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SAÚL TREJO REYES

*Regional Income Inequality in Mexican Agriculture and
Government Policy*

Mexican agricultural development over the present century is widely considered a great success story. Agricultural output has in general kept pace with the food requirements of a population that grew from 15 million in 1910, on the eve of the Mexican Revolution, to 20 million in 1940 and 70 million in 1980. During the last 40 years output per caput grew more than fourfold. Agricultural product grew from 100 to 525, while national product increased from 100 to 1300. However, agricultural output per caput grew only 50 per cent, and as a result the country was forced to import foodstuffs during the last decade. During the period following 1940, the agricultural labour force has grown from 3.8 to somewhat less than 7 million, so that output per worker is now 3 times greater. However, the increase in rural income has by no means been equitably distributed among different regions and human groups. Rather, productivity differentials and income inequality have widened, not only between urban and rural dwellers, but also within the rural sector. That this has been so under a government grown out of revolution and committed to equality shows the great difficulty in distributing government resources to attain equity objectives. It also shows how the increasingly urban character of the Mexican economy and society has conditioned rural development policies along a road to inequality.

Until early in this century Mexican agriculture, and Mexican society as a whole, had developed predominantly in the central highland plateau. The coastal areas, as well as the North and Northwest, had been held back in their development both by climate and by distance from the central region where Mexico City is located. Thus in 1899 the central region accounted for 49 per cent of crop value. This share diminished steadily to 35 per cent in 1939 and 27 per cent in 1959 (Reynolds, 1970). Beginning in the 1930s, the Federal Government started an intensive policy of agricultural investment, directed toward increasing the land area under cultivation, primarily in regions hitherto underdeveloped. Cropped land area increased from 6.3 to 10.8 million hectares between 1940 and 1960 and a further increase to 16.4 million hectares took place between 1960 and 1978. Irrigated land area increased from 1.9 to 3.0 million hectares between 1940 and 1960 and to 4.8 million hectares in 1978. Thus the ratio of cropped land to labour

increased from 1.57 hectares per worker in 1940 to 2.31 in 1979. Despite what would appear as a lessening of population pressure on arable land in this period, 1940 also marks the start of a still ongoing process of rural-urban migration that has completely transformed the character of the country from rural to urban. In 1940 the total labour force was 5.9 million, of which 3.8 million, or 64 per cent, was in agriculture. By 1960 the figures were 11.2 million, 6.1 million, and 54 per cent. In 1980 the total labour force was about 21 million, of which at most 7 million, or 33 per cent, were in agriculture and other rural activities.

It may be said that modern Mexican development portrays a race between the growth of the labour force, which definitely accelerated after 1940, and the creation of new employment opportunities. The fact that the agricultural labour force continued to increase during the period of rapid urbanization may be attributed to four factors: (a) opening of new land to cultivation; (b) government investment in rural infrastructure; (c) government expenditure on social welfare in the rural areas; and (d) private capital accumulation in agriculture. Given that these four elements have operated in a different manner both through time and in different regions of the country, they have contributed to an increase in regional income differentials over time.

As may be seen from the labour force figures, between 1960 and 1980 the agricultural labour force rose at most 15 per cent, while the urban labour force rose 170 per cent. This latter figure may be overstated but even so the difference is enormous. Practically the whole of the increase in rural population migrated to the cities after 1960. Data for the period previous to 1960 is scarce; however, the differential rate of development for five regions may be seen from the share of agricultural production that each of them accounted for in 1939 and 1959:

TABLE 1 *Share of Agricultural Production: Regions of Mexico*

Region	1939	1959
North	25	23
Gulf	19	17
North Pacific	11	18
South Pacific	10	15
Centre	35	27
Total:	100	100

Source: Reynolds (1970).

It should be pointed out that during the last five decades rather diverse policies have been followed with regard to government investment in agriculture. During most of the 1930s a policy of land distribution and support to small landholders was followed, and co-operative organizations were given various types of government assistance. During the 1940s this

policy was substituted for one of support to commercial agriculture. Co-operative type associations fell out of favour, large-scale individual farming was favoured and agricultural investment emphasized increases in irrigated acreage, generally in new regions. The land was distributed in larger units and at the same time traditional agriculture was neglected. During the 1950s an intermediate course between support of modern and traditional agriculture was followed. During the 1960s investment in modern agriculture again became relatively more important. Beginning in 1952 the share of agriculture in government investment began to fall from 20 to about 12 per cent by 1970. By then it was evident that the relative neglect of agriculture in favour of urban activities, as well as the decreasing marginal productivity of new investments in irrigation, given that the best locations had already been developed, was resulting in a lessened dynamism of the sector. At the same time it became evident that rural poverty and the resulting migration to the cities were becoming problems of unmanageable dimensions. Thus, without neglecting commercial agriculture, rural development investment was again increased. By 1976 investment in agriculture and rural development had again reached 20 per cent of government investment.

Between 1960 and 1979 more specific indicators of the regional impact of government policies may be used. The first is the distribution of federal government investment expenditure in different states and in different types of activities. We shall analyse two periods. The first, 1959–70, encompasses two administrations; the second, 1971–78, includes the administration in power from 1971 to 1976 and the first two years of the following government period. Per caput federal investment in different states for the period from 1959 to 1970 ranged from US\$120 (at 1970 prices) to US\$985. There are seventeen states in the range from US\$120 to \$320. Sixteen of these form a compact region that includes Central Mexico and all but one of the Pacific coastal states in Central and Southern Mexico. The pattern is repeated in 1971–78 with relatively minor changes. Total investment does not always accurately reflect the effects on the population, since the benefits of industrial and petroleum public sector investment accrue to Mexico City in large part, regardless of location.

With regard to investment in agriculture and in social welfare activities, a degree of concentration similar to that for total investment occurs. In both periods agricultural investment has been concentrated in a few zones where irrigation could be developed. As a result these states, all outside the central region referred to above, have accounted for a very high proportion of the increase in agricultural output. Their role has been particularly important with regard to exports.

AN EXPLANATION OF REGIONAL INCOME INEQUALITIES IN MEXICAN AGRICULTURE

Five elements may be considered in order to explain regional differentials in rural incomes. They are the following:

- 1 Relative capital-labour and land-labour ratios.
- 2 Factor productivity differences, stemming from use of different technologies and organizational models.
- 3 Labour mobility in response to income differentials.
- 4 Relative rural-urban prices.
- 5 Government income transfers.

The first two elements determine physical output-to-labour ratios in agricultural activities. The latter two relate to the individual worker's ability to obtain money income either through sale of his output or through working for pay outside his own plot. Included in the last one are prices of industrial goods, which also determine in a direct way welfare levels of rural inhabitants and their families. Also part of government transfers are social welfare expenditures, which represent a transfer of income in kind to the rural inhabitant.

As a result of the differential access of the population to the above named elements, income inequality is very high in Mexico. Although there are no regional or sectoral data on income distribution, it is useful to analyse the overall distribution of income, since the various groups are rather easily identified. Table 2 shows income distribution in 1950 and 1977. The Gini

TABLE 2 *Size distribution of income in Mexico by deciles*¹

Decile	1950	1977	1977 ²	Annual Real Increase %
I	2.43	1.08	2.31	-0.2
II	3.17	2.21	4.41	1.5
III	3.18	3.23	6.88	2.9
IV	4.29	4.42	9.41	3.0
V	4.93	5.73	12.20	3.4
VI	5.96	7.15	15.23	3.5
VII	7.04	9.11	19.40	3.8
VIII	9.63	11.98	25.52	3.7
IX	13.89	17.09	36.40	3.6
Xa. ³	10.38	12.54	26.71	3.6
Xb.	35.10	25.45	54.21	1.6
Total	100.0	100.0	213.0	2.8

Sources: 1950, *Population Census*; 1977, *Secretaria de Programación y Presupuesto, National Income and Expenditure Survey*.

¹ In 1950 each decile represented 450,000 families; in 1977, 1.1 million.

² This column shows each decile's real income in relation to its 1950 income. Thus, if national income in 1950 may be considered as 100, in 1977 it was 213. The per caput income of the lowest ten per cent of the population was 2.43 in 1950, and 2.31 in 1977.

³ Each of these last two rows represents 5 per cent of the population.

TABLE 3 *Government investment, welfare and income levels by state*

Region	Welfare rank	Current (US\$)	Rank	Govt Investment Rank	
	1970	income 1965		1959-70	1971-78
Northwest					
Baja California	3	756	3	9	12
B. California Sur	7	628	6	3	3
Sonora	5	728	4	12	10
Sinaloa	15	500	8	7	14
Nayarit	25	267	20	29	18
North					
Chihuahua	9	390	12	13	20
Durango	18	274	18	17	24
Northeast					
Coahuila	8	632	5	6	11
Nuevo León	2	916	2	16	17
Tamaulipas	6	542	7	5	7
Centre-North					
Agascalientes	4	284	17	15	22
San Luis Potosí	24	207	23	25	29
Zacatecas	29	163	29	32	30
Pacific-Centre					
Jalisco	11	331	15	30	30
Colima	17	335	14	8	5
Michoacán	26	172	27	24	15
Centre					
Querétaro	19	228	21	14	16
Guanajuato	20	215	22	20	28
Hidalgo	27	157	30	23	13
México	16	430	9	27	26
Tlaxcala	22	110	32	31	27
Puebla	21	205	24	28	31
Morelos	10	268	19	22	23
Gulf-Centre					
Veracruz	12	426	10	11	8
Pacific-South					
Guerrero	30	171	28	18	19
Chiapas	32	192	25	21	9
Oaxaca	31	115	31	26	25
Peninsula					
Tabasco	28	343	13	2	4
Campeche	13	418	11	11	6
Quintana Roo	23	173	26	4	6
Yucatán	14	295	16	19	21
Federal District	1	1100	1	1	1
National Average:		455	9		

coefficient changed from 0.504 in 1950 to 0.496 in 1977. As may be seen from Table 2, the bottom 50 per cent of the population received 18 per cent of total income in 1950 and 16.7 per cent in 1977. However, the lowest decile's share fell from 2.43 per cent to 1.08 per cent. This group's real income remained approximately constant over the period, while deciles \bar{V} to \bar{X} obtained rather substantial increases in their incomes. The fact that the Gini coefficient remained practically constant results from the fact that some of the intermediate groups increased their income share at the expense of the top decile. Thus, while the relative lot of the poorest group worsened, in equity terms this was somewhat compensated by the income gains to middle groups, obtained to a great extent as a result of the urbanization process.

Table 3 shows an ordering of relative welfare at the state level. An index was computed using 1970 Census data for sixteen variables. It also shows an estimate of output per caput by state for 1965, with a maximum of US\$110 and a mean of US\$455. If the 31 states and the Federal District are ranked according to their income levels, it may be seen that 14 of the 16 states that received the highest per caput federal investment in 1959–70 occupy the first 14 positions in terms of income per caput at the state level. In 1971–78, 12 of those 14 still remained in the top places in terms of government investment per caput.

If these investment figures are broken down, the most interesting aspects for our purpose are those relating to investment in agriculture and in social welfare. With regard to agricultural investment, 10 of the fourteen states with the highest investment in 1959–1970 also are among the fourteen top states in terms of per caput incomes. Social welfare investment expenditures are also highly concentrated. In 1959–70, 10 of the 14 states with the highest per caput investment are also among the top 14 states in terms of income. In 1971–78, it is the same. The above shows the close relationship between income levels and the distribution of government investment expenditures. It also shows that, with the exception of the Mexico City area, government investment expenditures have been concentrated outside the region where traditional agriculture is a way of life. Thus it may be seen that in so far as the population of these areas has been able to increase its welfare level substantially, it has sought to do this through migration, either to the capital city, to the United States, or to other areas, primarily the northern border.

Rural-urban migration.

In order to determine the importance of different factors in explaining rural-urban migration, a model based on Todaro's work was tested for the Mexican case. Maximization of individual welfare would imply that the decision to migrate is a function of relative expected earnings and unemployment. Specifically, the following model was used:

$$M_i = M_i (L_i, w_i, w_d, U_i, U_d, D), \text{ where}$$

M_i = Migration between 1960 and 1970 from state i to the Federal District

L_i = Labour force in state i in 1970

w_i = Minimum wage in state i

w_d = Minimum wage in the Federal District

U_i = Underemployment rate in state i , defined as the share of the labour force with incomes below the state minimum wage in 1970

U_d = Underemployment rate in the Federal District, defined in a similar manner

D = Distance from the capital of state i to the Federal District.

REGRESSION RESULTS

	Const.	L	D	w_i/w_d	U_i/U_d	V^*	R^2
M	2.4939	1.0146	-0.5482	-	-	-1.1576	0.88446
(t)	(3.9523)	(10.3227)	(5.5041)	-	-	(3.3586)	
M	-	1.0021	-0.5418	-0.9586	1.0464	-	0.88656
(t)	-	(10.2138)	(5.5901)	(2.9147)	(4.0700)	-	
M/L	4.5339	-	-0.5526	-	-	-1.1537	0.7071
(t)	(8.1078)	-	(5.9210)	-	-	(3.4174)	
M/L	-	-	-0.52040	-0.6200	1.6727	-	0.6985
(t)	-	-	(5.5632)	(1.9192)	(6.8523)	-	

$$* V = (w_i/w_d) (1 - U_i + U_d)$$

Results obtained show very clearly the importance of these variables, all with the expected signs, as may be seen in the above chart. Given the policy that had been followed until a few years ago with regard to minimum wages, these reflected rather well the relative level of development of different states. Thus it may be seen that income differentials affect rural-urban migration directly. The same may be said of relative underemployment levels.

In dealing with the question of how well migratory flows have contributed to an equalization of income levels throughout the country, it is necessary to rely on indirect evidence, since reliable income figures by state at different time intervals are not available. Personal income distribution figures, as shown in Table 2, indicate that an increase in the degree of inequality for the poorest ten per cent of the population has been accompanied by an apparent

stability in this group's real income over time. At the same time, from the fifth decile upwards, income gains have taken place at a rate substantially higher than the average, at the expense of the share of the top five per cent of the population. The poorest ten per cent of the population represents, almost completely, rural inhabitants. This group is about a fourth to a third of rural population, and it is made up predominantly of landless labourers and owners of very small plots of land. These groups have been the target of government policies over the last decade.

Government expenditures to improve the welfare of the poorest groups in rural areas have been directed primarily at the following areas:

- 1 Health, through setting up rural clinics in the poorest areas in order to provide basic medical care to poor peasants. Also, a programme to provide medical services to some groups of rural labourers.
- 2 Education, through an increase in expenditures to serve the needs of the most isolated groups of rural inhabitants.
- 3 Nutrition, by means of a programme of rural stores to lower the prices of basic processed foodstuffs to the rural population, which traditionally has paid the highest prices for all products.
- 4 Productivity. Beginning in 1980, a programme of increased support prices for production of staple food, primarily corn, was put into effect. It was coupled with subsidies to lower the prices of seeds, fertilizer and credit, primarily to subsistence farmers, in order to increase agricultural production and the productivity of land.

The latest indirect evidence would seem to indicate that the high rate of growth achieved by the Mexican economy in 1978–81, an average of 8.5 per cent annually, has meant a high rate of employment creation and therefore increased job and income opportunities for the rural labour force. However, this has been a short-run change. The more important question in this regard is the extent to which a rapid increase in aggregate demand resulting from the oil boom has meant lasting changes in the welfare levels of the rural population. Recent aggregate economic changes have affected at least three of the five elements that explain regional differentials in rural incomes; labour mobility as a result of increased opportunities for non-agricultural employment, relative rural-urban prices, and government income transfers to the rural population. As a result of the changes initiated, and of good weather conditions, agricultural output increased by 18 per cent in 1981 and cropped area increased almost proportionately.

Despite the above, it is evident that agriculture cannot absorb any more workers; on the contrary, the impossibility of earning the levels of income which better communications and urban influences have led rural inhabitants to aspire to, has meant a continuing exodus from rural areas to the largest cities in Mexico. Since, as was mentioned above, a large part of the rural population has not improved its welfare level at all during the last thirty years, it appears that agricultural price policies and an excess supply of labour have kept rural wages, and incomes for the poorest groups, near the subsistence level. These workers lack any marketable skills. The fact that

their number has increased at the same rate as the total population means that government policy in general has not been effective in reaching marginal populations, although rapid growth in the last few years has given many of them a way out of rural poverty. For these people, progress has meant increasing inequality. It is significant that temporary migrants to the United States do not in general come from the poorest states, but rather from the Central and Northern regions, which have a long history of such migration. These states have traditionally enjoyed higher average incomes, and have also had a higher rate of migration to the large Mexican cities.

Given the adverse influence of government policy on regional equality and/or rural-urban income differentials, it may be asked what types of alternative policies might have been followed to promote equality. It would seem that Mexican policies in this respect have varied widely over time, and yet the basic problems have remained. The unemployment and under-employment problems that Mexico has traditionally faced receded into the background in the last few years as a result of the oil boom. Despite this fact, the poverty level prevalent in a large part of the agricultural sector has meant that private saving capacity in traditional agriculture is very low. Therefore, given the insufficient rate of creation of urban employment as well as the exploding labour force, rural income increases have depended on government investment or income transfers. In some cases these have been a way of calling forth the savings potential implicit in underutilized rural labour. However, in general this aspect has not been emphasized. Thus the rate of increase of rural incomes has been limited by the amount of government resources effectively transferred and by the prevailing organizational patterns. Of course, in some areas with favourable resource endowments, the effect of government transfers on productivity and capital formation has been rather high.

Given that government investment funds for agriculture have been clearly insufficient for the sector as a whole, emigration has been a way to avoid a drastic fall in rural incomes, as well as a means by which rural families have received transfers from their urban members. This process seems to have worked most clearly in the central region of the country where subsistence and traditional agriculture prevails. Migrants, as Table 4 shows, have gone, in large part, to Mexico City.

Despite the fact that in many regions rural welfare levels seem to have increased as a result of government investment expenditures, rural-urban income differentials, as well as productivity differences between agriculture and other activities, have widened. Thus, relative incentives to migrate out of agriculture remain high. Given the size of the agricultural labour force and the prevailing levels of rural incomes, it is evident that, even if the past rate of migration to the cities continues over this decade and the next, rural population at the end of the century will still be about twenty million, compared to approximately twenty-four at present. Thus, the demand for productive agricultural investment will remain unabated.

That the region surrounding Mexico City has been traditionally the area of poorest agriculture is accounted for in terms of land and capital per

TABLE 4 *Net migration by state and region*

Region	('000s)			Total/1970 Pop. (per cent)
	Up to 1960	1960-70	Total	
Northwest	279	183	462	11.0
Baja California Norte	256	139	395	39.0
Baja California Sur	-16	10	-6	-4.4
Sonora	76	21	97	8.4
Sinaloa	-46	18	-28	-2.1
Nayarit	9	-5	4	0.7
North	-26	-87	-113	-4.3
Chihuahua	115	1	116	6.9
Durango	-141	-88	-229	-23.6
Northeast	278	131	409	9.1
Coahuila	-39	-55	-94	-8.1
Nuevo León	124	154	278	15.7
Tamaulipas	193	32	225	14.7
North Central	-412	-309	-721	-26.8
Aguascalientes	-42	-12	-54	-15.2
San Luis Potosí	-152	-126	-278	-20.8
Zacatecas	-218	-171	-389	-38.9
Central Pacific	-557	-271	-828	-13.5
Jalisco	-254	-8	-262	-7.6
Colima	11	15	26	10.2
Michoacán	-314	-278	-592	-24.3
Central	-959	223	-736	-6.2
Querétaro	-97	-24	-121	-23.9
Guanajuato	-331	-166	-497	-20.9
Hidalgo	-189	-121	-310	-24.8
Mexico	-189	660	471	11.7
Tlaxcala	-61	-36	-97	-22.0
Puebla	-151	-136	-287	-10.9
Morelos	59	46	105	16.3
Gulf Central	39	-15	24	0.6
Veracruz	39	-15	24	0.6
South Pacific	-277	-309	-586	-10.8
Guerrero	-74	-114	-188	-11.2
Chiapas	-42	-38	-80	-4.9
Oaxaca	-161	-157	-318	-15.0
Peninsula	-87	-18	-105	-5.4
Tabasco	-34	-6	-40	-5.0
Champeche	-9	11	2	0.8

Quintana Roo	10	24	34	37.4
Yucatán	-54	-47	-101	-12.7
Mexico City	1,722	473	2,195	30.4

Sources: Population Census, 1960, 1970.

worker, as well as by the persistence of traditional cultural traits. That government policy has been unable to alter the status of the poorest inhabitants significantly despite the large sums invested over almost fifty years shows that the problem is not exclusively of an economic nature. Lacking any coherent blueprint about the objectives of government policy with regard to rural inhabitants or the ways in which such objectives would come about as a result of different actions, successive administrations have simply emphasized different programmes, either to transfer income or to increase productivity. However, at any one time expenditures have been thinly spread and the organizational models of rural society have not always been aimed at achieving widespread participation in efforts and decisions. Corruption has also been an important factor in maintaining the productivity of government's rural expenditures rather low.

In other regions of the country, where due to irrigation and larger plot sizes initial factor endowments have been more favourable, rural productivity and incomes have grown continuously. In such areas, the real wages effectively paid to rural workers have also apparently increased over time, as the index of rural wages shows. It is clear that only in those regions with favourable factor endowments have modern agriculture and organizational patterns developed. In areas where this has been the case the labour force in agriculture has been sharply divided into landowners and workers. However, the latter have at least been able to earn the minimum wage, which is far above the level of income that poor peasants obtain in the regions where traditional agriculture is prevalent.

REFERENCE

¹ C.W. Reynolds, *The Mexican Economy, Twentieth Century Structure and Growth*, Yale University Press, 1970.

DISCUSSION OPENING I – CHAMHURI SIWAR

This paper deals with a typical trend that is happening in most LDCs, that is, the growth that leads to further inequality. The author initially describes the success story of Mexican agriculture in terms of the growth in agricultural output, rural incomes and productivity, but not without the consequence of the growth of productivity differentials and increased income inequality which results from uneven agricultural investment, rural-urban migration and differences in factor endowments.

With regard to government policies, the author chooses government investment in the agricultural sector as an index of the government's support for the agricultural sector. He uses the size of the government investment as

the indicator. This approach contains one inherent weakness in that it does not tell us about how the investments were spent, that is, whether or not it has been in support of the commercial and modern agricultural sector with the consequent neglect of the traditional sector. Also the profitability of each investment was not reported, nor were the distribution of gains and losses from the investments. Specifically it would be interesting to know how the gains and losses from such investments were distributed among the landless, small, medium and large-sized farmers. The failure of government policy, as pointed out by the author, lies with the ineffectiveness of government programmes in reaching the marginal population. The author asked what alternative policy might be followed. It seems that the history of government investment in agriculture has traditionally favoured commercial and modern agriculture, concentrated in a few zones where irrigation could be developed, with an apparent neglect of the traditional sector. It is not surprising that the result is increased income inequality between the rural-urban sector and also within the rural sector itself. To improve income inequality within the rural sector, a natural course to follow would be to emphasize investment and development programmes in the traditional sector. By specifying the rural target groups, investment and programmes may then be directed to them to alleviate poverty.

Another factor that contributed to the increase in regional income differences was said to be rural-urban migration. The extent to which this migration occurs was summed up in that after 1960 practically the whole of the increase in the rural labour force migrated to the cities. The author uses a model, similar to that of Todaro's, to determine the importance of different factors in determining rural-urban migration. It seems to me that it is not enough to look into the decision to migrate based on relative expected earnings and unemployment. Other factors, such as the levels of education, the costs related to migration, the availability of kin in urban centres, would strongly influence the decision to migrate.

The other side of rural urban migration, that is, the impact on the agricultural sector, specifically on agricultural and labour productivity and incomes, has not been analysed. In a situation of agricultural labour surplus one would expect that rural-urban migration would increase agricultural and labour productivity and ultimately labour's income, through increased farm size and farm opportunities.

A declining trend in the agricultural labour force is a prerequisite for improved agricultural incomes as experienced by most developing countries. As such, rural-urban migration should be encouraged to a point where agricultural land could be worked optimally and rural labour force meets its demand. This would help to raise rural wage rates and reduce rural-urban wage differentials and would by itself reduce rural-urban migration. On the urban side, the influx of labour to the urban centres, along with the inability of the urban sector to provide adequate employment opportunities, would ultimately reduce urban wage rates. This would act as a deterrent to a further influx and further growth would hopefully reduce regional income inequality.

DISCUSSION OPENING II – DAVID COLMAN

The paper touches (in a rather disjointed way) upon two different dimensions of income inequality; (a) regional income inequality; and (b) inter-personal income inequality; and it also touches (econometrically) upon rural-urban labour migration which is part of the system's mechanism for equating incomes and opportunities.

The issues are not principally addressed at the agricultural sector level, but at the aggregate level. That is to say that Table 2 presents the income distribution for the Mexican population as a whole (not for rural or agricultural families) while Table 3 presents rankings of states in terms of average income per caput for the population as a whole.

The data in Table 3 are used to illustrate the direct relationship between income levels in states and government expenditure in states, suggesting that government policy favours the better-off states. Since regional agricultural expenditure by the government has also correlated well with overall government expenditure it, too, has tended to go to the better areas and thus does not appear to have been primarily aimed at equity objectives.

One (possibly interesting) observation arises with respect to the data in Table 2 on the changing income distribution over time. It is an observation which relates to comparable statistics in other papers and is the relationship between the population in the bottom decile in 1950 and that in 1977. Naïvely one might assume that there is some family relationship (despite the growth in the number of families in the decile from 4.5 million to 11 million). However the possibility is that there may be a large income mobility related to the family income cycle. Thus those in the lowest decile may be largely older and single parent (smaller) families in both periods, such that a high proportion of those in the bottom group in 1977 were, when younger, in a higher group in 1950. In other words, figures like this gloss over a number of interesting questions.

The rural-urban migration analysis is based on a simple pooled cross-section/time-series model. The results accord well with expectations and are robust (in that deflating M by L does not greatly affect the parameters on the explanatory variables other than L). The only other thing which it would have been useful to have explained is the rationale for variable V when the intercept term is suppressed.

The inclusion of this brief section on rural-urban migration provides a peg on which to hang a whole discussion of market mechanisms for reducing income inequality, for the results indicate market forces working strongly to relocate labour. There are other equilibrating mechanisms which might operate, such as, lower prices for wage goods in poorer areas; a tendency for some movement of labour intensive industries to poorer areas; and migration of individual family members on a temporary basis. The cumulative effect of these will clearly not bring about regional and interpersonal income equality. But the question we might ask is how large are the effects of government policies to reduce income inequality likely to be relative to the effects of 'normal market' equilibrating mechanisms.