CHANGING INCOME DISTRIBUTION UNDER DEVELOPMENT: COLOMBIA

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This paper examines the available evidence relative to the distribution of income in a developing country, Colombia, over a relatively long span of years, roughly from the mid-30s to the mid-60s, especially in the context of the argument that recent growth has been characterized by worsening distribution and stable or declining incomes for lower income groups. The basic conclusions are that income distribution within agriculture worsened throughout the period, while non-agricultural income probably worsened from the mid-30s to the early 50s, improved from then to the mid-60s, and then leveled off. During the period of improvement in non-agricultural income, it appears that the overall distribution also improved somewhat. Over the period as a whole, the main gainers have been the second and third deciles from the top; the top decile appears to have lost. The bottom two deciles also appear to have lost.

In Colombia, as in many developing countries, it is often argued that recent growth[1] has been characterized by worsening distribution, stable or even declining incomes for lower income members of the labour force, burgeoning urban slums filled with people "expelled" from agricultural sectors which are stagnant and archaic or whose pattern of modernization has been characterized by labour saving technological change, rapid population growth accentuating all the problems of labour surplus, and so on. Such fears are fuelled also by the generally accepted belief that the growth process in the now developed countries involved a stage of worsening income distribution, prior to a subsequent stage of improvement associated with the approach of economic maturity.[2]

Few developing countries have sufficient information from as far back as 20 or 25 years to provide bases of comparison with the more abundant data now available, so most judgments with respect to income distribution trends are of necessity impressionistic. This study attempts to trace out certain features of the income distribution trends in Colombia during the last 30 or 40 years by piecing together diverse types of information. A rough attempt is made also to check the consistency of various alternative hypotheses which might explain the observed trends.

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[1]Especially during the post-World War II period with its tendencies to "capital intensive" growth, rapid population growth and so on.

[2]Some students believe this sequence is more or less inevitable, since the high profit share linked to a skewed family or personal income distribution is a key source of the savings which fuel growth. This pessimistic conclusion leads, further, to the fear that "extra-labour-market" steps taken in the guise of income redistribution (e.g., wage legislation which induces capital intensity) will create disincentives and inefficiencies in the system and help to slow its growth down to unacceptable levels.

Methodology

The desirable data base for studying changes in income distribution—periodic and good quality surveys, with comparable and appropriate definitions—will remain out of reach for some time in most Latin-American countries, including Colombia. While four or five attempts have been made, at different points of time, to estimate distribution,[3] only one (referring to 1964) has adequate detail and methodology to lend it much confidence;[4] among the other studies methodology is either too crude, insufficiently spelled out, or incomparable with the 1964 study to permit useful over time comparisons.[5] Under the actual data conditions, over time comparisons of these surveys can at most serve as a check on other techniques.

In this study major reliance is placed on the wage series for various groups of workers; this, coupled with information on functional distribution over time and changes in the occupational and sectoral structure over time, permits some appraisal of (a) changes in the overall personal and family income distributions and (b) with somewhat greater precision, changes in the distribution of labour income. While the distribution of capital income is also of much interest, it is significantly harder to get at. A number of problems associated with differences between personal and family income, inclusion or non-inclusion of income not associated with the current production process, and biasing effects of an increasing proportion of women in the labour force, are not considered. Reference is made to some of the possible mechanisms determining changes in income distribution, but only speculative hypotheses are possible in this area.

The nature of the available data makes it convenient to partition the discussion in a number of respects; frequently it is possible to say with greater certainty what has happened within a given sector or time period than for the whole economy or the whole time period considered—from the mid-1930's to the present. In particular, separate information is available for the agricultural sector; better information is available on the distribution of labour than capital income; reference of much of the available information to a number of benchmark years forces the use of periods delimited by those years.

Basic conclusions are (a) that income distribution in agriculture has worsened throughout the period since the mid-thirties; (b) that non-agricultural income distribution probably worsened from the mid-thirties until some time in the early 50's, then improved until some time in the mid-60's, and then tended to level off.[6] Conclusion (b) is based primarily on and therefore particularly pertinent

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[3]See Miguel Urrutia, "Reseña de los Estudios de Distribución de Ingresos en Colombia," *Revista del Banco de la Republica*, No. 508, Febrero, 1970.

[4]See Miguel Urrutia and Clara Elsa de Sandoval, "La Distribución de Ingresos Entre los Perceptores de Renta en Colombia—1964," *Revista del Banco de la Republica*, Julio, 1970.

[5]For a more detailed discussion see A. Berry, "Some Determinants of Changing Income Distribution in Colombia: 1930–70," Yale Economic Growth Center Discussion Paper No. 137, March, 1972, and Miguel Urrutia, "Reseña . . . ," *op. cit.*

[6]Evidence for the period since the mid-1960's is as yet quite incomplete; some of it suggests a renewed worsening, other of it does not. Income of such groups as agricultural and construction workers has not increased substantially where at all (see Table 1); but structural change—especially shifting from agriculture to non-agriculture—may have been quite rapid. Any overall judgment would be premature at this point.

to the distribution of labour income; much less is known about the distribution of capital income and its relation to labour income.

The Probable Worsening of Distribution, 1930's to Early 1950's: Evidence

A considerable body of evidence suggests that overall personal and family distribution (always very bad) worsened from say 1930 until some time in the early 1950's.[7]

This period included the economic difficulties of the latter part of the world depression in the 1930's; the advance of industry, given an initial impetus by the difficulties of importation during those years, and further stimulated during the war as manufactures were again difficult to import; and the rapid post-war industrial and overall growth associated with balance of payments ease. The price of coffee started to rise rapidly in the late 40's and early 50's. Rural violence, present in substantial proportions in the 30's, exploded into the famous *violencia* in the late 40's and early 50's, and was undoubtedly one factor in accelerating rural to urban migration. Growth in income per capita was fairly continuous over the period, and particularly rapid during the latter part between 1945 and 1951–54, as income per worker[8] rose at an average of 5.1 percent[9] per year, while output per worker was rising at 3.6 percent. During the decade 1934–36 to 1944–46, income per worker grew less rapidly at 1.0 percent and output per worker at 1.4 percent. For the period as a whole income (output) per capita grew at 2.8 percent (2.3 percent) as population grew somewhat faster than the labour force.

Major evidence of distribution worsening is the slower income growth for unskilled labour than for other groups, especially in agriculture. (On Figure 1 are plotted relevant series for the major occupational categories for which information is available, and in Table 1 percent changes over specified periods are indicated.) In 1938 landless or nearly landless workers accounted for 47.5 percent of the total agricultural labour force; by 1951 this had risen to 55–57 percent.[10] Whereas income per capita in agriculture rose rather systematically over the whole post-1935 period, our estimate of real wages was lower in 1950 than in 1935 (having bottomed out in the early 1940's; the 1950–54 average was about 20 percent lower than in 1935, according to the figures.[11] It seems probable, however, that these figures give a downward biased measure of real wage change over the

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[7]A competing hypothesis of particular interest when only the urban sector is being considered would locate the turning point (from worsening to improving) in the late fifties. Udall's evidence on several low income occupations in Bogota, including the only data which separate out unskilled manufacturing workers, would suggest this, showing no clear rise until the early sixties. Average blue collar incomes began to rise rapidly in the early fifties, as is well known, but these rises may have gone largely to more skilled workers, or workers of large firms. Udall's data were from classified ads, and it is not clear how accurate an indicator they provide. (See Alan Udall, *Migration and Employment in Bogota, Colombia*, Yale Ph.D. Dissertation, 1973.)

[8]More precisely, per member of the labour force, though during these early years open unemployment was quite low.

[9]Based on net national income estimates.

[10]This figure includes family helpers in 1951; whether it does in 1938 is unclear but it seems probable; when they are excluded the figures are, of course, lower.

[11]See the author's *Development of the Agricultural Sector in Colombia*, forthcoming, Chapter V.

period;[12] even if this is the case, however, it appears certain that labour income in agriculture grew less rapidly than per capita income in the sector (3.7–4.2 percent over the period 1935 to 1950–54 according to the author's estimates—see Table 1). A wage rate rising more slowly than average income was essentially equivalent to a worsening of the distribution between labour and capital, or between labourers and capitalists.

Wage statistics for the non-agricultural sector are scarce before the 1950's. It does appear, at least during the late 1940's and early 50's, that the distribution of labour income in manufacturing was worsening; a comparison of the 1945 and 1953 industrial censuses suggests that between those two years average blue-collar wages rose by about 25 percent while average white-collar wages were increasing by about 50 percent.[13] The rapid growth of manufacturing during these years, and the particular focus on import substitution would be expected to contribute to such a trend. The white-collar/blue-collar comparison cannot be made for the universe of manufacturing firms before 1945; data from the firms reporting to DANE during the period 1936–42 (between 400 and 1,000 according to the year) suggest approximately a 5 percent increase in real wages for blue-collar workers and a 10 percent decrease for white-collar workers, consistent with a pattern where the period of a rapidly widening white-collar/blue-collar differential began after World War II. This widening was reversed beginning some time in the early or mid-1950's.

As indicated in Table 1 and Figure 1, white-collar wages in manufacturing were far above the mean or median incomes of the economy at each point in time, so the rapid increase occurring for this period as a whole, and particularly in the post-war part of it, constitutes, *per se*, a factor tending to worsen the overall distribution. Blue-collar workers in the factories included in the DANE surveys from which the above estimates were made also are above the median income, though a little below the mean; their 35–40 percent increase for the period as a whole was somewhat below the economy average.

No good estimates of the purchasing power of manufacturing output and hence of total labour plus capital income generated in manufacturing are available for this period; physical output per person appears to have risen at about 4.7 percent and if one judges by the cost-of-living indices which include manufacturing items in the miscellaneous category, the relative price may have trended up somewhat. The fact that the increase in average wages (blue and white-collar

[12]Evidence from several countries, including Japan, suggests that wage rates may have been above their equilibrium levels (or simply over-reported) during the early years of the depression when prices were still falling or constant. The suggestion, in other words, is that wages lagged prices in the descent during the depression. (For a discussion of the Japanese case see Ryoshin Minami, "The Turning Point in the Japanese Economy," *The Quarterly Journal of Economics*, Vol. LXXXII, Aug. 1968, p. 380.) Unfortunately wage statistics are not available prior to 1935 in Colombia to verify this hypothesis, but the similarity of the pattern with Japan in particular does suggest this as the most likely interpretation for the wage rate decrease at this time.

[13]See Albert Berry, "Trends in Real Wages in Colombian Manufacturing and Construction," Research Report No. 7403, Department of Economics, University of Western Ontario. Note that this figure does not mean that white-collar earnings rose by 50 percent for a given occupation. There was undoubtedly an upgrading of average education and training of the white-collar workers in this period. (The number of engineers and certain other professionals probably rose markedly.) Still the increase for the representative occupation must have been substantial.
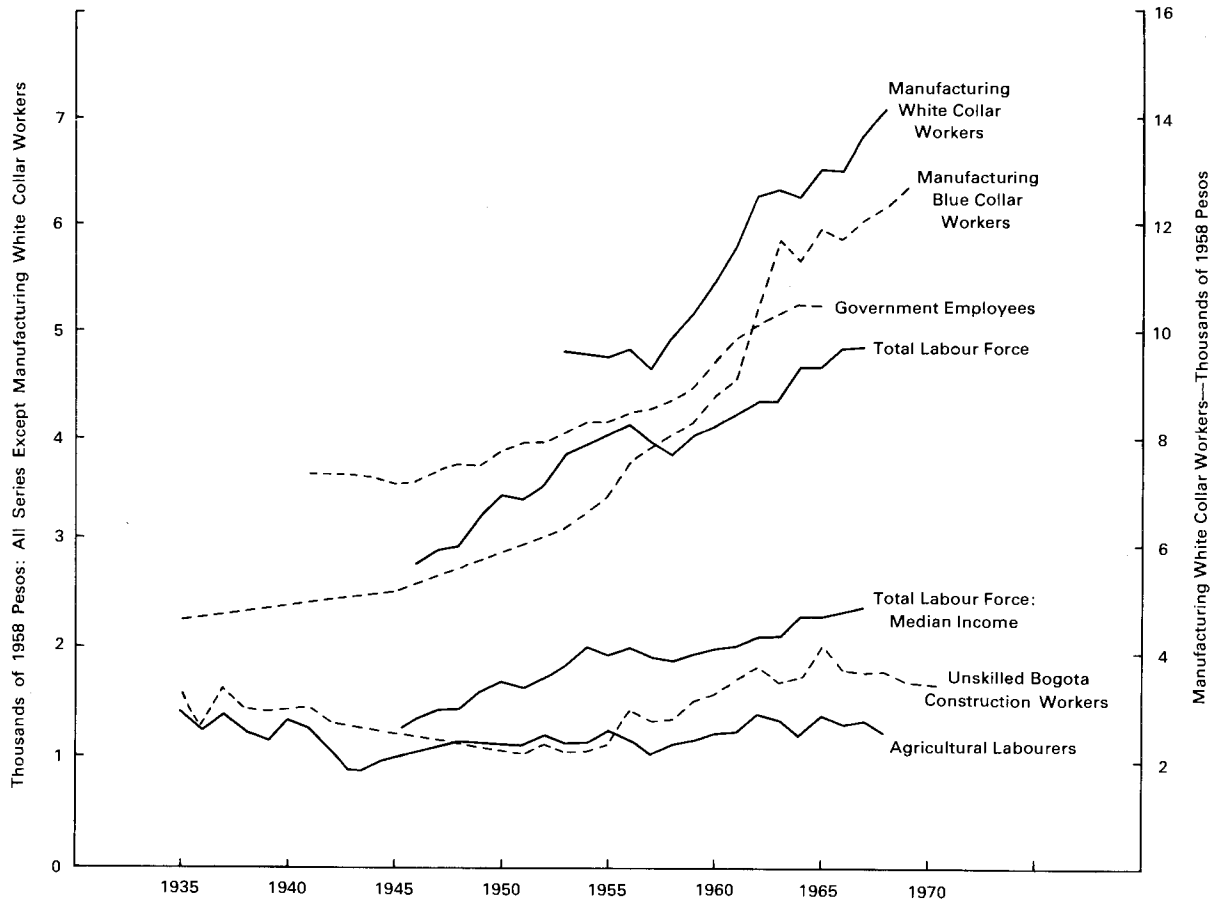
Figure 1

Historical Trends in the Income Levels of Selected Occupational Groups 1930's and on

TABLE 1
INCOME CHANGES BY PERIODS AND BY OCCUPATIONAL CATEGORIES
(Annual Income in 1958 Pesos)*

	Labour Force	Agricultural Labour Force	Male Agricultural Blue Collar Workers	Factory Manufacturing Blue Collar Workers	Bogota Construction Workers	Agricultural Labour Force, Excl. Workers	Factory Manufacturing White Collar Workers	Government Employees	Non-Agricultural Labour Forces[p]	Labour Force Median Income[q]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
PERIOD I (1934–36 to 1950–54)										
Average Income—										
Beginning of Period	2280	1144–1218	1102–1377[d,e]	2280–2365			5650–6400	≈3080	4201–4335	
End of Period	3685[a]	2300[b]	1158[e]	3193[g]	1081[j]	3060[m]	9600[g]	≈3900	5364	≈1840
Annual Rate of Increase	2.8	3.7–4.2[c]	−1.0–0.25[f]	1.8–2.0[h]	decrease[k]		2.3–3.0[n]	1.4	1.26–1.45	
PERIOD II (1950–54 to 1964–66)										
Average Income—										
End of Period	4746	2903	1336[e]	5878	1880[j]	3948[m]	13038	5197[o]	6413	≈2354
Annual Rate of Increase	1.9–2.3	1.8	1.1	4.6	4.2	2.0	2.0	2.2	1.35	
PERIOD III (1964–66 to 1970)										
Average Income—										
End of Period	5425	3259	1403	6356[i]	1690[j,l]	4503[m]	15871[i]	n.a.	7059	≈2691
Annual Rate of Increase	3.1	2.4	1.0	1.56[i]	−2.13[l]	2.67	2.32[i]	n.a.	1.94	

*The deflator used for all incomes is the national accounts net national income index.

[a] Net National Income per person, calculations based on the *Cuentas Nacionales* and my estimates of the labour force.

[b] Agricultural output divided by the labour force. (See Berry, *The Development . . . , op. cit.*, Chapter V.)

[c] 1935 to 1950–54.

[d] Refers to 1936.

[e] Assuming the reported daily wage and an average of 250 days worked per year.

[f] A literal reading of the wage statistics indicates a decrease of 15.9 percent over the period 1935–37 to 1950–54, i.e., of about 1 percent per year. It is argued elsewhere (Berry, *The Development . . . , op. cit.*) that the observations in the 1930's are probably above equilibrium wages, since prices were falling and money wages could have lagged prices in this descent. The decrease of the GDP deflator over 1927–28 to 1935–37 was a little over 20 percent, and that of the GNP deflator was probably about the same. It would seem implausible that the wage lag would cause an overestimate greater than 15 percent associated with falling prices, though there could also have been a wage lag simply related directly to the fact that the real wage was falling. Perhaps a total overestimate of 20 percent would provide an upper limit; this would imply a wage increase over the period of about 0.25 percent per year.

[g] Refers to 1953.

[h] 1936 to 1953; these annual rates correspond to total real wage increases of 35 percent and 40 percent, respectively.

[i] Preliminary; based on rough splicing of DANE series to the author's series, which end in 1966.

[j] Assumes 275 days worked per year.

[k] There is some question of whether the figures for the 1930's and the 1950's refer to the same groups, but it seems unlikely they are very different.

[l]Based on the series presented in A. Berry, "la Industria de la Construcción en la Decada de los Sesenta," *Economía Colombiana*, Vol. 92, April, 1972, tercer epoca.

[m]Assuming crudely that 40 percent of the agricultural labour force were workers (col. 4); there is some imprecision in this assumption but it probably does not lead to a large bias in the estimate made. As explained elsewhere, there is no simple delineation of labourers and others.

[n]Assuming a total increase over the period of 50–70 percent. Over 1944–45 to 1953 we have estimated an increase of 48.3 percent. Prior to 1945 the evidence is more problematic. Over 1936–42, data on a set of firms of varying composition suggested a decline of about 18 percent, though the series was erratic. Possibly there was some increase over 1942–45. Overall, the increase would seem likely to fall in the range 50–70 percent, as assumed here.

[o]Refers to 1963–67.

[p]All figures in this column are calculated on the basis of cols. (1) and (2) and data on the share of the labour force in agriculture. The method of calculation underlying cols. (1) and (2) is somewhat different, with col. (1) probably having some upward bias relative to col. (2); it seems unlikely, however, that these problems generate a significant bias in the growth rates calculated in col. (9).

[q]Assuming the same median/mean ratio as found by Urrutia–Sandoval in 1964, i.e., 4175/8410 or 4.96 or 5.0. (See Urrutia and Sandoval, "La Distribución . . . ," *op. cit.*, p. 17.)

together) was somewhat less than the increase indicated by these figures for average labour productivity would suggest that the gross capital share rose somewhat and that income of industrial capitalists probably rose somewhat faster than wages, and certainly faster than average income of the total labour force, therefore contributing to a worsening of distribution.

Earnings of artisan workers are not available for this period; it seems unlikely that they could have been rising as fast as the 2.8 percent characterizing the labour force as a whole during this period, since there is little reason to believe that physical productivity was doing so. The share of all industrial workers in certain artisan sectors was decreasing, especially in the textile and clothing sectors where modern factory industry was cutting in rather heavily. This could even have implied downward pressure on artisan incomes.

The movement of average wages of government employees (a category so heterogeneous that it is doubtful that it can be given much interpretation)[14] is somewhat different from that of white-collar workers in manufacturing; it seems not to have been increasing in the years preceding the end of World War II; a five year moving average of wages for all levels of government rises moderately over the succeeding decade (1945–55) and more rapidly in the following years. The movements are different for the different levels of government, in particular as between the national government and the other two levels.[15]

Persons in the employ of the three government levels rose from 2.4 percent to 3.1 percent of the labour force between 1938 and 1951: assuming that a good number, apart from the teachers, required relatively little preparation and skills were less important determinants of their employment, it is not necessarily surprising that they should not have shared in the rapid increase in white-collar wages characterizing the manufacturing sector.[16]

In the construction sector data are scarcer and more difficult to interpret. Nevertheless it appears, over the long run, that: (a) a relatively close relationship has prevailed between unskilled construction worker wages and agricultural wage figures (see Table 2); and (b) that there has been a wage differential in favour of the urban (unskilled construction) worker; thus in the late 30's the typical daily wage of a peon in Bogota appears to have been 20–40 percent higher than the daily wage of peons in the agricultural regions near Bogota (compare Cols. (1) and (3), Table 2). The relationship appears to have become inverted in the early 50's with the agricultural wage slightly higher, perhaps in part a result of the rural violence. The typical long-run differential then reappeared in the late 50's and

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[14]It includes professionals, teachers, police, street-sweepers, and a host of other categories. A breakdown by blue-collar/white-collar would be useful but has not yet been effected. Alan Udall did study the wage trend for Bogota street-sweepers, showing that taking 1937 and 1950–54 as end points an increase of about 10 percent was registered; but there were violent fluctuations in real wages and they were destined to fall more in the fifties before beginning an abrupt increase in the late fifties. (See Alan Udall, *Migration, and Employment in Bogota, Colombia,* Yale Ph.D. Dissertation 1973, Chapter 2.)

[15]The figures here probably understate the real increase through failure to take adequate account of the increase in fringe benefits (*prestaciones sociales*). Moving averages are used since nominal wages tend to change in steps in the government sector, with the result that real wages fluctuate rather violently and probably do not reflect short-run market phenomena.

[16]An alternate explanation of the different behaviour would simply be the heterogeneity of the group considered; probably some sets of professionals did have wage increases.

since, fluctuating between 10 and 25 percent; it appears to have narrowed in the last five years. Some uncertainty attaches to this interpretation due to the fact that the construction wage figures presented in Col. (1) for 1935–42 are public sector wages, while the post-1950 figures refer primarily to the private sector; in any case these Bogota public sector unskilled construction wages bore a fairly consistent relation to the Cundinamarca agricultural wages over the 1935–42 period; the real construction wage showed no measurable change while that in agriculture fell a little. No figures are available between 1942 and 1950, but if it be assumed that the recorded public sector wages for 1932–42 corresponded to the same skill level (or more generally to the same labour market) as those of the 1950–70 series (not exclusively or even primarily public sector), then it would be concluded that the real wage fell by about 20 percent (from an index of 75 to one of 61) over the period.[17,18] Thus the suggested 1935–50 wage movement clearly fits a "worsening distribution" pattern.

Unskilled construction wage series are unavailable for the country as a whole before 1950, but it seems probable that they suffered a decline in the 1930–50 period, or at least the 1935–50 period. Evidence available for the post-1950 period is consistent with a rather close tie[19] between construction and agricultural wages, the latter of which, as indicated above, did fall at this time.

For Bogota, Udall's figures on wages in commerce fit the general pattern precisely; he finds a decrease between the years 1936 and 1954[20] and a subsequent rather sharp increase to 1963–64.[21] His figures for maids' wages in Bogota rose rapidly over 1936–45, fluctuated around the 1945 level until about 1950 when a sharp dip appeared, followed by a recovery which however only brought the wage back to its 1945 level by 1958–60; after this a substantial percentage increase has occurred, amounting over the 1958–67 period to more than 25 percent.[22]

To summarize, the information for agricultural wages, blue-collar manufacturing wages, construction wages, and commerce wages all show rather small or no increases from some point in the 30's to some point in the 50's. All clearly advanced less than the average income per member of the labour force. Udall's estimates of maids' wages in Bogota, the weakest series in terms of methodology, are a partial exception, depending on the particular period chosen. White-collar workers in manufacturing and government both showed moderate or rapid increases at least over 1945–55, suggesting a widening of the overall white-collar/

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[17] Deflating by the Bogota blue-collar cost of living series.

[18] Meanwhile the Cundinamarca agricultural wage rose by 28 percent, about the same in the cool climate regions around Bogota as in the hot zones.

[19] As of 1971 (1st semester) construction wage differences across cities were not dramatic; (see Berry, "Some Determinants, . . . ," op. cit., Table A-2, which indicates that 7 of 10 cities sampled had average "helper" wages in the range 18.5–20.7 pesos per day).

[20] The 1936–54 change is open to some question both (a) because of the small sample in both years and possible differences in the definition of "small", and (b) because of the fact that Udall had to assume the same ratio of average wages to average incomes in the two years, the two pieces of data apparently only being available together in 1954. (See Udall, op. cit., p. 86).

[21] For 1963–64 Udall used wage data from CEDE's unemployment surveys to arrive at his estimate.

[22] Udall obtained an observation every 2–4 years since 1945, based on classified advertisement data; although the methodology leaves room for some doubt, it is consistent over time. It is more doubtful that the calculated change over 1936–45 is accurate since the sources of information were different.

TABLE 2
UNSKILLED CONSTRUCTION WAGES IN BOGOTA, COMPARED TO OTHER SELECTED WAGE SERIES
(all wages expressed in pesos per day)

Year	Current Prices				1958 Prices			
	Unskilled Construction Workers: Bogota	Agricultural Salaries: Cundinamarca	Agricultural Salaries: Cold Climate Cundinamarca	Agricultural Salaries: Colombia	Unskilled Construction Workers: Bogota	Agricultural Salaries: Cundinamarca	Agricultural Salaries: Cold Climate Cundinamarca	Agricultltural Salaries: Colombia
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1935	(.80)				4.44	4.90	4.85	5.60
1936	(.75)				3.85	3.77	3.74	5.15
1937	(.93)				4.91	3.89	3.85	5.77
1938	(.94)	0.60	0.60		4.40	4.38	4.34	5.04
1939	(.96)	0.60	0.60	0.74	4.31	4.02	3.97	4.66
1940	(.95)	0.80	0.80	0.78	4.40	5.74	5.68	5.38
1941	(.94)	0.80	0.90	0.71	4.42	5.42	5.70	5.19
1942	(.92)	0.65	0.60	0.72	3.98	4.06	3.73	4.23
1943		0.60	0.60	0.73		3.38	3.34	3.52
1944		0.90	0.80	0.94		5.04	3.46	3.78
1945		1.05	1.00	1.09		4.02	3.80	4.04
1946		1.50	1.50	1.25		5.29	5.24	4.20
1947		1.75	1.50	1.62		4.86	4.17	4.42
1948		1.85	1.70	2.02		4.74	4.35	4.74
1949		2.05	2.00	2.03		5.07	4.91	4.53
1950	2.24	2.50	2.30	2.52	3.97	4.85	4.45	4.46
1951	2.34	2.90	2.60	2.84	3.81	5.08	4.55	4.55
1952	2.45	2.70	2.40	2.81	4.08	4.68	4.16	4.85
1953	2.50	2.95	2.55	2.92	3.88	4.61	3.99	4.66
1954	2.74	3.42	2.90	3.27	3.91	4.58	3.89	4.66
1955	2.93	3.67	3.25	3.46	4.14	5.16	4.44	5.16
1956	3.98	3.92	3.35	3.54	5.32	5.32	4.55	4.76
1957	4.30	4.37	3.90	3.89	4.92	4.91	4.38	4.25
1958	5.01	5.05	4.50	4.55	5.01	5.05	4.50	4.55
1959	6.00	5.25	4.75	5.00	5.60	5.02	4.52	4.78
1960	6.50	5.90	5.25	5.51	5.84	4.90	4.35	5.05
1961	7.60	6.50	5.80	6.29	6.28	5.24	4.69	5.08
1962	8.50	7.10	6.55	6.92	6.85	5.99	5.49	5.66
1963	10.20	9.15	8.40	8.99	6.23	5.73	5.25	5.52
1964	12.55	10.10	9.75	10.60	6.52	5.60	5.06	4.92

1965	15.00	11.65	11.60	11.28	7.50	6.78	6.30	5.60
1966	16.00	13.72	12.60	13.17[c]	6.70	6.15	5.63	5.33
1967	17.00[a]	15.67	14.20	14.07[c]	6.58	7.33	6.76	5.52
1968	18.00[a]	16.80	14.50	14.82	6.58			5.13
1969	19.00[a]	18.50	17.22	17.03[d]	6.31			5.15
1970	20.00[a]			18.18[d]	6.21			5.15
1971	21.57[b]				6.30			

[a] Interpolated by guessing.

[b] First semester. Calculated as 20.39 (the figure reported by a DANE survey and excluding fringe benefits) plus an estimated 1.5 for those benefits.

[c] Interpolated (in the absence of access to the correct figure) taking into account an estimate of the change in the real agricultural wage between 1967 and 1968.

[d] Based on equal weights for warm and cool regions.

Sources and Methodology:

For the years 1950 to 1958, Col. (1) is based on unpublished data kindly supplied by Robert Merrill; for subsequent years the lower figure of the CAMACOL series and the ICT series was chosen. In certain years in which ICT was paying the minimal wage, the CAMACOL figures were lower still and the assumption is that the market wage was in fact below the minimum wage at those times. In the last years the CAMACOL figures have been above those of ICT and also above figures suggested by data from CEDE, DANE, and experts in the field; for that reason we have accepted the ICT figures for 1965, 1966, and 1967. (It would be possible to verify more completely the consistency with the CEDE data during 1963–66 if we knew the educational distribution among the unskilled workers but we do not.) It should be noted that there is some difference of opinion as to whether real construction wages have risen over the last few years. The fact that the figures presented here for 1967–70 were simply interpolated obviously implies that they are open to doubt. However the figures for 1965 and 1966 seem reasonably good, with no reason to believe they are overstated. And the 1971 figure is probably the most solid of all. Figures for 1935–42 come from Bogota municipal government records, as reported in Urrutia and Arrubla, *Compendio, . . . , op. cit.*

Cols. (2) and (3) are based on DANE information published in the *Anuario General de Estadistica* and/or the *Boletin Mensual de Estadistica*. For Col. (2) the cold and warm regions of Cundinamarca were weighted equally in the calculation.

Cols. (4) and (6)–(8) come from Berry, "The Development . . ." *op. cit.*, Ch. 5, through 1965. (The original sources are the two just cited.) The specific sources for the subsequent years are cited in the footnotes. Col. (5) is Col. (1) deflated by the Bogota blue-collar cost of living index constructed by DANE.

blue-collar gap.[23] There appears during this period to have been an excess supply of labour in a number of sectors with the corresponding downward impact on wages.

A glance at Figure 1 may suggest that the dividing line between periods is arbitrary. Several of the wage series had risen by 1950, but then fell between 1950 and the mid-1950's; this might be attributed to an exogenous increase in urban labour supply related to the rural violence. If such relatively short-run phenomena are smoothed out it could be argued that the distinction between the two periods—before the mid-50's and after—is not a striking one. Still, if regression lines are fitted to most of the series discussed above, the estimated growth rates tend to be lower during the first period than that calculated for the "average income" series. This is in contrast to a subsequent period (beginning some time in the early 50's and extending to some time in the early or mid-60's, according to the sector) during which the blue-collar wages rose rapidly and white-collar/blue-collar gaps were narrowed. This period is discussed in more detail below.

Empirical information on capital incomes is scarce. Theory and some observation concur in suggesting that the import substitution industrialization of the 1930's, and especially the post-war period, raised these incomes in manufacturing (and commercial agriculture to some extent) and also led to a less equal distribution of labour income. Import substitution was in part responsible for the increasing ratio of white collar to blue collar incomes in manufacturing after World War II.[24] Information on the capital share is shaky. In manufacturing it appears to have been fairly stable or possibly falling between 1944–45 and 1953; in 1953 the labour share of gross value added (at factor cost) appeared to be a little over 30 percent;[25] a rough estimate based on data kindly made available by David Chu suggested a somewhat lower figure for 1944–45.[26] In agriculture an increase in capital share does appear to have occurred, though it is unclear how much of it was associated with import substitution.

Changes in overall income distribution depend not only on changes in the relative incomes of occupational groups at different positions in the distribution—our focus so far—but also on changes in their relative sizes. Clearly the major structural change during this period (and in subsequent ones) was the

[23]Even if the ratio "white-collar wage/blue-collar wage" did not rise, the fact that white-collar workers, with wages far above those of blue collar workers, were a growing minority of the total labour force would constitute a factor tending to increase inequality (e.g., in terms of the Gini coefficient) in the distribution of labour income. The reasoning involved is that when the upper tail of the frequency distribution expands, the Gini coefficient rises.

[24]Particularly rapid growth industries in this period were paper, rubber, chemicals, petroleum, and the metal products industries. A high share of total growth was still accounted for by staples like food, beverages and textiles, however.

[25]Using DANE's upward biased value added figures, 28.7 percent; but not all of purchased inputs were subtracted out in DANE's calculations of value added.

[26]Considering only the industries (modern ones) for which Chu estimated (net) value added in 1945, his figures imply a labour share of net value added equal to 25.4 in 1944–45; for the same industries the census shows a share of 34.2 percent of gross value added in 1953. At the same time this set of industries has a below average labour share (as a group) and their increasing weight between 1944–45 and 1953 would suggest a smaller increase in the overall labour share. Only limited credence can be given to the comparison in any case, since the estimated changes between 1944–45 and 1953 labour shares seem erratic on an industry by industry basis. Difficulty in estimating 1944–45 value added in petroleum products was particularly noteworthy; with a lower limit value added in petroleum, the 1944–45 labour share (of net value added) in these industries would have been about 28 percent.

decreasing share of the agricultural relative to the total labour force. Since at the start of the period the agricultural sector encompassed about 65 percent of total labour force (mid-thirties), the small but increasing size of the non-agricultural sector, with its substantially higher average income, could have worked towards an overall worsening.[27] As of 1945, the average income in agriculture was probably about 35–40 percent of that in non-agriculture; in 1935 it was perhaps 30–35 percent.[28] In 1964, the inequality of the agricultural personal income distribution was about the same as that of the urban distribution when unemployed persons were included in the latter.[29]

Since the agricultural distribution appears to have been worsening substantially over the period 1935–64, whereas there is less evidence to that effect in non-agriculture, it may be speculated that the agricultural distribution was less skewed 30 or 40 years ago than that of non-agriculture. If this was the case, the gradually increasing share of people in the non-agricultural sector would be expected to worsen overall distribution both because of the difference in average incomes of the two sectors and because of the greater inequality *per se* in the non-agricultural distribution.

A crude quantification of the effect of these factors on distribution in the period 1934–36 to 1950–54 may be obtained by assuming that within each of three groups—agricultural wage earners, other agricultural labour force, and non-agricultural labour force—income is distributed in the same way (around a different mean) at the beginning of the period and at the end.[30,31] If this assumption is not too far from being accurate, then distribution worsened over the period (see Table 4). The top deciles would have increased their share of the pie; the bottom deciles would have suffered a decrease.

Possible Improvements in Distribution between the Early Fifties and the Mid-Sixties

While conclusions naturally remain somewhat speculative, the weight of evidence for the urban areas suggests an improvement beginning some time in the 50's and going through the mid-sixties; for the labour force as a whole this is less

[27]The argument was used by Simon Kuznets in discussing the implications of the rural to urban labour force transfer. (See Simon Kuznets, "Economic Growth and Income Inequality," *American Economic Review*, Vol. XLV, No. 1, March 1955.) This effect would be expected if (a) the growing high income sector is considerably smaller than the other one and if (b) within each of the two groups into which the labour force was divided, everyone had the same income, or if the income distribution was at least as unequal in the growing sector as in the other one.

[28]See A. Berry, *The Development of the Agricultural Sector in Colombia*, Ch. 1, Yale University Press, forthcoming.

[29]See Albert Berry y Alfonso Padilla, "La Distribución de Ingresos Provenientes de la Agricultura en Colombia, 1960," in DANE *Boletin Mensual de Estadistica*, No. 234, Enero, 1971, p. xxi. The measure of inequality was the Gini coefficient. The urban distribution data on which the comparison is based are from Urrutia and Sandoval, "La Distribución de Ingresos . . . ," *op. cit.*

[30]I.e., the ratio in $Y_i/\overline{Y}$ is the same at beginning and end, where Y_i is the average income of persons in the ith percentile and $\overline{Y}$ is the overall average income.

[31]Although scattered information is available on income trends in some categories of the non-agricultural labour force, it would be difficult to piece it together in such a way as to "use" such information effectively. We limit ourselves here to the crude assumption of no change in distribution within the whole non-agricultural labour force.

One important change in occupational structure in this period was the increase in importance of domestic service; this might suggest a worsening of the personal income distribution within the non-agricultural category, but it is less clear that this would be true for family distribution.

clear since it seems fairly certain that the distribution of income in agriculture continued to worsen during this period. For this post-1950 period, it is possible to use both estimates of functional income distribution and various wage and earnings series to try to build up a picture of how distribution has been changing. Functional distribution is a rather good indicator of personal or family distribution for certain of the non-agricultural sectors where independent workers are relatively unimportant, such as the factory sector in industry. Before turning to the functional distribution, however, we review the available earnings series, comparing them to the series for average income of all workers, which for the period 1950–54 to 1964–67 rose at 1.9 percent per year, or a little faster.

We turn first to the non-agricultural sector. As noted above, real blue-collar wages in factory industry rose dramatically since the early 50's; average annual increase between 1953 and 1964–66 was 4.6 percent, well above the overall urban sector average. This factor *per se* does not imply an improvement in income distribution, since average income in this category was above the urban mean at the beginning of the period and still farther above it at the end. Wages in smaller factories and income of artisan workers, meanwhile, rose less rapidly, although they still appear to have risen faster than urban incomes as a whole. (See Table 3.) They tended to be below the median urban income at the beginning of the period, so their growth may be thought of as contributing to a decrease in inequality. Finally, white-collar incomes in industry rose much more slowly than those of blue-collar workers, averaging an increase of about 2.2 percent over the period in question.[32]

Further evidence that urban distribution improved over this period, comes primarily from the lower income sectors of construction workers, workers in small scale commerce and—though with considerably less confidence in the figures—wages of maids. Wages of street sweepers in Bogota also fit the pattern, from the late fifties on; their rapid rise began later than for construction and manufacturing workers.

Over the period 1950–54 to 1964–67, real wages of unskilled workers in construction rose by perhaps 70–75 percent in Bogota, an average annual increase of 4.2 percent with the increase rather concentrated in the period 1958–65.

Data from the 1954 and 1967 commerce censuses suggest that real wages paid by small establishments rose, in some cases very substantially, and perhaps overall about the same as small firms in manufacturing and unskilled construction workers. Real wage changes in these latter two categories (over roughly the same period) were about 20–30 percent (1953–66) and 50–60 percent (1950–70)[33], respectively, while in small-scale commerce they appear to have been 20–40 percent (1954–67). (See Table 3.)

As noted earlier Udall calculated that maids' wages in Bogota took a sharp dip around 1950 with a fairly rapid increase then occurring through about 1967; the increase over 1958–67 was about 50 percent and from 1950–54 to 1964–67

[32]There was a relative increase in office workers compared to professionals, a fact of interest since it hints that the representative white-collar worker may have had a more rapid increase in real income than indicated by the average figure cited.

[33]Over 1954–67 the increase was greater but wages fell in absolute terms in the succeeding years.

TABLE 3
SELECTED REAL ANNUAL WAGE SERIES (1958 PRICES)

Year	Construction Unskilled Construction Workers Bogota	Manufacturing Artisan Manufac-turing	Manufacturing Plants of <5 Workers*	Manufacturing Plants of <10 Workers	Commerce Establish-ments of <5 Workers	Commerce Food and Beverage Stores with Sale of <100,000 per Year (1967 pesos)	Maids (Index: 1958 = 100)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1950	1091						
1951	1048						
1952	1122						
1953	1067	2517		2320			
1954	1075				2000–2500	1070	
1955	1138						
1956	1463		2390				
1957	1353						
1958	1378						100
1959	1540						
1960	1606						
1961	1727						
1962	1884						
1963	1713						
1964	1793	3129					
1965	2071						
1966	1843		2820–3080	2800–3060			
1967	1810				2900	1680	130
1968	1810						
1969	1735						
1970	1708						

*And more than 24,000 pesos output.

Sources and Methodology:

Col. (1) is based on the nominal wage series of Table 2, deflated to 1958 prices and assuming 275 days paid per year.

Col. (2) is from Miguel Urrutia and Clara Elsa Villalba, "El Sector Artesanal en el Desarrollo Colombiano", *Revista de Planeación y Desarrollo*, Vol. 1, No. 3, October 1969.

Cols. (3) and (4) are calculations by the author, making use of John Todd's correction factors for the year 1966 (to offset a bias introduced by DANE's methodology in the years since 1962). See John Todd, *Size of Firm and Efficiency in Colombian Manufacturing*, Yale Ph.D. dissertation, 1972.

Cols. (5) and (6) are based on the commerce censuses of 1954 and 1967 respectively. In Col. (5) and 1954 estimated range is preliminary; data are not fully comparable between the two censuses. The estimates of Col. (6) are from A. Berry, "Unemployment as a Social Problem in Colombia: Some Preliminary Hypotheses and Interpretations", mimeo, p. 98.

Col. (7) is from Alan Udall, *Migration and the Labor Market, Bogota, Colombia*, Yale Ph.D. dissertation, 1973.

perhaps 60–70 percent.[34] Udall's Bogota street sweepers' wages indicate an increase of 18–21 percent over 1950–53 to 1964–66.[35]

[34]Because of small sample and in some respects doubtful methodology, these data are not hard. But they are suggestive.

[35]See Urrutia and Arrubla, *Compendio . . . , op. cit.*, p. 80.

In summary, the wages in all low-income occupations for which data are available increased more rapidly than did average *per capita* income, thus suggesting strongly that income distribution improved in the urban sector.

As was true for the previous period, little is known about the distribution of capital incomes and the relationship between an individual's capital income and his labour income. As discussed below, the share of current income going to physical capital appears to have decreased during the period in question.

The only evidence relating to distribution of capital incomes is from the tax returns. Urrutia cites CEPAL's estimate that in 1953 the 2.9 percent of tax payers reporting the highest income had 35.7 percent of national income; the comparable figure calculated by Urrutia for 1965 was 12.1 to 14.1 percent of national income.[36] Comparing 1937 figures from the Contraloria General de la República with his own for 1964, Urrutia concludes that concentration was similar in the two years; in 1937 the richest 1 percent of the population declared about 7 percent of all income; in 1964 this group controlled about the same percent.[37] All these figures are shaky; still it is relevant that they are consistent with the conclusion that income distribution deteriorated in the first period considered and then improved again.

This result holds also under the assumption that within each of twelve occupational categories[38] distribution did not change over the period.[39] The combined effect of the shifting occupational distribution of the labour force and the changes in relative mean incomes among occupations had, in fact, a substantially positive impact within the upper part of the distribution, as shown in Table 4. The share of the top decile would, under these assumptions, have fallen by from 3 to 7 percent.[40] Distribution could have worsened only if there had been substantial worsening of the intra-occupational distribution, a matter on which we have to date no empirical evidence.

In agriculture, wages rose slowly (about 1 percent on average) over the period; this was considerably less than the increase in average earnings of persons involved in agriculture (nearly 2 percent). Distribution of capital income may have been worsening as a rapid advance of commercial agriculture characterized especially the late 50's and early 60's.[41] Still, it seems probable that overall worsening was smaller than in the previous period.

Trying to judge how overall distribution moved involves putting the results for the agricultural and non-agricultural sectors together, and allowing for the fact that the relative importance of agriculture in output and employment was

[36]Urrutia, "Variación Historica . . . ," *op. cit.*

[37]Urrutia, "Variación Historica . . . ," *op. cit.*

[38]Agricultural wage earners, other agricultural labour force, manufacturing blue-collar workers, manufacturing white-collar workers, government employees, commerce workers (excludes large capitalists), artisans, construction workers, maids, (technical) professionals, non-technical professionals, and "other labour and capital".

[39]The distribution assumed within each category was, for several occupational categories, based on DANE's 1970 household survey, the only source of such information on a national level to date. For other sectors CEDE's eight city unemployment survey of 1967 was useful. (CEDE, "*Encuestas Urbanas* . . .", *op. cit.*)

[40]A range is presented since there is uncertainty as to the changes in size of some of the categories used, and hence also in the residual category "other labour and capital". The two values are designed to provide lower and upper limits with respect to the change over 1951–64 at a rather high confidence level.

[41]See A. Berry, *The Development* . . . , *op. cit.*, Chapter 2.

diminishing. Table 4 indicates that, if no intra-occupation changes of distribution occurred, then some improvement occurred in the top 40 or 50 percent of the distribution. The top decile share decreased by 3–6 percent; the top 50 percent may not have suffered any decrease. And there may have been some small increase in the share of the bottom 20 percent, although this is extremely tentative since the data is particularly weak in the bottom deciles of the distribution. The calculated Gini coefficient fell from the range 0.60–0.63 to 0.57.

Over 1934–36 to 1964 as a whole, Table 4 suggests some decrease in the income of the top decile, definite gains for the next two deciles, no change for the next two, and some decrease for the bottom 50 percent as a whole, and for the bottom 20 percent as well. The relative worsening of these latter two groups appears to have characterized only the first of the two sub-periods. The only group whose share moved in the same way (up) in both sub-periods was deciles 2 and 3. The calculated Gini coefficient increased from 0.55 to 0.57.

This result confirms the casual impression of a certain degree of prosperity in the so-called middle-class whose growth in fact provided a limited but sufficient market for the import substituting industries which developed after the war.

Though the temptation to draw too much out of the still shaky data base used must be resisted, the consistency of much of the pattern shown here with Kuznets, "worsening, then improving" hypothesis on income distribution in the development process is noteworthy.[42] The shift from agriculture to non-agriculture has played a role in the apparent 1951–64 improvement. Assuming such an improvement did really occur, one might be tempted, optimistically, to assume that Colombia has turned the income distribution corner and could anticipate a continuation of the positive trend. Certainly such a conclusion is not yet warranted, but the pessimistic opposite is even less warranted.[43]

Functional Distribution of Income: Trends Since Circa 1950

The conclusions just reached with respect to trends over the early fifties to mid-sixties period are bolstered by the available information on trends in the functional distribution over this period. The basic functional division is between labour income and capital income. Three "labour shares" are of particular interest: (a) the share of national income paid to people in return for their services (paid labour share); (b) the total labour share, i.e., the paid labour share plus the imputed income of the self employed corresponding to their labour inputs, and (c) the pure labour share, i.e., the share of national income corresponding to basic labour services as distinct from the additional income related to services which are based on education and learned skills.

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[42]Simon Kuznets, "Economic Growth and Income Inequality," *American Economic Review*, Vol. XLV, No. 1, March, 1955.

[43]Perhaps the major doubt with respect to the conclusions reached above, and especially with respect to the judgment that distribution improved over the second period considered, is the failure to take account of changes in the value of capital assets.

It seems likely that the distribution of income from asset appreciation is similar or more skewed than the distribution of wealth; only large-scale capitalists are able to take advantage of certain opportunities for rapid capital appreciation. The expectation, therefore, is that failure to take account of capital gains leads to some underestimation of income inequality; but since the estimated distribution is already quite concentrated, it may not be measurably worsened.

TABLE 4
INCOME DISTRIBUTION COMPARISONS, 1934–36, 1951 AND 1964

		1934–36	1951	1964
Non-Agriculture:				
Gini Coefficient			0.599–0.644	0.601
Share of Top	5%		35.21–38.80	31.71
	10%		47.44–51.95	44.63
	20%		62.67–67.01	60.36
	30%		73.30–77.07	70.66
	50%		88.05–90.55	84.66
Bottom	20%		1.15–1.56	n.a.[a]
All Sectors:				
Gini Coefficient		0.553	0.602–0.633	0.57
Share of Top	5%	38.41	40.00–42.22	35.66
	10%	48.16	51.15–53.90	47.87
	20%	60.79	64.95–67.68	63.10
	30%	70.14	74.29–77.01	73.73
	50%	83.79	86.14–88.00	86.84
Bottom	20%	3.78	2.49–3.00	3.30

[a]The presence of extensive open urban unemployment in 1964 and lack of information as to the income of the unemployed makes it especially hazardous to estimate this value.

Sources and Methodology:

The 1964 distributions are basically those of Urrutia and Sandoval ("La Distribución de Ingresos . . ." *op. cit.*) with a few minor alterations to take account of more recent information. The 1951 distributions on which these figures are based have been estimated using figures on employment by occupational category in 1951 (basically from the population census of that year), estimates of increases in mean income by occupation (based on the sources cited in Tables 1, 2, and 3), and the assumption that intra-occupational category distribution did not change between 1951 and 1964. Alternative assumptions were made with respect to some of the mean income changes based on shakier data and some of the employment estimates which were also not firm.

The same methodology by which the 1951 distribution was estimated (i.e., use of the 1964 distribution and information on changes over 1951–64) served to generate the 1934–36 distribution (use of the 1951 distributions and information on changes over 1934–36 to 1951) except for the wider categories used (only three): agricultural paid workers, the rest of the agricultural labour force, and the non-agricultural labour force. It was assumed that no intra-period changes in distribution occurred within any of these broad groupings. The 1934–36 distribution is weaker than the later ones both because this assumption is less plausible for such broad categories and because the income series are less convincing. In particular, estimates of wage income in agriculture (directly from wage data) and estimates of total agricultural income (see Table 1) are to all intents and purposes inconsistent in the mid-thirties, the implicit non-wage income being too low. It was accordingly assumed that the non-wage income was higher than implicit in the figures of Table 1 (specifically 1941 posos per person); the lower of the two alternative wage rates shown in Table 1 was used. This adjustment had the effect of damping the distribution worsening which however still emerges from a comparison of the 1934–36 and 1951 figures. It is our impression that the data weaknesses are not so great as to overturn the result that distribution worsened. Very possibly worsening occurred within the three categories which were distinguished in 1934–36; this would mean that distribution in 1934–36 was less unequal than estimated (all else assumed to be accurate).

As seen in Table 5, the paid labour share of gross domestic product (at factor cost) rose from about 32 to almost 39 percent over the period 1950–59. The share of estimated net domestic product (at factor cost) rose from 34.2 to 42.5 percent.[44] Although part of the increase in the paid labour share during this period was associated with increases in specific sectors, in particular manufacturing and transportation, agriculture (the largest single sector) showed a substantial decline so that the net effect of intra-sectoral changes in the share was less than one point (i.e., with the 1950 sectoral distribution of value added and 1967 labour shares within each sector, the overall paid labour share (of G.D.P.) would have risen only from 32.0 to 32.7). Most of the increase was associated with the inter-sectoral shifts, especially towards government, banks, etc., and construction. During the latter part of the period the decrease in the share of agriculture[45] also contributed since by that time its labour share was well below the overall average. The increased share of commerce worked in the opposite direction. The paid labour share for non-agriculture as a whole rose very substantially from just under 35 percent to about 45 percent.

The increased number of large-size firms and the gradual decrease in the relative importance of the family unit tend, in some economies, to raise the paid labour share over time when the total labour share is not increasing; in Colombia the share of paid workers did rise from 55.4 percent in 1951 to about 58 percent in 1964 and about 60 percent in 1970. Table 6 indicates that the total labour share of private sector income rose by 3–4 percentage points (predictably less than the increase in the paid labour share). The increase in the total labour share is small (less than 2 percent) when related to gross national income (figures not shown); given the uncertainty surrounding the depreciation figures, one cannot say conclusively that an increase has occurred; obviously the opposite cannot be said either. In either case it appears that the occupational position shift is responsible for much of the increase in the paid labour share.[46] And though it is conceivable that little increase occurred in the total labour share, it seems very unlikely that this could have been the case in the non-agricultural sector; the national accounts

[44]It is widely believed that the National Accounts overestimate private sector depreciation, and by an increasing amount over time; this, by itself, would imply that these figures are upward biased (other data being correct) by an increasing amount; on the other hand, no account is taken in the National Accounts of public sector depreciation, which could have been increasing over time.

While there are undoubtedly errors and biases in these figures, they are probably not so serious as to throw into question the clear increase in the paid labour share.

[45]In agriculture the decline in the labour share is associated with the advent of commercial agriculture whose share in total agricultural production (including livestock) rose from about 7–10 percent in 1950 to 18–24 percent in 1967 (in 1958 prices), where commercial agriculture is defined as including cotton, rice, sugar for refining, barley, sorghum, soybeans, sesame, 50 percent of wheat output and 10 percent of the production of corn and potatoes.

[46]If the average imputed wage income of people not receiving a paid wage is equal to that of those who are (an assumption not much different from that implicit in the figures of Table 6), a shift of 4.5 percent of the labour force from the unpaid category to the paid would (assuming also that the group which shifts receives an average level of wages) increase the paid wage share by 4.5 percent of total income. It would thus account for the bulk of the actually observed increase of 6–8 percent (depending on whether gross or net domestic product is the base). In fact the assumption that the imputed wage of the "group which shifts" be equal to the average wage of paid people is probably upward biased since this group involves in large measure farmers. At the same time it is true that the paid workers/labour force ratio rose more rapidly for men than in total; since men have higher wages and earnings than women, this factor would work in the opposite direction.

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TABLE 5

PAID LABOUR SHARE OF VALUE ADDED AT FACTOR COST, BY SECTOR, 1950–1969

Year	Agri-culture	Mining	Manu-facturing	Construction	Commerce	Trans-portation	Communi-cations	Electricity, Gas, Water
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1950	27.4	34.7	27.47	73.0	18.3	35.8	54.7	34.0
1951	27.4	31.2	28.3	75.5	18.3	36.2	53.7	26.5
1952	25.7	27.5	29.5	74.1	18.3	35.6	50.4	28.6
1953	26.0	31.5	30.1	73.1	18.3	37.2	51.0	26.2
1954	23.7	32.6	30.8	71.8	18.3	37.0	52.6	27.0
1955	25.4	34.1	32.4	71.97	18.3	37.3	54.3	26.2
1956	22.9	33.8	32.7	72.2	18.3	33.9	50.5	24.8
1957	20.9	29.6	34.0	71.2	18.3	37.3	53.7	26.6
1958	21.6	23.3	34.8	72.0	18.3	39.0	50.7	26.9
1959	22.0	26.4	35.0	71.3	18.3	38.7	50.9	29.4
1960	23.9	26.8	34.8	72.3	18.3	43.8	50.2	29.2
1961	23.6	27.0	36.2	72.1	18.3	45.7	60.5	32.0
1962	24.6	33.0	36.3	71.4	19.5	47.8	57.4	31.3
1963	25.8	34.5	36.5	73.6	18.3	46.3	62.1	43.9
1964	22.1	38.8	38.1	73.8	18.3	46.8	55.8	39.2
1965	24.9	35.0	38.1	74.4	18.3	48.4	55.4	37.7
1966	23.4	39.1	37.8	75.6	18.3	49.8	58.2	36.3
1967	23.6	41.0	38.93	77.41	18.3	47.9	57.2	37.9
1968	22.0	34.1	40.1	78.1	21.5	43.7	55.5	36.6
1969	22.7	34.7	39.9	81.1	21.7	45.3	55.9	35.1

Sources and Methodology:

For all sectors with the exception of agriculture the figures represent the national accounts datum "payments of labour" related to gross domestic product at factor cost, with all figures in current pesos.

The national accounts estimate of the total paid labour force in agriculture is higher than my own, due to their including all workers classified in the population censuses as working for someone else plus a portion

figures indicate between 1950 and 1969 an increase in the paid labour share from about 35 to about 45 percent; the share of non-agricultural workers receiving renumeration rose only from about 68 percent to perhaps 71 percent over this period.

How has the distribution of total labour income between "pure" labour and human capital changed over time? Unfortunately, the concept of a pure labour share is ambiguous in an economy with such prevalence of imperfect labour markets as Colombia's. According to precisely how one defines it and depending also on uncertainties in statistical information, one might guess that the pure labour share fell by about 7–9 percent over the period 1950–69. Perhaps the most interesting series, where the pure wage rate is assumed to correspond to that of the agricultural male over 18 years (Col. 1 of Table 7)—indicates a decrease from 36 percent in 1950 to 28 percent in 1969. It is of interest to note that the periods of

Personal Services	Government Services	Bank, Insurance, and Real Estate	Total Paid Labour Share of Gross Domestic Product at Factor Cost		Paid Labour Share of Net Domestic Product	Paid Labour Share of G.D.P. in Non-Agriculture
			Basic Estimate	Alternative Estimate		
(9)	(10)	(11)	(12)	(13)	(14)	(15)
48.0	100.0	48.9	31.99	36.0	34.20	34.78
48.2	100.0	48.5	32.24	36.2	34.69	35.23
48.6	100.0	44.6	31.77	35.5	34.23	35.54
48.6	100.0	45.9	32.57	36.2	35.05	36.49
48.7	100.0	45.8	31.98	35.5	34.29	37.27
49.0	100.0	49.3	33.68	37.2	36.39	38.45
49.9	100.0	48.6	32.50	35.7	35.19	38.19
49.1	100.0	55.1	31.71	34.7	35.14	38.39
49.6	100.0	58.0	32.24	35.3	36.90	38.41
50.9	100.0	54.8	32.72	35.6	36.97	38.52
50.7	100.0	58.7	33.78	36.7	37.80	39.19
49.6	100.0	60.8	35.04	37.9	38.84	40.42
51.3	100.0	64.0	36.66	39.5	40.58	41.96
49.0	100.0	63.5	37.27	40.2	41.36	42.10
48.9	100.0	64.5	36.17	38.3	39.54	42.01
49.0	100.0	65.0	36.34	39.2	39.84	41.34
50.1	100.0	65.9	36.74	39.4	40.49	42.38
47.8	100.0	67.7	37.68	39.6	41.52	43.82
47.7	100.0	67.6	37.02	39.5	40.76	43.63
58.6	100.0	66.2	38.66	41.2	42.42	45.37

(one-half) of the independent workers. While it is indeed true that many independent workers also earn income as labourers, it seems clear on the other hand that some of the population classified in the census as workers hold small farms from which a part of their income accrues; they are not full time workers. I assumed that these two effects offset each other. The Banco estimate of the paid labour share for this sector was thus decreased in each year by the coefficient 0.725 (the ratio of my estimate to theirs in 1960).

rapid decline in this share have also been those of most rapid growth of income *per capita*, i.e., 1945–56 and 1967–69. Sectoral trends of the pure labour share are generally similar to those of the paid labour share.

Meanwhile the human capital share has risen considerably, with advancing education. This increase is concentrated in the two periods of rapid decrease in the pure labour share, although it continued to ease up during the slow growth period, 1957–66. Though there are suggestions of a decrease in the rate of return to certain types of human capital over time (e.g., the decreasing ratio of white-collar/blue-collar wages in industry) this factor, if present, has been outweighed by the increase in the stock of human capital. The physical capital share (the complement of the total labour share) declined from about 37 percent in 1950 to about 35 percent in 1969; the share of net domestic product reaching the hands of individuals fell by about 5 percent as business savings and direct taxes on corporations rose (see Table 6).

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TABLE 6
LABOUR AND CAPITAL SHARES OF NET NATIONAL INCOME AT FACTOR COST
(percentages)

Year	Paid Labour	Imputed Labour	Total Labour	Capital Income of Persons and Unincorporated Enterprises	Business Savings and Direct Taxes of Incorporated Entities	Private Sector Capital Income	Public Sector Capital Income[1]	Total Capital
	(1)	(2)	(3)	(4)	(5)	(6) = (4) + (5)	(7)	(8)
1950	34.57	28.76	63.33	33.06	3.21	36.27	0.40	36.67
1951	35.12	28.20	63.32	32.56	3.33	35.89	0.79	36.68
1952	34.55	28.76	63.31	32.80	3.15	35.95	0.74	36.69
1953	35.37	28.38	63.75	32.37	2.99	35.36	0.89	36.25
1954	34.53	28.82	63.35	32.60	3.35	35.95	0.70	36.65
1955	36.62	27.57	64.19	31.41	3.63	35.04	0.77	35.81
1956	35.44	28.33	63.77	31.85	3.66	35.51	0.72	36.23
1957	35.67	28.10	63.77	31.48	4.06	35.54	0.69	36.23
1958	37.78	26.53	64.31	29.45	4.81	34.26	0.82	35.08
1959	37.55	26.37	63.92	29.71	5.44	35.15	0.93	36.08
1960	38.32	25.81	64.13	29.12	5.94	35.06	0.81	35.87
1961	39.44	25.57	65.01	28.82	5.20	34.02	0.97	34.99
1962	41.28	25.03	66.31	28.22	4.75	32.97	0.72	33.69
1963	42.28	24.20	66.48	27.51	5.63	33.14	0.38	33.52
1964	40.24	25.76	66.00	28.13	5.73	33.86	0.14	34.00
1965	40.54	25.09	65.63	28.28	5.73	34.01	0.36	34.37
1966	41.32	24.65	65.97	27.65	5.90	33.55	0.48	34.03
1967	42.41	24.42	66.83	27.43	5.57	33.00	0.17	33.17
1968	41.79	24.57	66.36	27.35	5.70	33.05	0.59	33.64
1969	43.68	23.36	67.04	26.17	•6.28	32.45	0.24	32.69

Source: Cuentas Nacionales for the paid labour estimates, except for agriculture. (See the discussion with Table 5). Imputed labour income was estimated as follows. The share of labour force in each of the categories employers, independent workers, white-collar workers and blue-collar workers was calculated for 1951, 1964, and 1970 based on population census and sample information and was interpolated for the intervening years. (See A. Berry, "Some Determinants . . . ," *op. cit.*, Table 4). Relative remunerations for the four categories were based on DANE's 1970 *Encuesta de Hogares* and CEDE, *Encuestas de Empleo y Desempleo, Annexo Estadístico.* These two sources were not fully consistent and more faith was placed in the latter. The same relative income ratios were assumed to hold for the whole period. It was assumed for employers and independent workers that 50 percent of their income was due to their labour input. (See A. Berry, "Some Determinants . . . ," *op. cit.*, Table 6).

[1]Defined as public corporation profits minus interest on the public debt.

The evidence on changes in functional distribution tends to reinforce that from earnings series with respect to the period in question—the early fifties to the mid-sixties. In agriculture, a declining paid labour share, a declining pure labour share (Table 7), and a wage rate rising less rapidly than average income all suggest that income distribution worsened again during the period, although probably less than in the previous one.

Mid-60's to the Present

The period 1966–70 constitutes a new rapid growth phase in the Colombian economy, and most of the evidence points to a renewed worsening of the

distribution. Two major indicators of low-income group welfare are the agricul-
ture wage rate and the construction worker wage rate. The latter, as discussed
elsewhere,[47] seems to have fallen during this period while the agricultural wage
rate was roughly stable and the blue-collar wage rate in manufacturing increased
more slowly than before—at about 2.2 percent.[48] Meanwhile the white-collar
wage in manufacturing rose by about 3.2 percent per year.

Another phenomenon which may in the past have been associated with
distribution is the level of proletarization (share of workers who are paid) in the
commerce sector; when wages in commerce establishments, including small ones,
were rising substantially over the 1954–67 period, the share of paid workers in the
total labour force rose from 30.8 to 35.7 percent. But since 1967 it appears to have
fallen once again;[49] no recent wage figures are available.

As observed in Table No. 7, the pure labour share of net domestic income
appears to have started down again about 1967 after having been relatively
constant for a decade; in both agriculture and in non-agriculture decreases have
occurred. The human capital share resumed its increase, while the physical capital
share remained essentially stable at about 35 percent. Given the considerable
expansion in primary education over the preceding years, the combination of a
decreasing unskilled labour share with an increasing human capital share does
not necessarily constitute a factor working towards a worsening of income
distribution. The share of population in the agricultural worker/construction
worker categories has been falling. An important question becomes that of how
distribution has been changing within the income ranges characterized by some
human capital.

*Income Changes of Lower Income Groups and their Relationship to the Overall
Rate of Economic Growth*

It has been argued on occasion that lower income groups in developing
societies tend to suffer absolute income and welfare decline over time (we call this
Hypothesis 1); it is also argued (Hypothesis 2) that *rapid* growth can lead not only
to a worsening of distribution—apparently consistent with the record in
Colombia—but also to lower absolute income for this group; this latter hypothesis
could, if one placed sufficient weight on the lower income groups, imply that the
faster growth rate could lower the welfare of the society as a whole.

The first hypothesis, that major groups have suffered decreasing absolute
incomes over substantial periods of time, receives little support from the
Colombian statistics. The only group for which the argument could be taken
seriously is the agricultural workers, whose reported real wages appeared in the
mid-60's to be only at about their mid-30's level. But, as mentioned earlier, it
appears that the figures for the mid-30's were probably well above those of, say,

[47]Albert Berry, "La Industria de la Construcción en la Decada de los Sesenta," *Economía
Colombiana*, No. 92, April, 1972, Tercer Epoca.

[48]Figures from DANE, *Boletin Mensual de Estadística*, various copies. Since no cross-checks with
other sources have been possible for this recent period, the data are somewhat less solid than for the
previous period.

[49]See Albert Berry, "Towards an Interpretation of the Rapid Post-War Growth of Services in
Urban Colombia," mimeo, 1972.

TABLE 7
FACTOR SHARES OF NET DOMESTIC INCOME: 1950–69[a]
(percentages)

Year	Pure Labour Share		Human Capital Share		Total Labour Share	Capital Share	Paid Labour Share	Pure Labour Share	
	Est. A	Est. B	Est. A	Est. B				Agriculture	Non-agriculture
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1945	38.2	≈42.05[b]							
1946	36.7								
1947	38.4								
1948	40.4								
1949	34.7								
1950	36.0	34.87	26.68	27.81	62.68	37.32	34.20	47.85	25.37
1951	36.8	34.53	25.75	28.02	62.55	37.45	34.69	47.77	24.52
1952	34.4	33.11	28.32	29.61	62.72	37.28	34.23	43.68	24.75
1953	32.8	31.36	30.37	31.81	63.17	36.83	35.05	41.91	23.28
1954	31.6	29.90	31.30	33.00	62.90	36.10	34.29	38.49	22.71
1955	31.8	31.52	31.99	32.27	63.79	36.21	36.39	42.38	23.38
1956	30.7	33.13	32.63	30.20	63.33	36.67	35.19	37.92	28.67
1957	29.2	31.69	33.65	31.13	62.82	37.18	35.14	34.10	28.49
1958	31.2	33.91	31.61	28.90	62.81	37.19	36.90	36.38	30.48
1959	30.2	34.51	32.72	28.41	62.92	37.08	36.97	36.88	31.29
1960	29.8	33.74	33.46	29.52	63.26	36.74	37.80	37.99	29.56
1961	30.1	34.71	33.92	29.31	64.02	35.98	38.84	39.50	30.26
1962	30.0	34.94	35.18	30.24	65.18	34.82	40.58	41.34	29.88
1963	31.4	35.12	34.63	29.91	65.03	34.97	41.36	44.03	28.89
1964	30.6	35.25	34.26	29.51	64.86	35.14	39.54	39.34	30.82
1965	29.8	36.90	34.29	27.59	64.49	35.51	39.84	39.91	33.04
1966	30.1	35.36	34.54	29.28	64.64	35.36	40.49	40.14	30.63
1967	29.1	34.21	36.52	31.21	65.42	34.58	41.52	38.75	29.58
1968	27.2	32.26	37.49	32.45	64.71	35.29	40.76	35.81	28.11
1969	27.9	31.47	37.20	33.63	65.10	34.90	42.42	36.90	26.45
1970									

[a]As noted above, net domestic product (income) has been a decreasing share of gross domestic product (income) over time, according to the national accounts estimates; if that decrease has in reality not occurred, the total labour share would have risen less than indicated here, or possibly not at all (see Table 5).

[b]This is a rough estimate based on an interpolated figure for the unskilled construction wage in 1945. (See the methodology of Estimate B below.)

Sources and Methodology:

Estimate A is based on the assumption that pure labour income corresponded to the male agricultural wage, and that the days worked per year were 250 for everyone. This procedure has at least one upward biasing feature, the assumption that the male wage be applied to women and children (who have lower wages) and to family helpers (who probably work on average considerably less than 250 days). A downward biasing feature is the assumption of 250 days worked for everyone; the average in urban areas is higher.

For estimate B the above assumptions were applied only with respect to the agricultural labour force while the wage series for unskilled construction workers (see Table 2) was applied to the non-agricultural labour force, with the assumption of 275 days worked. Col. (5), total labour share, is based on the summation of the paid labour income (Table 5) and imputed labour income, the latter calculated as 50 percent of total income of unpaid workers (employers and own-account workers). Col. (7), presented for purposes of comparison, is from Table 5.

For Col. (8) it was assumed that net domestic income in agriculture was 0.95 times gross value added, and (different from Col. (1))an adjustment was made (multiplication by the coefficient 0.92) to take account of the fact that unpaid family helpers work less than other members of the labour force and that women and children earn lower incomes (and hence presumably have lower inputs).

Col. (9) used the assumptions of Col. (2), applied to the non-agricultural sector.

TABLE 8
ANNUAL PERCENTAGE INCOME CHANGE OF SELECTED OCCUPATIONAL GROUPS, COMPARED ACROSS
PERIODS OF SLOW AND FAST OVERALL INCOME GROWTH

Occupational Group	Period 1 1935–1956 (fast growth)	Period 2 1956–1966 (slow growth)	Period 3 1966–1970 (fast growth)
Male Agricultural Wage Labourers	−0.70 to +0.37[a]	1.5[b]	1.0[c]
Unskilled Construction Workers (Bogota)	small decrease − small increase[d]	3.8	−2.0[e]
Blue-collar Manufacturing Workers			
Total	2.18–2.36[f]	4.8	2.0[g]
Small Plants (<25 workers)	n.a.	3.3[h]	n.a.
Large Plants (≥25 workers)	n.a.	3.9[h]	n.a.
Commerce Workers			
All		1.3[i] (1954–1967)	
Small Establishments		1.2–2.9[j]	
(<5 workers)		(1954–1967)	
Food Retailing	decrease[m]		
Maids	substantial increase[n] (Bogota only)	3.9 (Bogota only)	n.a.
Average Growth of Income per Member of the Labour Force	2.76[k]	1.68[b]	4.04

[a]See Table 1 for discussion. The upper figure shown is the more probable.

[b]1955–57 to 1965–67.

[c]1965–67 to 1970.

[d]It seems improbable that an increase over this period could have been above say 1 percent per year; it could well have been less.

[e]1965–67 to 1969–71. See Berry, "La Industria de la Construcción . . . ," op. cit., p. 25.

[f]See Table 1. End of period defined as 1955–57.

[g]1970 over 1965–67. The former figure is provisional.

[h]From Berry, "The Relevance and Prospects . . . " op. cit., p. 3 and p. 32.

[i]From Berry "Urban Labour Surplus and the Commerce Sector: Colombia," Yale Economic Growth Center Discussion Paper No. 178, 1973.

[j]From Table 3.

[k]1934–36 to 1955–57.

[m]Udall, op. cit. Based on Bogota data. It is interesting to note that Udall's figures (large store clerks) indicate a considerable increase over 1945 to 1954–58 so unless there was a drop in the period "mid-thirties to 1945", a considerable increase must have occurred over the period as a whole.

[n]Udall, op. cit. There is some uncertainty here since Udall estimates the whole of the increase in question to have occurred before 1945, a period during which his sources of information were not internally comparable.

the 20's, so that over the longer run and certainly over the course of the 20th century, this group has seen a substantial income increase.[50] The same goes for such other unskilled groups as construction workers, artisans, small-scale commerce workers, and so on.

The more interesting question in the Colombian context is whether these groups benefit or are harmed by *rapid* economic growth. Colombia provides a good laboratory experiment in terms of fairly lengthy periods of slow and of rapid income growth; if the hypothesis is alleged to be related to output (as opposed to income) growth—and this might be the more normal version of it—then the laboratory is less useful, since there were smaller fluctuations. They were, however, in the same direction as those of per capita income, so we can more or less freely take the periods 1934–56 and 1966–70 as ones of particularly rapid growth and 1956–66 as one of slow growth.

Table 8 summarizes some of the relevant information. For several groups actual income decreases do appear to have occurred over the first period of relatively rapid growth. Although manufacturing blue-collar workers as a group had income increases almost as fast as the economy-wide average, it is not improbable that the small-scale firms did not share so successfully in the growth; were this the case, then the only low income group listed here with a gain close to the overall average would be maids.[51] Almost all of the categories had increases equal to or above the average during the slow growth period 1956–66, and all those for which comparisons are possible did better than in the earlier fast growth period.

It should be obvious that these results must be interpreted with caution;[52] it would be almost a contradiction of terms to argue that in the long run the welfare of low-income groups can be advanced by preventing growth. But they do raise questions. If in fact growth has been causally related to worsening distribution, can the nature of growth be altered so that this price need not be paid? Or can alleviating institutions be developed to lower the costs of growth and thus provide "social lubrication" for the process? The evidence is suggestive enough to call for additional empirical work to permit more confident acceptance or rejection of the relationship which seems to have surfaced here, and theoretical work on the mechanisms which may have generated it.

Summary

The size distribution of income in Colombia has been highly unequal throughout the period for which some data are available. It appears to have become more so over the period from the mid-thirties to some time in the mid-fifties, with this worsening occurring in both agriculture and non-agriculture as well as in the aggregate. From the mid-fifties to the mid-sixties, roughly, non-agricultural

[50]A conclusion supported by a calculation made by McGreevey. (William P. McGreevey, *An Economic History of Colombia 1845–1930*, Cambridge: Cambridge University Press, 1971, p. 132.)

[51]Who provide a service clearly complementary with the success of high income people.

[52]Apart entirely from the fact that the observed relationship under discussion may be spurious. Other factors were no doubt important in determining some of the income changes in question; the *violencia*, for example, may have helped push people into low income urban jobs towards the end of the first period, contributing to the bad experience of some of the groups.

distribution improved; although distribution in agriculture continued to worsen it appears that overall distribution improved somewhat. During both the periods just cited trends in the distribution of non-agricultural labour income paralleled those in the distribution of total non-agricultural income, i.e., there was a worsening followed by an improvement. Over these two periods as a whole the main gainers have been the second and third deciles from the top; the top decile appears to have lost. The bottom 20 percent appears, with less certainty, to have lost a little. The recent period, mid-sixties to 1970, appears to have been characterized by a renewed worsening of distribution, though information is particularly incomplete to date. All these conclusions are open to various pitfalls, including the low quality of the data underlying them, exclusion of certain forms of income, etc.

Absolute incomes of certain low income groups have risen faster during the period of slow income and output growth (1956–66) than during the preceding and succeeding periods of faster growth. In some cases actual declines have occurred under fast growth.