

**ESTIMATES OF PERSONAL SAVINGS FUNCTIONS
FOR WEST MALAYSIA BASED ON 1957-58
HOUSEHOLD BUDGET SURVEY DATA**

SHAHRUM HASHIM and ABDUL HALIM ISMAIL
The National University of Malaysia

SINOPSIS

Kertas ini menganggarkan rangkap-rangkap tabungan perseorangan untuk Malaysia Barat dari data yang dipungut dalam Penyelidikan Belanjaan Isi-rumah 1957-58 oleh Jabatan Perangkaan. Hanya rangkap-rangkap Keynesian yang mudah sahaja yang dianggarkan. Rangkap-rangkap ini adalah dikenakan kepada data di atas bagi semua isi-rumah dalam sampel secara keseluruhan serta juga bagi semua isi-rumah tersebut dengan disusun-lapiskan kepada sektor-sektor bandar dan luar-bandar dan kumpulan-kumpulan kaum Melayu, Cina dan India.

SYNOPSIS

This paper estimates personal savings functions for West Malaysia from the data collected in the 1957-58 Household Budget Survey by the Department of Statistics. Only the simple Keynesian functions are estimated. These are fitted to the data for all sample households as well as for these households stratified into the urban and the rural sectors and the Malay, Chinese, and Indian ethnic groups.

This paper estimates personal savings functions for West Malaysia from the data collected in the 1957-58 Household Budget Survey by the Department of Statistics.¹ Though the data may be quite old, the source nevertheless remains the only household budget survey thus far undertaken in this country.² It is as much the objective of this paper to present the estimated personal savings functions for their sake as to record these functions for the purpose of historical comparison with those to be estimated from the data that will become available in the future.

1 The relevant data have been extracted from the unpublished summary sheets of the survey made available to one of the writers through the courtesy of the Department of Statistics, Kuala Lumpur, when he was studying for his higher degree during 1966-70.

2 Another household budget survey is in the process of being undertaken at the time of writing.

I. FUNCTIONAL FORM

Only the simple Keynesian functions will be fitted to the data. These are of the form

$$S = a + bY + u$$

where S = personal savings, Y = personal income, a is the constant, and u is the error term. The coefficient b is the marginal propensity to save.

II. DATA

The Household Budget Survey 1957–58 had been conducted on the basis of random sampling covering a total of 2,760 households comprising 840 households in the urban sector and 1,920 households in the rural sector. The available data relevant to this study are the figures relating to monthly income and monthly total expenditure for each of the households. The latter comprises the monthly expenditure for eleven groups of commodities, namely (a) total food (b) alcoholic drinks (c) tobacco (d) clothing and footwear (e) household goods (f) fuel (g) power (h) transport (i) entertainment and services (j) sundries (k) housing.³

For a small number of households, however, the data are incomplete,⁴ and consequently these households have to be left out from the analysis. The data finally used in this study relate to 2,603 households consisting of 789 households in the urban sector and 1,814 households in the rural sector.

The data for monthly income, the explanatory variable in the functions to be estimated, have been collected in the survey for theoretically all the households. However, owing to the practical difficulties in collecting information for such a variable, the data obtained still leave something to be desired. For one thing, as has been indicated above, for a fairly large number of households especially in the rural sector the data on income are not available. For another, there are some conceptual questions which are not clear. For example, it is not expressly stated how production for own consumption—a widespread phenomenon in the rural sector—had been treated. Thus it should be borne in mind from the outset that we are dealing with income data of questionable accuracy, perhaps more so in the case of the rural than the urban sector.⁵

3 For further detail see Department of Statistics, *Household Budget Survey 1957–58*, Kuala Lumpur, no date.

4 More often than not this is due to the monthly income data not being available.

5 The Report of the survey thus states, "the tables on income distribution of households are not as accurate and reliable as those for consumption and expenditure." Department of Statistics, *Household Budget Survey 1957–58*, p. 3. The Department, however, has used some of the income data albeit in a restricted way. See, for example, Department of Statistics, *Income Elasticities*, mimeo., no date.

Data on monthly savings were not directly collected in the survey. For the purpose of this study, monthly savings for a given household has therefore been estimated as its monthly income less its monthly total expenditure on groups of commodities mentioned above. This approach seems appropriate considering the nature of the available data. Some minor conceptual difficulties might nonetheless still remain. For example, the monthly expenditures on "sundries" include disbursements for insurance and debt repayment, while the expenditures on "housing" include payments for the purchase of land and house—and all these are here excluded from savings. Yet on the other hand expenditures on consumer durables, which are normally not regarded as savings, have in most cases been included in one or another of the above groups of commodities—and therefore omitted from the above definition of savings.

The sample households in the survey had been stratified in two stages. In the first stage, the households had been classified according to their location in the urban or the rural sector. In the second stage, the households within each of the above two sectors had further been classified on the basis of the ethnic origin of their members into the Malay, the Chinese, and the Indian households. This stratification conveniently facilitates the analysis being undertaken for the whole country as well as by the sector and the ethnic group.

There are thus in all six strata of households. For the purpose of this analysis the data have been grouped. The households within each stratum or a combination of strata have been grouped on the basis of two criteria. First, they have been assigned into eight groups according to their monthly incomes. Second, they have further been divided into ten groups on the basis of the number of their members. For each resultant group of households the average monthly income and monthly savings figures are computed. Table I illustrates the grouping procedure, and furnishes an example of the grouped data based on the two criteria for the Urban Chinese Group. It is to be noted that the figures are in the 'aggregate' or as per household, and not on per capita basis. Further, in the regression each figure has been weighted by the relevant number of households.

III. RESULTS

Table II sets out the absolute figures for average income and average savings as well as the savings-income ratio for the various relevant strata.

The functions estimated from the data for these strata are laid out in Tables III and V through VII. It may be observed that the regression coefficients are in all cases highly significant, and the adjusted coefficients of determination, \bar{R}^2 , are in most cases over sixty five percent.

TABLE I
AN EXAMPLE OF GROUPED DATA:
AVERAGE MONTHLY HOUSEHOLD INCOME AND SAVINGS FOR URBAN CHINESE GROUP
(IN DOLLARS)

Average Monthly Household Income		Number of Persons Per Household									
		1	2	3	4	5	6	7	8	9	10+
1- 74	Y	53.33	66.71	-	-	64.00	60.00	-	-	52.00	-
	S	11.13	-3.24	-	-	11.05	0.98	-	-	-190.85	-
75-149	Y	98.33	109.99	113.96	117.50	120.87	118.36	122.33	122.50	110.00	-
	S	19.99	8.44	9.83	-11.68	2.62	3.40	-18.76	-7.45	-22.77	-
150-224	Y	162.80	178.80	180.54	185.77	178.17	191.83	184.37	188.31	203.00	201.67
	S	-1.10	16.76	0.85	17.30	16.48	7.31	-12.49	10.16	2.25	-114.47
225-299	Y	-	265.00	255.71	257.22	252.88	265.14	255.87	258.11	249.13	260.19
	S	-	25.11	28.05	25.46	24.59	17.93	21.86	-1.17	-29.21	19.79
300-399	Y	-	338.67	342.17	336.63	344.67	331.25	330.67	328.55	345.08	339.53
	S	-	63.38	44.48	70.35	66.45	51.78	38.90	22.38	35.30	23.10
400-499	Y	-	-	469.83	430.00	450.44	430.00	439.00	457.00	437.00	463.75
	S	-	-	153.06	3.62	106.62	71.58	54.71	117.23	47.03	29.85
500-699	Y	-	-	500.00	591.67	550.00	580.45	595.00	583.13	596.67	557.45
	S	-	-	185.59	149.13	104.03	34.88	21.85	66.31	64.73	36.04
700+	Y	-	-	-	1006.67	700.00	791.75	857.67	1368.67	1263.02	926.47
	S	-	-	-	348.03	18.27	252.45	182.46	351.88	491.33	116.10

Y = average monthly household income.
S = average monthly household savings.

TABLE II
INCOME, SAVINGS AND SAVINGS-INCOME RATIO FOR VARIOUS GROUPS OF HOUSEHOLDS

Measures	All Households	All Urban Households	All Rural Households	All Malay Households	All Chinese Households	All Indian Households	Urban Malay Households	Urban Chinese Households	Urban Indian Households	Rural Malay Households	Rural Chinese Households	Rural Indian Households
Number of Households	2603	789	1814	1326	1041	236	100	564	125	1226	477	111
Average Income (\$)	211.72	289.23	177.58	148.20	287.75	230.29	248.98	306.27	230.20	138.52	265.84	230.42
Average Savings (\$)	19.47	32.67	13.77	19.26	23.80	1.56	35.92	35.93	15.68	17.93	9.45	-14.35
Savings-Income Ratio	0.092	0.113	0.078	0.130	0.083	0.007	0.144	0.117	0.068	0.129	0.036	-0.062

Source: Computed from data described in the text.

In Table III the estimated functions for all sample households as well as for all the households stratified by the urban and the rural sectors are shown. It may be seen that for the first function for all households the marginal propensity to save is about 0.28. This is just slightly lower than the figure of 0.31 found by Lee from his analysis of the cross-section data on household savings in West Malaysia collected by the Department of Economics of the University of Malaya in a household sample survey for the whole peninsula in 1960.⁶

The remaining two functions in the Table appear to reveal that the marginal propensity to save is higher for the rural households than for the urban households, with the relevant magnitudes being 0.35 and 0.23 respectively. If this finding reflects the true state of affairs, it would certainly run contrary to the hitherto popular belief that the marginal propensity to save is lower for the rural households than for the urban households. The writers however would caution against taking this finding as conclusive owing to the uncertainty regarding the accuracy of the data particularly those relating to rural households. There is unfortunately very little avenue to check this result at the moment.

TABLE III
FUNCTIONS FOR ALL HOUSEHOLDS, ALL URBAN HOUSEHOLDS
AND ALL RURAL HOUSEHOLDS

Sector	Function	\bar{R}^2
All households	$S = -39.45 + 0.2782Y^*$ (0.0037)	0.681
All Urban Households	$S = -34.65 + 0.2337Y^*$ (0.0059)	0.665
All Rural Households	$S = -49.12 + 0.3541Y^*$ (0.0069)	0.593

*Significant at the 1-percent level.

An attempt may however be made to reorganise the tabulated data in Lee's work into the form as presented in Table IV. The Table provides limited information only because of the adoption of very broad classes with respect to the income data. Nonetheless the limited information as revealed in the Table would appear to suggest also that the agricultural and other rural workers in farming including fishing, mixed operation, and rural business and cottage industries seem to have high propensities to save; whereas those in the non-agricultural occupations specifically

⁶ Lee Hock Lock, *Household Saving in West Malaysia and the Problem of Financing Economic Development*, Kuala Lumpur, Faculty of Economics and Administration, University of Malaya, 1971, pp. 37-39.

clerical and sales workers, skilled and semi-skilled employees, lower professionals, manual workers, and protective services employees appear to have low propensities.

Table V depicts the functions for all households classified by ethnic group. The functions appear to yield the marginal propensity to save of 0.41 for all Malay households in both urban and rural areas, 0.31 for all Chinese households, and 0.19 for all Indian households. The comparatively high propensity for the Malay households raises some doubt as to whether this represents the true situation or rather it reflects inaccuracies in recording the data. In particular, as it will be pointed out below, the data for rural Malay households might contain considerable errors.

TABLE IV
SAVINGS-INCOME RATIOS BY THREE INCOME GROUPS
FOR WEST MALAYSIA, 1960

Occupational Groups	Savings-Income Ratio (%)		
	Less Than \$3,000	\$3,001– \$10,000	\$10,001 And Above
<i>Agricultural & Other Rural</i>			
Farm operations including fishermen	0.5	12.2	45.7 ¹
Rural employees—plantators & mines	7.4	5.6	—
Mixed—operators cum employees	8.4	42.7 ¹	—
Rural business, cottage industries, etc.	6.4	16.2	30.0 ¹
<i>Non-Agricultural</i>			
Independence professionals	—	10.3 ¹	41.5
Self-employed—sale of goods	4.0	11.1	25.3
Self-employed—sale of services	4.7	13.4	17.4
Employed professionals & executives	7.2	16.7	24.1
Clerical & sales	13.5	13.0	13.0 ¹
Skilled & semi-skilled—employed	8.6	13.3	7.2 ¹
Lower professionals	18.1	13.4	13.0 ¹
Manual workers	8.8	8.3	—
Protective services	9.6	15.5	17.6

¹Less than ten samples.

Source: Lee Hock Lock, *Household Saving in West Malaysia and the Problem of Financing Economic Development*, Kuala Lumpur, Faculty of Economics and Administration, University of Malaya, 1971, pp. 55–57.

Finally, Table VI and Table VII present the functions for the households similarly classified by ethnic group but further stratified into the urban and the rural sector respectively. For the urban sector, Table VI shows that the marginal propensity to save is 0.21 for Malay households, 0.26 for Chinese households, and 0.20 for Indian households. For the rural sector, Table VII depicts the propensity of 0.51 for Malay households, 0.39 for Chinese households, and 0.17 for Indian households. It

is, however, suspected that data recording might have been subject to a considerable measure of errors in the case of Malay rural households probably partly because most of these are in the agricultural occupations the nature of which makes accurate recording particularly of income data difficult; and as such the high propensity for the rural Malay households should not be accepted on its face value.

TABLE V
FUNCTIONS FOR ALL MALAY HOUSEHOLDS,
ALL CHINESE HOUSEHOLDS AND ALL INDIAN HOUSEHOLDS

Ethnic Group	Function	\bar{R}^2
All Malay Households	$S = -41.00 + 0.4066Y^*$ (0.0073)	0.703
All Chinese Households	$S = -64.59 + 0.3071Y^*$ (0.0066)	0.677
All Indian Households	$S = -42.36 + 0.1906Y^*$ (0.0252)	0.193

*Significant at the 1-percent level.

TABLE VI
FUNCTIONS FOR URBAN MALAY HOUSEHOLDS,
URBAN CHINESE HOUSEHOLDS AND URBAN INDIAN HOUSEHOLDS

Ethnic Group	Function	\bar{R}^2
Urban Malay Households	$S = -16.31 + 0.2097Y^*$ (0.0125)	0.740
Urban Chinese Households	$S = -43.66 + 0.2598Y^*$ (0.0073)	0.692
Urban Indian Households	$S = -29.94 + 0.1981Y^*$ (0.0368)	0.184

*Significant at the 1-percent level.

TABLE VII
FUNCTIONS FOR RURAL MALAY HOUSEHOLDS,
RURAL CHINESE HOUSEHOLDS AND RURAL INDIAN HOUSEHOLDS

Ethnic Group	Function	\bar{R}^2
Rural Malay Households	$S = -52.06 + 0.5052Y^*$ (0.0082)	0.755
Rural Chinese Households	$S = -93.70 + 0.3880Y^*$ (0.0158)	0.558
Rural Indian Households	$S = -54.63 + 0.1748Y^*$ (0.0473)	0.103

*Significant at the 1-percent level.