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## THE EFFECTS OF THE FINANCIAL SYSTEM ON THE DISTRIBUTION OF INCOME AND WEALTH IN MEXICO†

The goals of growth and income distribution in developing countries converge in the domain of financial policy. Yet little effort has been made to determine the extent to which financial policies favoring growth are consistent with the objective of an equitable distribution of income and wealth. In Mexico and probably in many developing countries the pattern of borrowing and lending rates, the structure of lending, the terms of credit, and the inflation tax on financial assets all tend to disfavor the small lender and to favor the large lender.<sup>1</sup> Hence, household financial accumulation seems to be biased in a manner favorable to upper income groups, resulting in a concentration of financial wealth.

The issues examined in this essay include the structure of family income distribution and savings in Mexico for the years 1963 and 1968; selected relationships between family income, savings, and the acquisition of financial assets and liabilities; and some implications of alternative assumptions about the distribution of increments to the gross national product (GNP) for patterns of aggregate savings.<sup>2</sup> A model is introduced which relates savings at different income levels to alternative opportunities for financial intermediation. The model is tested using limited evidence on financial lending and borrowing of

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†An earlier draft of this paper was presented at the United States-Mexican Financial Relations Conference, Palo Alto, California, March 14-16, 1974. Appreciation is extended to Dale Adams, Dennis Chinn, William Cline, Albert Fishlow, Donald Keesing, Scott Pearson, and Edward Shaw for their helpful comments on previous versions.

<sup>1</sup> There are several illuminating studies of Mexico's post-war financial evolution. See, for example, Benner (4, 5); Brothers and Solis (6); Goldsmith (8); Eckaus (7); A. Navarette (15); and Solis (26). I. M. de Navarette deals with the characteristics of Mexican income distribution in (16) and (17).

<sup>2</sup> Financial policy may influence income distribution indirectly as it affects the real structure of production and the relative price of consumer and producer goods. The effect of financial policy on the structure of production and hence on relative income shares is discussed elsewhere and is thus given second priority here. (See 24, Chap. 3, especially pp. 52-59). But the net impact of this relationship on income distribution may be large in countries such as Mexico, where financial policy

households in Monterrey. When compared with the savings data for Mexico, the findings suggest that appropriate financial policies could raise the rates of voluntary financial savings of lower income groups and increase their levels of income and wealth. These results enhance understanding of relationships among income distribution, savings, and financial policies. See also (9, 13, 14, 18, 25, and 29).

### FINANCIAL INTERMEDIATION AND HOUSEHOLD SAVINGS

In the long run, the ratio of aggregate savings to national income in developing countries is likely to be independent of the level of personal income, while in the short run, phenomena such as transitory income, demonstration effects, and relative price changes are major causes of differences in observed savings ratios at different levels of income. Numerous economists have noted that savings ratios are also significantly affected by the structure of the financial system and, thus, by the type of monetary and financial policies pursued by the government. Evidence from a number of Latin American, Asian, and African countries suggests that financial policies can be important in determining household savings functions as well as the composition of savings between physical and financial assets. See (22, 20, and 21).

One important reason why savings rates are relatively low and even negative at low levels of income is that poor families face a higher relative price of future over present goods (i.e., lower interest rates on their potential financial savings) than rich families. In addition, low income borrowers face higher average costs of borrowing than upper income groups, increasing the burden of interest payments out of income. Finally, though the low and unstable incomes of the poor exacerbate their need for precautionary savings, even greater current consumption pressures tend to raise their time discount rate above that of upper income groups. The result is to reinforce lower savings patterns on the demand side as well.

These characteristics of low income savers, which are supported with evidence from Monterrey below, imply that poor families do not find adequate financial means through which to channel their potential savings and have limited access to credit. Accordingly, marginal propensities to save will tend to be low and perhaps even negative, although savings for the repayment of previous borrowing offset this effect to some extent. The net result of frustrated savings by the poor will be greater inequality in the distribution of asset income and wealth.<sup>3</sup>

As income grows from very low levels, savings may well remain negative within some narrow range of income levels. Marginal propensities to save could also be negative within this income range. As families move up the ladder toward

has been an important device to allocate credit among deficit production sectors for specific growth objectives. For a discussion of financial intermediaries, their evolution and roles in the structural transformation of Mexico and other Latin American countries, see Conceição Tavares (28). The potential for increasing structural instability and income concentration in the financial sector is explored in (27).

<sup>3</sup> However, William Cline has noted that if the wealth holdings of the poor are negligible at the outset, then lower than average marginal savings rates may still be consistent with higher than average rates of growth of wealth.

middle income levels, opportunities become available to accumulate savings in more sophisticated financial instruments on more attractive terms, so that financial savings begin to rise at an increasing rate. Households will attempt to bring their levels of actual wealth up to the desired levels. Since this adjustment process is likely to be slow, marginal propensities to save may be expected to increase gradually as income grows rather than to jump immediately to the highest level and remain there. Finally, high income level families may approach target levels of wealth, dampening the desire for further accumulation and diminishing the marginal propensity to save. If so, wealth could become somewhat less concentrated in a growing economy over the long run, as Lampman's study showed for the United States from the 1920s to the 1950s (11).

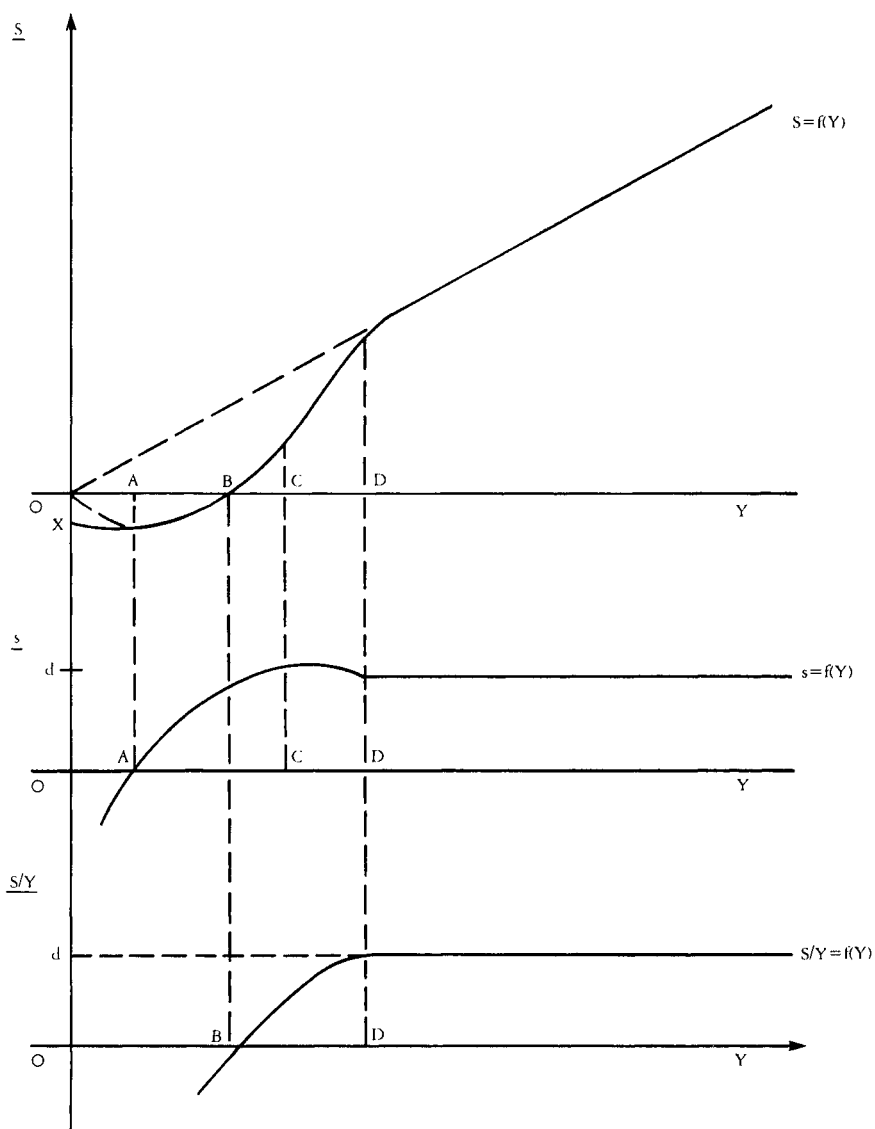
### THE THEORETICAL MODEL

Characteristics of household savings behavior in developing countries such as Mexico can best be understood in terms of a simple theoretical model. The model hypothesizes that cross-sectional savings functions will tend to become linear over time. Marginal propensities to save will converge for all income levels as incomes rise. This trend will be accelerated by increased availability of financial savings opportunities including adequate rewards for such savings and particularly those of lower income households. The trend will be slowed to the extent that rates of time preference of the poor remain significantly above those of the rich.<sup>4</sup> Changes in income distribution will also affect the trend. Activities to promote financial savings of lower income groups can be useful in altering preferences in the desired direction of faster relative wealth accumulation of the poor. These activities could include both advertising and institution-building such as savings cooperatives, contractual savings schemes, and the introduction of indexed savings deposits in banks and other financial institutions accessible to the working class.

In our model the savings decisions of households are assumed to represent a stream of intertemporal consumption decisions in which the felt needs for goods and services are weighed against the availability of income from a fairly certain present into an indefinite future. Goods (or the welfare from their consumption) may be acquired at any period of the household's earning stream. The choice of the period should depend on the following: the relative prices of present versus future goods at each point in time (reflected in the structure of real interest rates on savings); present income and its relationship to expected future income; past consumption levels; the consumption (present and expected future) of other households with which the given family is familiar; expected future needs of the family; the desire for present over future consumption; and the consumption of psychic gratification per se—for example, the gratification from work itself, which may be somewhat independent of the material consumption it enables through the expenditure of income earned, or the gratification from the absti-

<sup>4</sup> For simplification it is assumed here that the effect on financial savings of preferences for liquidity and risk are neutral with respect to income level. Savings in the form of physical assets may also be expected to rise with income, although in this study much savings, including consumer durable purchases, are not treated explicitly in the analysis of cross-sectional household savings behavior owing to data limitations.

CHART 1.—HYPOTHESIZED HOUSEHOLD SAVINGS-INCOME RELATIONSHIP



$S$  = Savings

$Y$  = Income

$s$  = Marginal propensity to save

$S/Y$  = Average propensity to save

nence from consumption, or from the sharing of welfare derived from the consumption of others.

Present savings-consumption decisions relate to the financial process most directly through borrowing and lending, the relative prices of present versus future goods, and differing intertemporal preferences. The availability and cost of finance are essential elements in the decision-making process of households in a system subject to financial intermediation. For the majority of social systems, elements of intertemporal exchange have existed, permitting budgeting deficits of some households to be covered by the surpluses of others, subject to an appropriate interest charge. The development process leads to increased institutionalization and identifiability of the financial intermediation process. Hence, it is not surprising that the degree of intermediation of households rises with income levels.

We focus here on the relationship between family income and savings.<sup>5</sup> In particular, we postulate the existence of a significant nonlinear relationship between the level of income and family savings for a relatively wide range of low and medium income levels, although at higher income levels the relationship may well be linear. As income grows from a relatively low level the average and marginal propensities to save tend to increase at a decreasing rate, leveling off as income approaches some relatively high value.

Chart 1 illustrates these points. At zero income savings from present income obviously must be zero (see dotted line). Households, however, require a minimum level of consumption for survival. Hence there is a biologically and culturally defined level of negative savings at zero income indicated by the vertical distance OX. The distance OA indicates a region of negative savings which is not only explained by the capacity of the household to mortgage future income, but also by its ability to accumulate wealth and by the willingness of others to provide support. As income increases from O to A, the possibility of net borrowing combined with the pressure of consumption needs causes the savings rate to decline but at a decreasing rate within the income range OA. In this range the marginal propensity to save is negative but rising. At levels of income within the range of OB, personal savings as well as the average propensity to save are negative, but as savings begin to rise relative to borrowing the net figure becomes increasingly less negative. After point B, savings begin to take on positive values. Within the income range BC, we observe that personal savings grow at an increasing rate. From point C to point D, on the other hand, the rate of growth of personal savings slows down and the marginal propensity to save decreases. At point D, the rate of growth of savings stabilizes, the income elasticity of savings becomes unity, and the marginal and average propensities to save reach the same constant value  $d$ , meaning that from this point on they are relatively independent of the level of income.

Our model is designed to explain the savings behavior of a cross section of income groups or families at a given point in time. The savings function plotted

<sup>5</sup> We abstract here from problems involved in distinguishing between reported current expenditures and actual consumption of goods and services during the current period. Hence, the question of whether or not durable consumer goods purchases represent savings is not considered central to the line of reasoning presented in this section.

TABLE 1.—DISTRIBUTION OF PERSONAL INCOME IN MEXICO  
IN 1963 AND 1968\* <sup>a</sup>  
(1963 pesos)

Income group (monthly family income in pesos)	Income per capita per year	1963		Share of population in group (percent)	1968		Share of population in group (percent)
		Total income of group (million pesos per year)	(percent)		Income per capita in group	Total income of group (percent)	
0-300	519	3,483	3.1	15.9	475	981	4.3
300-600	951	9,670	8.6	24.1	788	5,459	14.6
600-1,000	1,598	14,773	13.1	21.9	1,376	12,921	19.7
1,000-3,000	3,400	39,592	35.2	27.6	2,838	56,218	41.7
3,000-6,000	7,141	23,368	20.8	7.7	6,351	42,504	14.1
6,000-10,000	15,201	11,082	9.9	1.7	12,293	20,542	3.5
Over 10,000	21,455	10,427	9.3	1.1	29,089	28,682	2.1
Total	2,661	112,409	100.0	100.0	3,520	167,309	100.0

\*Data from José Luis Aburto and Clark W. Reynolds, working papers based on Banco de México., *Encuesta sobre Ingresos y Gastos Familiares en México-1963*, oficina de Estudios sobre Proyecciones Agrícolas, México D.F. 1966 and Banco de México, *Encuesta sobre Ingresos y Gastos Familiares en México-1968*, Documentos Internos, 1972, 1973.

<sup>a</sup> Since 1954 the Mexican peso has been valued at 12.5 per U.S. dollar with free convertibility. Constant values were obtained using the implicit GNP deflator. As of September 1, 1976 the peso was allowed to "float" in the world market. As of December 1976 the exchange rate was around 24.5 per U.S. dollar.

in Chart 1 indicates how much a given income group or family saves if its income is at a certain specified level and how its total savings and average and marginal propensities to save would change, *ceteris paribus*, as a result of income changes.

Such a function, however, does not directly express the behavior of aggregate personal savings for a country as a whole. Our cross sectional savings function could, in fact, be consistent with a situation in which aggregate national savings maintained a linear relationship with income over time. Alternatively, it could be consistent with an entirely different situation such as that suggested by Landau (12) in a recent study of aggregate savings functions in which total savings for a developing country were said to bear a nonlinear relationship to per capita income similar to that presented in Chart 1. Although both situations are possible, we believe that in a country such as Mexico aggregate national savings are more likely to behave in a nonlinear fashion over time, similar to the pattern we assume to hold for cross-sectional savings functions. As incomes rise, the aggregate savings function is likely to shift upward but at a decreasing rate if all income groups share in the gains from growth. Individual household savings functions may also be expected to rise over time as absolute income levels rise in developing countries. Increased financial intermediation policies will also tend to shift observed savings upward, *ceteris paribus*, as reflected in time series data. The estimation of cross-sectional savings functions for Mexico in the following section does not permit a test of savings behavior over time except for comparison between 1963 and 1968.

### PERSONAL INCOME DISTRIBUTION IN MEXICO

The best evidence available on personal income distribution in Mexico, presented below, is from the Central Bank budget study data on family income and expenditures for 1963 and 1968 (1, 2). The advantage of these data is that, unlike other budget study information on Mexico, the sampling procedure is internally consistent, statistically sophisticated, and similar for both years. Furthermore, the method of aggregation minimizes subjective adjustments for underreporting which have tended to bias earlier income distribution figures. On the other hand, the weakness in the data stems from the decision not to exaggerate the figures by blowing up income estimates to correspond to hypothesized rather than reported income levels. Thus the sample data for 1963 when transformed into aggregates represent only 72 percent of estimated disposable family income as derived by I. M. de Navarette from the national accounts.<sup>6</sup> Table 1 contains the size distribution of personal income for 1963 and 1968 by seven income groups and comparable population shares in each group for the respective years, and Table 2 provides personal savings estimates from the same sources. These data are subject to a probable severe downward bias for both income and savings estimates. Savings are a residual of reported income minus reported consumption; because the former is likely to have a more significant downward bias than the latter, the residual is highly sensitive to this error. It is also likely that the upper income

<sup>6</sup> See I.M. de Navarette (17, p. 62). The figures used in that study can be contrasted with the results of the estimates of family income, consumption, and savings in Mexico for 1963 from the Bank of Mexico study (1, Table 1):



TABLE 2.—ANNUAL PER CAPITA INCOME AND SAVINGS  
IN MEXICO FOR THE YEARS 1963 and 1968\*  
(1963 pesos)

Income group (monthly family income)	1963		1968	
	Income	Savings	Income	Savings
0-300	519	-619	475	-200
300-600	951	-447	788	-170
600-1,000	1,598	-281	1,376	-214
1,000-3,000	3,400	-48	2,838	-102
3,000-6,000	7,141	1,467	6,351	537
6,000-10,000	15,201	4,286	12,293	2,130
Over 10,000	21,455	10,456	29,089	8,119
Total	50,265	14,814	53,210	10,100

\*Data from José Luis Aburto and Clark W. Reynolds, working papers based on Banco de México, *Encuesta sobre Ingresos y Gastos Familiares en México-1963*, oficina de Estudios sobre Proyecciones Agrícolas, México D.F. 1966 and Banco de México, *Encuesta sobre Ingresos y Gastos Familiares en México-1968*, Documentos Internos, 1972, 1973.

groups underreport income to a greater extent than lower income groups, owing to the increasing importance of profits, interest, and rent in their receipts and the tendency to underreport nonwage income. Hence, the estimated savings function is likely to have a flatter slope than the real one due to underreporting by the upper income groups.<sup>7</sup>

Comparison Table  
(millions of pesos)

	Survey of the Bank of Mexico	I.M. de Navarette Study
Disposable income of families	112,409	156,304
Consumption	111,220	145,842
Family savings	1,189	10,462

In both estimates consumption includes the purchase of consumer durables and hence savings represents net financial savings of households. The Bank of Mexico survey gives figures on total monthly income and expenditure from which the annual figures are estimated and savings taken as a residual (income - consumption = savings). The Navarette study (p.62) indicates that its consumption estimate comes from the Bank of Mexico (presumably from its national accounts estimate and not from the budget study data) and that an assumption, perhaps exaggerated, is made that family savings represent 40 percent of gross domestic savings in 1963. Finally, personal disposable income is the sum of the consumption and savings estimates which are independently generated.

<sup>7</sup> This will tend to offset an upward bias noted by Kuznets and others in cross-sectional estimates of savings functions reflecting the transitory component of income which tends to lead to less observed savings by lower income groups and more savings by upper income groups in the short opposed to the long run. Since Mexican national accounts do not permit an examination of the secular behavior of aggregate personal savings, one cannot readily test cross-sectional evidence

TABLE 3.—DIRECT ESTIMATION OF HOUSEHOLD SAVINGS  
AS PERCENTAGE OF DISPOSABLE FAMILY INCOME\*

	All families	Income level ( <i>pesos</i> )		
		\$2,000 or less	\$2,001– \$5,000	\$5,001 or more
A. <i>Net financial savings</i>	-2.91	-4.79	-2.97	-1.01
Change in currency balances	0.54	0.33	0.57	0.70
Change in demand and savings deposits in financial institutions	0.21	-0.03	-0.26	1.14
Change in other savings	0.48	0.34	0.79	0.16
Change in fixed interest securities	0.02	—	0.01	0.03
Insurance premiums	0.37	0.05	0.41	0.63
Loans to private individuals	0.05	—	0.12	-0.02
<i>Less: Dissaving (i.e., an   increase in indebtedness)</i>	8.27	9.39	8.27	7.19
<i>Plus: Debt amortization</i>	3.69	3.92	3.65	3.54
B. <i>Net savings through   tangible assets</i>	8.09	4.05	7.99	12.14
Amortization of mortgage debt	1.87	1.40	1.86	2.34
Acquisition of durable goods	10.91	7.48	10.87	14.28
<i>Less: Depreciation</i>	4.69	4.83	4.74	4.48
C. <i>Net savings (A+B)</i>	5.19	-0.74	5.02	11.13

\*Data from Banco de México, *El crédito al consumo en Monterrey, N.L., 1967*, Vol. 1, Table III.35, p. 315.

### PERSONAL SAVINGS AND THE ACCUMULATION OF FINANCIAL WEALTH

Survey information from Monterrey, Mexico for 1967 permits a comparison of the size distribution of income to personal savings and the accumulation of physical and financial assets and liabilities (1, 2). Data of this nature are seldom available for developing countries, but in 1968 the Bank of Mexico conducted two surveys in Monterrey, one relating to changes in the financial situation of households and the other to the financial policies of commercial establishments selling consumer durables.<sup>8</sup> While both surveys obtained data only for 1967, the against trend data, so the net result of these offsetting biases must remain conjecture. See Kuznets (10, pp. 28-31).

<sup>8</sup> Among the limitations of the survey material are the relatively small sample of households (891 families), and the usual data collecting problems, which are likely to include underreporting of income. Yet despite such qualifications the material is valuable for the factual evidence it provides about relationships which hitherto have been subject to conjecture.

TABLE 4.—HOUSEHOLD ACCOUNTS—MONTERREY, N.L., 1967,  
EXCLUDING CURRENT EXPENDITURES\*

		Monthly totals (percentage of disposable income)			
			Income level		
	All families	\$2,000 or less	\$2,001 to \$5,000	\$5,001 or more	
<i>Cash receipts</i>					
1.	Wages and salaries	75.32	80.64	76.46	68.55
2.	Other income	17.88	12.72	16.64	24.66
3.	Rent, interest, dividends	3.47	2.63	3.15	4.75
4.	Total income (1+2+3)	96.67	95.98	96.25	97.96
5.	Plus: Transfer payments	3.33	4.02	3.75	2.04
6.	Disposable income	100.00	100.00	100.00	100.00
7.	Capital receipts	0.69	1.33	0.44	0.45
8.	Total	100.69	101.33	100.44	100.45
<i>Net savings</i>					
9.	Net financial savings	5.19	-0.74	5.02	11.13
	(sum of 15 thru 22)	-2.91	-4.79	-2.97	-1.01
10.	Cash balances	0.54	0.33	0.57	0.70
11.	Deposits in credit institutions	0.21	-0.03	-0.26	1.14
12.	"Tandas" and savings banks	0.29	0.11	0.46	0.21
13.	Certificates of savings and capitalization	0.19	0.23	0.33	-0.05
14.	Fixed interest securities	0.02	—	0.01	0.03
15.	Sum of 10 through 14	1.25	0.63	1.12	2.03
16.	Insurance premiums	0.37	0.05	0.41	0.63
17.	Loans to private individuals	0.05	—	0.12	-0.02
18.	Less: Dissaving (i.e., any increase in short term indebtedness)	8.27	9.39	8.27	7.19
19.	Purchase of automobile	1.48	—	1.17	3.36
20.	Purchases of other consumer durables	2.70	4.31	2.94	0.79
21.	Other purchases	4.09	5.07	4.16	3.04
22.	Plus: Debt amortization	3.69	3.92	3.65	3.54
23.	House repairs	0.10	0.16	0.12	0.02
24.	Clothing and shoes	0.60	0.71	0.60	0.51
25.	Medical care, vacations, etc.	0.14	0.30	0.09	0.06
26.	Goods purchased on credit prior to 1967	0.85	1.08	0.81	0.69
27.	Other expenditures	0.57	0.29	0.72	0.62
28.	Purchase of automobile	0.52	—	0.34	1.28
29.	Purchase of selected consumer durables in 1967	0.91	1.39	0.96	0.36
30.	Net savings through tangible assets (sum of 31 thru 36)	8.09	4.05	7.99	12.14
31.	Amortization of mortgage	1.87	1.40	1.86	2.34
32.	Payments for other real assets (i.e., land)	0.69	-0.86	1.15	1.48

TABLE 4.—HOUSEHOLD ACCOUNTS—MONTERREY, N.L., 1967,  
EXCLUDING CURRENT EXPENDITURES\* (CONTINUED)

		Monthly totals (percentage of disposable income)			
		Income level			
		All families	\$2,000 to or less	\$2,001 to \$5,000	\$5,001 to or more
33.	Investments in family business	0.49	0.11	0.62	0.64
34.	Purchase of automobile	3.67	0.13	2.51	8.77
35.	Purchases of other durable goods	6.07	8.10	6.58	3.32
36.	Less: Depreciation in 1967	4.69	4.83	4.74	4.48
37.	Automobile	1.52	0.32	1.49	2.73
38.	Other durable goods	3.17	4.51	3.25	1.75
Change in total assets unadjusted for indebtedness		13.45	8.65	13.29	18.32
Change in total assets unadjusted for indebtedness or depreciation		18.14	7.64	18.03	22.80
Number of families		177,366	114,539	48,623	14,204

\*Data from Banco de México, *El crédito al consumo en Monterrey, N.L.*, 1967, Vol. 1, Table III-35, p. 315.

Bank conducted another Monterrey survey in 1969, this time related to consumer credit operations of financial institutions for 1966, 1967, and 1968 (3). This survey provides a basis for rough estimates of the gross accumulation of financial assets and liabilities of households by size distribution of income and related net financial surpluses or deficits during the year 1967. Unfortunately these flow data cannot be compared to stocks of financial assets and liabilities held by the income groups at the beginning or end of the period since such figures are not available. The resulting information on financial flows of households may be related to data on consumer credit operations, interest rates on consumer lending, and financial intermediation with particular attention to consumer credit, all for 1967. This set of information permits one to begin to piece together some possible corollaries among personal income, savings, and financial intermediation, as well as household investment in consumer durables.

As shown in Tables 3 and 4, total net savings of households were broadly defined in the Monterrey surveys as the sum of net financial savings plus net savings in the form of tangible assets. The national average personal savings rates were 1 percent and 6 percent for the 1963 and 1968 budget studies, respectively. In contrast, the net financial savings figure for all families derived from the Monterrey data in Table 3 was -2.91 percent. Since Monterrey is a city with relatively high income levels compared with the country as a whole, it is unlikely that the survey results adequately report the full extent of financial savings, understating lending of households rather than overstating borrowing. On the other hand, real savings through the accumulation of tangible assets are highly positive, averaging 8.09 percent (Table 3). This result offsets the negative

TABLE 5.—ESTIMATION OF FINANCIAL SAVINGS OF HOUSEHOLDS\*  
(billion pesos)

Form of net change in financial assets <sup>a</sup>	1940 to 1948	1949 to 1954	1955 to 1959	1960 to 1963	1940 to 1963
Currency <sup>b</sup>	1.6	2.0	2.1	2.4	8.1
Demand deposits <sup>c</sup>	0.4	0.5	1.0	1.3	3.2
Savings deposits <sup>d</sup>	0.8	3.3	4.9	10.7	19.7
Private insurance reserves <sup>e</sup>	0.5	0.9	1.0	1.5	3.9
Government insurance reserves <sup>e</sup>	—	—	0.6	1.2	2.8
Government securities <sup>f</sup>	0.7	1.0	2.0	0.2	3.5
Other fixed interest securities <sup>f</sup>	0.4	1.2	1.5	3.4	6.5
All claims	4.4	8.9	13.1	20.3	47.9
Corporate stock <sup>g</sup>	1.0	5.0	10.0	10.0	26.0
All financial assets	5.4	13.9	23.1	30.3	73.9
Personal disposable income <sup>h</sup>	133.0	256.0	458.0	559.0	1,407.0
Ratio $\Delta$ assets / PDI	4.1	5.4	5.0	5.4	5.3

\*Data from R. W. Goldsmith, *The Financial Development of Mexico*, Organization for Economic Cooperation and Development, Paris, 1965, p. 84.

<sup>a</sup> Note that net increases in financial liabilities are apparently not deducted by Goldsmith, so that the resulting ratio does not measure net financial savings of households as a share of personal disposable income.

<sup>b</sup> Estimated at four-fifths of increase in currency outside banks. Data from *International Financial Statistics*, 1964/65 Supplement.

<sup>c</sup> Estimated at one-fourth of increase in demand deposits of business and individuals in commercial banks.

<sup>d</sup> Estimated at three-fourths of increase of savings deposits in commercial banks and of time and foreign currency deposits in "development banks."

<sup>e</sup> Assumed equal to increase in total assets less policy loans of private life insurance companies and social security organizations.

<sup>f</sup> Estimated at approximately four-fifths of increase in fixed interest securities not held by financial institutions.

<sup>g</sup> Estimated at about 40 percent of all corporate stock issues.

<sup>h</sup> Estimated at 90 percent of national income. Data from Comisión Nacional de Valores, Mexico City.

financial savings owing to the inclusion of consumer durable purchases as tangible assets. The net savings figure for household savings in Table 3 is 5.19 percent, rising from -0.74 percent for the lowest of the three income groups to 11.13 percent for the highest cohort.

Evidence from the Monterrey study suggests that the low figure for financial savings of households is due to errors in data collection, including a high degree of underreporting by the top income group. The survey information from this group might have been improved by further subdividing the top cohort and by including questions on stocks of physical and financial assets at the beginning and end of the period. Nevertheless, surveys of this kind should be complemented with information on household acquisition of financial assets directly from financial

institutions (flow of funds data broken down by major institutional sector) to permit adjustment of partial evidence to aggregate figures.

It is interesting to compare the survey result for net financial savings with the gross figure obtained by Goldsmith (8, p. 84) using rough approximations for the country as a whole without deducting increases in financial liabilities. He estimates that gross financial savings of households represented about 5.3 percent of personal disposable income for the period 1940-63, and that net financial savings were about 2.5 to 4.5 percent of personal disposable income as compared with the Monterrey survey's figure of -2.91 percent. Goldsmith's estimates are presented in Table 5 in detail.

Total net savings represent 5.2 percent of total disposable income in Table 4. The table also shows that families with higher incomes tend to save relatively more with respect to disposable income. This result is consistent with the budget studies of the Bank of Mexico which show increasing average propensities to save as the income of the family is higher. However, the magnitudes of the propensities are not similar because the budget studies did not consider as savings the acquisition of consumer durables. Table 4 indicates that net acquisitions of durable goods account for almost half of household savings. The other half is represented by acquisitions of other tangible assets including houses, real estate, and, to a small degree, direct investments in family businesses.

Data from the survey do not permit one to distinguish whether or not there are significant differences by income groups in the interest rates charged for credit and in the rates obtained from holding financial assets. There is strong evidence, however, that financial savings of low income groups are held mostly in the form of currency and, to a lesser degree, in savings deposits. Savings deposits with commercial banks were found to be very popular among the people of Monterrey. There are on the average 1.5 accounts per family in that city; these accounts yield 4 percent nominal interest.

The survey results show that savings in *cajas de ahorro* (a pool of company employee savings which is controlled by the administration or by the employees themselves and used to extend credit to the members of the pool) have become quite important for low income people holding stable jobs. Since this type of savings offers higher yields than cash or savings deposits (around 8 percent), the spread of such institutions may help reduce the negative effect of interest rate differentials on income distribution.

On the other hand, there is a strong indirect indication from the Monterrey surveys that low income families are charged relatively higher rates on the debt that they incur. In effect, the ratio of debt to disposable income is higher for low income groups than for high income groups (see Table 4). The structure of credit acquisitions by income groups is presented in Table 6. For the lowest income group, 66.7 percent of total credit purchases are related to durable goods other than automobiles compared to only 49 percent for the highest income group.

Along with the evidence on the size distribution of credit purchases, the Banco de Mexico data include information on the interest rates charged for consumer credit. The average nominal rates in percent charged by financial institutions were: direct consumer credit, 20; used automobiles, 70; televisions, 87; record players, 80; radios, 312; refrigerators, 70; stoves, 336.

TABLE 6.—CONSUMER CREDIT PURCHASES BY INCOME GROUP IN METROPOLITAN MONTERREY, PERCENTAGE DISTRIBUTION\*

	Income groups (1967 pesos)			
Types of purchases, 1967	0 to \$2,000	\$2,001 to \$5,000	\$5,001 to or more	Total
<i>Goods and services</i>				
Automobiles	—	13.4	37.3	19.2
New	—	6.8	27.3	13.0
Used	—	6.6	10.0	6.2
Other consumer durables	66.7	58.6	49.0	56.9
Selected items <sup>a</sup>	49.1	47.0	45.8	47.1
Others <sup>b</sup>	17.6	11.6	3.2	9.8
Clothes and shoes	11.7	10.5	5.5	8.9
Vacations, schools, etc.	5.7	1.5	0.6	2.2
Food <sup>c</sup>	1.4	0.5	0.1	0.6
Other Purchases on time <sup>d</sup>	14.5	15.5	7.5	12.2
Total purchases	100.0	100.0	100.0	100.0
<i>Sources of credit, 1967-69</i>				
<i>Modes</i>				
<i>Commercial Credit (percent)</i>				
Families in group	73.1	63.2	68.9	67.9
Value of purchases by group	50.3	57.7	69.1	—
Value of total purchases	21.6	21.7	23.3	66.4
Value of total purchases financed by mode of credit	32.6	32.7	34.7	100.0
<i>Financial Institutions (percent)</i>				
Families in group	3.5	9.8	10.5	9.1
Value of purchases by group	0.8	7.6	15.7	—
Value of total purchases	1.9	2.9	5.3	10.0
Value of total purchases financed by mode of credit	18.5	28.8	52.7	100.0
<i>Companies (percent)</i>				
Families in group	1.1	16.1	15.1	11.4
Value of purchases by group	16.1	20.7	12.8	—
Value of total purchases	2.6	7.8	4.2	14.6
Value of total purchases financed by mode of credit	17.8	53.1	29.1	100.0

TABLE 6.—CONSUMER CREDIT PURCHASES BY INCOME GROUP IN METROPOLITAN MONTERREY, PERCENTAGE DISTRIBUTION\* (CONTINUED)

Types of purchases, 1967	Income groups (1967 pesos)			
	0 to \$2,000	\$2,001 to \$5,000	\$5,001 to \$5,001 or more	Total
Private (percent)				
Families in group	22.3	10.9	5.5	11.6
Value of purchases by group	32.8	14.0	2.4	—
Value of total purchases	4.9	5.2	0.6	10.0
Value of total purchases financed by mode of credit	44.6	47.9	7.4	100.0
Total (percent)				
Families in group	100.0	100.0	100.0	100.0
Value of purchases by group	100.0	100.0	100.0	100.0
Value of total purchases	31.0	37.6	33.4	100.0

\* Banco de México, *Encuesta a las familias*, Apéndice Estadístico, Vol. 2, pp. 346-47, and Vol. 3, pp. 4, 5, and Survey of Credit Institutions, Monterrey, N.L., Banco de México, *Survey of Consumer Credit Institutions*, 1969.

<sup>a</sup> Includes 11 specific items: bedroom furniture, dining room furniture, living room furniture, refrigerators, stoves, washing machines, blenders, electric appliances, televisions, stereos, and record players. Automobiles not included.

<sup>b</sup> "Other" includes furniture, electrical machines, miscellaneous household equipment, motorcycles, bicycles, etc. For a complete listing see the *Apéndice Estadístico*, Vol. 2, p. 344.

<sup>c</sup> Figures for food purchased on credit presented in weekly amounts, as the purchases are on rotating accounts that are retired on a weekly or monthly basis. It is assumed that the amounts recorded in survey weeks correspond to average expenditures.

<sup>d</sup> Includes home-improvement expenditures, household repairs, and extraordinary expenses.

These effective rates are estimated by the bank on the principal durable goods bought with credit by the household. They are extremely high in view of the negligible rate of inflation in the mid-1960s, and many low income consumers were probably unaware of their magnitude. In any case, it appears that the lowest income group is more affected by these high interest rates given its relatively greater expenditure on durable consumer goods with higher credit costs. Purchases of automobiles, for example, are not included in consumer durables, yet they are among the cheapest goods in terms of credit costs. Moreover, the structure of credit purchases by sources of credit in Table 6 indicates that financial credit, which is the least costly source, is heavily concentrated in the highest income group. This group obtained 52.7 percent of total financial credit compared to 18.5 percent obtained by the lowest income cohort.



It is also indicated in Table 6 that the lowest income group relied quite heavily on private credit. This source, which includes moneylenders and would thus be expected to carry a relatively high cost to the borrowers, financed almost 33 percent of the group's total credit purchases. It was relatively unimportant to the other income groups. Furthermore, companies (employers' credit and *cajas de ahorro*) were an important credit source for the lowest income group, financing 16 percent of its total credit purchases. However, although this source is supposed to be relatively cheap, only about 1 percent of the families in that group had access to it. The probable explanation for this is that company credit is available only to those who have stable jobs with established employers.

The survey evidence cited above may be complemented with information provided directly by financial institutions. Loans granted directly to consumers by financial institutions constituted less than 2 percent of their total credit and loans in 1967. If we consider only commercial banks, then this figure rises to 6.3 percent—still a very low percentage.

According to the information supplied by financial institutions, the distribution of personal loans with respect to the income level of the borrowers was:

Percentage of Personal Loans Granted (by Transaction)  
(percent)

Income group ( <i>pesos</i> )	Commercial banks	Financieras
0 - 2,000	8	0
2,001 - 3,000	25	0
3,001 - 5,000	30	32
5,001 - and more	37	68

In summary, the Monterrey results reinforce the position that the differential between interest rates charged on financial liabilities and interest rates paid on financial assets of household varies according to the position of the households in the structure of income cohorts. The lowest income group carries a relatively greater debt than the highest income group, acquires a greater percentage of its consumer durables on credit, and thus pays relatively more in interest charges on credit obtained from more expensive sources.

These differentials will certainly affect the portfolio choice of households. For example, it is likely that the relative price of future goods over present goods at a given time will tend to be higher for the low income cohorts due to the low interest rates received on financial assets. If so, one would expect to find that families in the low income cohorts are relatively less attracted to the accumulation of interest-bearing wealth because they obtain a relatively smaller return on financial wealth. Low income families have small and even negative average propensities to save not only because they receive a low income, but also because they face different relative prices on present versus future goods as compared to high income groups. In short, the poor face relatively stronger incentives to consume.

## SUMMARY AND CONCLUSIONS

This essay has touched upon a number of relationships between the size distribution of income and the problem of intertemporal choice, with particular emphasis on the role of financial intermediation in the process. The results of the study indicate that accumulation through the financial process favors a relative increase in physical and financial assets of upper income groups independent of their savings rates. There are, of course, real costs of financial intermediation (both on the lending and borrowing side) in terms of scale economies in the size of transactions, risk, and liquidity, all of which favor upper income groups. The pattern of lending and borrowing rates does not necessarily reflect monopolistic or monopsonistic pricing policies and associated barriers to entry. But it does tend to result in the concentration of wealth, working against the goal of income redistribution and social equity. The commodity composition of credit also works in this direction, since those commodities favored by low income households are also those for which credit terms are most stringent. The portfolio choice among financial assets has the same effect since securities most readily available to the small lender in the formal credit market are those yielding the lowest real rates of interest.

The results of the Monterrey study indicate that people with low incomes who wish to accumulate wealth in proportion to income must save at a higher rate than those with larger incomes, since the net yield on financial assets of the poor is much lower than the rich. This tendency is augmented by the pattern of higher interest charges on financial liabilities. There is evidence that if credit facilities and financial assets were made available to low income households in a more accessible manner and with attractive yields, the net effect might well be to increase the net financial savings of such households while simultaneously increasing their share of financial wealth. Since the cost of providing financial intermediation services to the poor often makes such programs unprofitable for competitive financial institutions, consideration might be given to the use of fiscal subsidies, incentives, and other policies to induce the development of such services.

The application of fiscal incentives to complement market yields on financial assets held by the poor involves subsidization of accumulation of lower income households. Such subsidies represent potential government savings foregone, offset by induced voluntary private savings in order to improve equality in the distribution of wealth consistent with the goals of accumulation and equity. While the study provides some evidence that improved access to attractive financial intermediation services may also increase borrowing of the poor, the Monterrey findings suggest that far more must be known about the pattern of financial flows among households and among the business, household, government, and foreign sectors of the economy before a clear picture of the role of financial intermediation in savings, investment, and growth will emerge.

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