

EMPLOYMENT, UNEMPLOYMENT AND INCOME OF THE
UNIVERSITY-EDUCATED LABOR FORCE, 1976 - 1985

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As in most developed and developing countries, unemployment of university-graduates and the " devaluation of education " have attracted increasing attention by economic and political analysts in Colombia. In this country, as elsewhere in the world, the eclosion of the educational system in recent decades led to a rapid growth of the university-educated labor force (or university labor force, for short), $\frac{1}{2}$ while the demand for such workers expanded at a slower rate, particularly during the recession of the early 1980s. This resulted in increased unemployment, deterioration of real incomes, internal differentiation and growing frustrations for a large number of professionals.

This study discusses the relative importance of these problems in the four major cities of Colombia between 1976 and 1985. The study uses data from the DANE Household Surveys conducted in March of those two years and 1980, which provide an adequate description of the main trends during the period analyzed. In some cases, more continuous series are used to detect significant fluctuations during those years. The paucity of pertinent data made it impossible to analyze the evolution of employment, unemployment and income of college-level employees in other cities or in the country in general. It should be noted, however, that the four major cities comprise an appreciable share of the college work force and thus account for a large part of the problem under study.

The essay is divided in four parts. The first presents general considerations based on existing studies. The second discusses the trends in employment, unemployment and participation in the labor market for the university labor force. The third analyzes the trends in income and income distribution among college-trained workers. Lastly, a number of conclusions and policy recommendations are drawn.

1. General considerations

During the 1960s, the economics of education was dominated by two alternative approaches : the theory of human capital and the theory of educational planning. Despite significant differences between these two approaches, they both emphasize the problems associated with the supply of labor. In both cases, the center of attention is the contribution of a more highly educated work force to economic development. In practice, however, the rapid expansion of the educational system in both developed and developing countries was dominated in the 1950s and 1960s by demands from the middle and lower classes. This led the governments of various countries to expand the size of the educational system beyond the limits inferred from either approach, especially in regard to the university system. The result was the growth of a more educated workforce, the supply of which soon exceeded existing demands. In the late 1960s and early 1970s, virtually all countries experienced a transition from a situation of relative shortage of human resources to one characterized by an over-supply of skilled workers. Analysts then geared their attention to mechanisms for absorbing the overabundant labor force ^{2/}.

In Colombia, the pattern described has developed rather late and less intensely than elsewhere in Latin America. Educational levels in our country were quite low in the 1950s despite efforts made since the 1930s. The enrollment rate in higher education

was a mere 1.8% in 1960. Workers having some college education were only 1.0% of the work force in 1951 and 1.3% in 1964. The National Front governments(1958 - 1974)expanded the educational system significantly at all levels. In the field of higher education, this expansion was accompanied by even speedier growth of private universities, especially in the 1970s. As a result, university enrollment rates increased to 4.8% in 1970 and 10.9% in 1980. College students rose from 13,000 in 1960 to 85,600 in 1970 and 389,000 in 1985. However, the growth of the university system still fell short of that in other countries of the region, and college enrollment rates, adjusted by per capita income, remained below the Latin American pattern. The share of college-trained workers in the labor force rose to 2.6% in the early 1970s and 4.7% in 1978. What is more important, university-educated workers accounted for almost 10% of new entrants into the labor market between 1964 and 1978 ^{3/}. This ratio was much higher in the four major cities from 1976 to 1984, as will be seen in Part II of this paper. The growing surplus of college-trained workers struck the attention of economic and political analysts since the mid-1970s. The problem was aggravated early in the 1980s, when the rising tide of professionals coincided with the greatest recession in Colombian economic history.

The economy responds to an inconsistency between the educational system and the labor market in essentially three ways. First of all, unemployment of highly skilled workers may rise. Secondly, the relative income of these workers may decrease. Third, "requalification" of jobs may take place -- i.e., a replacement of the less skilled by the more educated workers. The latter process may not be homogeneous but, rather, may be concentrated in certain sectors of the economy or urban centers, resulting in a

growing differentiation of the economy based on educational levels of the labor force. The process may also be accompanied by a growing heterogeneity among the highly educated workers which may be reflected, in turn, in a growing disparity of income distribution for university workers. Furthermore, the replacement may take place in the "formal" wage labor market or more indirectly through the mechanisms of the "informal" economy.

The processes identified in the preceding paragraph are not mutually exclusive. Rather, they tend to occur simultaneously, although with varying intensities at different points in time and in different sectors of the labor market. Thus, unemployment might be the major problem for new graduates and may tend to worsen during the periodic recessions of economic activity. The medium-term response to structural changes in the make-up of the labor force is, on the contrary, a relative deterioration in the income of workers whose supply has increased more rapidly. This deterioration plays a vital role in job requalification, making it more attractive for employers to use highly educated workers or allowing self-employed professionals with college education to compete more advantageously in the market for goods and services. In such cases, the lower the elasticity of substitution between different types of labor, the more the relative incomes of university workers will deteriorate.

Research on the Colombian labor market has identified the presence of the aforementioned processes. Studies done in the late 1970s showed the increasing importance of unemployment among high school and university workers. The problem was worst for the former group but was already serious for workers with an incomplete college education (including student workers) and women professionals, while still negligible for male

professionals ^{4/}. Later studies pointed to a significant deterioration in the relative incomes of college-level workers. In Bogotá, these incomes decreased from 639% of the average earnings of primary school-level workers in 1963-1966 to 402% in 1978. Compared to secondary school-level workers, the comparable decrease was from 242% to 157% during the same period ^{5/}. Increasing job requalification has also been subject to attention. Absorption of the most highly-qualified work force has occurred mainly in the modern sector of the economy ^{6/} and in large urban centers. The process also coincided with an increasing differentiation of college trainees. The growth of the work force came mainly from private and public low-quality universities and low-cost careers where work and study could be combined to reduce the "opportunity cost" of higher studies. The labor supply trained in elite private and public universities, especially in more costly careers, was less elastic. Increased differentiation was also evident between these two types of universities -- the former now leading in the generation of the professional elite ^{7/}.

II. Employment and unemployment of the university labor force

A. Labor participation

The development of the university system has had a noticeable impact on the work force in the country's four major cities in the last decade. Between 1976 and 1984 the work force in these cities grew at an annual rate of 5.6%. Workers with some college education increased at a faster rate -- around 10%, more than doubling in these nine years. College trainees' share of the total labor force went up from 11.6 to 15.8%. Viewed in proportion to the growth of the labor force, the share was much larger -- 23.7%. In other words, during these years one out of every four new workers in the four major cities had some university training.

The impact of higher education on the work force can be broken down into two elements. The first is the growth of the educated population. The second is the greater participation in the labor market of persons with university education. This fact is clearly seen in Figure 1.A, which shows that in the past years almost two thirds of all persons with college training participated in the labor market; the ratio for the overall work force has been much lower -- 50% in the mid-1970s and 55% in 1984. As will be shown later on, the disparity is mainly related to the increasing opportunity cost of staying out of the labor market for persons with high educationalelevels, particularly women of all ages and men in the latter stages of their productive lives.

The same Figure shows that the overall participation rate has tended to increase in a more or less regular pattern in the past decade, with some cycles that have been the subject of attention by other analysts ^{8/}. This trend has been much less evident for the university labor force. It should be noted, however, that a substantial part of the increase in the average labor participation has to do, in fact, with the increasing ratio of college-trained workers in the labor force, since they are less prone to remain inactive.

The smaller increase in the participation rate of college level workers actually hides two changes which have worked in the opposite direction in the past decade. The first was the increasing proportion of women in the population of college trainees. While women accounted for only 34.9% of this population in 1976, the share rose to 43.8% nine years later. Since a smaller proportion of women than men participate in the labor market, this change tended to diminish the overall participation rate of university trainees. The second change was the increased rate of participation of college-trained women.

FIGURE 1

PARTICIPATION AND UNEMPLOYMENT RATES

A. Participation rate

68%
66
64
62
60
58
56
54
52
50

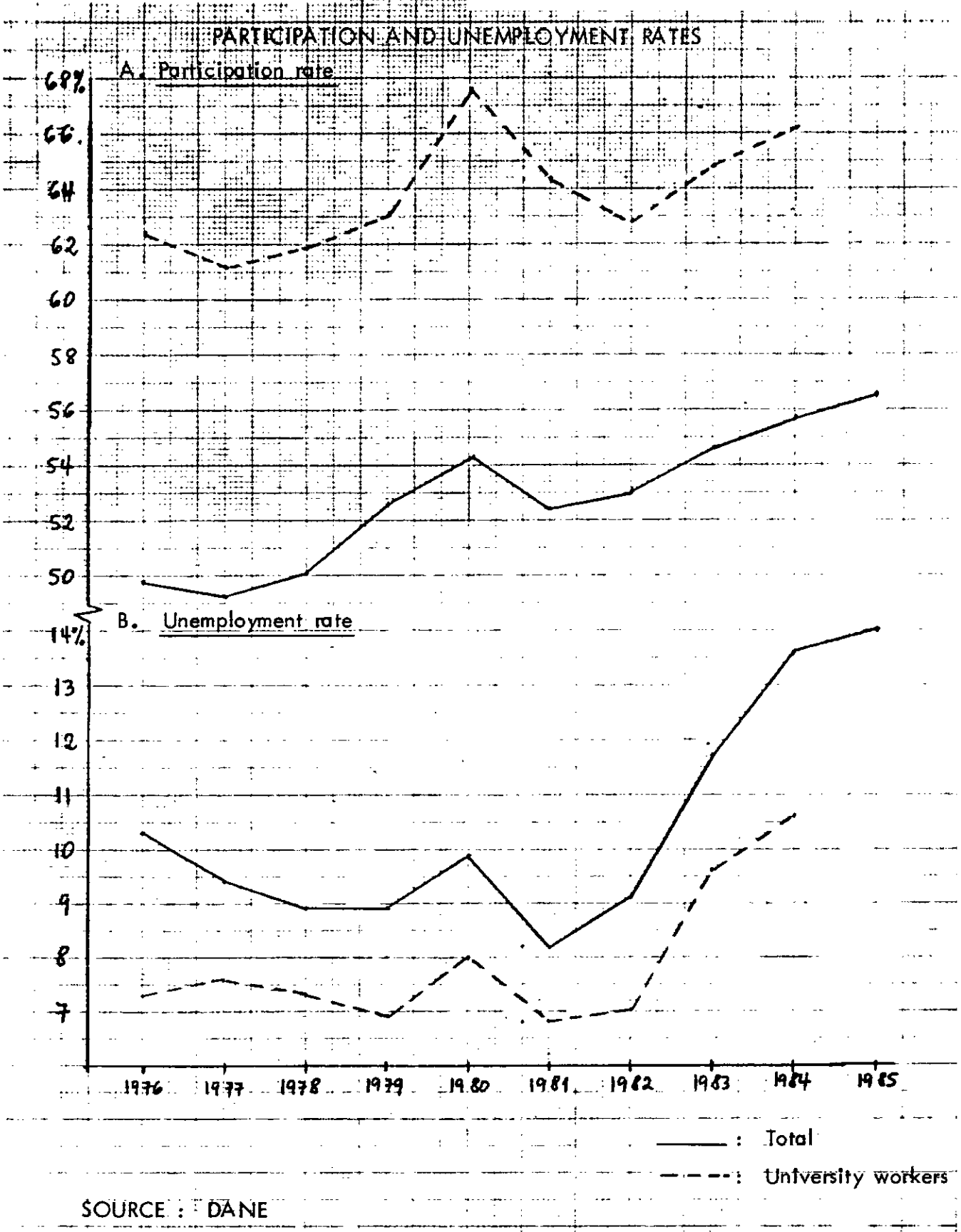
B. Unemployment rate

14%
13
12
11
10
9
8
7

1976 1977 1978 1979 1980 1981 1982 1983 1984 1985

— : Total
- - - : University workers

SOURCE : DANE



From less than 50% in 1976, this rate rose to almost 60% in 1985. The latter trend prevailed over the former, resulting in a small increase in the overall labor participation of the college population.

Table 1 shows the trends in participation of male and female college trainees, compared to the total number of persons in each age group. There is an evident increase in the labor participation of college women of all ages between 1976 and 1985. However, their labor activity rates continue to be less than those for college men of similar age. Nonetheless, this difference between the sexes is much less marked for persons with higher education than for the overall labor force. The table also shows that although the educational system keeps men aged 15 to 29 partly out of the labor market, the same does not hold true for women. Furthermore, college-educated men and women remain economically active until an older age. Thus, the higher participation rates by women and the extension of the productive lifespan are the basic differences between the labor activity of college-educated persons and the population at large.

The impact of an expanded university system will continue to influence the labor force in the coming years. This effect will be the result of four different factors. The first is the expected increase in the college enrollment rate. The second is the aging of workers who have received education in recent decades. As seen in Table 2, college trainees account for over 20% of the work force in the 20 to 39 year-old age group. Thus, the ratio of college trainees in the work force will approach this level in the next decade. This effect will be enhanced by the longer permanence of professionals in the labor market. Lastly, the participation of college women may continue to increase, although at a lower rate than in the past. All this indicates that the pressure

TABLE 1
LABOR PARTICIPATION RATES
(March of each year)

Age Group	1976				1980				1985			
	Total		University-trained		Total		University-trained		Total		University-trained	
	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
12-14	5.3%	7.6%			9.3%	8.0%			7.7%	4.9%		
15-19	41.0	57.2	15.0%	13.0%	45.5	34.5	24.0%	20.7%	42.0	30.4	17.1%	19.0%
20-29	84.6	51.1	62.1	54.0	87.7	56.8	68.6	60.0	87.0	58.5	65.9	60.1
30-39	98.0	42.9	98.2	66.6	98.1	53.3	98.6	79.9	98.2	56.0	98.3	78.6
40-49	96.4	34.3	96.3	64.1	95.1	40.5	97.7	74.8	96.5	48.9	98.5	74.8
50-59	87.5	23.8	98.6	40.3	89.9	29.3	98.8		87.0	30.1	93.3	52.0
60-69	60.9	12.4	68.1		64.9	17.1	84.5		64.6	13.2	79.4	24.3
70-79	29.7	8.0	40.7		36.2	8.1	38.8		36.8	6.3	44.7	
TOTAL	67.8	39.4	72.7	48.8	72.2	40.6	78.1	57.2	74.3	42.1	77.7	59.7

SOURCE : DANE.

TABLE 2
 SHARE OF UNIVERSITY TRAINEES IN THE POPULATION
 (March of each year)

Age Group	1976		1980		1985	
	Men	Women	Men	Women	Men	Women
15 - 19	2.0%	1.0%	2.6%	3.2%	2.1%	4.8%
20 - 29	15.2	12.0	20.1	18.3	19.0	20.7
30 - 39	16.1	7.2	21.0	13.4	22.3	18.1
40 - 49	11.9	4.5	14.6	4.7	17.4	9.9
50 - 59	10.2	1.3	10.8	3.2	13.3	4.9
60 - 69	9.3		13.8		16.2	3.6
70 - 79	8.7		9.8		10.1	
TOTAL	12.4	6.4	15.8	11.8	17.2	15.3

SOURCE : DANE

of university trainees on the labor market will continue to be significant in the coming years, especially among the younger generations. A recent study, for example, indicates that, for the remainder of this decade, two out of every five new workers in the 20 to 29 year-old age group will be college-trained ^{9/}. As regards the overall work force in the four major cities, at least one out of every three new workers will have this educational level.

B. Absorption of the university labor force

In simple terms, productive absorption of the growing university work force can occur through three different mechanisms. First, sectors that make intensive use of university labor may grow relative to the rest of the economy. Second, the proportion of jobs filled preferentially by college trainees may also grow in each sector of the economy. Third, "requalification" of jobs in a strict sense may take place, as previously defined. In economic terms, the first two mechanisms are captured by the income elasticity of demand for college-trained workers. The third mechanism is a process of substitution. As seen in Part I, this type of absorption is generally linked to a decrease in relative income of university workers. The lower the elasticity of substitution between different types of labor, the greater will be the decrease in relative incomes.

Unfortunately, existing information does not allow for a clear breakdown of the relative importance of these factors ^{10/}. Tables 3 and 4 include existing information on the importance of the college-level work force in leading urban sectors and in the main occupational positions. These tables show the significant share of college-trained workers in the public and financial sectors. In both cases, about 40% of the work force in 1985 had university training. In other urban sectors the proportion was much

TABLE 3

COMPOSITION OF EMPLOYMENT BY ECONOMIC ACTIVITY

(March of each year)

	1976	1980	1985
A. <u>Total employment</u>			
Industry	26.0%	26.5%	23.7%
Commerce	22.0	24.5	25.5
Services	32.7	29.2	29.1
Financial sector	5.4	6.8	7.6
Others	13.9	13.0	14.1
B. <u>University employment</u>			
Industry	18.2%	18.8%	17.2%
Commerce	12.3	15.1	15.4
Services	47.6	37.0	38.9
Financial sector	12.8	19.9	19.0
Others	9.1	9.2	9.5
C. <u>Share of university workers in each sector</u>			
Industry	7.6%	9.4%	11.7%
Commerce	6.1	8.3	9.7
Services	15.9	16.9	21.6
Financial sector	25.8	39.2	40.2
Others	7.1	9.5	10.9

SOURCE : DANE

TABLE 4

COMPOSITION OF EMPLOYMENT BY OCCUPATIONAL CATEGORY

(March of each year)

	1976	1980	1985
A. <u>Total employment</u>			
Private employees	51.2%	52.1%	50.0%
Public employees	12.1	10.6	10.4
Self-employment	22.6	23.9	26.6
Employer	3.1	4.0	4.0
Others ^{1/}	11.0	9.5	9.0
B. <u>University employment</u>			
Private employees	47.3%	55.4%	48.7%
Public employees	32.0	29.9	25.4
Self-employment	13.9	10.2	17.6
Employer	6.1	4.0	7.6
Others ^{1/}	0.8	0.5	0.9
C. <u>Share of university workers in each category</u>			
Private employees	9.4%	13.1%	15.8%
Public employees	26.9	34.9	39.4
Self-employment	6.2	5.3	10.7
Employer	20.0	12.3	30.8
Others ^{1/}	0.7	0.7	0.5

^{1/} Family workers and domestic servants

SOURCE : DANE

lower -- between 10 and 12% ^{11/}. The public and financial sectors, then, absorbed 44% of the university labor force but accounted for only 18% of total employment. The relative importance of university workers in the public sector is consistent with the Latin American pattern ^{12/}. In the case of Colombia, this is even more pronounced in intermediate cities, where 35 to 65% of all university trainees are working in the public sector. The corresponding rate for the four major cities is 25%, as seen in Table 4 ^{13/}.

Employment has been unequally dynamic in these two sectors of the economy during the past decade. Contrary to general belief, employment in the public sector has grown more slowly than overall employment, while jobs in the financial sector have increased rapidly. The joint effect of the development of these two sectors has been practically nil. Thus, the university-trained labor force has not benefitted from a relative growth of the university-labor intensive sectors. Absorption of the growing tide of professionals has come entirely from the relative increase in jobs demanding professional workers in each sector and from "requalification" of existing jobs. Although it is difficult to weigh these factors individually, the latter has probably been more important. College trainees have thus consistently increased their share in employment in all urban sectors during the last decade (see Table 3).

A look at employment trends by occupational positions gives greater insight into the absorption of workers with a university education in recent years. As seen in Table 4, wage labor is much more important among college workers than in the labor force at large. The lesser importance of self-employment and other types of jobs (family workers and domestic servants) reflects mainly the articulation of highly educated

workers with the "formal" sector of the economy, consistent with the Latin American pattern ^{14/}. The mechanisms of absorption of new college trainees have been radically different during the growth phase (1976-1980) and during the recession of the early 1980s. In the former period, the private sector demand for salaried workers resulted in increasing rates of absorption of college trainees, with all other occupational positions becoming relatively less important. On the contrary, the private sector demand for salaried workers has not been dynamic in the 1980s. This factor, together with the minor increases of public employees, has meant that employment of universitee-trained workers has depended increasingly on the efforts of the workers themselves, either through self-employment or the setting up of small businesses. Thus, the recession has been particularly hard on a part of the work force that is highly dependent on the "formal" sector and whose supply has continued to increase at an accelerated rate. The result has been the development of a growing "informal sector" of professionals. The significance of the self-employment and employer occupational categories has thus increased rapidly for college trainees. These two positions represented a little over 14% of the college-trained work force in 1980 and over 25% in 1985.

C. College-level Unemployment

The history of unemployment in Colombia in the last decade is divided into two radically different stages. During the phase of economic growth up to 1980, the unemployment rate tended to decrease; this trend was maintained until 1981, due to reduced labor participation. The recession made its impact felt as of 1982, as the sluggishness of employment coincided with participation rates resuming their historical trend (See Figure 1).

Unemployment of the college work force has followed these two cycles. However, contrary to the general trend, the reduction of unemployment was almost negligible from 1976 to 1981. Its subsequent increase, although somewhat lagging, has been proportionately similar to that of the overall labor force. Throughout the period analyzed, however, college-level unemployment has remained below the average for the economy. Since, furthermore, these workers have a higher labor participation rate, the ratio of university trainees who find jobs is significantly higher than that of any other group in the population.

The problem of open unemployment in Colombia is particularly dramatic for workers with a secondary school education. The unemployment of university-trained employees has even fallen below the rate for primary school workers ^{15/}. The problem of unemployment of secondary school workers, however, has much to do with the situation of the university labor force. These two developments probably indicate that college trainees have been successful at finding jobs by shifting the burden of unemployment to the secondary school workers. Furthermore, the former's "success" during the recent recession has been precarious, as we saw in the preceding section, and has been achieved only at the expense of sacrificing real and relative income. This will be analyzed in Part III of this paper.

The aggregate unemployment rate for college trainees hides the specific impact of the problem on the different component groups. Workers having higher education can be divided into three groups : student workers, persons with incomplete university training, and professionals in the strict sense. It is also useful, for purposes of analysis, to break the working-age population down by sex and age-group.

TABLE 5

UNEMPLOYMENT RATES OF THE UNIVERSITY WORKERS
 (March of each year)

	1976	1980	1985
Men : 20 - 29	11.6%	9.4%	14.8%
30 - 39	0.6	2.9	5.0
40 - 49	0.6	0.6	1.8
50 - 59	0.0	0.0	2.1
Women : 20 - 29	14.4	9.2	19.4
30 - 39	5.5	3.2	9.3
40 - 49	0.0	0.0	0.0
50 - 59			4.0
Complete studies :	2.3	3.0	6.5
Incomplete studies	12.2	16.4	16.6

SOURCE : DANE

Table 5 gives a detailed view of the impact of university-level unemployment in Colombia. The unemployment rate for professionals is still one of the lowest in the economy -- 6.5% in March 1985 --, although it has increased significantly compared to the rate in the boom years (2 - 3%) ^{16/}. The problem is more significant for student workers and those with incomplete college studies; unemployment in these groups is similar to that for secondary school workers. In the first of these groups, unemployment rates were particularly alarming in March 1985 (24.3%). However, student workers are a particularly erratic segment of the labor force and their unemployment tends to be less traumatic than in other population groups, as a large share of them are secondary household workers who do not depend on their work for subsistence ^{17/}.

A breakdown by age and sex shows the greater incidence of unemployment among women and the younger generations. The problem becomes dramatic only among workers aged 20 to 29, many of them student workers. It should be emphasized, however, that the problem of unemployment has been shifting gradually toward older college trainees, especially in the case of women. While in 1976 the over-30 age group accounted for only 7.9% of all college-level unemployment, the share went up to 14% by 1980 and to 21.4% in 1985. Unemployment rates, especially among women 30 to 39 increased rapidly in the eighties. Even so, these rates have remained below those for the same sex and age group in the labor force at large.

III. Devaluation of education and income distribution of college trainees

It may be concluded from the foregoing analysis that unemployment has not been the predominant response to the rapid growth of the university-labor force, except in the segment made up of students and, to a lesser extent, of workers with an incomplete

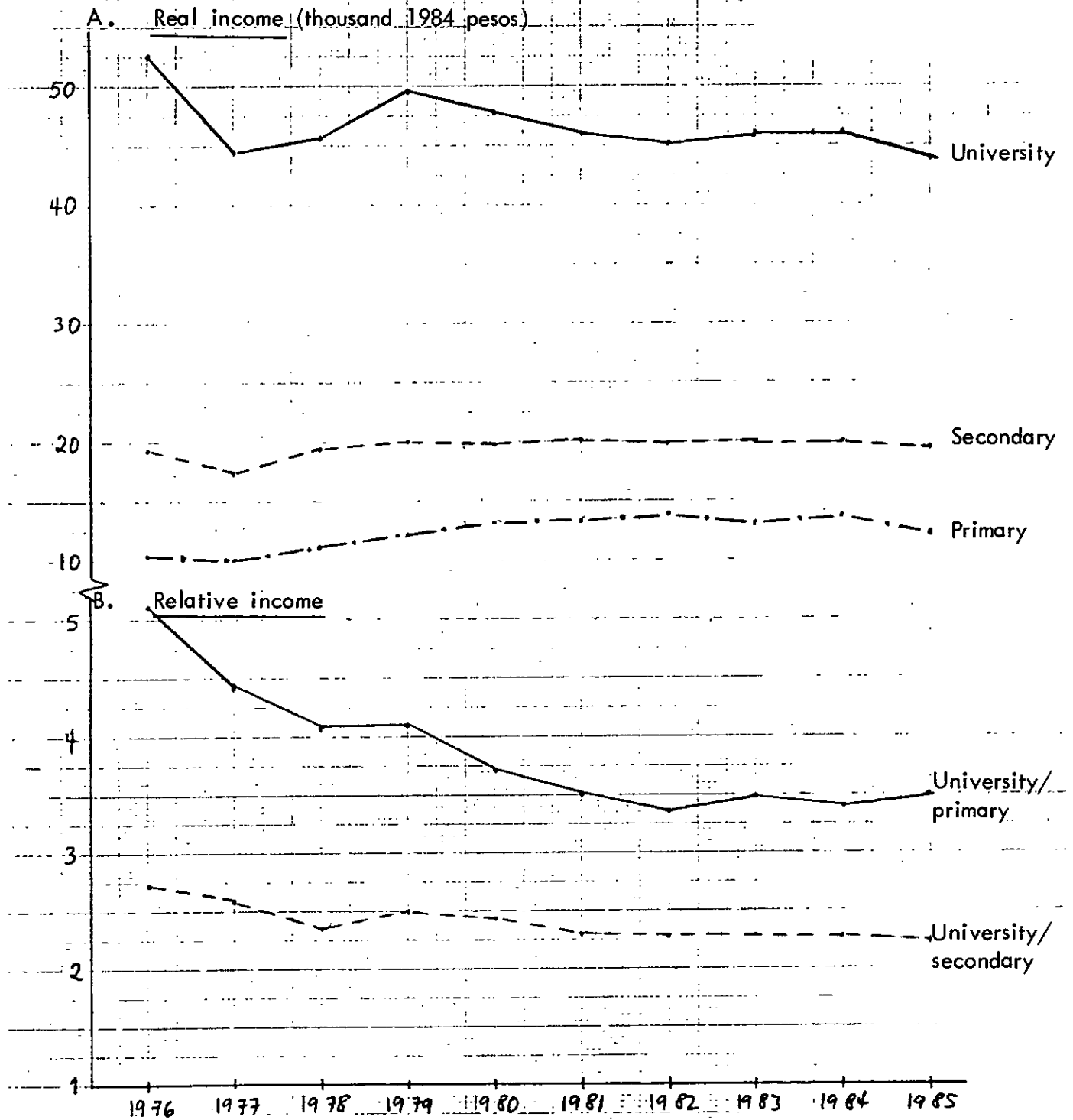
college education. Both groups, however, can be assimilated to that hardest hit by unemployment : secondary school-level workers. College trainees have been able to find work, due to massive job requalification in the private sector during the second half of the 1970s and to the growth of the informal sector during the recession of the early 1980s. As discussed in Part I of this paper, it is important to see to what extent this process has been accompanied by a deterioration of university workers' relative incomes.

The more general evidence on this aspect is shown in Figure 2. The behaviour of real and relative income for different types of workers in the years of decreasing unemployment (1976 - 1981) has differed greatly from the years of growing unemployment (1981 - 1985). During the first of these phases, real income of primary school level workers increased rapidly, with a brief interruption related to rising inflation in 1977. On the contrary, real income grew more slowly for secondary school level workers and tended to decrease for college trainees. The result was a rapid change in relative incomes of the different types of workers. Thus, while the average income for a college trainee in 1976 was 511% of that for a primary school worker, by 1981 the ratio had gone down to 349%. Compared to secondary school workers, relative incomes for college trainees decreased from 272% to 230% in the same period.

During the first half of the eighties all workers have been affected by recession. Average real incomes remained constant until 1984. However, this figure hides the increase in the real income of wage earners between 1981 and 1984, accompanied by a significant deterioration of real earnings of self-employed persons ^{18/}. In 1985, the deterioration of real incomes became general, as accelerated inflation and slow adjust-

FIGURE 2

INCOME BY EDUCATIONAL LEVEL



SOURCE : DANE

ment of nominal earnings led to a rapid fall of real wages ^{19/}. During those years, relative earnings of workers with different levels of education remained fairly constant. Very probably, dependency on salaried work helped to protect college trainees' real incomes during the initial years of the recession, while earnings for workers in the informal sector -- where less educated workers are more important -- dwindled dramatically. This attenuating factor ceased to operate in 1985 and will doubtlessly work in the opposite direction in the coming years, thus initiating a new phase of deteriorating relative incomes for college-level workers.

Table 6 confirms that between 1976 and 1984 deterioration of real income has been common to the three segments making up the university labor force ^{20/}. From 1976 to 1980, however, deterioration of real income was less severe for students and more so for the other two groups. From 1980 to 1985 the opposite has been true. During the 1976 - 1985 period as a whole, deterioration has been similar, although somewhat lower for persons with incomplete higher studies (14%) and more for professionals and student workers (17 and 18%).

This same data, and Tables 7 and 8, indicate to what extent decreased earnings have been accompanied by a worsening of the income distribution in each of the groups analyzed. The trend has been very different for professionals and for the rest of the university labor force. The Gini coefficient shows that income distribution for the first of these groups deteriorated from 1976 to 1985. This deterioration has been the result of the recession, as distribution tended to improve slightly in the second half of the 1970s. In contrast, the tendency to a better income distribution has been permanent throughout the decade for the other two groups, although much less marked in the case of workers with incomplete careers between 1980 and 1985.

TABLE 6

INCOME OF UNIVERSITY WORKERS

(March of each year)

	1976	1980	1985
<hr/>			
A. <u>Real income</u> (thousand March 1985 pesos)			
Students	36.6	34.8	30.1
Incomplete studies	52.2	45.0	44.8
Professionals	82.5	71.5	68.3
B. <u>Income distribution</u> (Gini coefficient)			
Students	0.264	0.246	0.180
Incomplete studies	0.328	0.301	0.296
Professionals	0.336	0.318	0.363

SOURCE : DANE

Deterioration of real income and income distribution for professionals is confirmed in detail by Table 7. The ratio of professionals earning less than four minimum 1985 wages has increased consistently since 1976. From 49% in 1976, the ratio went up to 58% in 1980 and 65% in 1985. At the same time, professionals earning more than eight minimum wages decreased from 12% in 1970 to 7% in 1980 and 6% in 1985. Deterioration in income distribution is shown on this Table by the ratio of professionals receiving a given share of the total income for this group of workers. While 8% of the professionals received 20% of the total income for this segment of the work force in 1976 and 1978, only 5% of higher income university graduates made up this proportion in 1981. For 30% of total income, the corresponding ratios were 13 to 14% of all professionals in 1976 and 1980, and only 11% in 1985.

The data from household surveys does not show to what extent this growing differentiation among professionals is related to changes in the educational system itself. However, the relative growth of lower quality universities and low-cost careers is so evident (see Part I) that one can hardly fail to see in the income distribution trends a reflection of changes wrought in the structure of the country's system of higher education. It is difficult, then, to know to what extent the loss of real and relative income among professionals is a result of this growing heterogeneity of the university labor force and to what extent it is a "devaluation of education" in the strictest sense, that is lower returns, with the characteristics of education itself remaining constant. Future research should confirm the relative importance of these phenomena.

Be this as it may, the growing differentiation between a university "elite" and "proletariat" should be noted. The latter group makes up a growing bulk of government

TABLE 7

INCOME DISTRIBUTION OF PROFESSIONALS

(March of each year)

Number of minimum wages of March 1985	Proportion of professionals			Proportion of income		
	1976	1980	1985	1976	1980	1985
1- 2	19.0%	21.4%	22.5%	6.1%	8.1%	8.4%
2- 3	11.6	14.7	29.7	5.9	8.3	18.7
3- 4	18.1	22.2	13.0	13.1	18.5	11.3
4- 5	11.1	14.5	11.9	10.4	16.1	13.3
5- 6	17.2	7.0	9.2	19.9	9.1	13.0
6- 7	5.9	8.2	2.2	8.2	12.4	3.5
7- 8	5.2	5.4	5.4	8.2	9.9	9.7
8- 9	1.6	0.8	2.4	2.8	1.6	5.1
9-10	2.9	3.0	0.6	5.7	6.7	1.4
More than 10	7.5	2.9	3.2	19.7	9.3	15.6

SOURCE : DANE

TABLE 8
 INCOME DISTRIBUTION OF OTHER UNIVERSITY WORKERS
 (March of each year)

	Number of minimun wages of March 1985	Proportion of workers			Proporcion of income		
		1976	1980	1985	1976	1980	1985
A. <u>Incomplete studies</u>	1 - 2	42.3%	47.7%	46.8%	20.7%	26.1%	26.1%
	2 - 3	20.1	23.7	28.2	15.9	23.5	26.2
	3 - 4	11.1	15.5	8.0	12.6	20.1	10.6
	4 - 5	12.2	4.4	7.7	17.8	7.0	12.9
	5 - 6	8.0	3.5	5.2	14.4	5.8	11.2
	6 - 7	1.1	2.1	0.5	2.4	4.0	1.1
	7 - 8	3.2	0.9	1.4	8.0	2.5	3.9
	Más de 8	2.1	2.2	2.3	8.1	11.1	7.9
B. <u>Students</u>	1 - 2	65.8%	67.5%	74.1%	43.4%	46.0%	57.7%
	2 - 3	16.0	17.2	19.0	18.0	21.0	25.6
	3 - 4	9.1	8.1	2.9	14.5	14.0	5.0
	4 - 5	4.2	3.2	2.3	9.1	7.2	5.7
	5 - 6	2.3	2.0	1.4	5.9	5.2	4.2
	Más de 6	2.6	2.0	0.2	9.1	6.5	1.0

SOURCE : DANE

and private bureaucracy and of the university labor force as a whole. Its relative growth in the past 10 or 15 years has altered the dynamics of the labor market and the demand for college enrollment. In this group of persons, higher learning has increasingly become a prerequisite to maintain a minimum occupational status in the context of massive job requalification. This, together with the innovations made in the educational system to lower costs ^{21/}, explains the high demand for enrollment in low-quality universities. This type of higher education and job requalifications thus feedback on each other. In the meantime, investment in elite universities continues to be basically profitable, at least in a significant group of professions. Furthermore, this type of education continues to be one of the few channels for social advancement open to the middle and lower classes. This fact, in turn, explains why these universities are faced with increasing excess demands. Given this differential pattern in the professional labor market, it may be predicted that demand for enrollment in both types of universities will continue to be high and increasing towards the future, although for very different reasons.

Table 8 shows, lastly, that improved income distribution for students and persons with incomplete college studies is mainly a reflection of a downward levelling of earnings for such workers. The ratio of persons in the lowest income levels has been rising in the past decade and is now overwhelming. Students earning less than four minimum wages now make up 96% of the total workers in the group compared to 91% in 1976. The corresponding ratio for persons with an incomplete college education was 74% in 1976 and rose to 83% in 1985. Including only workers earning less than two minimum wages, the corresponding ratios rose from 66 to 74% between 1976 and 1985 for students and from 42 to 47% for persons with incomplete college training.

IV. Conclusions and policy implications

Expansion of the university system has had a dramatic impact on the labor market in the country's four major cities during the past decade. This impact has resulted from the growing proportion of persons with college education and from their higher participation in the labor market, especially for women. The labor market's response to this increased relative supply has been only secondarily unemployment, especially in the case of professionals. In fact, the economy has managed to absorb the growing university labor supply. During the phase of economic expansion in the late 1970s, the loss of relative income and mass job requalification in the private sector allowed the absorption of the growing contingent of highly educated workers. During the economic recession of the early 1980s, this same effect was due to the increasing informality of the college-trained work force. In both periods, the growth of this segment of the labor force probably helped worsen unemployment among secondary school-level workers. Furthermore, growing heterogeneity among professionals became more evident in the past decade, causing a deterioration of their income distribution. Two types of labor markets for university graduates arose, which reflect -- and at the same time influence -- the growing differentiation of the university system itself.

The impact of the university system on the labor market will be even more evident in the coming years. Increased enrollment rates, aging of a work force wherein the proportion of highly-educated persons is higher in the youngest generations, longer permanence of professionals in the labor market, and additional increase in labor participation by college-trained women, indicate that at least one out of every three new workers in the four major cities will have some higher education in the next few years. In this

context, pressures on the labor market will tend to be stronger. In actual fact, the global oversupply of labor may well diminish as the surplus of professionals grows.

Authorities' response to this situation should not be to restrict growth of the university system. In this connection, it should be realized that more education is desirable in itself -- a consumer good and not only a capital asset, to speak in economic terms. Furthermore, it is a public good, as an educated society is qualitatively different from one with a lower level of education. There is evidence, furthermore, that higher learning, especially of a top quality, is less advanced in Colombia than in other developing as well as developed countries. Notwithstanding, the government should check the proliferation of poor quality programs which fail to adequately achieve the two-fold goal : providing a desirable consumer good and meeting the students' demand for economic advancement. In particular, more stringent standards should be imposed on low-standard universities that have grown in recent decades, and the new open university programs must not be allowed to become a further source of sub-standard college education.

The constructive answer to the challenge posed by a more highly educated work force is, obviously, to create more job openings. Although faster economic growth will certainly contribute to this result, economic policy should aim at stimulating those sectors that make intensive use of college trainees. Opposition to such policies must not be justified on the grounds that the economy has so far been able to absorb the growing supply of university graduates, since given the interrelationships in the labor market and the much greater challenge posed by the university work force in the future, lack of a policy of this sort could further aggravate the problems now faced by persons with middle levels of education.

In this connection, one of the major implications has to do with foreign trade policy. The implication is that, at least in dynamic terms, the assumption that the Colombian economy is abundant in non-skilled workers is a growing fallacy ^{22/}. Foreign trade policy must, therefore, incorporate the concept of intensity of skilled labor when designing mechanisms of export promotion and protection of domestic production. This fact should be reflected in the management of instruments associated not only with the trade of goods and but also, and very particularly, in the service sector. This is an area where the country has made little progress in the past.

This policy should be accompanied by promotion of those non-tradable sectors producing goods and services that are college-labor intensive. In this connection, it should be emphasized that a sound and dynamic financial sector is essential from the viewpoint of the labor market, justifying from a new angle the efforts of the Betancur Administration to overcome the financial crisis. Also to be emphasized is the relative backwardness of this sector of the economy in Colombia compared to other countries in the region. Broadening of social services by the State should be another priority goal in economic policy. Expenditures in this area are highly desirable, as they fulfill a double objective : they absorb professional workers and are highly progressive from the point of view of income distribution ^{23/}. The country's backwardness in certain social indicators (rural education, child mortality and nutrition, to mention only a few of them) is evident and reflects the lag this type of expenditures in Colombia. Furthermore, and contrary to popular belief, government employment in Colombia is proportionately the lowest in Latin America ^{24/}. So, while efforts are still needed to increase the efficiency of public -- and private -- spending, there is no clear justification

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for the idea that an over-large government machinery in Colombia must be dismantled. However, the efforts to increase social spending may, if considered advisable, be channeled at least in part through private institutions.

In addition to these considerations, there is also the need to promote an import-substitution sector which at the same time produces goods and services which are not internationally tradable : science and technology. This sector is highly intensive in the use of professional labor and is lagging dramatically in Colombia. Priority attention should be given in economic policy to the channeling of government and private resources toward this sector in its various facets, from basic to the most applied research, including the adaptation of products and technologies by private and public corporations.

On the other hand, the promotion of microbusinesses -- so appealing to the public and private sectors in recent years -- do not seem to be particularly effective instruments to absorb university labor. As we saw in Section II.B, wage labor tends to be more important for the highly educated workers, particularly in the younger generations ^{25/}. Self-employment requires experience and special contacts attained only after a certain amount of professional practice. Although the same is true for other independent workers, the informal economy offers a wide range of opportunities for self-employment in trade, industry and construction that do not exist for persons with high levels of education.

From the previous discussion, it may be concluded that special programs to counteract unemployment should be geared to the work force with secondary schooling, which has been the hardest hit by this problem. Special programs could, however, involve those segments of the college labor force whose unemployment has worsened in the

last decade. In this connection, women professionals should receive priority attention, even above student workers, for the reasons analyzed in the text.

Given the foreseeable growth of the college labor force, no policy design will be able to prevent additional deterioration of the income earned by college trainees, especially those from low-quality universities. It must be remarked that the levelling of earnings for different types of workers is not in itself undesirable. Rather, it should be welcomed as a sign of increasing social equality. However, if this process is not accompanied by an increased share of workers in national income and, hence, by an overall improvement in income distribution, and if the above process is further associated with a growing differentiation of the professional labor force, the alleged "social equality" generated by the educational system must be viewed with great reservation. An essential argument in defense of the educational system in the 1960s, especially by the theory of human capital, was its ability to bring about better income distribution, as indicated by the experience in developed countries ^{26/}. Otherwise, educational development becomes an additional source of social frustration and another, albeit modern and sophisticated, mechanism for reproducing long-standing social inequalities. No efforts must be spared to promote a fairer distribution of income and to adequately promote the potential for social mobility generated by the educational system.

The latter remark and the preceding considerations involving science and technology, lead to some final comments on the allocation of government subsidies to the university system. These subsidies are not presently tied to a clear promotion of a public good nor to the objective of improving income distribution. On the contrary, the

universities' scarce contribution to Colombian scientific and technological development should be emphasized, as well as the regressive effect of public expenditures on higher education, as shown by studies done a decade ago ^{27/}. Although the situation may be somewhat different today, it is nonetheless true that state subsidies to the universities fulfill neither of these purposes. This being so, as emphasized by several studies ^{28/}, a funding system should be designed to encourage scientific and technological development, on the one hand, and access of lower-income students to higher education. A system combining the promotion of research with a national system of fellowships and subsidized credit would better serve this purpose than the present dichotomy between public universities funded almost entirely by the State and private universities paid for almost entirely by the students.

NOTES

- * Executive Director, FEDESARROLLO and Technical Director of the Employment Commission. I am greatly indebted to Fanny Kertzman for her invaluable help in the statistical work.
- 1. The definition of the university labor force used in this paper includes all persons with some university training. It thus includes students and persons with incomplete studies.
- 2. See Philips H. Coombs, La crisis mundial de la educación : perspectivas actuales, Madrid : Santillana, 1985, Chapter 6; Ricardo Carciofi, "Acerca del debate sobre educación y empleo en América Latina", Revista Colombiana de Educación No. 8, II semestre 1981, pp. 9-61; and Angela Little, "The Coordination of Education Policy and Planning and Employment Policy and Planning : A State of the Art Review", UNESCO, Doc. ED-84/WS/75.
- 3. On the labor market, see Francois Bourguignon, "The Labor Market in Colombia : An Overview of its Evolution over the Past Three Decades", Mimeo, World Bank, January 1986, Tables 5 and A.1. On the university system, see Hernando Gómez Buendía, Finanzas Universitarias : pasado, presente y futuro, Bogotá : FEDESARROLLO, 1984, Chapter II and Hugo López "¿Por qué la superproducción de administradores en Colombia?", Lecturas de Economía, No.15, September-December 1984, pp. 77 - 102.

4. Cecilia López and Amparo López, "Educación : inversión en recursos ociosos ?", Empleo y Desempleo, ANIF, 2:2, February - March 1977.
5. Bourguignon, op. cit., Table 7.
6. Bernardo Kugler, Alvaro Reyes and Martha Isabel de Gómez, Educación y mercado de trabajo urbano en Colombia : una comparación entre sectores moderno y no modernos, Bogotá, CCRP, Monografía No. 10, May 1979.
7. Hernando Gómez Buendía, op. cit., Chapter II; Hugo Lopez, op. cit., Jorge Orlando Melo, "Crecimiento y expansión de la educación superior en Colombia : una feria de ilusiones", Lecturas de Economía, No. 16, January - April 1985, pp. 253-271; and Rodrigo Parra Sandoval and María Elvira Carvajal, "La universidad colombiana : de la filosofía a la tecnocracia estratificada", Revista Colombiana de Educación, No. 4, II Semester, 1979, pp. 131-141.
8. See, for example, Coyuntura Económica, September 1983, pp. 77 - 83.
9. Instituto SER de Investigación - FEDESARROLLO, "Modelo de simulación del mercado de trabajo de los jóvenes", Research Report, April 1986.
10. A simple econometric exercise to capture the relative importance of substitution factors in the demand for university workers did not give satisfactory results. The GDP - elasticity obtained was excessively high (close to 2), while the elasticity of substitution for secondary school-level workers and of the demand to changes in the real income of the university workers were not statistically different from zero.
11. Employment in government services can be calculated as the difference between government employees, according to the corresponding occupational category, and employment in public services (electricity, gas and water). This method indicates that university workers are 12% of unemployment in non-government services.
12. Rafael Echeverría, Empleo público en America Latina, Santiago, PREALC, Investigaciones sobre Empleo No. 26, 1985.
13. Coyuntura Económica, December 1984, pp. 85-88.
14. Kugler, et. al., op. cit.; Carciofi, op. cit.; and Juan Pablo Terra, "El papel de la educación en relación con los problemas del empleo", Revista de la Cepal, No. 21, December 1983, pp. 79 - 109.
15. In the first three quarters of 1984, the average unemployment rate was 11.3, 16.7 and 10.6% for workers with primary, secondary and university education.

16. Estimates refer to workers with five years or more of university studies. They include some students with that characteristic.
17. See, on this, Juan Luis Londoño, "Ciclos de vida, relaciones contractuales y la inserción de los jóvenes en el mercado de trabajo", Employment Commission, Document No. 3, March 1986.
18. Juan Luis Londoño, "Evolución reciente del empleo y el desempleo urbano", Economía Colombiana, No. 172-173, August - September 1985, pp. 10 - 22.
19. Coyuntura Económica, December 1985, pp. 98 - 106.
20. Professionals are defined as those persons who are not currently attending school and have five years or more of advanced studies. Persons with incomplete studies are those who are not attending the university and have four year or less of studies; the definition thus includes persons with intermediate careers.
21. Hugo López, op. cit.
22. The argument is only valid in keynesian terms. In a neo-classical context, the country will continue to be relatively abundant in non-skilled labor. The relevance of the latter concept depends, however, on full employment of all productive factors, a difficult assumption to defend in the Colombian context.
23. On this issue, see Marcelo Selowsky, Who Benefits from Government Expenditure? A Case Study of Colombia, New York : Oxford University Press, 1979; Miguel Urrutia and Albert Berry, La distribución del ingreso en Colombia, Medellín : La Carreta, 1975, Chapter 5; and Jean Pierre Jallade, Public Expenditure and Income Distribution in Colombia, World Bank Staff Working Paper No. 18, 1974.
24. Echeverría, op. cit. This study shows that, proportionally, public employment in Colombia is about half of that in other Latin American countries.
25. Londoño, "Ciclos de vida...", op. cit.
26. See, for example, Urrutia and Berry, op. cit., Chapter 6 and Carciofi, op. cit.
27. See texts quoted in Note 23.
28. Gómez Buendía, op. cit., Chapter IX; Finanzas intergubernamentales en Colombia, Informe de la Misión, Bogotá : Departamento Nacional de Planeación, 1981, Chapter IX.