution of income (ii) does not, as is sometimes supposed, have unusually large participation by the government in the economy, at least as far as government's claim on and use of resources is concerned (iii) is underindustrialised and overserviced (iv) trades heavily (v) is behind on urbanisation.

Plotting of South Africa's 18- variable development profile on a chart developed by the United Nations Research Institute for Social Development enables one to make the following observations: (i) There are considerable deviations from normal in South African development (ii) In both 1960 and 1975 social indicators lay generally below economic indicators i.e. for our general level of development we have a powerful economy but rather poor social conditions (iii) Of the social indicators the two lowest are life expectancy and housing.

From a consideration of South Africa against the background of Adelman and Morris's work, it is possible to conclude:
(i) Although South Africa should belong to the top group of developing nations by virtue of its per capita GNP it in fact gets classified in the intermediate group because of low scores on a number of social indicators. This confirms the UNRISD finding.

(ii) In common with other intermediate countries South African social development is uneven which leads to structural change and/or political instability.
(iii) Political participation in South Africa (assessed as very low in the period 1957-62) is unlikely to increase as an automatic consequence of socio-economic development.
(iv) Income distribution is more unequal in South Africa than one would expect, which confirms the Chenery and Syrquin finding.

It is not implausible to attribute some of these deviations from normal to uniquely South African political and social institutions. It therefore appears too simple to assert with O'Dowd that 'most of the characteristics, economic, political and social, of the South African scene are normal in terms of its present stage of development'.

South African development in international perspective, 1950-1975.

'Looking at ourselves in isolation, we may so easily have a distorted picture that it is wise, whenever possible, to compare our experience with that of other developing nations. This is greatly facilitated if we can find some general categories or broad terms of reference; and, for this purpose, we cannot do better than accept W.W. Rostow's five stages of economic growth ...'[1]

(D. Hobart Houghton)

'Most of the characteristics, economic, political and social, of the South African scene are normal in terms of its present stage of economic development.'[2]

(M.C. O'Dowd)

Hobart Houghton's first assertion is as sensible as it was on the day he wrote it. The latter part of his second assertion has worn less well, however; there are now to be had better studies of development patterns than Rostow's. The purpose of this paper is to assess recent South African development against the background supplied by three such studies carried out by Chenery and Syrquin[3], the United Nations Research Institute for Social Development[4] and Adelman and Morris[5] respectively.

In what respects are these studies better than Rostow's?

In three, I suggest:

(i) It is now generally agreed that development refers to more than just economic growth. Even if it is not clear just what this 'more' consists of, we may say that changes in economic, social and political structure as well as distributive changes are involved. Rostow does discuss changes in economic structure in some detail; changes in social and political structure are dealt with more briefly and less satisfactorily. Distribution is not dealt with explicitly at all, though presumably (for instance) the 'age of high mass consumption' is somewhat more egalitarian than earlier stages. By contrast, our studies consider many more variables - Chenery and Syrquin deal with 27 (7 cover accumulation processes, 12 resource allocation processes and 8 demographic and distributional processes), UNRISD with 18 (9 economic and 9 social) and Adelman and Morris with 51 (14 sociocultural, 18 political and 19 economic).

(ii) It has been proved difficult to superimpose five distinct, sequenced 'stages of growth' on the evidence. A little of the difficulty surfaces in Rostow's book and anomalies increase as more evidence is taken into consideration. Stages of growth are replaced by continuous structural change over the range between

100 and 1000 US dollars (1964 prices) gross national product per capita in Chenery and Syrquin, the UNRISD study establishes correspondence points between the various indicators and Adelman and Morris use a variety of multivariate statistical techniques. In each case an attempt is made to extract underlying structure from the data instead of imposing a pattern on it.

(iii) Ceteris paribus, one expects studies with a broad data base to yield more reliable results than those with a narrow base. Rostow relied on data from 14 countries only when making most of his points. Information has improved greatly since then - Chenery and Syrquin consider 101 countries excluding only (most) communist economies and countries where the population in 1960 was below one million. UNRISD considers 115 countries with 1960 population over one million and Adelman and Morris 74 non-communist countries excluding those for which data are poor.

Two points need to be made about the limitations of the three studies we shall be considering:

(i) They are, at best, loosely tied to theories of development. Chenery and Syrquin work within a general model of structural change which assumes similar variation in consumer demand with rising per capita income, accumulation of capital at a rate exceeding the growth of the labour force and access of all countries to similar technology, international trade and capital inflows. Within this framework they selected ten basic processes that appear to be essential features of development in all countries. These processes were suggested either by economic theory or by empirical uniformities.[6] Adelman and Morris sought an inclusive but parsimonious set of indicators to represent 'the most important aspects of economic, social and political institutions and performance'[7] and subjected these to factor analysis in order to study the interconnections revealed by the data. Their selection of indicators and interpretation of results reveal a modernisation theoretical approach. The UNRISD study started out with a provisional list of over seventy indicators and weeded out those with poor country coverage, effective duplicates and those which correlated poorly with other indicators. Since the studies are so empirical it is worth sounding the usual warning that observed correlations do not establish causation; one may only impute causation on the basis of a theory.

(ii) They draw conclusions about development trajectories from cross-sectional studies. This,as Adelman and Morris point out, requires justification - the justification they offer is that one may view cross-country results as representative of patterns of change typical of individual countries at a given point in time when access to technology and opportunities for trade are, at least in principle, common to all.[8] These are similar assumptions to those of Chenery and Syrquin, cited above. Some theories of underdevelopment (e.g. dependency theory), however, assert that the prospects facing any given economy depend on its relative quite as much as its absolute position. If this is true the shape of the average transition path (which now becomes a dubious concept) may change over time, associations holding now being dissimilar to those holding 50 years ago or 50 years hence. The objection may be met if one assumes that such change, if it occurs, occurs relatively slowly. One should then also stress that 'normal' development can only mean development along some average trajectory derived from evidence gathered from a number of countries in the third quarter of the twentieth century. Trajectories at other times may be different, so one should not project these results outside this time period.

We now turn to a detailed discussion of South African development against the background of each of the studies, starting with the most narrowly economic.

1. Chenery and Syrquin

Chenery and Syrquin proceed by using regression analysis. The regression equations (which can be thought of as reduced forms of a general equilibrium system) are of the general form

$$X = \alpha + \beta_1 \ln Y + \beta_2 (\ln Y)^2 + \gamma_1 \ln N + \gamma_2 (\ln N)^2 + \Sigma \delta_j T_j + \varepsilon F \quad [9]$$

where X is the dependent variable (usually taken as a ratio to GDP or to another appropriate aggregate), Y is GNP per capita in 1964 US dollars, N is population in millions, F is net resource inflow as a share of total GDP and T_j (j=1,2,3,4) is the time period (the period 1950-1970 is divided into four subperiods of five years each). For any given year in South Africa Y, N, F and T can be found. Since

the coefficients are estimated by Chenery and Syrquin from cross-country observations, it is then possible to calculate an expected value of X for South Africa. This expected value can then be compared with the observed value of X for the year under consideration.

Chenery and Syrquin start by estimating coefficients from observations on all countries. They then classified countries by scale and by trade orientation and ended up with three groups:
(1) large, (2) small, primary oriented and (3) small, industry oriented. A comparison of the statistical results of these three groups showed that the three-way division provided a significant improvement over the pooled regressions for most of the allocation processes and some of the accumulation processes.[10] South Africa, having had a population of over 15 million in 1960, falls into the large category, but only just. Where 'large' regression coefficients are reported these are used to calculate the expected values of the variables under consideration.

Observed and expected values of the variables are reported in Appendix A together with notes on their derivation. Limits are placed 2% above and below expected values - if the observed values lie within these limits, the variable is classified normal for the year under consideration.[11] If the observed values lie outside these limits they are classified as below normal or above normal. The comparisons between observations and expectations are carried out in Table I.

Five themes may be extracted from Table I. Relative to its expected position, South Africa:
(i) has an unequal distribution of income. This can be seen directly from variables 10a and 10b. The single income distribution estimate is not very reliable, so one looks for confirming evidence elsewhere and finds it in a high savings ratio as well as in low food consumption (although private consumption as a whole tends to be above normal) and a high birthrate. More supporting evidence for a particular type of inequality comes from variables 3a and 3b - although expenditure on education is normal, the school enrolment ratio is considerably below normal throughout the period.

(ii) does not, as is sometimes supposed, have unusually large participation by the government in the economy, at least as far as government's claim on and use of resources are concerned. Government revenue is normal and tax revenue below

TABLE I Comparisons between observed and expected values for 27 variables - South Africa, 1950 - 1974 [12]

Variable name	Countries on which regression based	No. of observations	Years observed value: Below expected	Normal	Above expected
ACCUMULATION					
1a Saving [1]	LARGE	25	1960	1951-53, 1955-59, 1961-64	1950,1954 1965-74
1b Investment [1]	LARGE	25	1962	1950,1954-57,1959-1961,1963 1966,1968	1951-53, 1958,1964-65,1967, 1969-74
1c Foreign capital inflow [1]	ALL	20 [4]	1957,1959-64	1955-56, 1958,1965-67,1969.	1952-54,1968, 1970-72
2a Government revenue [1]	LARGE	25	1962	1950-61, 1963-74	
2b Tax revenue [1]	ALL	25	1950-74		
3a Education expenditure [1]	ALL	8		1950,1960, 1963,1969-73	
3b School enrolment ratio [2]	LARGE	18 [4]	1952-55, 1958-72		
RESOURCE ALLOCATION					
4a Private consumption [1]	LARGE	20 [4]		1963,1965-70	1952-62,1964 1971-72
4b Government consumption [1]	LARGE	20 [4]		1952-61, 1963-69	1962,1970-72
4c Food consumption [1]	ALL	25	1950-56, 1958,1971-72,1974	1957,1959-70, 1973	
5a Primary share in production [1]	ALL	20 [4]		1958-65, 1968-72	1952-57, 1966-67
5b Industry share in production [1]	ALL	25	1950-74		
5c Utilities share in production [1]	ALL	25			1950-74
5d Services share in production [1]	ALL	25	1950-58, 1961-70, 1974	1959-60, 1971-73	
6a Exports [1]	LARGE	25			1950-74
6b Primary exports [1]	LARGE	18			1957-74
6c Manufactured exports [1]	LARGE	18		1965,1970-71	1957-64, 1966-69, 1972-74
6d Services exports [1]	LARGE	25		1950-74	
6e Imports [1]	LARGE	25			1950-74

continued/.....

TABLE I (continued)

	Variable name	Countries on which regression based	No. of observations	Years observed value: Below expected	Normal	Above expected
DEMOGRAPHIC AND DISTRIBUTIONAL						
7a	Primary share of employment	ALL	15	1972-73	1960-71, 1974	
7b	Industry share of employment	ALL	15	1960-74		
7c	Services share of employment	ALL	15			1960-74
8	Urbanisation [3]	ALL	3	1951,1960, 1970		
9a	Birthrate	ALL	2			1960,1970
9b	Deathrate	ALL	2		1960,1970	
10a	Share of highest 20% in income	ALL	1			1965
10b	Share of lowest 40% in income	ALL	1	1965		

Notes:
[1] Expressed as a fraction of GDP
[2] School enrolment as a fraction of people aged 5-19
[3] Urban dwellers as a fraction of total population
[4] Observed values compared with 5-year moving average of expected values to lessen effect of uninteresting year-to-year fluctuations.

normal throughout the period and only four out of twenty observations of government consumption are above normal.

(iii) is underindustrialised and over-serviced. Industry's share of both production and employment is consistently below normal. Over-servicing does not appear in the production figures but does in the employment figures. This may be a further result of income inequality insofar as it affect patterns of demand. The primary share in both employment and production is (perhaps surprisingly) normal over much of the period.

(iv) trades heavily. Exports and imports are way above normal for large countries, coming closer to the expected paths for small balanced countries. Here the marginality of South Africa's classification makes itself most clearly felt. Primary exports are well above normal; manufactured exports tend to be above normal while service exports are normal. This situation reflects the consequences of our natural resource endowments and of our leading position in Southern Africa.

(v) is behind on urbanisation - more sharply so in 1970 than in 1960 or 1951 - reflecting the effects of influx control.

2. UNRISD

For each of the 18 indicators one may, in the case of South Africa, find a raw measurement. These measurements are reported in Appendix B. These raw measurements are converted into transformed scores. Each transformed score lies between 0 and 100 and transformations are so made that on average a given score on one indicator corresponds to that score on all the others. The correspondences and transformations were made on the basis of a cross-country sample for 1960. Correspondence charts for other years would look somewhat different, but they are not available.

For South Africa (as for other individual countries) a 'development profile' can be drawn which shows the pattern of deviations on individual scores from the mean score which can be taken as a general index of development. Transformed scores for 1960, 1965, 1970 and 1975 are reported in Table II which enables us to make the following observations:

(i) The transformed scores vary considerably over the eighteen indicators suggesting considerable deviations from normal in South African development. That these imbalances are a long-standing feature of our economy follows from a relative constancy in the shape of the 1960 and 1975 profiles.

TABLE II - UNRISD indicators(transformed scores) 1960,1965,1970 and 1975.

	1960	1965	1970	1975
Social				
1. Expectation of life at birth	25	27	28	29
2. Percentage population in localities of 20 000 plus	46	(47)	48	(49)
3. Per capita animal protein consumption	71	65	69	64
4. Combined primary and secondary enrolment ratio	28	31	35	46
5. Vocational enrolment ratio	32	34	35	34
6. Average number of persons per room	13	(13)	14	(14)
7. Newspaper circulation per thousand	25	24	24	25
8. Telephones per hundred thousand	56	60	70	76
9. Radios per thousand	41	48	55	63
Economic				
10. % EAP in electricity, gas, water, sanitary services, transport, storage and communication	39	38	35	36
11. Agricultural production per male agricultural labourer	32	34	34	36
12. % adult male labour in agriculture	69	74	77	80
13. Per capita electricity consumption	67	79	87	93
14. Per capita steel consumption	37	51	58	66
15. Per capita energy consumption	82	90	96	100
16. % GDP from manufacturing	38	46	49	49
17. Per capita foreign trade	52	56	57	70
18. % EAP as salaried and wage earners	76	71	70	69
Mean	46	49	52	56
Social mean	37			44
Economic mean	55			67
GNP per capita	39	43	49	51

(ii) Social indicators lie generally below economic indicators in both 1960 and 1975. In terms of transformed scores the gap between the two sets actually widened over the period. Six of the nine economic indicators grew by more than 10 points over the period, whereas only three of the social indicators (primary and secondary education, telephones and radios) did. One can think of particular reasons for the exceptions to the general relative position of social and economic indicator scores. For instance, telephones per hundred thousand are high because the majority of telephones are installed in business premises, so that this 'social' indicator has 'economic' content. On the other hand, agricultural production per male agricultural labourer is relatively low because there remains a large subsistence sector side-by-side with a capital-intensive and efficient commercial sector. Insofar as this reflects dualism in South African society, this is a 'social' as well as an 'economic' indicator. So the major conclusion to be drawn from the UNRISD study is that, for our general level of development, we have a powerful economy but rather poor social conditions.

(iii) Of the social indicators, one may observe that life expectancy and standards of housing are particularly low. The two education indicators are below the mean throughout the period, confirming the finding in the Chenery and Syrquin section. There has, however, been a substantial narrowing of the gap between the primary and secondary education indicator and the mean since 1960.

(iv) The share of manufacturing in GDP score (lower than the mean) and foreign trade score (higher than the mean) confirms the findings in Table I. Note also the very high scores of electricity consumption and energy consumption.

3. Adelman and Morris

Adelman and Morris start out by applying factor analysis to per capita GNP and 24 social and political variables for all 74 countries. They extract three factors jointly 'explaining' 70% of the variance in per capita GNP:

- I, interpreted as representing 'the processes of change in attitudes and institutions associated with the breakdown of traditional social organisation'[13] (53%)
- II, interpreted as representing 'a movement along a scale that ranges from centralised authoritarian political forms to specialised political mechanisms capable of representing the varied group interests of a society and of aggregating these interests through participant national political organs'[14] (10%)

- III, the 'character of leadership' ... a movement along the scale implies a decline in the power of traditional elites and a rise in the strength of 'industrialising elites ' [15] (7%)

Since the first factor accounts for over 50% of intercountry variations in income per capita, Adelman and Morris used the country scores for this factor to rank countries with respect to their level of socioeconomic development. The countries are then divided into three groups. Interestingly, South Africa falls into the intermediate group. It had by far the highest per capita GNP in 1961 in this group; in fact the South African GNP per capita exceeded those for 17 countries in the 25-country 'high' group. (Remember that Adelman and Morris are considering underdeveloped countries). This peculiarity reinforces the point (from a different angle)[16] already discussed - South Africa shows a particular disparity between 'social' and 'economic' development.

Countries in the intermediate group are historically, culturally and geographically heterogeneous. They are, however,'without exception transitional societies in which the process of social, economic and political modernisation has proceeded far enough to profoundly disturb or even completely shatter traditional customs and institutions without, however, proceeding far enough to set them on the path of continuous and effective development.'[17] Yet, as far as the economic component of development is concerned, they generally have high enough rates of gross investment for sustained growth - this is certainly the case in South Africa. Another general characteristic of intermediate countries is unevenness of social change; this is illustrated in Table III which displays the scores on all social indicators for South Africa in 1957-62.

TABLE III Social indicators: South Africa 1957-62

Indicator	Score	Interpretation
Size of the traditional agricultural sector	A	Less than 25% of population in traditional subsistence agriculture
Extent of dualism	*	Some significant modernisation of methods of production in almost all sectors of the economy. No clear-cut sectoral or geographical cleavage between the modern and nonmodern segments of the economy.
Extent of urbanisation	A-	30% or more of total population in urban areas of 20 000 or more inhabitants
Character of basic social organisation	C+	Strong tribal allegiances widespread, but these have been weakened in important rural areas as well as urban areas
Importance of the indigenous middle class	D+	Expatriate settled group comprising over 1% of the population dominate the middle class almost completely
Extent of social mobility	B-	School enrolment ratio of over 40 percent. Middle class occupations over 10 percent of active male population. But presence of prohibitive ethnic or cultural barriers affects significant parts of the population
Extent of literacy	B-	Literacy rate of 35 to 44 percent
Extent of mass communication	B+	Composite index based on daily newspaper circulation and number of radio receivers
Degree of cultural and ethnic homogeneity	D	Less than 51% of the population speaks the dominant language
Degree of social tension	C	During 1957-62 suffered from marked social tensions accompanied by considerable violence and social instability arising from racial, tribal, religious and cultural tension

continued/.....

TABLE III (continued)

Indicator	Score	Interpretation
Crude fertility rate	C+	Fertility rate of between 40 and 49 per thousand
Modernisation of outlook	A	Outlook of the urban educated population was significantly modernised, judging by the standards of less-developed countries. Programmes of political, social and economic modernisation had gained significant support among both the urban and rural populations

Source:- Adelman and Morris (1971) pp.19-51. Where necessary, scores have been transformed to make A the 'modern' end of the scale.
* Unranked variable

This uneven social change generates social tension which in turn generates structural change and/or political instability.

In their second book (which draws on much the same data as the first) Adelman and Morris set out to investigate sources of intercountry differences in levels of political participation in underdeveloped nations. They construct an ordinal measure of political participation based on three broad criteria:

- the extent to which the major socioeconomic and cultural-ethnic groups, through participant associations and institutions, have their interests represented in and are able to influence the making of national political decisions affecting them.

- the extent to which individuals belonging to nationally represented cultural-ethnic and socioeconomic groups can choose between different political channels in seeking national representation of their interests.

- the extent of actual participation by individuals in the national political process through participation in political parties, special interest groups, or other institutions or associations carrying out political functions, or through voluntary voting

between genuine political alternatives.[18]

South Africa scored a poor J on this measure being a country 'in which major groups in the population probably consisting of over two-thirds of the population are without formal national political representation and in which it is also probable that less than one-quarter of the adult population participate in some minimal way in groups, associations or institutions representing their interests at the national level.' [19] Some might argue that the position has changed for the better since 1957/62; others would deny this. The difference would revolve around the content given to terms like 'national' and 'participation'. This illustrates the general point that it is more hazardous to assign a symbol to a political variable than it is to assign a number to an economic indicator. The social indicators considered fall between these two extremes of reliability.

The technique of discriminant analysis is applied to obtain a set of country characteristics that best discriminate among groups of nations having different extents of political participation. The technique is applied to all 74 countries and to each of the three groups already distinguished. For the intermediate group the discriminant function includes three clusters of variables: freedom of political opposition and of the press, importance of the indigenous middle class and political strength of the traditional elite.[20] The interesting thing to note is that of the indicators that go to make up these three variables eight are political, four social and three economic. The implication (and it holds for other groups of countries too) is, as Adelman and Morris point out, 'that increases in political participation are by no means automatic consequences of socioeconomic development in underdeveloped countries.' [21]

Finally, we may turn to Adelman and Morris's analysis of the size distributions of income in underdeveloped countries. They consider three measures:

- the income share of the lowest 60% of the population
- the income share of the middle quintile of the population
- the income share of the wealthiest 5% of the population.

These are used as dependent variables in successive 'analyses of hierarchial interactions,' a type of analysis of variance which does not assume linear relationships. Adelman and Morris describe the technique as follows:

'...the focus is on 'explaining' variations in the dependent variable. The analysis selects from a set of independent variables the one that splits the parent sample into two subgroups having the smallest possible combined dependent-variable variance within the subgroups ... Each of the two subgroups thus obtained is then treated as a new parent sample for which the analysis again selects the independent variable providing the 'best' split ... Each of these subgroups is again treated as a parent sample, and the process is continued through a series of binary splits. The result is an asymmetrical branching process that subdivides the original parent sample into subgroups constructed to facilitate prediction of the value of the dependent variable with the least error ... To ensure statistical significance, groups are candidates for splits only (1) if they contain a number of observations greater than $\bar{N}$ (set equal to 10) and (2) if they include at least a specified proportion of the overall variance (set equal to 10 percent). In addition, splits that are not statistically significant at the 5% percent level (by an F test) and splits that produce splinter groups (i.e. that contain fewer than five observations) are not carried out in this analysis.' [22]

The placing of South Africa (in 1965) in this scheme is complicated because Adelman and Morris seem to have made a subtle mistake [23] and allowed the computer to classify South Africa as sharply dualistic rather than mildly dualistic. Instead of belonging to the sharp dualism and low and medium GNP per capita group (where the share of the poorest 60% in income is predicted to be 17%), South Africa should appear with the low and moderate dualism, moderate and high development potential and moderate and low school enrolment group (where the predicted share is 23%). The actual share reported by Adelman and Morris was 16%. As far as the share of the top 5% is concerned, South Africa is in the group having fair or abundant natural resources, a small indigenous or expatriate middle class and a mixed economy with a large government role and a predicted top 5% share of 31% (actual share reported as 39%). When it comes to the share of middle 20%, South Africa is in the group displaying low and moderate dualism and diversified manufacturing exports. The predicted share is 16% and the actual share 11%. These results confirm the finding in the Chenery and Syrquin study that inequality in South Africa is greater than the expected value.

Conclusions

The results of the three studies confirm one another in so far as they are comparable. There emerge two linked special features of particular importance in South African development over the period 1950-1975. These are:

(i) the lag between economic and social development. This shows up in low scores in the fields of social welfare (health and housing), social organisation (basic social organisation, indigenous middle class and social mobility) and behaviour (fertility rate). Economic development is more normal (or 'above normal') with a few exceptions: low school enrolment, a low share of industry in both production and employment and low urbanisation.

(ii) the unequal distribution of income. This is inferred directly from reported income distribution figures (which are not very reliable) and indirectly from its effects.

It is not implausible to attribute some of these deviations from 'normal' to uniquely South African political and social institutions. The political retardation of urbanisation has as its accompaniment the preservation of more of traditional African social organisation than would otherwise be the case. The poor distribution of education (which reflects the unequal allocation of resources within it) leads to low social mobility (also restrained by law) which contributes to inequality which in turn contributes to poorly distributed education etc. Inequality in the allocation of public resources to health and housing lower scores in these fields.

It therefore appears that O'Dowd's assertion quoted at the beginning of this paper is altogether too simple. It assumes that the organisation of South African society into racial estates has only the effect of allocating roles within a given structure (given by the level of development). This paper suggests that there are abnormalities in South African development judged against an international background between 1970 and 1975. These are related to well-known features of the South African scene - racial organisation affects social structure as well as distributing roles within it.

NOTES

1 D. Hobart Houghton, The South African Economy (second edition), Oxford University Press, 1967, p.6. The reference is, of course, to W.W. Rostow, The Stages of Economic Growth (A Non-Communist Manifesto), Cambridge University Press, 1960.

2 M.C. O'Dowd, The Stages of Economic Growth and the Future of South Africa, mimeo, 1966, p.1.

3 H. Chenery and M. Syrquin, Patterns of Development 1950-1970, Oxford University Press, 1975.

4 United Nations Research Institute for Social Development, Contents and measurements of socio-economic development, Report no 70,10, Geneva: UNRISD, 1970.

5 I. Adelman and C.T. Morris, Society, Politics and Economic Development ; A Quantitative Approach, John Hopkins, 1971.
Economic Growth and Social Equity in Developing Countries, Stanford University Press, 1973.

6 Chenery and Syrquin, op.cit., p.5-7.

7 Adelman and Morris (1971), p.15.

8 Adelman and Morris (1971), p.149.

9 Chenery and Syrquin explain that the semilog formulation was chosen 'to retain the adding-up properties of the shares of a given aggregate. The fitted equations and derived predicted values of a common semilog formulation for the components of an aggregate add up identically to the fitted equation and predicted value for the aggregate - variable by variable - provided all estimates refer to the same sample.'(pp. 142-3)

10 Chenery and Syrquin, op. cit., p. 74 and 88.

11 Limits of 2% were chosen because Chenery and Syrquin have failed to report some of their coefficients to sufficient decimal places to enable users of their book to calculate expected values more accurately than this. Thus if (for example) the expected savings ratio were 25%, savings would be regarded as normal if the observed ratio lay between 23% and 27%.

12 Expected values of variables for the period 1970-1974 were calculated assuming no shift in the time period coefficient between 1965-1969 and 1970-1974.

13 Adelman and Morris (1971), p.153.

14 Adelman and Morris (1971), p.155.

15 Adelman and Morris (1971), p.157.

16 The variables associated with Factor I (apart from GNP per capita) are size of the traditional agricultural sector, extent of dualism, extent of urbanisation, character of basic social organisation, importance of the indigenous middle class, extent of social mobility, extent of literacy, extent of mass communication, crude fertility rate and degree of modernisation of outlook.

17 Adelman and Morris (1971) p.203.

18 Adelman and Morris (1973) p.118.

19 Adelman and Morris (1973) p.215.

20 For an interpretation of why this is so, consult Adelman and Morris (1973) pp.131-133.

21 Adelman and Morris (1973) p.139.

22 Adelman and Morris (1973) pp. 146-148.

23 The mistake arises because South Africa has a unique value (A-) on the dualism indicator (Adelman and Morris. 1971, p.24.). This indicator is a nominal rather than an ordinal variable; accordingly the computer has been allowed to class A- with C (sharp dualism). This should have been prohibited.

Appendix A

Observed and expected values of the Chenery and Syrquin variables - South Africa, 1950-74

Source codes

(1) South African Reserve Bank, A statistical presentation of South Africa's national accounts for the period 1946 to 1970, Pretoria, June 1971
(2) South African Reserve Bank, A statistical presentation of South Africa's national accounts for the period 1960 to 1974,Pretoria, March 1976
(3) Dept. of Statistics, South African Statistics 1976, Pretoria, 1977
(4) South African Reserve Bank, Quarterly Bulletin for December 1978
(5) Chenery and Syrquin, op. cit.
(6) Dept. of Statistics, Statistical Yearbook 1964, Pretoria, 1965
(7) Dept. of Statistics, S.A. Statistics 1970, Pretoria,1971
(8) Dept. of Statistics, S.A. Statistics 1974, Pretoria,1975
(9) S.A. Reserve Bank, A statistical presentation of South Africa's balance of payments for the period 1946 to 1970, Pretoria, 1971
(10) S.A. Reserve Bank, A statistical presentation of South Africa's balance of payments for the period 1956 to 1975, Pretoria, 1977
(11) C. Simkins, Measuring and Predicting Unemployment in South Africa, 1960-77 in C. Simkins and D. Clarke, Structural Unemployment in Southern Africa, Natal University Press, 1978.

Note: Primes denote predicted values of the variables in question.

I Gross National Product and Population

	GDP at factor cost	Less net factor payments to rest of world	GNP at factor cost	GDP deflator	GNP at 1963 factor cost(R)	GNP at 1964 factor cost($)	Population (mill)	GNP per capita ($)
1950	2549 [1]	146 [2]	2403	74,1 [5]	3243	4612	13,59 [8]	339
1	2772	166	2606	76,7	3398	4832	13,89	348
2	2976	177	2799	79,6	3516	5000	14,21	352
3	3373	182	3191	85,8	3719	5289	14,54	364
4	3624	198	3426	87,1	3933	5593	14,87	376
5	3819	215	3604	87,7	4109	5843	15,22	384
6	4123	240	3883	90,0	4314	6135	15,58	394
7	4342	230	4112	91,5	4494	6391	15,95	401
8	4445	230	4215	91,7	4597	6537	16,32	401
9	4694	242	4452	93,3	4772	6786	16,73	406
1960	4965 [3]	247 [4]	4718	94,8	4977	7078	17,12 [9]	413
1	5256	269	4987	96,3	5179	7365	17,58	419
2	5602	246	5356	97,2	5510	7836	18,05	434
3	6224	250	5974	100,0	5974	8495	18,55	458
4	6816	273	6543	102,4	6390	9087	19,08	476
5	7474	303	7171	105,7	6784	9647	19,61	492
6	8109	324	7785	109,7	7097	10092	20,16	501
7	8981	349	8632	112,9	7646	10873	20,73	525
8	9643	394	9249	116,2	7960	11320	21,29	532
9	10735	445	10290	121,1	8497	12083	21,88	552
1970	11949 [6]	509 [7]	11440	125,9	9087	12923	22,47	575
1	13224	508	12716	133,4	9532	13555	23,03	589
2	14859	584	14275	145,7	9798	13934	23,67	589
3	18334	710	17624	171,6	10270	14605	24,31	601
4	22584	903	21681	192,1	11286	16050	24,94	644

Sources: [1] (1) Table 7 [2] (1) Table 1 [3] (2) Table 4 [4] (2) Table 1 [5] (3) p.21.4
[6] (4) pS- 72 [7] (4) p S- 69 [8] S.A. Statistics 1972 pA - 9 (adjusted)
[9] (3) p. 1.6

Note: Conversion factor from 1963 Rand to 1964 $ = $\frac{1}{0,720}$ x 1,0239 = 1,4221

II Foreign capital inflow and table of basic variables

	Foreign capital inflow (R mill)	Y	N	F	T	F'	F (5 year moving average)
1950	182 [1]	339	13,59	0,071	1	0,004 [4]	
1	187	348	13,89	0,067	1	0,004	
2	144	352	14,21	0,048	1	0,003	0,055
3	113	364	14,54	0,034	1	0,003	0,043
4	193	376	14,87	0,053	1	0,003	0,031
5	51	384	15,22	0,013	2	0,015	0,019
6	35	394	15,58	0,008	2	0,015	0,019
7	-47	401	15,95	-0,011	2	0,015	0,005
8	134	401	16,32	0,030	2	0,015	-0,004
9	-61	406	16,73	-0,013	2	0,014	-0,011
1960	-180 [2]	413	17,12	-0,036	3	0,017	-0,012
1	-129	419	17,58	-0,025	3	0,017	-0,021
2	-88	434	18,05	-0,016	3	0,017	-0,019
3	-80	458	18,55	-0,013	3	0,016	-0,005
4	-41	476	19,08	-0,006	3	0,016	0,003
5	255	492	19,61	0,034	4	0,014	0,010
6	141	501	20,16	0,017	4	0,013	0,022
7	162	525	20,73	0,018	4	0,013	0,027
8	456	532	21,29	0,047	4	0,013	0,030
9	180	552	21,88	0,017	4	0,013	0,039
1970	582 [3]	575	22,47	0,049	4	0,012	0,041
1	818	589	23,03	0,062	4	0,012	0,031
2	449	589	23,67	0,030	4	0,012	0,036
3	-46	601	24,31	-0,003	4	0,012	
4	899	644	24,94	0,040	4	0,012	

Sources: [1] (1) Table 15 [2] (2) Table 11 [3] (4) p S-84 [4] (5) p.30.

III Gross domestic saving and investment

Date	Gross domestic saving (R mill)	Gross domestic investment	S	S'	I	I'
1950	516 [1]	555 [1]	0,202	0,169 [4]	0,218	0,235 [4]
1	501	760	0,181	0,172	0,274	0,234
2	592	751	0,199	0,187	0,252	0,230
3	681	848	0,202	0,199	0,251	0,227
4	803	908	0,222	0,184	0,251	0,232
5	869	962	0,228	0,225	0,252	0,233
6	973	984	0,236	0,229	0,239	0,232
7	1059	1075	0,244	0,244	0,248	0,228
8	1012	1154	0,228	0,210	0,260	0,236
9	1177	1009	0,251	0,244	0,215	0,227
1960	1187 [2]	1150 [2]	0,239	0,269	0,232	0,228
1	1362	1147	0,259	0,259	0,218	0,229
2	1435	1118	0,256	0,252	0,200	0,231
3	1679	1513	0,270	0,250	0,243	0,233
4	1710	1758	0,251	0,245	0,258	0,234
5	1902	2198	0,254	0,219	0,294	0,249
6	2095	2096	0,258	0,232	0,258	0,246
7	2618	2799	0,292	0,232	0,312	0,246
8	2561	2483	0,266	0,208	0,257	0,251
9	2798	3043	0,261	0,232	0,283	0,245
1970	2834 [3]	3702 [3]	0,237	0,206	0,310	0,252
1	3158	4215	0,239	0,195	0,319	0,254
2	3931	4021	0,265	0,220	0,271	0,247
3	4969	5021	0,271	0,247	0,274	0,240
4	6034	7032	0,267	0,212	0,311	0,249

Sources: [1] (1) Table 15 [2] (2) Table 11 [3] (4) pS-84 [4] (5) p.200

IV Government revenue and taxes

Date	Govt. revenue	G	G'	Tax revenue	T	T'
1950	399 [1]	0,157	0,165 [4]	346 [1]	0,136	0,184 [5]
1	474	0,171	0,168	409	0,148	0,186
2	521	0,175	0,172	476	0,160	0,189
3	593	0,176	0,176	547	0,162	0,192
4	642	0,177	0,178	557	0,154	0,192
5	675	0,177	0,185	577	0,151	0,204
6	710	0,172	0,188	636	0,154	0,206
7	760	0,175	0,192	674	0,155	0,210
8	773	0,174	0,189	690	0,155	0,205
9	838	0,179	0,195	751	0,160	0,210
1960	914 [2]	0,184	0,194	785 [2]	0,158	0,206
1	929	0,177	0,195	799	0,152	0,206
2	978	0,175	0,197	832	0,149	0,207
3	1257	0,202	0,202	1087	0,175	0,210
4	1377	0,202	0,205	1178	0,173	0,212
5	1505	0,201	0,205	1298	0,174	0,214
6	1614	0,199	0,209	1435	0,177	0,217
7	1951	0,217	0,214	1661	0,185	0,220
8	2103	0,218	0,212	1827	0,189	0,217
9	2492	0,232	0,219	2142	0,200	0,223
1970	2720 [3]	0,228	0,220	2381 [3]	0,199	0,222
1	2981	0,225	0,221	2631	0,199	0,223
2	3342	0,225	0,225	2945	0,198	0,226
3	4310	0,235	0,231	3656	0,199	0,231
4	5386	0,238	0,233	4600	0,204	0,231

Sources: [1](1) Table 17 [2] (2) Table 13 [3] (4) pS-85 [4] (5) p 200
[5] (5) p 30

V Education expenditure

For all races and all age groups from both the revenue and the loan accounts

Date	Rm	Ed	Ed' [5]
1950 [1]	85,0	0,033	0,023
1960	184,0	0,037	0,034
1963	230,0	0,037	0,035
1969 [2]	421,7	0,039	0,042
1970 [3]	508,6	0,043	0,042
1971	603,7	0,046	0,042
1972 [4]	655,6	0,044	0,042
1973	789,0	0,043	0,042

Sources:
1 S.A. Institute of Race Relations, Annual Survey of Race Relations 1965
2 S.A. Institute of Race Relations, Annual Survey of Race Relations 1972
3 S.A. Institute of Race Relations, Annual Survey of Race Relations 1973
4 S.A. Institute of Race Relations, Annual Survey of Race Relations 1974
5 (5) p 30

VI Education - enrolment

	Whites		Coloureds/Asians		Africans	Total	Population 5-19				
	Public	Private	Public	Private			Percent	No.(mill)	E	E'[7]	E' (5 yr. moving av.)
1950	467649[1]	37262 [1]	262354[4]	6155 [2]	779368 [3]	1552788	33,70	4,58	0,339	0,659	
1	498315	38667	272168	7533	799151	1615834	33,78	4,69	0,345	0,659	
2	515591	39791	288743	5851	845812	1695788	33,86	4,81	0,353	0,630	0,643
3	536058	39846	301730	7769	888431	1773834	33,94	4,93	0,360	0,613	0,635
4	555996	40545	318710	7271	966867	1889389	34,03	5,06	0,373	0,654	0,626
5	574136	41835	333311	7076	1013910	1970268	34,11	5,19	0,380	0,618	0,618
6	588163	41342	349245	6254						0,616	0,627
7	602465	42670	366976	6583						0,587	0,614
8	614178	44217	381190	6591	1339132	2385308	34,36	5,61	0,425	0,661	0,599
9	630509	45500	403218	6404	1406939	2492570	34,44	5,76	0,433	0,590	0,590
1960	645546	46890	425994	6874	1499844	2625148	34,52	5,91	0,444	0,543	0,590
1	658271	47087	449444	6912	1603196	2764910	34,74	6,11	0,453	0,567	0,580
2	671798	46822	475883	7004	1678388	2879895	34,96	6,31	0,456	0,591	0,587
3	681663	48684	500228	6576	1764150	3001301	35,18	6,53	0,460	0,607	0,626
4	698383	49905	532718	6582	1830403	3117991	35,40	6,75	0,462	0,628	0,655
5	714318	49754	542820	6783	1950558	3264233	35,62	6,99	0,467	0,737	0,682
6	732283	49136	564896	5740	2104643	3456698	35,83	7,22	0,479	0,712	0,716
7	744700	49056	581452	6103	2233504	3614815	36,05	7,47	0,484	0,724	0,737
8	759497	50956	613841	5508	2388081	3817883	36,27	7,72	0,495	0,778	0,749
9	772175	49224	653888	4730	2542365	4022382	36,49	7,98	0,504	0,734	0,772
1970	817238	47169	674474	4559	2737450	4280890	36,71	8,25	0,519	0,798	0,782
1	830136	47163	704743	4289	2916519	4502850	36,71	8,45	0,533	0,827	0,770
2	840216	45927	733671	4167	3079507	4703488	36,71	8,69	0,541	0,773	0,785
3	852074	44768	763168	3781	3286499	4950290	36,71	8,92	0,565	0,720	
4	859587	43902	796276		3486261	5186026	36,71	9,16	0,566	0,808	

Note: % Population 5-19

1951: $\frac{27.8 \times 2641689}{12671452} + \frac{36.6 \times 1103016}{12671452} + \frac{39.9 \times 366664}{12671452} + \frac{35.0 \times 8560083}{12671452} = 33,78$

1960: [5] $\frac{2171170+1840972+1506192}{15988047} = 34,52$ 1970 : [6] $\frac{8001748}{21794328} \times 100 = 36,71$

Percentages for other years obtained by interpolation and extrapolation. 1971-1974 set same as 1970

Sources: [1] (3) p.5.4 [2] (3) p.5.6 [3] (3) p.5.8 [4] Union Statistics for 50 years pp.A-B & A-14 [5] 1960 Population Census vol.9 pp.1-2 [6] 1970 Population Census [7] (4) p.200

VII Government and private consumption

	C	C	C'	G	G	G'	G' (5 year moving average)	C' (5 year moving average)
1950	1740 [1]	0,683	0,677 [7]	328 [4]	0,129	0,155 [7]		
1	1960	0,707	0,675	352	0,127	0,154		
2	2175	0,731	0,667	420	0,141	0,149	0,151	0,669
3	2348	0,696	0,660	457	0,135	0,145	0,146	0,656
4	2479	0,684	0,667	476	0,131	0,151	0,140	0,643
5	2662	0,697	0,611	501	0,131	0,129	0,135	0,629
6	2775	0,673	0,608	540	0,131	0,128	0,133	0,621
7	2957	0,681	0,600	557	0,128	0,123	0,127	0,607
8	3095	0,696	0,618	590	0,133	0,134	0,124	0,608
9	3213	0,684	0,600	623	0,133	0,122	0,122	0,611
1960	3362 [2]	0,677	0,616	655 [5]	0,132	0,115	0,122	0,616
1	3480	0,662	0,621	702	0,134	0,118	0,120	0,617
2	3663	0,654	0,624	815	0,145	0,121	0,120	0,622
3	3969	0,638	0,623	898	0,144	0,123	0,126	0,625
4	4431	0,650	0,625	1007	0,148	0,125	0,130	0,626
5	4764	0,637	0,633	1125	0,151	0,142	0,133	0,626
6	5174	0,638	0,626	1256	0,155	0,137	0,138	0,629
7	5599	0,623	0,625	1355	0,151	0,138	0,141	0,629
8	6165	0,639	0,638	1484	0,154	0,147	0,142	0,630
9	6893	0,642	0,624	1701	0,158	0,139	0,145	0,633
1970	7714 [3]	0,646	0,637	2005 [6]	0,168	0,149	0,146	0,634
1	8716	0,659	0,642	2389	0,181	0,153	0,144	0,629
2	9702	0,653	0,629	2548	0,171	0,143	0,146	0,631
3	11477	0,626	0,615	2906	0,159	0,135		
4	13557	0,600	0,631	3680	0,163	0,148		

Sources:
[1] (1) Table 8
[2] (2) Table 6
[3] (4) p. S-73
[4] (1) Table 17
[5] (2) Table 13
[6] (4) pS-85
[7] (5) p.204

VIII Food consumption
(incl. beverages and tobacco)

	Food consumption	Food as % of GDP	FD[1]
1950	602 [1]	0,236	0,306 [4]
1	669	0,241	0,303
2	806	0,271	0,295
3	864	0,256	0,288
4	892	0,246	0,291
5	946	0,248	0,270
6	1000	0,243	0,266
7	1053	0,243	0,258
8	1102	0,248	0,272
9	1144	0,244	0,257
1960	1183 [2]	0,238	0,237
1	1249	0,238	0,239
2	1299	0,232	0,240
3	1380	0,222	0,236
4	1521	0,223	0,236
5	1675	0,224	0,236
6	1806	0,223	0,228
7	1942	0,216	0,225
8	2110	0,219	0,234
9	2255	0,210	0,221
1970	2500 [3]	0,209	0,229
1	2745	0,208	0,232
2	2953	0,199	0,221
3	3526	0,192	0,209
4	4253	0,188	0,218

Sources: [1](1) Table 8 [2] (2) Table 5 [3] (4) pS-73 [4](5) p 38

IX Value added by sector

	SIC 1	SIC 2	PRI	Pr	Pr'	Pr' 5 yr. moving average	SIC 3	SIC 5	IND	In	In'
1950 [1]	454	338	792	0,311	0,238 [4]		470	80	550	0,216	0,298 [4]
1	513	366	879	0,317	0,237		511	90	601	0,217	0,300
2	483	371	854	0,287	0,245	0,241	572	116	688	0,231	0,297
3	574	365	939	0,278	0,250	0,244	598	112	810	0,240	0,298
4	593	399	992	0,274	0,235	0,248	760	105	865	0,239	0,305
5	578	470	1048	0,274	0,254	0,251	780	109	889	0,233	0,291
6	619	531	1150	0,279	0,254	0,249	843	123	966	0,234	0,292
7	620	572	1192	0,275	0,263	0,254	875	134	1009	0,232	0,290
8	561	576	1137	0,256	0,239	0,258	912	149	1061	0,239	0,299
9	589	630	1219	0,260	0,262	0,260	942	155	1097	0,234	0,291
1960 [2]	601	684	1285	0,259	0,272	0,258	1023	152	1175	0,237	0,281
1	664	709	1373	0,261	0,264	0,260	1111	147	1258	0,239	0,285
2	682	742	1424	0,254	0,254	0,255	1191	157	1348	0,241	0,290
3	753	788	1541	0,248	0,249	0,240	1363	183	1546	0,243	0,295
4	711	879	1590	0,233	0,238	0,229	1542	237	1779	0,261	0,307
5	760	944	1704	0,228	0,200	0,219	1745	299	2044	0,273	0,317
6	838	1012	1850	0,228	0,208	0,207	1875	325	2200	0,271	0,316
7	1042	1036	2078	0,231	0,203	0,199	2028	348	2376	0,265	0,319
8	949	1092	2041	0,212	0,184	0,194	2197	377	2574	0,267	0,327
9	991	1215	2206	0,205	0,198	0,185	2538	424	2962	0,275	0,329
1970 [3]	973	1207	2180	0,182	0,175	0,181	2796	507	3303	0,275	0,334
1	1168	1164	2332	0,176	0,164	0,184	2983	586	3569	0,270	0,339
2	1316	1513	2829	0,190	0,183	0,178	3210	677	3887	0,262	0,333
3	1524	2244	3768	0,206	0,200		3944	811	4755	0,259	0,328
4	2197	3068	5265	0,233	0,168		4634	1007	5641	0,250	0,343

Sources: [1] (1) Table 7 [2] (2) Table 4 [3] (4) p S-72 [4] (5) p 83

	SIC 4	SIC 7	Ut	U	U'	SIC 6	SIC 8	SIC 9	General Govt.	Others	SER	Sr	Sr'
1950 [1]	44	236	280	0,110	0,078	375	202	47	196	103	997	0,354	0,420
1	47	263	310	0,112	0,079	374	223	51	215	115	982	0,354	0,419
2	51	280	331	0,111	0,079	416	254	55	247	131	1103	0,371	0,412
3	62	309	371	0,110	0,079	520	265	60	268	139	1253	0,371	0,408
4	71	350	421	0,116	0,080	550	293	65	284	144	1346	0,371	0,416
5	83	373	456	0,119	0,083	583	314	69	301	153	1426	0,373	0,409
6	90	390	480	0,116	0,083	624	335	73	328	167	1527	0,370	0,408
7	97	415	512	0,118	0,083	654	370	77	354	174	1629	0,375	0,401
8	105	436	541	0,122	0,084	674	352	82	379	179	1706	0,384	0,416
9	114	469	583	0,124	0,083	684	431	87	406	187	1795	0,382	0,400
1960 [2]	123	506	629	0,127	0,085	708	459	92	421	197	1877	0,370	0,397
1	134	512	646	0,123	0,086	732	450	99	450	205	1980	0,374	0,402
2	144	554	698	0,125	0,086	804	520	107	483	220	2134	0,331	0,406
3	157	613	770	0,124	0,087	905	585	115	530	232	2368	0,330	0,400
4	169	677	846	0,124	0,088	1000	649	127	577	245	2601	0,382	0,411
5	181	710	891	0,119	0,090	1096	716	136	624	265	2837	0,380	0,432
6	200	756	956	0,118	0,090	1154	750	151	722	284	3101	0,382	0,425
7	227	861	1088	0,121	0,091	1299	880	165	793	302	3439	0,383	0,427
8	252	910	1162	0,121	0,092	1464	1014	183	883	323	3867	0,401	0,437
9	277	991	1268	0,118	0,092	1621	1160	200	970	343	4299	0,400	0,427
1970 [3]	307	1154	1461	0,122	0,093	1791	1472	230	1132	373	5005	0,419	0,439
1	351	1309	1660	0,126	0,094	1942	1561	257	1357	435	5562	0,420	0,444
2	409	1387	1796	0,121	0,093	2172	1691	282	1508	455	6248	0,427	0,432
3	478	1766	2244	0,122	0,093	2716	2175	316	1736	676	7568	0,413	0,431
4	537	2047	2584	0,114	0,095	3376	2640	362	2115	662	9095	0,403	0,437

X Exports and imports

	Exports	Imports	GDP	X	X' (large)	M	M' (large)	X" (small balanced)	M"
1950 [1]	828	727	2662	0,311	0,099 [4]	0,273	0,172 [4]	0,243	0,308
1	987	1090	2909	0,339	0,102	0,375	0,170	0,245	0,306
2	1004	1003	3116	0,322	0,116	0,322	0,166	0,254	0,296
3	1022	1023	3537	0,289	0,127	0,289	0,162	0,261	0,289
4	1125	1049	3808	0,295	0,111	0,275	0,165	0,254	0,301
5	1253	1152	4025	0,311	0,141	0,286	0,156	0,264	0,271
6	1382	1175	4339	0,319	0,144	0,271	0,154	0,267	0,269
7	1500	1305	4583	0,327	0,159	0,285	0,149	0,276	0,259
8	1387	1319	4711	0,294	0,125	0,280	0,157	0,259	0,283
9	1560	1168	4993	0,312	0,159	0,234	0,147	0,277	0,258
1960 [2]	1595	1304	5286	0,302	0,185	0,247	0,149	0,286	0,244
1	1692	1195	5568	0,304	0,175	0,215	0,150	0,281	0,250
2	1783	1229	5937	0,300	0,167	0,207	0,151	0,279	0,257
3	1921	1518	6601	0,291	0,163	0,230	0,151	0,279	0,260
4	2047	1840	7253	0,282	0,157	0,254	0,151	0,278	0,265
5	2091	2107	7923	0,264	0,130	0,266	0,166	0,274	0,301
6	2261	1970	8591	0,263	0,143	0,229	0,161	0,282	0,292
7	2434	2307	9523	0,256	0,142	0,242	0,161	0,283	0,294
8	2668	2268	10255	0,260	0,117	0,221	0,166	0,271	0,311
9	2731	2592	11535	0,237	0,141	0,225	0,159	0,285	0,295
1970 [3]	2757	3165	12834	0,215	0,114	0,247	0,165	0,272	0,315
1	3019	3609	14214	0,212	0,103	0,254	0,167	0,268	0,323
2	3981	3534	15927	0,250	0,128	0,222	0,159	0,281	0,305
3	5015	4371	19577	0,256	0,153	0,223	0,152	0,296	0,286
4	6656	6835	23973	0,278	0,118	0,285	0,160	0,280	0,313

Sources: [1] (1) Table 2 [2] (2) Table 2 [3] (4) pS-70 [4] (5) p.204.

		XI Composition of exports										
Date	% of merchand. exports Industrial	Merchand. exports	Gold	Primary	Industrial exports	Services exports	TOTAL	PX	PX'	IX	IX'	SX	SX'
1950	0,301 [1]	429 [6]	294 [6]	554	729	115 [6]	838					0,043	
1	0,284	575	300	712	793	190	1005					0,044	
2	0,302	575	300	705	734	146	1025					0,046	
3	0,301	592	305	720	178	146	1044					0,040	
4	0,339	560	329	765	224	162	1151					0,042	
5	0,320	737	366	857	236	178	1281					0,043	
6	0,325	819	395	948	256	199	1413					0,045	
7	0,432 [2]	868	429	933	384	215	1532	0,199	0,089	0,082	0,038	0,046	0,032
8	0,457	776	440	851	355	205	1421	0,178	0,058	0,074	0,043	0,042	0,029
9	0,483	879	503	967	435	217	1589	0,187	0,088	0,083	0,038	0,042	0,033
1960	0,487	881 [7]	630 [7]	982	429	224 [7]	1635	0,182	0,134	0,079	0,039	0,041	0,045
1	0,489	923	676	1054	449	230	1729	0,185	0,094	0,078	0,038	0,040	0,040
2	0,496 [3]	948	632	1148	470	247	1827	0,188	0,086	0,071	0,040	0,041	0,041
3	0,482	1024	693	1249	483	257	1959	0,184	0,081	0,068	0,042	0,038	0,040
4	0,480	1074	735	1294	516	301	2111	0,173	0,074	0,069	0,044	0,040	0,039
5	0,504	1067	775	1304	538	314	2155	0,150	0,043	0,066	0,050	0,039	0,037
6	0,569	1216	765	1253	652	345	2330	0,146	0,054	0,075	0,045	0,038	0,040
7	0,571	1323	775	1343	729	426	2526	0,136	0,051	0,077	0,051	0,043	0,040
8	0,567	1513	769	1421	866	480	2752	0,134	0,028	0,081	0,055	0,046	0,034
9	0,609	1485	647	1428	904	517	2849	0,119	0,048	0,075	0,052	0,043	0,041
1970	0,636	1453 [8]	837 [8]	1365	924	681 [8]	2871	0,102	0,023	0,069	0,058	0,043	0,033
1	0,634	1551	922	1490	993	677	3150	0,100	0,019	0,066	0,060	0,044	0,031
2	0,611 [4]	2216	1161	2023	1384	769	4139	0,122	0,034	0,082	0,056	0,046	0,038
3	0,617	2517	1770	2734	1553	962	5249	0,133	0,057	0,076	0,053	0,047	0,043
4	0,656	3164	2565	3647	2052	1114	6843	0,148	0,023	0,085	0,060	0,045	0,035

Sources: [1] (6) p4-7 [2] (8) p0-13 [3] (7) p0-11 [4] (2) p15.11 [5] (3) p 16-11 [6] (9) Table 1 [7] (10) Table 1
[8] (4) p5 57 [9] (5) p 234.

XII Employment (thousand)

	Primary	Industry	Services	Total	PE%	PE'	IE%	IE'	SE%	SE'
1960	2465	839	2229	5533 [1]	44,6	0,455 [2]	15,2	0,243 [2]	40,3	0,329 [2]
1	2482	856	2266	5604	44,3	0,449	15,3	0,246	40,4	0,332
2	2470	898	2323	5691	43,4	0,440	15,8	0,252	40,8	0,336
3	2474	951	2406	5831	42,4	0,429	16,3	0,258	41,3	0,341
4	2493	1064	2469	6026	41,4	0,420	17,7	0,263	41,0	0,346
5	2441	1172	2531	6144	39,2	0,402	19,1	0,272	41,2	0,354
6	2533	1231	2632	6396	39,6	0,404	19,2	0,272	41,2	0,354
7	2608	1293	2688	6589	39,6	0,394	19,6	0,277	40,8	0,358
8	2459	1324	2759	6542	37,6	0,383	20,2	0,283	42,2	0,364
9	2552	1405	2855	6812	37,5	0,385	20,6	0,282	41,9	0,363
1970	2438	1496	2922	6856	35,6	0,368	21,8	0,291	42,6	0,372
1	2492	1563	3007	7062	35,3	0,359	22,1	0,296	42,6	0,376
2	2494	1585	3096	7175	34,8	0,369	22,1	0,291	43,1	0,372
3	2566	1664	3203	7433	34,5	0,374	22,4	0,288	43,1	0,369
4	2504	1765	3317	7586	33,0	0,348	23,3	0,301	43,7	0,382

Sources: [1] (11) Table 18 [2] (5) p. 49.

XIII Urbanisation

		Urban	Rural	Total	Ur	Ur' [4]
1951 [1]		5 397 000	7 275 000	12 671 000	0,426	0,463
1960 [2]	W	2 570 394	507 920	3 078 314		
	C	1 029 182	477 616	1 506 798		
	A	397 529	79 942	477 471		
	Af	3 471 098	7 444 427	10 915 525		
	T	7 468 203	8 509 905	15 978 108	0,467	0,490
1970 [3]		10 410 293	11 384 035	21 794 328	0,478	0,564

Sources:

1 1951 Population Census
2 1960 Population Census vol. 7 no.1.
3 1970 Population Census rpt. 02-05-10
4 (5) p. 49.

XIV Birth and Death rates

1960	Birth rate [1]	Weight [2]	BR' [3]	Death rate [1]	DR'
Whites	24,8	0,179		8,7	
Coloureds	46,4	0,088		15,6	
Asians	29,7	0,028		7,6	
Africans	40,1	0,705		14,5	
All	37,6	1,000	0,316	13,4	0,121

1970	Birth rate [1]	Weight [2]	BR'	Death rate [1]	DR'
Whites	23,5	0,171		9,1	
Coloureds	36,3	0,092		14,1	
Asians	33,3	0,029		6,9	
Africans	37,7	0,709		10,3	
All	35,1	1,000	0,264	10,4	0,101

Sources:
[1] S. Trengove-Jones, A study of health and health services in S.A. since 1960, unpublished M. Com. Dissertation, University of Natal, Pietermaritzburg 1977.
[2] Statistical News Release P.11 of 19.12.78.

XV Income Distribution

		Actual [1]	'Expected' [2]
1965:	Highest 20%	0,580	0,545
	Lowest 40%	0,062	0,113

Sources:
[1] (5) p.198
[2] (5) p.49

Appendix B

Construction of the UNRISD profile for South Africa

It has been possible to construct 'raw' scores for each of the eighteen core UNRISD indicators in South Africa for 1960, 1965, 1970 and 1975. In some cases, the scores were quite straightforward to compute; in others, various assumptions had to be made - in one or two instances these were heroic. Chart 25 of the UNRISD book provides the level of each raw score corresponding to each decile; percentiles were computed by linear interpolation between the deciles lying on either side of the score.

In order to enable the reader to judge the reliability of the estimates of the values of the various social indicators, notes are provided on sources and computation methods used in each case:

General: (a) Population: The size and the age distribution of the population are required for most indicators. The most up-to-date official size estimates for the four years under consideration are contained in Statistical News Release P 11.1 Mid-year population estimates, 5.12.77. The age distributions have to be built up from the race-sex-age distributions which are available for 1960, 1970 and 1975. The sources used are as follows:

1960: (i) Whites - the 1960 population census results as summarised on pA - 27 of S.A. Statistics, 1968

(ii) Coloureds and Asians - J.L. Sadie, Demographic data pertaining to the Non-white population of South Africa, South African Journal of Economics, vol. 38, no. 1, Mar. 1970.

(iii) Africans - J.L. Sadie, Demographic data pertaining to the Non-white population of South Africa, South African Journal of Economics, vol. 38. no.2, June 1970.

1970 and 1975:

(i) Whites, Coloureds, Asians and 'domestic' Africans - Department of Statistics, Population projections for the Republic of South Africa, 1970 - 2020, Report 02-06-01, Pretoria, 1976. White figures were taken from the 25 000 immigrants per year table

(ii) 'foreign' Africans - Department of Statistics, 1970 Population census, Sample tabulations Bantu, Report 02-02-02, Pretoria. The 1975 age distribution for this group was assumed to be the same as in 1970.

The main results of the calculations are shown in Table 1. The 1965 age distribution is obtained by taking the average of the relevant 1960 and 1970 entries. Sometimes corrected population estimates are required counting people in the age groups <15, 15-64, > 65 as 1/3:1:1 respectively (indicators 7,8,9), ½:1:1 (indicator 6) or ½:1:2/3 (indicators 3,13,14,15,17 and GNP) or by considering only people in the age group 5-19 (indicator 4 or in the age group 15-19 (indicator 5).

Table I- Population estimates

	1960 M	1960 F	1965 M	1965 F	1970 M	1970 F	1975 M	1975 F
Percentage population								
White	8,9	9,0	8,7	8,7	8,5	8,5	8,3	8,3
Coloured	4,4	4,4	4,5	4,5	4,6	4,7	4,5	4,6
Asian	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
African	35,6	35,0	35,9	34,8	36,2	34,6	36,2	35,2
< 15	39,7		40,3		40,8		39,6	
15-64	56,8		56,1		55,3		55,5	
≥ 65	3,5		3,7		4,0		3,9	
5-19	34,0		35,4		36,8		35,7	
15-19	9,4		9,7		10,1		9,8	
Total population								
(thousands)	17 122		19 607		22 465		25 466	
1/3:1:1	12 590		14 345		16 361		18 743	
½:1:1	13 715				17 882			
½:1:2/3	13 525		15 419		17 587		20 093	
5-19	5 821		6 941		8 267		9 091	
15-19	1 609		1 902		2 269		2 496	

(b) Prices: Current prices in rand were converted to constant 1960 prices by using the consumer price index and then multiplied by 1,4 to obtain prices in 1960 US dollars

1. Life expectancy: Figures for life expectancy at birth over five year periods from 1955-60 (except Whites) to 1975-80 were obtained from J.L. Sadie, Projections of the South African population 1970 - 2020, Industrial Development Corporation, Johannesburg, 1972. Figures were obtained for each year by averaging the adjacent five-year figures. The 1960-1965 figure for Whites was used as the 1960 figure. Disaggregated figures by race and sex were aggregated by finding a weighted mean, the weights being the fractions of the population.

2. Population in localities of 20 000 plus: Percentages were found for 1960 and 1970 by working through the 'urban' area figures by magisterial district in the 1960 and 1970 population censuses (Tables 6 of vol.1 and 2 of report 02-05-10 respectively), adding populations in towns and cities of more than 20 000 and dividing the totals by total enumerated population. Raw scores were not calculated for 1965 and 1975, but the percentiles were respectively interpolated and extrapolated.

3. Per capita animal protein consumption: Figures for total consumption of red meat were taken from the 1978 Abstract of Agricultural Statistics (table 44) and added to figures for total production of poultry (taken from table 35 of the same source - poultry consumption figures are not available). The totals were divided by the appropriate population figures. Total quantities consumed were taken as the mean of those in years adjacent to the year under consideration - thus the 1960 figure was the mean of the 1959/60 and 1960/61 totals etc.

4 and 5. Combined primary and secondary enrolment ratio and vocational enrolment ratio: For whites, school and technical college enrolments are given under five headings in S.A. Statistics 1976 (p.5.4):
- colleges and institutes for technical and advanced technical training
- correspondence colleges and private vocational schools
- public schools
- private schools
- special schools.

To complicate matters, secondary vocational school enrolments were included in special schools up to 1969 and in public schools from 1970. Also, not all five columns have entries for each of the years under consideration.

To split these figures up into academic primary and secondary on the one hand and vocational on the other, one adopts the following devices:

(i) all enrolments at colleges and institutes for technical and advanced technical training are counted as vocational and all enrolments at private schools are counted as academic

(ii) 80% of the enrolments at correspondence schools and private vocational schools are counted as academic and the rest as vocational.

(iii) to get an idea of the number of students at secondary vocational schools, compare the 1969 and 1970 public and special school figures:

	Public		Special		Sub-total	
	No.	%	No.	%	No.	%
1969	807 653	95,61	35 478	4,39	843 131	100
1970	821 907	99,43	4 669	0,57	826 576	100

$$\%\ 1970\ \text{public schools academic} = \frac{1969\ \text{public}\ \%}{1970\ \text{public}\ \%} = 96{,}2\%$$

$$\%\ 1969\ \text{special schools vocational} = \frac{1969\ \text{special}\ \% - 1970\ \text{special}\ \%}{1969\ \text{special}\ \%} = 87\%$$

Accordingly, all public school enrolments in 1960 and 1965 were counted as academic and 96,2% of these were so counted in 1970 and 1975. 87% of the special school enrolments in 1960 and 1965 were counted as vocational and 3,8% of the public school enrolments were so counted in 1970 and 1975.

(iv) Over the period 1969-1975 enrolment at correspondence colleges and private vocational colleges were an average of 4,2% of enrolments at public, private and special schools. Figures for correspondence and private vocational schools in 1960 and 1965 are obtained by applying this percentage to the appropriate totals in these years

(v) In 1970, enrolments at colleges and institutes for technical and advanced education were 2,07 times the total of vocational enrolments obtained from other columns. This factor is applied to the relevant totals in 1960, 1965 and 1975 to generate estimates under this head.

For Coloureds and Asians, there are headings similar to those for Whites, except 'special schools', which is replaced by 'vocational and special schools' (S.A. Statistics 1976 p.5-6) The splitting up job is a little easier: Academic primary and secondary enrolments are taken as 80% of correspondence and private vocational school enrolments plus all public and private school enrolments; vocational enrolments are taken as 20% of correspondence and private vocational school enrolments plus 90% of vocational and special school enrolments plus enrolments at colleges for technical and advanced technical training. As for Whites, only 1970 figures are available; other figures are generated as already described - this time the appropriate factor is 2,46.

For Africans, figures are readily obtained; academic primary and secondary enrolments are taken as enrolments under 'schools': mainly academic' and vocational enrolments as enrolments under 'schools : mainly technical'.

6. Average number of persons per room

The values for this indicator are the least reliable in the whole series. The problem is that statistics are available only for Whites, Coloureds and Asians in urban areas from the 1960 Population Census. The census definition of 'rooms' is used i.e. bed-and other living rooms. The assumptions are made that dwelling densities are similar for urban and rural areas and that Africans are housed at the same density as Coloureds. Then densities for urban Whites, Coloureds and Asians respectively can be calculated by multiplying the average number of rooms per house and flat by the number of houses and flats to get the total number of rooms and then dividing this number into the urban dwellers. All the figures necessary are obtained from the Review section of Dept. of Statistics, Population census 1970 : dwellings, report 02-03-04, Pretoria. An overall average was obtained by weighting the White average by the proportion of Whites in the population, the Asian average by the Asian proportion and the Coloured average by the Coloured and African proportion.

For 1960, the number of dwellings and the urban population for Whites, Coloureds and Asians are available so, if one assumes average house sizes to be the same in 1960 and 1970, a 1960 figure can be estimated.

No 'raw scores' were calculated for 1965 and 1975 but percentiles were obtained by linear interpolation and extrapolation.

7. Newspapers: Average daily circulation statistics of major urban daily newspapers are available for 1961 to 1974 at p 18.8 of the S.A. Statistics 1976. These are divided by the appropriate population statistics. The 1961 result is used for 1960 and the 1974 result for 1975.

8. Telephones: The total number of telephones in use is recorded for each year from 1961 to 1975 at p 18.6 of S.A. Statistics, 1976. These numbers are divided by the appropriate population statistics. The 1961 result is used for 1960.

9. Radios: The total number of radio listeners' licences issued each year from 1960 to 1975 is recorded at p 18.3 of S.A. Statistics 1976. This number will be considerably less than the number of radios in use, since many listeners will have more than one radio on the same licence and some listeners will not have licences at all. Accordingly, the number of radios is assumed to be double the number of licences; these numbers are divided by the appropriate population statistics.

10. Percentage of the economically active population in electricity, gas, water, sanitary services, transport, storage and communications:

Estimates of the economically active population for each of the years under consideration are provided in table 9 of C. Simkins, Measuring and predicting unemployment in South Africa, 1960 to 1977 in C. Simkins and D. Clarke, Structural unemployment in Southern Africa, Natal University Press, 1978. Employment in electricity, gas and water is listed under SIC 4 and in transport, storage and communication under SIC 7 in table 18; the appropriate percentages are easily calculated. The results are likely to be slight underestimates since some water and all sanitary employment will appear under SIC 9, but the degree of underestimation is impossible to assess and no adjustment is made.

11 and 12. Agricultural production per male agricultural labourer and Percentage adult male labour in agriculture:

Estimates of the adult male labour force in agriculture are obtained by adjusting the employment figures in the 1960 and 1970 Population Censuses (vol. 6. table 2 and report 02-05-09 table 3, respectively) by the correction factors (for undernumeration) calculated in note 33 in Simkins op. cit. It turns out that 67,8% of the 'agricultural labour supply' as calculated in table 22 was male in 1960 and 65,9% in 1970. Linear interpolation and extrapolation yield figures of 66,9% and 64,9% in 1965 and 1975 and these are applied to the 1965 and 1975 totals respectively. Figures thus obtained are divided by the economically active male population to get the percentage of adult male labour in agriculture. The contribution of agriculture to gross domestic product at factor incomes (at current prices) is tabulated for each of the years under consideration at p. 21.6 of S.A. Statistics 1976. These figures are converted to 1960 U.S. dollars and then divided by the adult male agricultural labour force.

13. Per capita electricity cunsumption: Electricity consumption per head at two year intervals from 1960 to 1974 is given at p. 14.3 of S.A. Statistics 1976. 1965 consumption is taken as the average of that in 1964 and 1966 and 1975 consumption as 1974 consumption plus half of (1974 consumption minus 1972 consumption). These figures are multiplied by total population (1:1:1) in each year.

population ($\frac{1}{2}$:1:2/3)

14. Per capita steel consumption: An index of consumption of rolled and drawn steel products for the period 1962 to 1970 is available in S.A. Reserve Bank, A statistical presentation of selected economic indicators of South Africa for the period 1946 to 1970, Pretoria, 1971 and for 1970 to 1976 in the Reserve Bank Quarterly Bulletin, June 1977. The former index is based on 1963 and the latter on 1970; given two figures for 1970, it was easy enough to convert the entire series to a 1970 base. Mr. v.d. Walt of the Reserve Bank was kind enough to tell us that the actual consumption in 1970 was 3,472 million metric tons, so the multiplication of the index in other years by this figure and subsequent division by the relevant population statistic gives us the required figure. It was assumed that the growth rate in per capita consumption was the same from 1960 to 1962 as it was from 1962 to 1965; a 1960 figure could thus be generated.

15. Per capita energy consumption: Fortunately there exists a useful secondary source of information here in pp. 33-36 of M. Dagut: South Africa: an appraisal, Nedbank, 1977. Dagut supplies us with the following information:

(a) Total energy consumption: 1960 - 42 million tons coal equivalent
1967 - 57 million tons coal equivalent

This amounts to a 5,0% p.a. compound growth rate in energy consumption.

(b) Percentage electricity of total useful energy produced:

1968 - 27,1%
1974 - 32,6%

$$\frac{\text{Total useful energy produced in 1974}}{\text{Total useful energy produced in 1968}} =$$

$$\frac{\text{Electricity sold in 1974}}{\text{Electricity sold in 1968}} \times \frac{27,1}{32,6} = 1.362$$

(Electricity sales taken from p. 14.3 of S.A. Statistics 1976)
This amounts to a 5,3% p.a. compound growth rate. Given an absolute energy figure in 1960, one can interpolate and extrapolate on the basis of these growth rates to get energy consumed in each of the other years under consideration. One then divides by the appropriate population figure.

16. Percentage GDP from manufacturing:
The contribution of manufacturing to GDP at factor incomes at 1963 constant prices and total GDP measured in the same way are presented for each year from 1946 to 1975 at p.21.7 of S.A. Statistics 1976. Simple division yields the required result.

17. Per capita foreign trade:
Figures for total imports (free on board) and total exports (including re-exports and gold) for each year from 1946 to 1974 are tabulated at p.16.5 of S.A. Statistics 1976. The corresponding figures for 1975 are taken from table S-57 of the Reserve Bank Quarterly Bulletin for June 1977. The figures are added, converted to 1960 U.S. dollars and divided by the appropriate population figure.

18. Percentage of economically active population as salaried and wage earners:
Simkins op.cit. was used as the source - economically active population was taken from table 9 as before. All employment other than that in subsistence agriculture was taken as salaried and wage employment - subsistence employment as recorded in table 13 was taken from total employment in table 18. Division yields the result.

Per capita GNP: Gross national product at (current) market prices was taken from Table I of S.A. Reserve Bank, A statistical presentation of South Africa's quarterly national accounts for the period 1960 and 1974, Pretoria, 1976 for 1960 and 1965 and the Reserve Bank Quarterly Bulletin, June 1977 for 1970 and 1975. These estimates were converted to 1960 U.S. dollar prices and divided by the appropriate population estimates.

Table I presents the results of the 18 indicators and per capita GNP in each of the four years considered.

Table I - Values of UNRISD indicators, 1960, 1965, 1970 and 1975.

	1960	1965	1970	1975
1. Expectation of life at birth (years)	56,2	56,9	57,6	58,6
2. Percentage population in localities of 20 000 plus	35,4		36,3	
3. Per capita animal protein consumption (kg/year)	56,0	52,2	55,2	51,4
4. Combined primary and secondary enrolment ratio (%)	45,5	47,5	51,9	59,8
5. Vocational enrolment ratio (per thousand)	5,1	5,8	6,2	5,8
6. Average number of persons per room	2,17		2,15	
7. Newspaper circulation per thousand	68	63	66	68
8. Telephones per hundred thousand	6809	7380	9256	10853
9. Radios per thousand	158	190	226	258
10. % EAP in electricity, gas, water, sanitary services, transport, storage and communication.	5,1	4,8	4,4	4,5
11. Agricultural production per male agricultural labourer (1960 US $)	507	561	560	618
12. % adult male labour in agriculture	24,6	22,4	21,2	20,1
13. Per capita electricity consumption (kwh/year)	1464	1809	2323	2991
14. Per capita steel consumption (kg/year)	71	158	197	242
15. Per capita energy consumption (kg.coal equivalent year)	3106	3494	3929	4411
16. % GDP from manufacturing	20,4	24,1	25,0	25,4
17. Per capita foreign trade (1960 US $)	262	291	295	399
18. % EAP as salaried and wage earners	73,3	71,8	71,4	71,3
Per capita GNP (1960 US $)	522	619	725	762

Profiles for 1960 and 1975 are plotted on Charts I and II respectively.

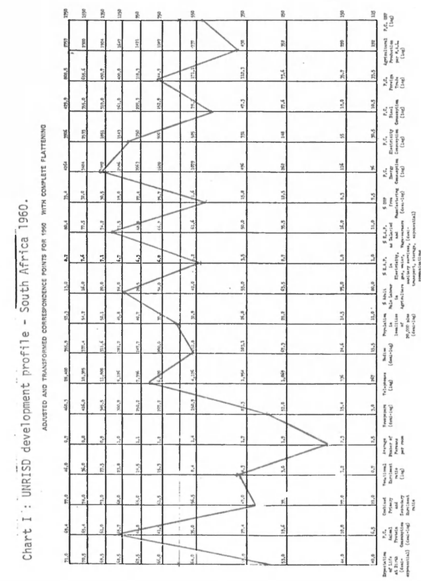
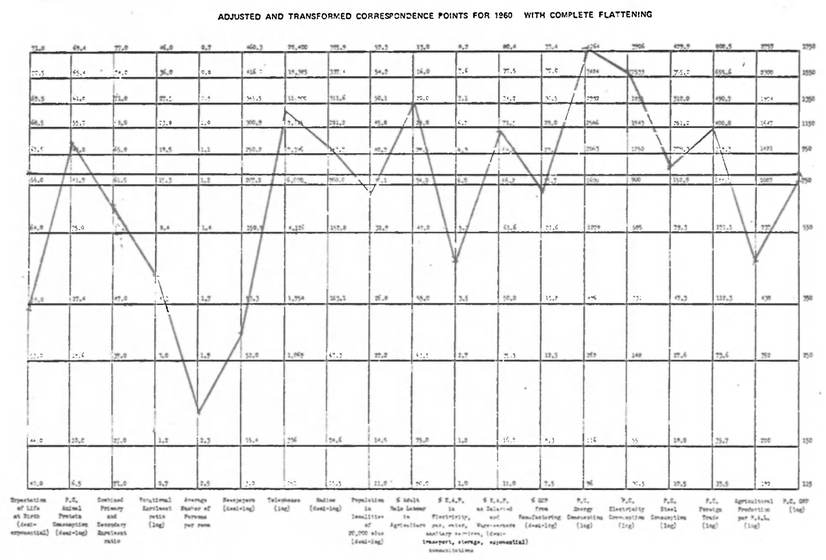


Chart I : UNRISD development profile - South Africa 1960.

Chart No. II. UNRISD development profile - South Africa 1975.



Appendix C

List of indicators used by Adelman and Morris

Sociocultural indicators

	Size of the traditional agricultural sector
	Extent of dualism
CU	Extent of urbanisation
*	Character of basic social organisation
	Importance of the indigenous middle class
	Extent of social mobility
	Extent of literacy
U	Extent of mass communication
	Degree of cultural and ethnic homogeneity
	Degree of social tension
C	Crude fertility rate
	Degree of modernisation of outlook
**	Predominant type of religion
**	Level of socioeconomic development

Political indicators

	Degree of national integration and sense of national unity
	Degree of centralisation of political power
**	Extent of political participation
*	Strength of democratic institutions
	Degree of freedom of political opposition and the press
	Degree of competitiveness of political parties
	Predominant basis of the party political system
	Strength of the labour movement
	Political strength of the traditional elite
	Political strength of the military
**	Political and social influence of religious organisation
	Degree of administrative efficiency
	Extent of leadership commitment to economic development
**	Extent of direct government economic activity
**	Length of colonial experience
**	Type of colonial experience
**	Recency of self-government
	Extent of political stability

Economic indicators

C	Per capita GNP in 1961
	Growth rate of real per capita GNP, 1950/51 - 1963/64
	Abundance of natural resources
C	Gross investment rate
	Modernisation of industry
CU	Industrialisation, 1950 - 63
	Character of agricultural organisation
	Modernisation of techniques in agriculture
	Improvement in agricultural productivity, 1950 - 63
	Adequacy of physical overhead capital
*	Improvement in physical overhead capital, 1950 - 63
	Effectiveness of the tax system
	Improvement in the tax system 1950 - 63
	Effectiveness of financial institutions
	Improvement in financial institutions, 1950 - 63
CU	Improvement in human resources
C	Structure of foreign trade
**	Rate of population growth
C **	Country size and orientation of development strategy

Note:
- * denotes item appearing in Adelman and Morris (1971) only
- ** denotes item appearing in Adelman and Morris (1973) only
- Where dates are not specified the variables were measured in the period between 1957 and 1962
- C denotes a corresponding indicator or indicators in Chenery and Syrquin
- U denotes a corresponding indicator or indicators in UNRISD

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Publications, Papers and Proceedings

BOOKS

1. CHARLES SIMKINS AND DUNCAN CLARKE, *Structural Unemployment in Southern Africa*, Natal University Press, 1978. Price: R3,75 (Order from the Press at P.O. Box 375, Pietermaritzburg, 3200).
2. CHARLES AND COSMAS DESMOND (eds.), *South African Unemployment: A Black Picture*, Development Studies Research Group and Agency for Industrial Mission, 1978. Price:R3.

WORKING PAPERS		COST
1. D.G. CLARKE	Foreign African Labour Supply in South Africa, 1960-1977. 62p. April 1977	2,00
2. D.G. CLARKE	The South African Chamber of Mines: Policy and Strategy with Reference to Foreign African Labour Supply. 45p. April 1977	1,00
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