

CHAPTER 6

PROJECTIONS AND POSSIBLE SOLUTIONS

6.1 INTRODUCTION

This chapter deals with the projections of the supply and demand of engineers, technicians, and teachers. It also relates tertiary education developments to the restructuring of the political system. The potential of political discontent of unemployed and underemployed university graduates receives detailed analysis. Finally, a number of possible solutions to the shortages of engineers, technicians, and teachers are proposed, as well as to the surpluses in other areas.

6.2 SUPPLY AND DEMAND PROJECTIONS

Projections of the supply and demand of labour may be divided into short-range (one to five years), medium-range (six to fifteen years), and long-range (sixteen and more years). Short-range projections are generally the most accurate ones, for much of the supply and demand are already in the "pipeline" and it may be reasonably expected that the situation will change little. Medium and long-range projections deal with far more unknown socio-economic and educational variables. This is especially the case with the situation where the projections are based on what will happen to students not yet in the education system. Frequently such projections are wide off the mark. This may well be the case with the projections made by the Department of National Education in a publication entitled Determination of the Probable Numbers of New Graduates in the Southern African Constellation up to 2010: Main Text, SAPSE Report No. 120, July, 1983. It has not yet been released to the public. This does not mean that there is no value to such projections, but that they should be taken with considerable caution. The concentration is thus upon short and medium-range projections.

6.2.1 ENGINEER AND TECHNICIAN SUPPLY AND DEMAND

A 1981 study of the labour market for engineers for the period 1977-1987 estimated that the demand will rise by 3,2% a year and by 1987, 21 352 engineers will be needed (Van Pletzen, 1981:10,24). There were in 1979, 15 851 engineers of whom 12 961 will still be working in 1987, using an annual attrition rate of 4,4% (21,29). This means that 8 391 will be needed or an average of 1 048 a year (32). Some 7 865 will be produced in this period or 874 a year (34). There will thus remain 526 vacancies, assuming that there are no significant additions based on immigration. These calculations were premised on the basis of an annual growth of the G.N.P. of 4,5% (3). So far in the years 1978-1984 the average growth in the real G.D.P. has been only 2,8% a year and thus it is doubtful whether the growth target will be met (Central Economic Advisory Service, 1985). Since there is a positive correlation between the number of engineers and economic growth, a slower growth of the economy results in a smaller demand.

A 1984 study by the Federation of Societies of Professional Engineers came to the conclusion that by 1987 the demand will be for 3 493 engineers and the supply will come to only 1 479, with 2 014 vacancies remaining, even considering that immigration would provide about 20% of the total supply (Lloyd & Plewman, 1984:10,13).

It is quite evident that these two projections reached very different conclusions, although both predicted continuing shortages. Table 4.15 indicates that in the years 1977-1983, 8 043 engineers were produced or an average of 1 149 a year. If this is projected for the years 1984-1986 it comes to 3 447 or a total of 11 490 engineers. This plus 12 961 still on the labour market equals 24 451 or 3 099 more than the Van Pletzen estimate. Such a situation would be unprecedented and hard to imagine. It and the 1981 and 1984 projections are good illustrations of the problems of supply and demand projections even within short and medium-ranges. Projecting the supply to 1990, on the basis of the 1977-1983 increases, indicates that it will rise by 2% a year, which is still short of the original assumption of a growth of 3,2%. It is even below the latest projection of an annual growth of the G.D.P. of 3,5% a year between 1984 and 1990

(Central Economic Advisory Service, 1985). It is thus safe to assume that unless the economy grows substantially less than the projections indicate, there will continue to be shortages of engineers throughout the 1980s.

As far as technicians are concerned, in the period 1978-1987 their annual demand rate is projected at 4% as opposed to an overall labour demand of 2,7% (Terblanche, Jacobs & Van Pletzen, 1984:3). Although no supply and demand figures are available, past trends indicate that shortages will continue throughout the 1980s (Table 4.21).

6.2.2 TEACHER SUPPLY AND DEMAND

Unlike the information for engineers, the data on teachers are not as detailed. The present number of teachers and the projected needs in order to maintain the 1981 teacher-student ratios of 1:19 for the whites, 1:29 for the coloureds, 1:25 for the Indians, and 1:41 for the blacks are as follows, with the author's projections in the brackets (Table 4.20; Terblanche, 1981:39-41):

	1983	1987	2000	
White	64 692	116 191	38 896	(103 184)
Coloured	29 200	47 228	35 519	(37 191)
Indian	10 100	12 491	8 420	(14 221)
Black	89 516	127 235	219 382	(240 171)

The 1987 projection of the number of white teachers needed is clearly too high, showing nearly a doubling of their numbers. On the other hand, the figure for 2000 is too low. In the years 1981-1983 the number of teachers increased by 3,5% (Table 4.20). If this rate of increase is projected to 2000 it would come to 103 184, which is close to the 1987 projection. As far as the supply is concerned, the latest number of teachers produced by the colleges of education dates back to 1975 and thus no reliable projections are possible, but it may be safely assumed that enough teachers will be produced.

The 2000 projection of coloured teachers appears to be quite accurate, whereas the 1987 projection is too high. In the years 1979-1983 there was even a slight decline and thus a 21,6% growth between 1983 and 2000 seems probable, which comes to 1,3% a year. Assuming that the same number of teachers (1 749) will be produced each year from 1984 to 2000 as was the case in 1983 (Table 4.14), this would mean 29 733 by 2000. Using an attrition rate of 4,4% a year, this means that of the 29 200 teachers in 1983, 7 358 would still be working. Thus, 37 191 teachers would be produced by the colleges of education, not including the University of the Western Cape. It is thus evident that there will be enough coloured teachers, perhaps even a slight surplus.

For the Indians the 1987 figure seems very close to the mark, whereas the one for 2000 is too low. Projecting the increase from 1983 to 1987, at 2,4% a year, to 2000 would result in 14 221 teachers. Some 9 231 teachers will be produced by their colleges of education and 2 545 of the 1983 teacher force will still be working in 2000, for a total supply of 11 976. This is very close to the projected demand of 14 221, considering that it does not include those from the University of Durban-Westville and that a surplus of teachers is expected by 1990, as indicated in Chapter 4.

The biggest increase is for black teachers. As Table 4.20 indicates, in the period 1969-1983 the number of teachers rose from 37 405 to 89 516 or by 139,3%, which comes to 9,9% a year. Projecting this rate of increase to 2000 would result in a demand of 240 171 teachers. As far as their supply is concerned, of the 89 516 teachers some 22 558 will still be teaching in 2000 and some 92 089 will be produced by the colleges of education, for a total of 114 647. This is still far short of the 240 171 needed, although it does not include those from the universities.

6.2.3 SUPPLY OF UNIVERSITY STUDENTS AND GRADUATES

The supply of university students is essentially dependent upon the number of matriculants and senior certificate holders. For the whites, coloureds, and the Indians, they are projected to increase until 1990 and then decline (Tables 2.1, 2.2, and 2.3). For the blacks these numbers will continue rising up to 2005 at least (Table 2.4; De Klerk, Van Tonder & Boshoff, 1982:15). Indeed, by 1995 blacks with senior certificates and matriculation exemptions will exceed whites. Already in 1986 for the first time the combined non-white senior certificate holders and matriculants will surpass the whites.

White university student enrolment in the years 1980-1985 grew by a mean annual rate of 2,9% (Table 4.1). Projecting the same growth rate to 1990 would come to 158 777 students. The coloured university student enrolment grew by a mean annual rate of 17% in the same period and would thus translate into 23 881 students by 1990 (Table 4.2). The Indian university enrolment grew by a mean 14,5% a year and would thus come to 29 843 students (Table 4.2). Finally, the black university enrolment grew by a mean 26,3% a year and would thus result in 99 292 students by 1990 (Table 4.3). Thus, by 1990 there could well be 153 016 non-white university students as opposed to 158 777 whites or just about equal numbers.

As far as degrees and diplomas are concerned, the rate of increase for the whites from 1979-1980 (latest available year) was 2,1%, for the years 1979-1980/1980-1981 for the coloureds 13,1%, for the Indians 5,6%, and for the blacks 14,5%, all far above the white increase (Table 4.15). Projecting these increases to 1990 would come to 26 699 awards for the whites, 2 040 for the coloureds, 2 190 for the Indians, and 3 506 for the blacks.

6.3 DEMAND FOR UNIVERSITY GRADUATES

In the case of university graduates, the supply situation is far easier to project than the demand situation. This is because the labour market is dependent upon far more variables and their interaction than is the

case of engineers or teachers. The situation is further complicated by the fact that many university graduates have not been educated for specific posts or professions unlike engineers and teachers. This is especially the case with the arts graduates. There are, however, a number of probable general developments having a bearing upon the potential demand for university graduates.

First, the proportion of the whites in the labour force will decline from 22% in 1980 to 16,2% in 2000. The coloured proportion will also decline from 10,7 to 10,1% and that of the Indians from 2,9% to 2,7%, but the proportion of blacks will increase from 64,4% to 71%, respectively (National Manpower Commission (1984:342,345.) An earlier study came to the same conclusion, although the figures differ somewhat (Sadie, 1981:28). This is essentially due to changing demographic variables, such as lower birth rates for all of the non-black population groups. The white birth rate has declined from 25,4 per 1 000 in 1945 to 16,6 in 1982, the coloured birth rate from 44,4 to 30, and the Indian birth rate from 39,2 to 25,1, respectively (Bureau of Statistics, 1964:C-9; Central Statistical Services, 1984:1.2). No precise figures are available for the blacks, but one estimate placed their birth rate at 34 in 1977 (Lötter, 1981:5).

Second, the white population alone is no longer able to provide sufficient numbers of high level manpower. This is the conclusion of a study by the National Manpower Commission on High-Level Manpower in South Africa. It is worth quoting from the preface by its chairman, H.J.J. Reynders:

South Africa will not be able to realise its development potential and offer all its people an acceptable standard of living if the country persists in trying to recruit its HLM mainly from the White population group; in fact, if we continue to do so, a relative deterioration may be expected in the course of time (1980:viii,15.)

In 1979 the whites constituted 62,2% of the professional and allied workers, but by 1987 their proportion will decline to 54,7%, for the coloureds

it will rise from 8,6% to 9,5%, for the Indians it will decline from 3,1% to 2,9%, and for the blacks it will increase from 26,1% to 33,1%, respectively. The practice of elevating the whites to higher posts and promoting the non-whites can no longer continue because the percentage of white men in high level occupations in terms of their total employment structure has already reached 31,5% as opposed to 26,5% in the United States in 1980 (Terblanche, Jacobs & Van Pletzen, 1984:61). To do so would lead to inefficiency.

The increasing numbers of qualified non-whites, especially blacks, means that the traditional government labour principle that blacks must not be appointed in supervisory posts over the whites will be challenged (Adam & Giliomee, 1979:163). It will mean that employers will be able to choose amongst a number of applicants instead of taking what is available. This might create a more qualified labour force, but at the same time cause some opposition on the part of the whites. In 1974 only 25% of the whites agreed that blacks be allowed in posts where they may be in charge of them, although by 1977 the percentage had increased to 37 (Hanf et al., 1981:231). A differently worded statement in the 1980s to the effect that as long as one's direct supervisor is competent he may belong to any population group resulted in 59,1% agreeing with it and 29,1% disagreeing (HSRC Investigation into Intergroup Relations, 1985:109).

Third, under the government's economic austerity measures for the 1985-1986 financial year President Botha on 5 March, 1985, announced the abolition of an average of 50% of the existing public service vacancies (Hansard, 1985, col.1777). If this signifies a shift in policy, it could have serious consequences for many university graduates, especially in the arts, who have been traditionally absorbed in large numbers by the government. At least since 1972 the vacancy rates for the whites in the public service have been substantially higher than those in the economy in general. During the 1977-1979 economic recession the mean annual public service vacancy rate was 13,2% as opposed to a general vacancy rate of only 2,5% (Barker, 1984:24,23).

Overall the proportion of highly skilled white collar workers will increase from 7,6% of the labour force in 1979 to 13,5% in 2000 (Sadie, 1981:30).

This means for the whites 139 000 additions to the labour force or 6 950 a year and for the others 901 000 or 45 050 a year (33). The proportion of blue collar workers will decline from 54,1% of the labour force to 49,1% (30). More specifically, the demand for white executives will come to 136 000 or 6 800 a year and for the others 74 000 or 3 700 a year (33). It is impossible for the whites to produce more than 85 000 of these (34). The same holds true of the capability of the non-whites to produce their quotas.

It may thus be concluded that the "generation of all kinds of skills, and particularly among the Blacks, on a hitherto undreamt of scale, is a dire necessity, if growth and therefore employment creation is not to be stunted and strato-inflation is to be avoided" (34). On the whole, it thus appears that the demand for university graduates in general will exceed the supply in the short-range at least.

6.4 POTENTIAL PROBLEMS

Surpluses of university graduates are nothing new. What is new is that in many of the Western European countries, the United States, and much of the Third World there has been an almost continuous and unprecedented growth of university enrolments and graduates since the end of World War II. What the critics of human capital theory have demonstrated in theory has happened in practice. Limits to university growth have developed. The situation is unprecedented. The existing economic systems are unable to absorb many of the graduates. Their unemployment and underemployment are endemic and thus structural in nature, not cyclical. The old human capital paradigm has been found wanting, but no new paradigm has yet replaced it.

Hirsch's theory of social limits to growth is probably the most fully developed statement of the problem and also offers some possible solutions. He maintains that under a market economy freedom of choice for the individual, competition, and individual valuation are regarded as necessary to deliver the goods (1978:9). The pursuit of individualistic economic goals needs the support of social morality. Social scarcity and social morality form the dual limits to growth (117). The problem is how to

reconcile social morality with the opposing market ethos (143). Originally this was not a problem because the social morality consisted of trust, acceptance, restraint, and obligation (141). The old social morality atrophied as the market economy spread. Laws and social obligations are only partial substitutes (132). The market economy is now based on its presumed ability to do without ethical judgements and moral obligations (133).

The solution lies in the direction of centralised and co-ordinated action to relate individual actions to social interest -- the pursuit of the social good contributing to the satisfaction of self-interest, rather than the reverse (178). Some reduction of individual competition is also necessary (182).

Although the short-range overall demand for university graduates appears to be good, this does not mean that there will be no problems in the long-range. South Africa, having elements of both the developed and the developing worlds, will sooner or later experience the same problems of social limits to growth as already experienced abroad. The increasing proportion of the non-whites, especially the blacks, may lead to severe competition for professional posts. Hitherto, the whites have enjoyed a virtual monopoly of professional posts in an essentially racially non-competitive labour market. The reliance upon government as the employer of last resort, especially for the arts graduates, may not always be available. In this connection it is worth noting an observation of the Work Committee on Education Principles and Policy of the De Lange Commission.

Experience, here as elsewhere, indicates that mobility in a future system is only possible in terms of the needs of the country. It might therefore be wise to devise generally formative education for which provision must be made, from the needs of occupation-directed education rather than the other way round (1981:38.)

Unemployment has not yet been a major problem, but underemployment has developed and if the past trends continue, as seems almost certain, it will grow as increasing numbers of university graduates will be unable to find suitable posts. There are two conflicting hypotheses as to what might happen to unemployed and/or underemployed people, including university graduates. According to Adam, the

permanently unemployed everywhere blame themselves for their failure rather than the conditions that cause it. Callousness in the guise of technocratic necessity does not incense. It makes its victims objects of pity, who, in the end, pity themselves (1983:11).

The other hypothesis maintains that failure to ensure work opportunities commensurate with one's level of education means that "through our educational policies we are sowing the seeds of revolution" (Giliomee, 1982:33). Although this was said of the blacks, it may be argued that it is also applicable to the other population groups as well, perhaps less so.

It is possible to cite supporting evidence for both hypotheses. The American experience since the late 1960s lends support to Adam's hypothesis, for the unemployed and underemployed university and college graduates have internalised their plight and not blamed the educational and political systems (Dreijmanis, 1978:260). On the other hand, in Weimar Germany many of the "academic proletariat" were in the vanguard of socio-political revolt and became members of the National Socialist and Communist Parties (256).

Within the South African context, Giliomee's hypothesis has already substantial supporting evidence. The blacks are highly discontented and have an attitudinal potential for violence, but the consistency and pervasiveness of the government controls inhibit this orientation from coming to the fore (Schlemmer, 1983:77). A 1977 survey of black students, urbanised blacks, upper income, and better educated ones re-

vealed that 7% approved of the use of violence for political ends (Hanf, et al., 1981:323). When the same question was related to Rhodesia (Zimbabwe), the approval rate increased to 28% (325). The HSRC investigation into intergroup relations in the 1980s revealed that 63% of the blacks, 40% of the Indians, 37% of the coloureds, and 30% of the whites regarded violence as an acceptable means of achieving political aims (1985:86). Disillusionment increases with the degree of urbanisation and education and hopes of peaceful change decrease. Readiness for conflict is growing, especially amongst the urban black youth (Hanf, et al., 1981:326). Anger by middle class, white collar, and urban black males with Standard 8 education and above has risen from 45% in 1977 to 58% in 1979 (Schlemmer, 1981:442). In 1982, 60% of black unemployment was amongst those under thirty years of age (Schlemmer, 1983:81). It is from these that one may expect a steady stream leaving the country for insurgency training abroad (80; HSRC Investigation into Intergroup Relations, 1985:102). This is because of what is known as relative deprivation; that is, the belief in a legitimate expectation of an improved socio-economic situation and the simultaneous belief that there is a high probability that the expectation will not be fulfilled (Gagiano, 1979:170).

Even amongst the whites there are signs of political discontent. In the 1981 election many working class Afrikaners deserted the governing National Party because they perceived the equal treatment of blacks and whites in educational opportunities and salaries as threats to them (Giliomee, 1982:xii). If the middle and upper class university graduates perceive such developments or similar developments in the same manner, there could be loss of support for the National Party amongst them in the next election. Continuing inflation and economic recessions could also lead to fears of proletarianisation on the part of the middle class and erode its support for the National Party.

6.5 POSSIBLE SOLUTIONS

6.5.1 POSSIBLE SOLUTIONS TO THE ENGINEER AND TECHNICIAN SHORTAGES

Shortages of technical personnel have been pervasive and remain so. No immediate solution is possible. As the prestige of the technical colleges and technikons increases, more adequate vocational guidance becomes available, and the society's value system in tertiary education changes, more technicians and engineers will appear and the shortages become less and eventually disappear. There are, however, some possible short-range reforms worth exploring, aside from the ones advocated by the various government commissions.

The granting of degrees to technikon graduates has been discussed for some time. In 1973 the Association of Engineers noted that the National Diploma in Technology course was similar to a university degree in engineering. The required books were identical as well (Behr, 1984:128). The argument against the granting of degrees has been that technikon programmes are more applied and that technikons are distinct from universities. On 13 June, 1983, Dr. G. van N. Viljoen, the Minister of National Education, upheld this position when he noted that in 1977 the then minister had decided that the CATEs would "develop vertically as distinctive tertiary institutions, parallel to the universities" (Hansard, 1983, col. 9312).

It is only natural that tertiary education institutions like to preserve their distinctiveness, especially the universities at the top of the academic prestige pyramid. Yet, the fact remains that some of the technikon programmes are becoming similar or even equivalent to those at the universities. Another case in point was the decision of the South African Pharmacy Board to the effect that the B.Sc. degree in pharmacy and the diploma in pharmacy were equivalent qualifications (Behr, 1984:129). The diploma was phased out as of 1985. Retail pharmacies regarded the two awards as equivalent, but industry preferred a degree (Dreyer, 1985). This also illustrates the tendency for degree, diploma, and certificate programmes to proliferate without much regard to the consequences.

The Department of National Education drew attention to this in a comprehensive study of the situation (1982b:40-126). In 1985 it noted that confusion had arisen from the lack of norms relating to the type of studies for which universities grant degrees, diplomas, and certificates; it issued some broad guidelines for degree structures and for the lessening of the growing tendency towards excessive professionalisation (Anon., 1985e:5)

A possible compromise solution might be to offer associate or half degrees, similar to the American associate of arts and science degrees. This would give added prestige to technikon programmes, especially in technical areas, and thus encourage enrolment. Another possibility would be a national authority to validate courses and award degrees, similar to the Council for National Academic Awards created in Britain in 1964. In this way there would be a recognised authority to evaluate technikon and university programmes and grant degrees to those which are of equivalent status. Finally, the upgrading of the technikons to technical universities like the ones in the German Federal Republic, the United States, and Britain does not yet appear a viable solution. The technikons do little research and do not have enough highly qualified staff to be upgraded to technical universities (De Lange, 1984; Van Rensburg & Greyling, 1985:1). It is, however, a long-range possibility worth exploring.

6.5.2 POSSIBLE SOLUTIONS TO THE TEACHER SHORTAGES

In the case of teachers it is not just a question of insufficient prestige or status but also of insufficient remuneration. It would thus be necessary to raise their salaries as well as increase their prestige. To do these things would entail the merging of the colleges of education with the university faculties of education, requiring a four-year programme for all teachers, and awarding a bachelor of education degree to those with a matriculation exemption certificate. This would improve teacher qualifications and at the same time attract more men to the teaching profession. It might also draw away some students from the arts and thus lessen their underemployment problems.

In the event that there arise any surpluses of white, coloured, or Indian teachers, these could be absorbed by the black schools. With the proposed take over of the colleges of education for the whites by the central government, such a move would be easier than when they were under provincial control. There can be no doubt that the quality of black education would improve as a result of a lowering of the student-teacher ratio. It might also be interpreted as a significant co-operative gesture on the part of the central government.

6.5.3 POSSIBLE SOLUTIONS TO THE SURPLUSES OF UNIVERSITY GRADUATES

There has developed within this century and especially after 1948 support for a strong central authority (Brookes, 1968:xxix). Despite the rhetoric of individual initiative and opportunity and a market economy, the government controls the labour market to a marked degree (Lemon, 1984:189). Its dealing with the problem of the poor whites and job reservation are examples of considerable intervention in the economy. Prime Minister Hertzog's "civilised labour" policy in the 1920s was designed to protect unskilled and skilled white workers from cheaper unskilled and skilled black workers. The Wage Act, No. 27 of 1925 provided for a statutory minimum wage to be determined by the Minister of Labour (Section 7(a)). The Mines and Works Act Amendment, No. 25 of 1926 reserved key posts in the mining industry for the white and coloured workers by restricting the issuance of certificates of competence to them (Section 1). This is not to suggest that the government institute a civilised and educated labour policy if and when there develop significant surpluses of university graduates, but rather to note that there have been occasions when the government was more heavily involved in the labour market than is the present case. Such a tradition of strong central government and the movement in the direction of more consociationalism (dealt with in Section 6.7) have provided with a combination of authority and accommodation -- two developments of possible value to a solution of the labour market problems of university graduates. Authority and accommodation will not be enough, however.

A basic reorientation in thinking about university education and employment appears to be a necessity. If university education were to be regarded as a social scarcity, a limited resource similar to certain sources of energy, it would then mean that there are limits to educational growth. The task for government would then be to distribute it as equitably as possible amongst all of the population groups. As indicated in Chapter 4, the government has begun to think along these lines, but more thinking of this sort is needed in the society at large.

There is no perfect solution and some surpluses will be probably unavoidable. The aim is to make "education and jobs correspond in a reasonable way to each other" (Sandgren,1973:11). The problem lies in persuading more potential and actual students to move into those areas where there is more demand and which are necessary for the manpower needs of the country. It is easy to advocate the need for restraint and social obligation, but difficult to convince people to act on the basis of social morality unless they perceive it in their own interests to do so. Incentives and disincentives of one sort or another are necessary.

Solutions may be divided into those seeking a remedy before students enter their studies and those which seek solutions after the completion of their education, although they are not mutually exclusive and may also be combined. A differentiated fee structure -- a standard one for those disciplines whose production is essentially in balance with the manpower needs of the country, a lower one for those not producing sufficient manpower, and a higher one for those which produce surpluses -- would be an attempt to better relate enrolments to the manpower needs of the country. Limiting enrolment (numerus clausus) in disciplines where there are surpluses or the potential for it would be a more drastic measure.

At the exit stage reducing the monetary attraction for top professional posts might counter the excess investment in securing the necessary educational credentials for them (Hirsch,1978:183-184). The problem with this is that it would postpone the solution to a later stage and leave it to the labour market to do it. Without government wage control, the labour market would be incapable of correcting the situation to any

marked degree, for there would be strong pressure from professional associations to provide for at least middle class salaries and status for top professional people.

A more drastic and idealistic solution going to the root of the problem, would be to prohibit power, prestige, and wealth from coinciding in a post as is frequently the case (Dore,1975:183). If a post carries a lot of power, it would then have little monetary reward and vice versa. Miners, for example, with little prestige and power would be paid more than company executives in order to compensate them for their hazardous working conditions and little prestige and power. Indeed, in a new social order they would be at the top of the monetary reward structure and the company executives at the bottom. Ideally, for professional people an atmosphere would be created in which the successful performance of a job is seen as its own reward (182-183).

All of these solutions may be viewed to some extent as preventive or negative ones in the sense that they seek to prevent labour market surpluses from occurring. Positive ones would provide some assistance to the presently unemployed or underemployed graduates. Before dealing with them, it is necessary to explore the beliefs which might encourage as well as inhibit such action.

On the one hand, there is support for strong central government and precedents for government intervention in the labour market. On the other hand, there is much rhetoric about individual initiative and the market economy.

The government's view is that

the state cannot bear the sole responsibility for the improved development, utilisation and conservation of South Africa's manpower and that the private sector will have to make a large contribution, and indeed, the most important contribution thereto (Economic Planning Branch,1981:14).

The Wiehahn Commission supported some assistance to unemployed workers, because the "impersonal labour market mechanism is not a good device for protecting workers against spells of unemployment...." (1980:Part 3, 295.)

Thus, while some assistance is recognised, it is of temporary nature and the labour market problems are preferably to be solved by private enterprise. The right to work is to be interpreted in an economic rather than in a strictly legal sense. To make it legal "must invariably lead to a system of forced labour which detracts from the individual's freedom to choose a career and the appropriate training" (296.) The 1985 abolition of half of the public service vacancies fits this pattern of thinking.

Attitudes such as these are typical of governments in market economies. Great stress is placed upon the individual's freedom of choice, but what happens when there is no choice of employment or the available employment is clearly unsuitable? Even the human capital theorists recognised that "human capital deteriorates when it is idle because unemployment impairs the skills that workers have acquired" (Schultz,1961:1). It is embarrassing for individuals and governments to contemplate such a possibility, let alone provide for some solutions, for to do so would amount to a recognition of failure. Yet, there is a need to rethink the traditional labour market attitudes and to come to accept the possibility and also the fact that there are not only surpluses of unskilled workers but also of highly skilled workers as well. If this were done, the latter might then be regarded as handicapped workers, not in a physical sense, but in a vocational sense. This is especially the case with advanced degree holders. Because of their specialised education, their employment options are limited.

If this were to be conceded, government would then in effect recognise that it bears a considerable responsibility to those which it helped to educate, largely at its expense. It would then be able to justify providing them with employment, even if it were in make work projects and at essentially basic wages. The private sector could then be also given

tax and other incentives to hire these people. As yet there is no evidence of such thinking on the part of the government.

Finally, all of these possible solutions have disadvantages -- restricting Lernfreiheit, remuneration, and social prestige. On the other hand, unlimited freedom of choice without any consideration for the manpower needs of the country has led to underemployment and considerable discontent and may lead to more unemployment and discontent, especially amongst the black graduates. The situation is unprecedented and thus calling for unconventional measures. It is a question of choosing amongst a number of unpleasant alternatives in order to avoid even more serious consequences.

6.6 A TERTIARY EDUCATION COMMISSION

As indicated in Chapter 3, there are a number of advisory councils dealing with various tertiary education matters and for the various population groups. There is, however, no body dealing with tertiary education as a whole for any population group let alone for all of the population groups. This is a weakness in that a permanent co-ordinating and planning mechanism is missing. The Department of National Education is, however, aware of this shortcoming and is thinking of a "buffer body" between the tertiary education system and the government (1983:24). A tertiary education commission serving all of the population groups would be able to provide a broad overview of the whole system, avoid the need for many of the type of commissions created in the past for specific purposes, and guarantee considerable continuity in operation and outlook. There is a precedent for this in Australia when in 1977 the Tertiary Education Commission (since 1981 called the Commonwealth Tertiary Education Commission) was created by the merger of the Universities Commission, the Commission on Advanced Education, and the Technical and Further Education Commission (Association of Commonwealth Universities, 1985:4). Its prime purposes are to advise the federal minister of education on university financing and promote balanced and co-ordinated development of tertiary education.

6.7 RESTRUCTURING THE POLITICAL SYSTEM

Since 1976 there has been considerable discussion and action on restructuring the state in order to provide more stability and participation for all of the population groups. The causes of this may be seen as the collapse of the belief that the Verwoerdian idea of separate development would bring security and morally acceptable separation and freedom to the blacks, more substantial and sustained challenge to the white domination than earlier, and efforts to create a larger black middle class (Giliomee, 1982:x). The literature on the ongoing debate is vast (Boulle, 1984; Dean & Smit, 1983; Nolutshungu, 1982; Rhoodie, 1980; Rotberg & Barratt, 1980; Van der Merwe & West, 1979; Van Zyl Slabbert & Opland, 1980; Van Vuuren et al., 1983). This is not the place to analyse it in detail. One may note, however, three broad options -- a unitary state, a consociational system, and the partitioning of the country. A unitary system with one man, one vote is rejected by the whites, as is partition. A consociation is viewed as the second best solution by the whites and the blacks (Hanf et al., 1981:349). This involves some kind of sharing of authority.

The movement is in the direction of consociationalism. The 1983 constitution provided certain consociational features -- a tricameral Parliament, a President's Council with representation for three of the main population groups, joint parliamentary committees, concurrent majority in the three houses and temporary suspensive veto for each, own affairs and separate executive and administrative authorities for each population group on certain matters and joint responsibility on general matters (Boulle, 1984:216). On the other hand, the blacks are unrepresented at the national level. There is no proportional representation electoral system. There remain single party ministers' councils, supremacy of the state president, including discretion in deciding on own and general matters.

The constitutional restructuring is an ongoing process. Since 1983 there is a special cabinet committee to devise representative structures for the blacks outside of the national states. On 25 January, 1985, President

Botha announced the creation of an informal forum to discuss constitutional matters with black leaders (Hansard, 1985, col. 15). If this process continues, the white-black conflict "can change to one where the divisions will be more on ideological rather than racial lines" (Van Zyl Slabbert, 1983:47). The restructuring of the state in the direction of consociationalism has created a climate of accommodation. It has at least the potential of somewhat mitigating any potentially excessive competition amongst university graduates for professional posts.

6.8 CONCLUSION

Shortages of engineers and technicians will continue in the short-range at least. In the case of teachers, for the whites, coloureds, and the Indians there will be sufficient numbers of them in the medium-range as well, perhaps even some surpluses. Shortages of black teachers will remain.

The supply of university graduates will continue to rise, much more faster for the non-white population groups than for the whites. The demand for university graduates will be influenced by the declining proportion of the whites, coloureds, and the Indians in the labour force and a substantial increase in the proportion of the blacks. The whites will no longer be able to provide sufficient numbers of high level manpower. In the short term at least the demand will exceed the supply, but underemployment will remain a problem. It may become serious in the case of the blacks, with the possibility of dire political consequences.

Possible solutions to the engineer and technician shortages include the granting of degrees by technikons, the validation of technikon courses, and the awarding of degrees by an external authority, as well as the upgrading of the technikons to technical universities. In the case of teachers, increasing their remuneration and merging the colleges of education with the university faculties of education would result in considerable increase in their prestige and attract more men to the profession as well.

As far as unemployment and underemployment of university graduates are concerned, the solution lies in relating individual actions to societal needs. Incentives or disincentives of one sort or another appear to be necessary, such as differentiated fee structures and the limiting of enrolments in those disciplines which produce labour market surpluses. The government could also provide employment for unemployed university graduates and encourage the private sector to do the same. All of these solutions have disadvantages as well as advantages, but in the long run they have the potential of avoiding even more serious consequences.

A tertiary education commission patterned after the Commonwealth Tertiary Education Commission in Australia would provide continuous advice to the government and a broad overview of the entire system.