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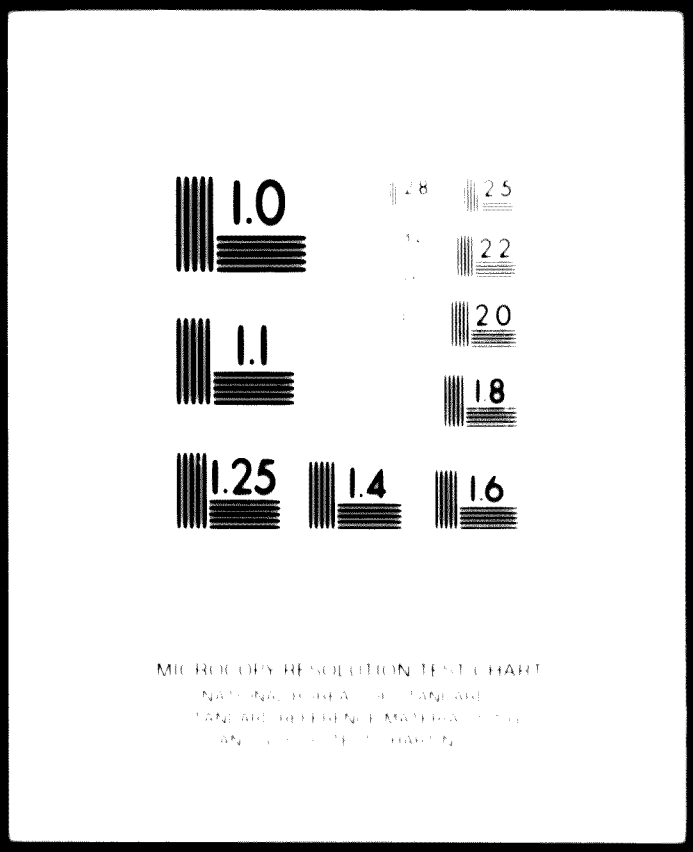

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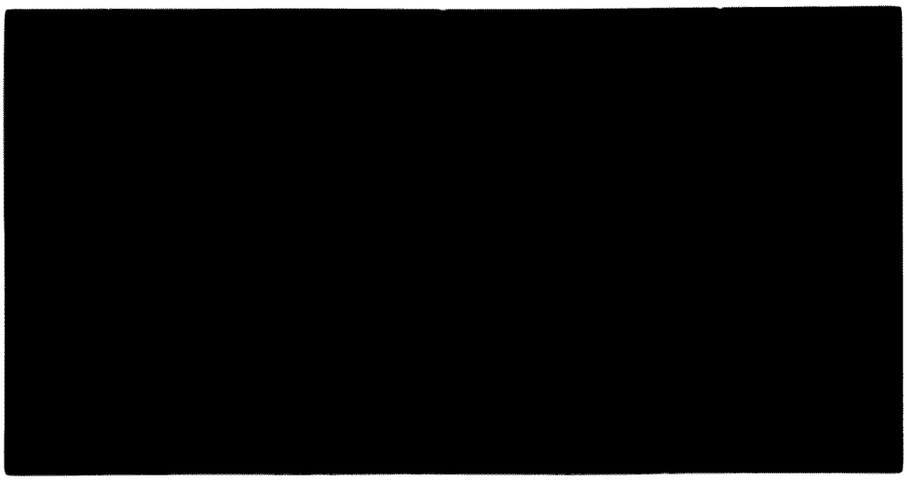

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Prepared by Metra International for the
United Nations Industrial Development Organisation

1972

DEVELOPMENT OF THE CONSUMER DURABLE GOODS AND AUTOMOTIVE INDUSTRIES IN IRAN

01070

Iran.
HOUSEHOLD SURVEY

October 1972

The views expressed in this report are the views of the consultants and do not necessarily reflect the views of the Secretariat of the United Nations Industrial Development Organisation

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ACKNOWLEDGEMENTS

Metra Consulting Group wish to express their gratitude to the many organisations both in Iran and in other countries who co-operated at different stages of the project and without whose help the execution of this study would not have been possible. A list of companies and other organisations contacted during the course of the work appears in Appendices to the two "Main Reports". However, we should like to express our particular thanks to His Excellency Dr. H.A. Mehran and the staff of the Ministry of Economy in Iran and to Dr. R. Abu-el-Haj and his UNIDO colleagues both in the Research Centre for Trade and Industry in Iran and at the UNIDO Headquarters in Vienna. Apart from indispensable practical assistance, Dr. Mehran, Dr. Abu-el-Haj and their colleagues have been especially generous in their encouragement of Metra personnel and in always providing a warm reception and cordial atmosphere.

Particular mention should also be made of two members of the Ministry of Economy Staff, Miss F. Baghari and Mr. A. Nishaboori, who were involved throughout the project including a time spent in the Metra Home Office in London under U.N. Fellowships. Their assistance and particularly their presence in London at a crucial stage in the project proved invaluable. We hope and indeed believe that their experience proved both interesting and beneficial and formed an extremely useful by-product of the project.

In the execution of the Household Survey, which formed a major part of the project, our thanks are due to many people in Iran who assisted us with this work. In particular we would like to thank the Governors of the Bank Markazi Iran for permitting us to use their facilities and to Dr. Taj Dar, Head of the Bank's Economics and Statistics Department, who made this possible. In particular we would like to express our appreciation of the tremendous help provided by Mr. Shahkarami of the Economics and Statistics Department and Mr. Shojaei also of that Department and the members of their staff who carried out and supervised the fieldwork. Their active and enthusiastic support was invaluable.

Finally, we wish to acknowledge the generous and efficient assistance of various British Embassies and High Commissions during the course of fieldwork in a number of countries.

FOREWORD

On the basis of a request from the Government of Iran, United Nations Development Programme (Special Fund) is assisting the Government in carrying out a project entitled "Research Centre for Industrial and Trade Development" (UNDP/Special Fund, Symbol IRA/16) The assistance is being provided through the United Nations Industrial Development Organisation (UNIDO) which is the executing agency for this project. The present study entitled "A Study of the Development of Consumer Durable Goods and Automobile Industries in Iran" has been carried out under contract number 71/68.

The total study has been divided at the request of UNIDO into two separate studies :

The Development of the Domestic Appliance Industry in Iran

The Development of the Automotive Industry in Iran

The report on the Automotive Industry has been divided into two volumes. The first of these is the "Main Report", presenting analyses of the industry and market together with detailed projections and recommendations. The second volume presents analyses of the individual companies which make up the industry at the present time.

The report of the Consumer Durable Goods is divided into two volumes, the first of which is the "Main Report" which presents Recommendations, a Summary and Conclusions. The second volume is sub-divided into thirteen parts according to product or product group. In this volume, Section I of each part gives a review or summary of that part of the report.

In addition to the above, a further volume deals with the Household Survey carried out as a part of the overall study and with the related Demographic Forecasting. This volume of the report is in fact common to the studies on both the Consumer Durable Goods and Automotive Industries.

The total study has been carried out under the following terms of reference :

- Consumer Durable Goods

  Within the scope of the project concerned with the domestic appliance industry Metra Consulting Group undertook to :

  Assess the demand for refrigerators, coolers, space heaters, water heaters, air conditioners, television sets, radio sets, hairdriers, vacuum cleaners, fans and any other appliances for which plans for local production are feasible. Such demand forecasts entail:

  (a) An analysis of past statistics and time series as may be available to obtain an indication of future demand;

  (b) An extensive household survey in the project area in order to collect as detailed information as possible on the project area on both income and expenditure;

  (c) A review of the Bank Markazi survey reports.As well as extracting appropriate information to establish:

      - minimum income necessary before purchase of a limited number of domestic appliances is made;

      - the curve of income distribution within the project area;

      - the total ownership of a particular appliance in the project area at the present time and hence, the level of penetration reached.

  (d) The minimum household income level necessary for purchase of the more expensive appliances, taking into consideration retail prices and consumer preferences.

(e) An indication, for the sake of comparison of elasticities of demand, the growth in demand and the pattern of this growth in a number of selected countries.

An analysis of the domestic appliance industry including :

(a) a detailed interview survey with senior representatives of companies in the domestic appliance industry in the project area, with the purpose of defining :

- the present structure of the industry
- production capacities and actual production levels
- production techniques and practices in use at the present time
- the present product range and product policy
- a cost structure of the industry identifying and quantifying major cost elements, labour, investment, overheads, raw material and components.

(b) Determine the consequences and implications of local manufacture both with respect to cost of the finished product in the project area and in terms of foreign exchange costs and savings.

(c) Indicate for the sake of comparison the experience of selected countries in the development of the domestic appliance industry, particularly as regards the degree of integration within the industry and the way in which this has evolved, the present product range and the ways in which these have developed, relationships between component producers and domestic appliance manufacturers, the commonality of components within a particular company and also across companies, and the competitive nature both of individual companies and the national industry as a whole in world market terms.

(d) Select a list of components worthy of further study and possible manufacture in the project area. For these components indications of minimum economic plant sizes, investment necessary, cost structure, and desirability or otherwise of integration with domestic appliance manufacturing companies should be established. In each case the probable foreign exchange cost and cost benefit or loss to the industry as a whole should be assessed.

(e) Indicate foreign companies possibly interested in manufacturing components in association with companies in the project area and the probable export potential resulting from such joint-ventures.

(f) Formulate recommendations regarding the future structure of the domestic appliance industry in the project area and the desired level of integration of components and finished product sectors. Recommendations should also be made with respect to target production levels, optimum product ranges and the cost and price levels of different products.

(g) Specific policy measures and programmes to be considered by the Government in its future planning and policies should be outlined.

- <u>Automotive Industry</u>

Within the scope of the project Metra Consulting Group undertook to :

(a) Analyse past motor vehicle registrations, production and imports to obtain general indications, on a time series basis, of future demand;

(b) Assess the life expectancy of the motor vehicles in Iran;

(c) Make a macro-economic analysis, based on the correlation between economic indicators and per capita owning of motor vehicles in a number of selected countries, to draw analogies between the development of the motor vehicle market in the Project Area and the corresponding development in such selected countries;

(d) Make an analysis of the lower income threshold necessary for the purchase of a motor vehicle and its trend within the period up to 1982-1983, taking into account factors such as price of the motor vehicles, development of other transport systems, Government's expenditures on roads as well as the development of urban and inter-urban bus and cargo transportation services.

(e) Based on the results of the work above, determine the demand for motor vehicles (per types and sizes) for the period up to 1982-1983.

Analysis of the motor vehicle and ancillary industries and preparation of a development programme.

(a) Undertake a detailed survey of the existing industry.

(b) Give advice on the advantages and disadvantages of concentrating manufacturing efforts in the lower cost, multi-purpose type of motor vehicles;

(c) Consider the partial trade balance of imports of incomplete kits with the export of components manufactured locally, beginning with a small percentage but increasing gradually;

(d) Propose legislative and policy measures to be considered by the Government for carrying out the proposed development plans;

(e) Recommend types of protection to be accorded to local entrepreneurs to encourage local manufacture while allowing sufficient margin for imports of completely built-up vehicles and parts in case of unacceptable inefficiencies in quality and/or overcost;

(f) Advise on the creation of a national body to deal with the policies on automotive industry and production questions such as quality control and independent testing facilities;

(g) Include in the investigation the possibility of using fibreglass reinforced plastics for commercial vehicles and passenger car bodies in the Project Area;

(h) Assess requirements in terms of manpower (labour and managerial including expatriates), and the need for lab o ur training programmes;

(i) Prepare a production programme which shall include, but not necessarily be limited to, the following information :

- number of plants (existing and new), for motor vehicle assembly and ancillaries production;
- number (by make and type) of vehicles to be produced;
- details of progressive increases in local content and local labour;
- list of parts to be manufactured locally.

On-the-job training of Iranian Counterparts

In addition to the above, Metra Consulting Group undertook to provide on-the-job training to two Iranian counterparts nominated by the Government in consultation with the UNIDO. The training programme included :

(a) participation in and contribution to the Contractor's work in the Project Area, and

(b) participation in and contribution to the Contractor's work at his Home Office

GENERAL NOTES

1. Throughout this report both the Solar and Gregorian Calendars have been used. For statistical purposes the two systems are not interchangeable and in general terms statistics appertaining specifically to Iran are based on the Gregorian Calendar. Nevertheless, for general approximations the following conversions should be used.

Solar Year + 621 = Gregorian Year

Solar	Gregorian	Solar	Gregorian
1338	1959	1353	1974
1339	1960	1354	1975
1340	1961	1355	1976
1341	1962	1356	1977
1342	1963	1357	1978
1343	1964	1358	1979
1344	1965	1359	1980
1345	1966	1360	1981
1346	1967	1361	1982
1347	1968	1362	1983
1348	1969	1363	1984
1349	1970	1364	1985
1350	1971	1365	1986
1351	1972	1366	1987
1352	1973	1367	1988

2. INCOME AND EXPENDITURE GROUPS

The income and expenditure groups used by Metra are the same as those used by the Bank Markazi in their 1348 survey. For convenience the income/expenditure groups are often referred to by number and the following table gives the range of annual income/expenditure for each group:

Group Number	Annual Income/Expenditure (Rls. p.a)
1	less than 30,000
2	30,001 - 50,000
3	50,001 - 75,000
4	75,001 -100,000
5	100,001 -150,000
6	150,001 -200,000
7	200,001 -300,000
8	300,001 -400,000
9	400,001 -500,000
10	over 500,000

3. ABBREVIATIONS

IMDBI	-	Industrial Mining and Development Bank of Iran.
cfm	-	cubic feet per minute
RCD	-	Regional Co-operation for Development
CKD	-	Completely Knocked Down
ft	-	foot
BTU	-	British Thermal Units
cu. ft.	-	cubic foot
fob	-	freight on board
cif	-	carriage insurance and freight
gvw	-	gross vehicle weight
sq.m	-	square metres
c.c.	-	cubic centimetres
HP	-	horse power
kg	-	kilograms
p.a.	-	per annum
lbs	-	pounds
Rls	-	rials

All tons are metric unless otherwise stated.

Contents

1. INTRODUCTION

This report covers the household survey conducted by METRA in Iran in late 1350. The survey was carried out as part of "A Study of the Consumer Durable Goods and Automotive Products Industries in Iran".

In this Volume the methodology, analyses and results of the household survey are discussed along with other data appertaining to population and income distribution. During the course of fieldwork in Iran METRA team members assembled as much published data on income distribution as was possible.

In Section 10 of this volume a summary of all known household income and expenditure surveys carried out in Iran is given.

All statistics on population used in this report have been taken from published sources in Iran. The data was checked with officials of the Ministry of Economy in Iran before being used in any of the analyses presented in this report.

Growth rates for GNP were supplied to METRA by representatives of the Ministry of Economy and the United Nation Research Centre in Iran in late December 1971. These growth rates have been used throughout.

2. OBJECT

The object of the study was to provide ownership and acquisition data for Iran on a wide variety of durable consumer goods including motor vehicles. The purpose of this data was to provide a base for the market forecasting work necessary within the general study of the Consumer Durable Industry in Iran.

This being so it was therefore necessary to obtain interviews with a representative sample of urban households in Iran and during these interviews to obtain answers to questions about ownership as well as time and place of acquisition of durables. Other questions were also to be included, dealing with such questions as brand shares etc. Certain demographic and socio-economic questions were also necessary to assist in the application of the findings to forecasting.

3. SAMPLE DESIGN AND GROSSING-UP PROCEDURES

The study team is indebted to the assistance of the Economics and Statistics Department of the Bank Markazi for allowing it to use the household sampling frame used by the Bank in its own Household Budget Surveys. The frame used was that used by the Bank in its 1348 survey. A description of this frame and the design of the present study is set out below.

3.1.1 The sampling frame: Bank Markazi

The 1345 census of population conducted by Iran Statistical Centre furnished the necessary information on the frame for sample design of the 1348 Household Budget Survey, namely:

1. Lists of all urban areas having 5000 or more inhabitants (Metropolitan areas).

2. Maps of the sample cities and their respective blocks.

3. List of blocks in each sample city according to their sizes (with respect to the number of households).

According to the 1345 population census there were 249 cities with more than 5000 population. At that time the Iran Statistical Centre had produced accurate maps of the cities showing the location as well as the number of blocks within the cities.

However, before conducting the area sampling, it was necessary to check the accuracy of the maps and the information obtained on the number of households within the blocks. Therefore, two cities (Shahsavar, and Rasht) were selected for a pre-test survey. A number of blocks were then randomly selected from the maps of the two above-mentioned cities and the households within those blocks were listed.

The pre-test results confirmed the reliability of the information regarding the number and sizes of the blocks in the cities as reported by the Centre.

3.1.2 Sampling method: Bank Markazi

The selection of sample households was based on a three stage stratified random sampling scheme, that is the cities, blocks and the households were selected in three stages respectively.

The sample cities of the urban areas were divided into three strata as follows:

1. The Greater Teheran (including Shemiran and Rey).

2. Large cities (having 100,000 or more population).

3. Small cities (the rest of the urban areas having more than 5000 and less than 100,000 populations).

3.1.3 Selection of the large cities: Bank Markazi and Metra

All large cities (urban areas with 100,000 or more population according to the 1345 populations census) were taken in the sample with certainty; in other words, all of the large cities were selected. Shemiran and Rey although they had a population of more than 100,000 were not considered as separate large cities but were instead treated as a part of the Greater Teheran. There were 11 such large cities which according to the 1345 census had a total population of 5,667,000 representing 58.3 percent of the total urban population which was 9,794,246. All these cities were included in the frame for the durables survey.

Table 1. The Population of the Large Cities in 1345

No.	City	Population
1	The Greater Teheran	2,980,041
2	Esfahan	424,045
3	Meshed	409,616
4	Tabriz	403,413
5	Abadan	272,962
6	Shiraz	269,865
7	Ahwaz	206,375
8	Kermanshah	187,930
9	Rasht	143,557
10	Quom	134,292
11	Hamedan	124,167
12	Rezaeih	110,749
	TOTAL	5,667,012

3.1.4 Selection of the small sample towns:

Bank Markazi and Metra

A new sample of small towns (according to 1345 census) was in order, but because of administrative difficulties a revised version of the 1338 small town sample was used. If a new sample were to be taken quite a number of new small towns would have appeared in the list, and this would have implied the transference of native enumerators to new places, involving serious administrative problems.

From the 22 old small towns, Lar had already been excluded due to the devastating earthquake, and Quom, had been promoted to a large city as its population had exceeded 100,000 according to the 1345 census. In this way 20 of the old small sample towns of the 1338 survey were taken as new sample towns for the 1345 household survey.

In order to have a complete sample of all the urban areas of the country in addition to the 20 old sample towns three new sample towns were selected from the newly developed small towns as per 1345 census, applying the same pattern of PPS* sampling method applied in 1338.

For the purposes of the durables survey the number of towns in this sub-sample was further reduced to 11, again by PPS* sampling. This was done in order to reduce cost and time necessary to complete fieldwork. The towns thus finally selected were as shown in Table 2.

*Probability Proportional to Size.

Table 2. Population of the sample small towns

No.	City	Population in 1345
1	Yazd	93,241
2	Gazvin	88,106
3	Kerman	85,404
4	Ardebil	83,596
5	Borjerd	71,486
6	Zandjan	58,714
7	Sari	44,547
8	Bandar-Abbas	34,627
9	Torbat-Heydarieh	30,106
10	Bushire	23,547
11	Shirvan	10,510
	TOTAL	623,884

The selection of cities, as given above, represented the first stage stratification.

Table 3. Population per primary stratum

	1345 population	% of population represented in Stratum 1
Teheran	2,980,041	100
Large cities	2,696,971	100
Small cities	4,117,234	15

3.1.5 Selection of households within primary strata: Bank Markazi and Metra

Because Tehran was known to have changed considerably since 1345 and because durable acquisition is frequently associated with new housing it was decided not to use the 1348 sample of blocks and households for this stratum. The 1348 sample of blocks and households was however used for the other two primary strata (i.e. large cities and small cities). The way that the 1348 sample of blocks and households was obtained is set out below.

3.1.6 Determination of the number of sample households:

Bank Markazi

In determining the sample size of households attempts were made to estimate the optimum sample size by making use of the expenditure variances of the households in the surveys of 1344 and 1345. However, since the size of a sample depends on the availability of resources a sample size of 5000 households were decided upon for the 1348 survey.

The allocation of 5000 sample households among the three strata was made proportional to their respective populations:

Table 4. Number of sample households in each stratum

Stratum	Population in 1345	No. of sample households, proportional to size	No. of adjusted sample households
The Greater Teheran (including Shemiran & Rey)	2,980,041	1521	1520
Other large cities (11 cities)	2,696,971	1377	1831
Other urban areas (small towns)	4,117,234	2102	1632
Grand Total	9,794,246	5000	4983

The total number of households in the second stratum was allocated proportionately amongst the 11 large cities. (See table 5.)

Table 5. Number of sample households in the large cities

Column No.	City	Population in 1345	No. of sample households proportional to size	No. of adjusted sample households
1	Greater Teheran (including Shemiran and Rey)	2,980,041	1521	1520
2.	Tabriz	403,413	206	206
3.	Esfahan	424,045	216	216
4.	Meshed	409,116	209	209
5.	Abadan	272,962	139	150
6.	Shiraz	269,865	138	150
7.	Kermanshah	187,930	96	150
8.	Ahwaz	206,375	105	150
9.	Rasht	143,557	73	150
10.	Hamedan	134,167	68	150
11.	Rezaieh	110,749	57	150
12.	Quom	134,292	70	150
	Grand total	5,677,012	2898	3351

As it can be seen from Table 5 the size of the samples in about half of the large cities are too small, and if individual price indexes were to be calculated, the weights would not have been reliable. Therefore, in order to reduce the sampling errors, the share of the cities having less than 150 households, were increased up to 150, and for the rest of the large cities no adjustments were made (Table 5).

The total number of sample households being fixed, the adjustments made in favor of some of the large cities meant a decrease in sample size of the small towns.

The total sample households allocated to the third stratum were equally divided amongst the 23 sample small towns. The figure arrived at was rounded to 68 since it had to be divisible by four, as it had been decided to allocate four sample households to each sample block.

As a result, in each of the sample small towns 17 sample blocks and a total of 68 sample households were selected. As the need loomed for a separate index for the city of Kerman, the number of sample households in this city was doubled (136 households).

*In practice only 68 schedules were taken into consideration in the final calculation of the wieghts for the consumer price index.

Table 6. Number of sample households in small towns

No.	Small towns	Number of adjusted sample households
* 1.	Yazd	68
* 2.	Ghazvin	68
* 3.	Ardebil	68
* 4.	Kerman	136
* 5.	Broojerd	68
* 6.	Zandjan	68
* 7.	Sari	68
8.	Ahar (Arasbaran)	68
* 9.	Torbat-Heidarieh	68
10.	Bodjnourd	68
*11.	Bushire	68
*12.	Bandar-Abbas	68
13.	Zahedan	68
14.	Birdjand	68
15.	Golpaygan	68
16.	Zabol	68
17.	Toyserkan	68
18.	Shahsavar	68
19.	Khoram-Darreh	68
20.	Makou	68
21.	Amlash	68
22.	Sarvestan	68
*23.	Shirvan	68
	TOTAL	1632

*Towns selected for durables survey.

3.1.7 Selection of Sample Blocks: Bank Markazi

The number of sample households in each city being fixed, the number of sample blocks only made sense in terms of the dispersion of households. In other words, the increase in the number of sample blocks increased the dispersion of the sample households within the cities, while affecting the listing expenses unfavourably. Because every selected block had to be listed, involving higher costs and additional personnel. Moreover, some of the small towns did not have the capacity to select more than a certain number of blocks. Therefore, on practical considerations, it was finally decided to select 4 households from each sample block. The number of sample blocks in each city was then worked out by dividing the corresponding number of sample households by four.

In the case of the small towns not having enough blocks, all the existing blocks were taken with more than four sample households in each block. (Such as Sarvestan and Amlash.)

After fixing the number of sample blocks, the complete lists of the blocks in each city were obtained from the Iran Statistical Centre.

At the time of the 1345 Census of Population, every city had been divided into districts, every district into zones, every zone into localities and every locality into blocks.

The Centre's lists followed the above-mentioned divisions, and it also contained a list of the number of households in the blocks.

Although the number of households had slightly changed between 1345 and 1347 it could still provide a fair account of the relative sizes of the sample blocks.

In selecting the sample blocks, the cumulative total of all the households within the sample blocks in each city was first calculated. By

dividing the cumulative total by the number of sample blocks, fixed previously, the "Interval" was worked out, and by the use of random numbers the sample blocks were selected according to probability proportional to size method (PPS).

3.1.8 List and maps of the selected blocks: Bank Markazi

Following the selection of the sample blocks, their identifications were recorded, which included the number of households within each of the sampled blocks. The sample blocks were then marked on the large maps of the cities. Special attention was paid to the problem cases which were referred to the Iran Statistical Centre for clarification. The addresses and locations of the sample blocks were drawn on special sheets called "block identification forms". These forms were then handed to the listing enumerators in order to reflect any changes occurred in the blocks' boundaries.

3.1.9 Household Listing Survey: Bank Markazi

During the selection of the sample blocks the preliminary works for the listing of the households in the sample blocks were in progress. Two different kinds of data were collected from the households on special questioners:

1. Information on residential dwellings.

2. Information on non-residential dwellings.

In the case of residential dwellings, in addition to the addresses, the number of dwelling units in the building, location of the dwelling unit in the building, tenure status (rental, owner occupied, in return for services, rent free or vacant), name, family name, and occupation of the head of the household, family size. The number of the literates in the households were also recorded.

In the case of non-residential dwellings only the types of activities that took place in the buildings were reported.

3.1.10 Allocation of Interviews in Durables Survey: Metra

The usual compromise between accuracy, cost and time considerations had led to a sample size of 1,500 households having been accepted. It was further felt that durable ownership levels and characteristics could vary significantly between Tehran, the large and the small cities. The primary stratification was thus based on this trichotomy and 500 households allocated to each primary stratum.

3.1.11 Use of Frame for Durables Survey: Metra

As has been mentioned previously the 1348 household listing was not used for developing the household sample for the durable sample in Tehran. The 1348 data was however used to assist in the following fashion.

(a) Tehran

In 1348 the Tehran blocks were selected with a probability according to size from the entire Tehran block listing. These were then classified into Tehran zones which are numbered 1-10. Because 1348 blocks were a random (PPS) sample of the Tehran population the allocation of the sample blocks to zones provides a good estimate of the distribution of population. On the strength of evidence provided by the Bank Markazi Construction survey it was considered that relative populations between zones had not changed substantially although total population had increased and considerable new housing had come into occupation. 100 sample blocks were therefore chosen from the present day (1350) Tehran block map maintained by the Bank Markazi. The

number of blocks per zone was chosen in proportion to the number of blocks per zone in the 1348 survey.

Table 7. Number of Blocks per Zone 1348 Bank Markazi and number of Blocks in Durable Survey

Zone No.	1348	Durable Survey
1	40	11
2	22	6
3	44	12
4	49	14
5	44	13
6	55	16
7	29	8
8	27	8
9	13	4
10	27	8
TOTAL	350	100

The blocks were chosen within each zone with a probability of selection according to size (area) weighted according to the amount of the block which had been built upon. By this means an up-to-date sample of 1350 Tehran blocks was selected so that the effect of new housing on durable acquisition could properly be taken into

account in the city where the greatest proportionate amount of new housing had taken place.

Within each block selected the interviewer was instructed to first conduct an enumeration of the number of "front-doors". Given this number the interviewer was then instructed to divide this number by 5 to obtain the sampling fraction for the block. Starting from the North-West corner of the block the interviewer then selected a random number less than the sampling fraction from a table of random numbers.

Given this random number x the interviewer then selected the xth household for interview. In cases where there was more than one household behind the "front-door" the interviewer was instructed to conduct two interviews and then double the interval before selecting the next household.

In this way households were selected within block with an equal probability of selection - albeit that the correction for multi-household dwellings was comparatively crude.

(b) The large and small cities

The procedure in the large cities and small cities was quite different from Tehran. Whereas ownership levels were expected to be comparatively high in Tehran and the problem there was to take account of new construction, in the large and small cities ownership was expected to be lower overall and to be concentrated in the upper income groups. The problem therefore was how to stratify further within the large and small cities to give the best compromise between accuracy and coverage.

It was therefore decided to stratify within large cities and within small cities using Bank Markazi information on blocks. The average household expenditure per block in the durable goods sample cities was calculated from the 1348 Bank Markazi Budget Enquiry. Blocks were then allocated to the three secondary strata:

	rials p.a.
household expenditure	over 300,000
household expenditure	under 300,000 and over 150,000
household expenditure	under 150,000

Within each cell, blocks were then chosen with a probability proportional to average household expenditure, the sampling interval per cell being based on the required number of blocks. This number was in turn based on the desired number of interviews per block which was 5 and the total number of interviews per cell; which had been set, both for large and small cities, as 100 in blocks with over 300,000 rials p.a. expenditure, 100 in blocks with less than 300,000 and more than 150,000 rials p.a. expenditure and 300 in blocks with less than 150,000 rials p.a. expenditure.

Before this final block selection took place it had been necessary to eliminate from the frame a number of blocks from cities which had been over-represented in the 1348 Bank Markazi survey. This was done on a random basis.

The number of households in the frame thus obtained and the number of households in the selected blocks is shown in Table 8 below on a cell by cell basis. The effect of the secondary stratification can easily be seen.

Table 8. Number if Households in Bank Markazi 1348 amended frame and number of Households in 1350 Durable Survey Frame

Large Cities	Total households	Over 300,000 rials p.a.	Under 3000,000 and over 150,000 rials p.a.	Under 50,000 rials p.a.	Total
	in all blocks	1,682	7,916	40,448	50,046
	in sampled blocks	981	1,623	7,740	10,344
Small Cities	Total Households				
	in all blocks	575	3,958	15,174	19,707
	in sampled blocks	377	866	3,431	4,674

No of households 1347
Av. expenditure 1348

Within each block thus selected households were selected according to the following procedure.

The number of interviews per block, 5, was used to determine the sampling interval per block. A random number less than the sampling interval was chosen from a table of random numbers and the required addresses per block were chosen starting from the random number and using the interval until 5 addresses per block had been selected.

3.2 Grossing-Up

The grossing-up procedure for Tehran was a single stage operation because Tehran results were based on a simple random basis. Each observation (v) was multiplied by the fraction $\frac{p}{s}$ where p is the number of households in Tehran (742,764 in 1350) and s is the number of Tehran households in the survey.

The grossing up procedure for the large cities and for the small cities is a little more complex, in that there are three stages.

First of all a weighting co-efficient has to be calculated for each block in each cell to re-adjust for the blocks having been chosen, within each cell, with a probability proportional to expenditure. This was done as follows, the number of blocks per cell in the Bank Markazi frame and in the durable survey frame were observed by expenditure category. The probability of a block being selected by category was calculated and then per cell re-weighting co-efficients were calculated. The steps taken and the results are shown in Tables 9 and 10 below.

Table 9. **Reweighting for Blocks in Large Cities**

Expenditure category '000 rials	No. of blocks in Markazi frame	No. of blocks in Durable Survey	% represented	Weighting co-efficient
0- 25	13	-)	5	5:1
25- 50	25	2)		
50- 95	96	15)	16	1.6:1
75- 100	89	14)		
100- 125	71	17)	25	1:1
125- 150	43	12)		
150- 175	33	6)	17	1.9:1
175- 200	19	3)		
200- 225	21	3)	17	1.9:1
225- 250	9	2)		
250- 275	11	3)	33	1:1
275- 300	7	3)		
300- 325	5	3		
325- 350	4	3		
350- 375	1	1		
375- 400	3	3		
400- 425	1	1		1:1
425- 450	1	-		
450- 475	1	1		
475- 500	1	1		
500- 525	-	-		
525- 550	-	-		
550- 575	2	1		
575- 600	-	-		
750- 775	2	-		
950- 975	1	-		
1,125-1,150	1	1		

Table 10. Reweighting for Blocks in Small Cities

Expenditure category '000 rials	No. of blocks in Markazi frame	No. of blocks in Durable Survey	% represented	Weighting co-efficient
0- 25	9	0)	8	4.1:1
25- 50	57	5)		
50- 75	79	13)	21	1.4:1
75-100	65	17)		
100-125	39	9)	33	1:1
125-150	42	18)		
150-175	23	4)	18	2.5:1
175-200	21	4)		
200-225	12	4)	26	1.7:1
225-250	11	2)		
250-275	7	4)	45	1:1
275-300	4	1)		
300 plus	12	10		1:1

The next stage, given that re-weighting has taken place, was to generate the observations per cell up to the total number of households per cell. This was done by the simple reciprocal fraction procedure using the values given in Table 8 for the total population of households per cell. The final stage was to combine the observations per primary stratum per secondary stratum into one total for large cities and another total for small cities and to generate back to the total population estimate using the reciprocal fraction again given actual population data for households in large cities of 699,591 and for households in small cities of 1,167,219.

Finally national estimates were produced by simply summing the separately derived sub-totals for Tehran, large cities and small cities.

The grossing procedure described above can be expressed as a formula where :

Si i = 1,7 are the achieved samples where i indicates

1 - Tehran
2 - over 300,000 rials large cities
3 - 150,000-300,000 rials large cities
4 - under 150,000 " " "
5 - over 300,000 rials small cities
6 - 150,000-300,000 " " "
7 - under 150,000 " " "

Wi are the corresponding weights obtained from Tables 10 and 11.

Vi is the corresponding observation.

Pi are the population figures for the cell sizes given in table 8 and the population figures for Tehran, all large cities and all small cities respectively.

Then the estimate of the observation for the whole population is:

$$VE = V_1 \frac{P_1}{S_1} + \left(\sum_{i = 2,4} V_i W_i \frac{P_i}{S_i} \right) \frac{\left(\sum_{i = 2,4} P_i \right)}{\sum_{i = 2,4} S_i}$$

$$+ \left(\sum_{i = 5,7} V_i W_i \frac{P_i}{S_i} \right) \left(\frac{\sum_{i = 5,7} P_i}{\sum_{i = 5,7} S_i} \right.$$

4. FIELDWORK AND SUPERVISION

Fieldwork was conducted by the interviewing and supervisory staff of the Economics and Statistics Department of Bank Markazi during the months of Azar and Dey 1350 (December 1971).

5. CHECKING PUNCHING AND ANALYSIS

Questionnaires were checked initially in Iran by the supervisors. This was then followed by initial editing in Iran. The questionnaires were then flown to the UK where further editing was carried out by the counterpart staff from the Ministry of Economy. They were then punched onto standard 80 column cards and a hole count and card listing were produced and further editing was carried out. Once a comparatively clean deck had been produced analyses were carried out on Metra's CDC 6600 computer.

6. QUESTIONNAIRE

A translated questionnaire together with a hole count (number of responses per item) is contained in the final section of this report. This questionnaire was developed in Iran together with members of the study team and with assistance from the Economics and Statistics Department of the Bank Markazi. The questionnaire was piloted before final drafting and printing. In translation into Farsi a certain amount of precision in wording was lost and this caused some problems in complex questions relating to space heating, water heating and motor vehicles. In overall terms however, this did not radically affect the basic information generated in the survey.

The questionnaire was designed to be administered during a personal interview to be conducted in the home. Furthermore, it was entirely pre-coded. This was necessary for three over-riding reasons; first was the need to obtain a standardised question format for interviews to be conducted in a wide range of social and cultural situations; second was the need to have a standardised question format to enable the British checkers and coders to operate efficiently in a foreign language (Farsi); and third was the need for speed in data processing.

DEMOGRAPHIC FORECASTING

7. INTRODUCTION/FORECASTING METHOD

In the preceding sections of this report the rationale, methodology of sampling and executing the household survey has been discussed. This section of the report deals with the methodology of grossing up results and the methodology used in forecasting demand for appliances in the future. Throughout this work households were divided into 10 income/expenditure groups which were the same income/expenditure group as used by the Bank Markazi. Expenditure groups of households have been considered separately for Tehran, 11 big cities and the 252 small cities in Iran. The ownership levels of domestic appliances as measured by the consumer survey, making appropriate allowances for sample segmentation, have been applied separately to each of the 10 income/expenditure groups in the above three city type classifications. In total therefore, some 30 cells have been considered.

The number of households in each expenditure/city type cell depends mainly upon three factors:

1) population growth and rural migration

2) GNP growth

3) distribution of income

Each of the above factors is forecast independently and the combined effect estimated by a graphical method. A check upon the accuracy upon the method shows that little improvement could be obtained for elaborate and expensive method involving a complex computer model. The sensitivity of the forecast to assumptions about the population growth, GNP growth and income redistribution are much more important than the limits of accuracy defined by the graphical method.

8. POPULATION GROWTH AND RURAL MIGRATION

The first population census in Iran was carried out in 1335 and this was followed by a second census in 1345. Between 1335 and 1345 the total population increased by 2.9%p.a. on average. Urban population however increased much more rapidly than did rural population, 5.13%p.a. against 1.69%p.a., due to migration from rural to urban areas. Various surveys and sample census conducted between and since the two major census surveys of 1335 and 1345 show that since 1342 migration from rural areas has accelerated Details are given in Table 11.

TABLE11 URBAN POPULATION GROWTH RATES

	1335-42	1342-45	1335-45	1345-61
Tehran	6.28	5.50	6.10	6.00
11 Big Cities	3.74	5.71	4.95	6.25
252 Small Cities	3.28	5.75	5.05	5.85
All 264 Cities	4.28	5.67	5.03	6.00

The forecasts to 1361 have been made with reference to other population forecasts made by Bank Markazi and the University of Tehran Institute of Social Studies and discussed with representatives of the Ministry of Economy in Iran. The forecasts from 1345 to 1361 have been made separately for city size groups and result in a total increase of 6% p.a. in urban population. This growth rate comprises 3.2% p.a. natural growth rate and 2.8% p.a. migration from rural areas. The forecasts of urban population by city size group are shown in Table 12.

TABLE 12 URBAN POPULATION

	YEAR					
	1335	1345	1348	1350	1356	1361
TEHRAN						
POPULATION	1512082	2718730	3239198	3639547	5148177	6908930
HOUSEHOLD SIZE			4.88	4.9	4.8	4.8
HOUSEHOLDS (H)			663770	742764	1072537	1439360
11 LARGE CITIES*						
POPULATION	1798476	2686962	3222742	3637877	5234530	7087970
HOUSEHOLD SIZE			5.26	5.2	5.2	5.2
HOUSEHOLDS (H)			612688	699591	1006640	1363071
252 SMALL CITIES						
POPULATION	2686168	4393001	5210099	5836102	8210310	10909710
HOUSEHOLD SIZE			5.04	5.0	5.1	5.2
HOUSEHOLDS (H)			1033749	1167220	1609864	2098021
ALL URBAN						
POPULATION	5996726	9799693	11671434	13113949	18593017	24906871
HOUSEHOLD SIZE			5.05	5.02	5.04	5.08
HOUSEHOLDS (H)			2310207	2609575	3689041	4900452

* Rey and Tadrish are excluded from the large cities and included in the category small cities.

Sources: Population data for 1335 and 1345: M. Amani, "Urbanisation in Iran", April 1971, University of Tehran, Institute of Social Studies.

Household Size: Metra Estimates (see Table 15).

The identities of the 11 big cities, together with their populations in 1335 and 1345, are shown in Table 13. Rey and Tadrish have not been included with either the big cities or with Tehran; they are not really small cities, but for convenience have been included in the category of small cities.

TABLE13 POPULATIONS OF THE 11 BIG CITIES

CITY	1335	1345
ABADAN	222,083	272,962
ISFAHAN	254,708	424,045
AHVAZ	120,098	206,375
TABRIZ	289,996	403,413
RASHT	109,441	143,557
REZAIEH	67,605	110,749
SHIRAZ	170,659	269,865
KERMANSHAH	125,439	187,930
QOM	96,499	134,293
HAMADAN	99,909	124,167
MASHAD	241,989	409,606
11 BIG CITIES	1,798,476	2,686,962

Population data for 1342 was not available for all cities. The estimates of the increased urban population growth rate between 1342 and 1345 were obtained from a sample of cities as shown in Table14.

TABLE 14 ANNUAL GROWTH RATES AND POPULATION

CITY	GROWTH RATES			POPULATION			
	1342-45	1335-42	1313-35	1345	1342	1335	1319
TEHRAN	5.5	6.3	6.3	2719730	2317116	1512082	540087
ESFAHAN	7.6	4.2		424045	339909	254708	204598
TABRIZ	1.3	4.6		403413	387803	289996	213542
RASHT	6.6	1.2		143557	118634	109491	121625
SHIRAZ	5.5	4.3		269865	229761	170659	129023
KERMANSHAH	4.1	4.2		187930	166720	125439	88622
MASHAD	9.6	3.7		409616	312186	241989	176471
HAMADAN	2.7	2.0		124167	114610	99909	103874
TOTAL 7 BIG CITIES	5.71	3.74	1.11	1972593	1669623	1292191	1082[illegible]
BANDARAPAS	6.8	6.9		34627	28434	17710	
BUSHIRE	2.4	2.5		23547	22054	18412	
KHORRAMABAD	7.7	4.4		59578	47680	38676	
ZAHEDAN	17.2	8.6		39732	24652	17495	
SARI	6.1	5.4		44547	37308	26278	
SANAIDAGGE	6.3	3.0		54578	45446	40641	
SEMNAN	1.0	0.7		31058	31900	29036	
SHAHR KORD	1.4	4.4		23757	22801	15476	
KERMAN	4.3	3.2		85404	75228	62157	
TOTAL 9 SMALL CITIES	5.75	3.38		396828	335503	265881	

Source: Mehdi Amani, April 1971
"Urbanisation in Iran"

University of Tehran, Institute of Social Services

Data appertaining to the average size of household in urban areas in Iran is sparse and during the course of fieldwork no forecasts of household size were found. On the basis of historical data and discussions with organisations such as the Bank Markazi Statistical Centre, Metra have made estimates on the household size up to 1361. These estimates along with available historical data are presented in Table 15.

TABLE15 HOUSEHOLD SIZE

	1335	1345	1348	1350	1356	1361
Tenran	4.7		4.88	4.9	4.9	4.8
11 Big Cities	4.8		5.26	5.2	5.2	5.2
252 Small Cities			5.04	5.0	5.1	5.2
All 264 Cities		4.9				

Note: 1335 data from National Census
1345 data from National Census
1348 Bank Markazi

9. GNP GROWTH AND HOUSEHOLD EXPENDITURE

Forecasts for GNP growth are those given to Metra in December 1971 by representatives of the Ministry of Economy. At that time plans were for a growth in GNP of 12% p.a. at Market Prices during the period of the 5th Plan and 10% p.a. during the period covered by the 6th Plan, throughout the period of the 5th and 6th Plans an inflation rate of 2% p.a. is assumed. Such a rate of inflation is consistent with experience over the past decade. The Bank Markazi Survey of 1349 shows an increase in the general price index, excluding crude oil, from 100 in 1338 to 118.1 in 1348. No index for domestic appliances is available but the price index for machinery and road motor vehicles increased from 100 to 119.7 over the same period.

Thus throughout this study the GNP growth rates, shown in Table 16, have been used.

TABLE 16 GNP GROWTH

YEAR	% Growth at	
	Market Prices	Constant Prices
1348	12	10
1349	12	10
1350-1356	12	10
1357-1361	10	8

Source: Ministry of Economy Iran.

If the GNP in 1348 is expressed as an index of 100, then the GNP in subsequent years is as shown in the second column of Table 17. It has been assumed that total households' expenditure will grow at the same rate as GNP.

TABLE 17 HOUSEHOLDS TOTAL EXPENDITURE INDICES AT CONSTANT PRICES

YEAR	EXPENDITURE INDEX (Equal to GNP Index)
1350	100
1356	177
1361	260

Very little data is available on either the distribution of income in rural areas or the total expenditure by households in rural areas. Two income/expenditure surveys have been carried out by the Iran Statistical Centre (ISC) and the results of these surveys are summarised in tables 18 and 19.

According to the above two mentioned surveys the average household expenditure of rural households in 1346 and 1348 was 52,600 and 47,500 rials per annum respectively. Whilst the data suggests that the actual average household expenditure in rural areas decreased between 1346 and 1348 the size of sample and the heterogeneity of the rural population means no conclusion can be drawn on the basis of such limited data. The data does however serve to give an indication of the average household expenditure in rural areas and for the purpose of forecasting it has been assumed that the average household expenditure in rural areas in 1350 was as determined in the 1348 ISC survey and projected to 1350 at 6% p.a.

Turning to urban areas the Bank Markazi have carried out a number of income and expenditure surveys between 1338 and 1348. More recently an ISC survey carried out in 1349 gives data on expenditure in urban areas. In addition the Metra Household Survey undertaken in 1350 provides data on income in urban areas. From these surveys it is found that whilst there are year to year fluctuations, the average income and expenditure of households in urban areas in Iran is around twice that found for rural areas. A review of the Bank Markazi and ISC surveys is presented in the following section, for reasons discussed there, and for consistency, the data on income from the Metra Survey has been used throughout. In using this data, which refers only to income, it has been assumed that income and expenditure are equal. Thus on the basis of the Metra Survey of 1350 and the assumptions made above regarding average expenditure in

TABLE 18 AVERAGE FOOD, TOBACCO AND NON-FOOD EXPENDITURE, PURCHASED OR NOT PURCHASED, BUT CONSUMED BY RURAL HOUSEHOLDS PER YEAR : 1346

Expenditure Group	(1)* House-Holds	(2) Av. Exp. (Food)	(3) Av. Exp. (Non-Food)	(4) Food & Non-Food Exp.	(1)x(4) 1000 Rls.	Normal % of House-Holds	Normal % of Exp.	Cum.% of House-Holds	Cum.% of Exp.
Less than 30,000	3,911	14,189	5,841	20,030	78,337	33.8	12.86	33.8	12.86
30-59,999	4,483	29,331	13,408	112,739	191,599	38.8	31.46	72.6	44.32
60-89,999	1,686	116,310	26,201	72,511	122,254	14.6	20.07	87.2	64.39
90-119,999	727	61,213	42,001	103,214	75,037	6.3	12.32	93.5	76.71
120-239,999	654	81,734	76,543	158,277	103,513	5.7	17.00	99.2	93.71
240,000 +	108	140,711	213,522	354,233	38,257	0.9	6.28	100.0	100.0
TOTAL	11,569	32,692	19,948	52,640	608,997	-	100.00	100.0	100.0

Source: Iran Statistical Centre.

* Number in sample.

TABLE 19 AVERAGE FOOD, TOBACCO AND NON-FOOD EXPENDITURE, PURCHASED OR NOT PURCHASED, BUT CONSUMED BY RURAL HOUSEHOLDS PER YEAR : 1348

Expenditure	(1) * House-Holds	(2) Av. Exp. (Food)	(3) Av. Exp. (Non-Food)	(4) Food & Non-Food Exp.	(1)x(4) 1000 Rls.	Normal % of House-Holds	Normal % of Exp.	Cum. % of House-Holds	Cum. % of Exp.
Less than 30,000	2,792	14,787	5,334	20,121	56,179	37.69	15.07	37.69	15.97
30-59,999	2,968	30,770	11,594	42,346	125,683	40.07	35.73	77.76	51.70
60-89,999	978	49,130	23,018	72,148	70,561	13.20	20.07	90.96	71.77
90-119,999	347	63,435	37,926	101,361	35,172	4.68	10.00	95.64	81.77
120-239,999	272	85,271	72,878	158,149	43,017	3.67	12.23	94.31	94.00
240,000 +	51	157,430	257,282	414,712	21,150	0.67	6.01	100.00	100.00
TOTAL	7,408	31,573	15,918	47,483	351,762	100.00	100.00		

*Sampled in 2564 towns, 7,408 households.

Source: Iran Statistical Centre.

rural areas it is possible to estimate the total household expenditure in Iran (both urban and rural) and to estimate the share of total expenditure in urban areas. Furthermore by making the assumption that growth in household income and expenditure directly relates to growth in GNP it is possible to forecast the total household expenditure in the future. Applying growth rates to urban and rural populations, and taking account of migration from rural to urban areas, it is possible to estimate the split of total expenditure between rural and urban areas. The following outlines the method of calculation:

a = number of rural households in 1350
b = number of urban households in 1350
c = average rural household expenditure in 1350
d = average urban household expenditure in 1350
e = net growth rate of rural households
f = natural growth rate of urban households
g = rate of increase in urban households due to migration from rural areas
h = rate of increase in household expenditure due to growth in GNP

In year 1350 the share of expenditure urban = $\frac{bd}{bd + ac}$

In year 1351

Number of rural households	= ae
Average expenditure	= ch
Thus rural expenditure	= (ae)ch
Number of urban households (no migration)	= bf
Average expenditure (no migration)	= dh
Expenditure resulting from migration	= b(g-1)ch

Thus

Urban expenditure in year 1351	= bfdh + b(g-1)ch
Urban share of expenditure	= $\frac{bfdh + b(g-1)ch}{bfdh + b(g-1)ch + aech}$

By taking urban share in year 1351 and dividing by urban share in year 1350 the rate of increase in urban share of expenditure can be calculated.

Substituting the following values for a to g:

a = 3,129,000
b = 2,310,000
c = 53,000
d = 100,000
e = 1.0169
f = 1.0320
g = 1.0280

$$S_1 = \frac{2.31 \times 1.0}{2.31 + 3.129 \times 0.53}$$ Where S_1 = urban share in 1350

$$= 0.5821$$

$$S_2 = \frac{2.3839 + 0.0876 \times 0.53}{2.4251 + 3.1819 \times 0.53}$$ Where S_2 = urban share in 1351

$$= 0.5891$$

$$\therefore R = 1.012$$ Where R = rate of increase in share in one year

Therefore

In 1356 urban share increases by a factor of $(1.012)^6$

$$Z = 1.077$$

In 1361 urban share increases by a factor of $(1.012)^{11}$

$$Z = 1.140$$

The above factors take account of increases due to natural growth in population and increases in urban population and expenditure resulting from migration.

To estimate total expenditure by urban households in 1356 and 1361, growth in GNP (and thus total expenditure) must also be considered.

Thus

Urban expenditure in 1356 = xyz

Where

x = urban expenditure in 1350 (i.e., 263,511 million rials)
y = GNP growth factor
z = urban share growth factor

Urban expenditure in 1356 = 263,511 x 1.76 x 1.077

= 504,017 million rials

Similarly in 1361

Urban expenditure = 263,511 x 2.60 x 1.140

= 785,263 million rials

10. DISTRIBUTION OF INCOME IN URBAN AREAS

It has been mentioned above that between 1338 and the present time Bank Markazi have carried out a number of income and expenditure surveys in the urban areas of Iran. With the exception of odd surveys in urban areas carried out by ISC the Bank Markazi surveys provide the only available source of data on income distribution in the urban areas of Iran. The results of the various surveys are summarised in Tables 20 to 25 inclusive. Table 26 gives a summary of the distribution of income according to the Metra Household Survey. The income and expenditure distributions calculated on the basis of the different surveys are shown in Figures 1 to 6.

Considering first the Bank Markazi surveys the results of these show that between 1338 and 1347 there was a progressive trend in the distribution of both income and expenditure. Between 1347 and 1348, however, the distribution of both income* and expenditure showed a pronounced regressive tendency. The 1349 survey though completed and analysed has not been published. It is understood that the reason the findings of this survey have not been published is that a further regressive trend is indicated for both income and expenditure. Before examining the methodology and commenting the reliability of the Bank Markazi surveys it is interesting to compare the findings of the 1349 ISC survey, the Metra Household Survey of 1350, and the Bank Markazi surveys of 1338, 1347 and 1348. The ISC survey of 1349 shows a progressive tendency in income distribution over the 1348 Bank Markazi survey but a regressive trend when compared with the findings of the Bank Markazi 1347 survey. The Metra survey, which generated only data on income, shows a regressive trend between 1347 and 1350 in income distribution but a slightly progressive trend from the Bank Markazi 1338 data. If it is assumed that income equals expenditure then the 1350 Metra data shows a slight progressive trend over the Bank Markazi 1348 data, but a regressive trend on the basis of 1347 Bank Markazi data. The above mentioned trends are summarised in Table 27.

Changes of the magnitude indicated on the basis of the 1347 and 1348 Bank Markazi surveys do not occur over such a short period without there being fundamental economic changes within a country. This did not occur in Iran. Even changes of the magnitude indicated by the Bank Markazi survey of 1348 and the ISC survey of 1349 will not occur

*Data on income distribution is not for 1348, this conclusion is therefore based entirely on discussions with representatives of Bank Markazi.

TABLE 20 EXPENDITURE DISTRIBUTION IN 1338 (32 CITIES COMBINED)

Family Total Expenditure Class (in Rials)	Number of Families	Average Family Expenditure	Percentage of House-Holds	% ? HX Expendi-ture	Cumulative Percentage of Expenditure	Cumulative Percentage of Households
Less than 20,000	298	14,298	9.21	1.59	1.59	9.21
20,000-29,999	338	24,873	10.44	3.04	4.63	19.65
30,000-39,999	382	34,903	11.80	4.82	9.45	31.45
40,000-49,999	367	44,822	11.34	5.95	15.40	42.79
50,000-62,499	375	55,698	11.58	7.56	22.96	54.37
62,500-74,999	306	68,582	9.45	7.59	30.55	63.82
75,000-87,499	211	80,857	6.51	6.17	36.72	70.33
87,500-99,999	169	93,778	5.22	5.73	42.45	75.55
100,000-124,999	220	111,402	6.80	8.87	51.32	82.35
125,000-149,999	165	137,730	5.10	8.22	59.54	87.45
150,000-199,999	166	171,810	5.13	10.32	69.86	92.58
200,000 & over	240	347,342	7.41	30.15	100.82	99.99
T O T A L	3,237	85,371	99.99	100.02	-	-

SOURCE : Bank Markazi

TABLE 21 URBAN HOUSEHOLD EXPENDITURE 1347

T E H R A N						
Expenditure Group	Number in Sample	Percentage of Households	Average Expenditure (X)	Percentage of Expenditure	Cumulative Percentage of Expenditure	Cumulative Percentage of Households
Less than 500,000	109	23.39	63,608	9.12	9.12	23.39
50,001-75,000	87	18.67	98,230	11.25	20.37	42.06
75,001-100,000	50	10.73	118,071	7.77	28.14	52.79
100,001-150,000	86	18.45	148,140	16.77	44.91	71.24
150,001-200,000	54	11.59	204,651	14.54	59.45	82.83
200,001-300,000	32	6.87	245,684	10.35	69.80	89.70
300,001-400,000	26	5.58	347,122	11.88	81.68	95.28
400,000 and more	22	4.72	632,894	18.32	100.00	100.00
T O T A L	466	100.00	163,061	100.00	-	-

Table 21 Continued ....

L A R G E C I T I E S						
Expenditure Group	Number in Sample	Percentage of Households	Average Expenditure (X)	Percentage of Expenditure	Cumulative Percentage of Expenditure	Cumulative Percentage of Households
Less than 50,000	168	38.18	41.110	15.89	15.89	38.18
50,001-75,000	78	17.72	76,934	13.81	29.70	55.91
75,001-100,000	62	14.09	105,646	15.07	44.78	70.00
100,001-150,000	74	16.82	135,110	23.01	67.78	86.80
150,001-200,000	23	5.23	200,307	10.60	78.39	92.05
200,001-300,000	14	3.18	205,243	6.61	85.00	95.23
300,001-400,000	13	2.95	300,316	8.98	93.98	98.18
400,000 and more	8	1.82	328,878	6.05	100.04	100.00
T O T A L	440	99.99	98,760	100.02	-	-

Table 21 Continued ....

S M A L L C I T I E S						
Expenditure Group	Number in Sample	Percentage of Households	Average Expenditure (X)	Percentage of Expenditure	Cumulative Percentage of Expenditure	Cumulative Percentage of Households
Less than 50,000	337	46.94	36,281	20.62	20.62	46.94
50,001-75,000	139	19.35	70,454	16.52	37.14	66.30
75,001-100,000	68	9.47	92,373	10.59	47.73	75.77
100,001-150,000	78	10.86	130,259	17.14	64.87	86.63
150,001-200,000	43	5.98	191,862	13.91	78.78	92.62
200,001-300,000	40	5.57	214,055	14.44	93.23	98.19
300,001-400,000	8	1.11	304,363	4.11	97.33	99.30
400,000 and more	5	0.69	316,181	2.67	100.00	100.00
T O T A L	713	99.97	82,551	100.00	-	-

Table 21 Continued ....

A L L U R B A N C I T I E S 1347						
Expenditure Group	Number in Sample	Percentage of Households	Average Expenditure (X)	Percentage of Expenditure	Cumulative Percentage of Expenditure	Cumulative Percentage of Households
Less than 50,000	614	37.81	42,453	14.58	14.58	37.81
50,001-75,000	304	18.72	80,006	13.62	28.20	56.52
75,001-100,000	180	11.08	104,083	10.48	38.68	67.61
100,001-150,000	238	14.66	138,227	18.41	57.09	82.27
150,001-200,000	120	7.39	199,233	13.38	70.46	89.65
200,001-300,000	86	5.30	224,384	10.80	81.26	94.95
300,001-400,000	47	2.89	326,894	8.60	89.85	97.84
400,000 and more	35	2.16	518,171	10.15	100.00	100.00
T O T A L	1,624	100.01	110.064	100.02	-	-

SOURCE : BANK MARKAZI

TABLE 22 URBAN HOUSEHOLD EXPENDITURE 1348

	TEHRAN							
	Expenditure Group	Percentage of House-holds	Households (H)	Average Expenditure (X)	Households x Expenditure (HX) 1,000,000 rials	Percentage of expenditure	Cumulative percentage of expenditure	Cumulative percentage of households
1	Less than 30,000	2.61	17,324	16,627	288	.22	.22	2.61
2	30,001- 50,000	7.55	50,115	43,595	2,185	1.70	1.93	10.16
3	50,001- 75,000	12.83	85,169	58,575	4,989	3.89	5.82	22.99
4	75,001-100,000	11.97	79,453	79,217	6,294	4.91	10.72	34.95
5	100,001-150,000	22.26	147,755	111,255	16,424	12.81	23.53	57.21
6	150,001-200,000	12.43	82,506	161,015	13,283	10.36	33.88	69.64
7	200,001-300,000	13.17	87,418	217,018	18,970	14.79	48.67	82.81
8	300,001-400,000	6.02	39,959	317,312	12,679	9.89	58.56	88.83
9	400,001-500,000	3.07	20,378	429,000	8,742	6.82	65.38	91.90
10	500,000 and more	8.09	53,699	826,941	44,406	34.62	100.00	100.00
TOTAL		100.00	663,770	193,471	128,260	100.00		

(Continued)

TABLE 22 (Continued)

11 BIG CITIES							
Expenditure Group	Percentage of Households	Households (H)	Average Expenditure (X)	Households x Expenditure (HX) 1,000,000 rials	Percentage of expenditure	Cumulative percentage of expenditure	Cumulative percentage of households
1	7.84	48,039	19,413	933	1.31	1.31	7.84
2	16.28	99,754	38,209	3,812	5.35	6.66	24.12
3	17.32	106,126	58,482	6,206	8.71	15.37	41.45
4	14.69	90,011	79,709	7,175	10.07	25.44	56.14
5	16.78	102,818	112,585	11,576	16.25	41.69	72.92
6	11.46	70,220	157,520	11,062	15.53	57.21	84.37
7	8.49	52,022	225,109	11,711	16.44	73.65	92.87
8	3.29	20,159	327,429	6,601	9.26	82.92	96.16
9	1.43	8,701	382,676	3,330	4.67	87.59	97.59
10	2.41	14,767	598,971	8,845	12.41	100.00	100.00
TOTAL	100.00	612,740	115,038	71,248	100.00		

(Continued)

TABLE 22 (Continued)

SMALL CITIES							
Expenditure Group	Percentage of Households	Households (H)	Average Expenditure (X)	Households x Expenditure (HX) 1,000,000 rials	Percentage of expenditure	Cumulative percentage of expenditure	Cumulative percentage of households
1	13.53	139,854	15,634	2,186	2.04	2.04	13.53
2	18.87	195,052	36,633	7,145	6.68	8.72	32.40
3	17.43	180,167	55,516	10,003	9.34	18.06	49.83
4	12.51	129,311	80,782	10,445	9.75	27.78	62.34
5	15.31	158,254	112,095	17,739	16.58	44.35	77.65
6	7.79	80,522	156,925	12,636	11.80	56.16	85.44
7	7.93	81,969	216,650	17,759	16.59	72.75	93.37
8	3.07	31,733	308,535	9,791	9.14	81.90	96.44
9	1.64	16,952	428,960	7,271	6.79	88.69	98.08
10	1.91	19,743	610,445	12,052	11.26	100.00	100.00
TOTAL	100.00	1,033,663	103,530	107,023	99.97		

(Continued)

NOTE: The expenditure groups are from the Bank Markazi sample of 23 small cities, but the total households apply to all 252 small cities.

TABLE 22 (Continued)

ALL URBAN CITIES							
Expenditure Group	Percentage of Households	Households (H)	Average Expenditure (X)	Households x Expenditure (HX) 1,000,000 rials	Percentage of expenditure	Cumulative percentage of expenditure	Cumulative percentage of households
1	8.88	205,217	16,601	3,407	1.11	1.11	8.88
2	14.93	344,921	38,101	13,142	4.29	5.40	23.81
3	16.08	371,462	57,066	21,198	6.92	12.31	39.89
4	12.93	298,775	80,040	23,914	7.80	20.11	52.83
5	17.70	408,827	111,878	45,739	14.92	35.04	70.52
6	10.10	233,248	158,548	36,981	12.06	47.10	80.62
7	9.58	221,409	218,781	48,440	15.80	62.90	90.20
8	3.98	91,851	316,502	29,071	9.48	72.39	94.18
9	1.99	46,031	420,217	19,343	6.31	78.70	96.17
10	3.82	88,209	740,321	65,303	21.30	100.00	99.99
TOTAL	99.99	2,310,178	132,681	306,531	99.99		

Source: Bank Markazi Household Expenditure Survey

TABLE 23 DISTRIBUTION OF EXPENDITURE IN URBAN AREAS IN 1349

Household Expenditure Group (rls. p.a.)	Average Annual Expenditure	Percentage of Households	Cumulative Households %	Cumulative Expenditure %
0-30,000	21,000	8.76	8.76	0.16
30,000-60,000	45,749	24.52	33.28	9.98
60,000-90,000	74,173	22.73	56.01	24.74
90,000-120,000	108,937	14.34	70.35	37.79
120,000-240,000	163,377	21.05	91.40	67.90
240,000 +	426,195	8.60	100	99.99

SOURCE : IRAN STATISTICAL CENTRE

TABLE 24 DISTRIBUTION OF INCOME IN URBAN AREAS IN 1338

Cumulative Percentage of Households	Cumulative Percentage of Income
35.6	10
53.5	20
66.3	30
77.0	40
84.8	50
90.4	60
93.5	70
95.7	80
97.9	90
100.0	100

SOURCE : BANK MARKAZI

TABLE 25 DISTRIBUTION OF INCOME IN URBAN AREAS IN 1347

Cumulative Percentage of Households	Cumulative Percentage of Income
33.6	10
50.6	20
63.6	30
72.8	40
81.0	50
85.4	60
98.0	70
92.6	80
96.2	90
100.0	100

SOURCE : BANK MARKAZI

ABLE 26. DISTRIBUTION OF HOUSEHOLD INCOME IN 1350

TEHRAN								
Expenditure Group	Households, Metra random sample	Households in Iran, grossed by sample	Percentage Households	Assumed Average Expenditure	Expenditure Households average millions rials per annum	Percentage Expenditure	Cumulative percentage expenditure	Cumulative percentage Households
Less than 30,000	5	7,413	1.00	16,627	123	09	09	1.00
30,001- 50,000	53	78,576	10.58	43,595	3,426	2.64	2.73	11.58
50,001- 75,000	90	133,430	17.96	58,575	7,816	6.02	8.76	29.54
75,001-100,000	67	99,332	13.37	79,217	7,869	6.06	14.82	42.91
100,001-150,000	93	137,878	18.56	111,255	15,340	11.82	26.64	61.48
150,001-200,000	59	87,471	11.78	161,015	14,084	10.85	37.49	73.25
200,001-300,000	47	69,680	9.38	217,018	15,122	11.65	49.14	82.63
300,001-400,000	46	68,198	9.18	317,312	21,640	16.67	65.82	91.82
400,001-500,000	10	14,826	2.00	429,000	6,360	4.90	70.72	93.81
500,000 and more	31	45,959	6.19	826,941	38,005	29.28	100.00	100.00
TOTAL	501	742,764	100.00	174,732	129,785	100.00		

Source: Metra Survey

TABLE 26 ALL URBAN CITIES

TEHRAN

Income Group	Percentage of Households	Households	Average Income (x)	Households x Income (HX) 1,000,000 rials	Percentage of Income	Cumulative percentage of Income	Cumulative percentage of households
Less than 30,000	13.73	358,342	16,643	5,964	2.26	2.26	13.73
30,001- 50,000	21.79	568,736	37,991	21,607	8.20	10.46	35.53
50,001- 75,000	19.13	499,117	57,359	28,629	10.86	21.33	54.65
75,001-100,000	12.02	313,719	79,988	25,094	9.52	30.85	66.67
100,001-150,000	14.54	379,448	111,928	42,471	16.12	46.97	81.21
150,001-200,000	7.14	186,428	158,994	29,641	11.25	58.22	88.36
200,001-300,000	5.18	135,131	218,180	29,483	11.19	69.41	93.54
300,001-400,000	3.83	99,822	317,915	31,735	12.04	81.45	97.36
400,001-500,000	0.62	16,225	424,961	6,895	2.62	84.07	97.98
500,000 and more	2.02	52,605	798,137	41,986	15.93	100.00	100.00
TOTAL	100.00	2,609,573	100,976	263,511	100.00		

Source: Metra Survey

TABLE 26 LARGE CITIES

Income Group	Percentage of Households	Households	Average Income	Income, millions of rials per annum	Percentage of Income	Cumulative percentage of Income	Cumulative percentage of households
Less than 30,000	13.44	94,025	19,413	1,825	3.08	3.08	13.44
30,001- 50,000	20.51	143,486	38,209	5,482	9.26	12.34	33.95
50,001- 75,000	24.68	172,659	58,482	10,097	17.06	29.40	58.63
75,001-100,000	12.29	85,980	79,709	6,853	11.58	40.97	70.92
100,001-150,000	15.43	107,947	112,585	12,153	20.53	61.50	86.35
150,001-200,000	6.86	47,992	157,520	7,560	12.77	74.27	93.21
200,001-300,000	3.08	21,547	225,109	4,850	8.19	82.46	96.29
300,001-400,000	2.56	17,910	327,429	5,864	9.91	92.37	98.85
400,001-500,000	.20	1,399	382,676	535	.90	93.27	99.05
500,000 and more	.95	6,646	598,971	3,981	6.72	100.00	100.00
TOTAL	100.00	699,591	84,623	59,202	100.00		

Source: Metra Survey

TABLE 26 **SMALL CITIES**

Income Group	Average Household Income (Rials)	Total Households	Total % Income		Percentage HH.	Cumulative Percentage HH.
			Normal	Cumulative		
Less than 30,000	15,634	256,904	5.39	5.39	22.01	22.01
30,001- 50,000	36,633	346,674	17.04	22.43	29.70	51.71
50,001- 75,000	55,516	193,028	14.38	36.81	16.54	68.25
75,001-100,000	80,782	128,407	13.92	50.73	11.00	79.25
100,001-150,000	112,095	133,623	20.10	70.83	11.45	90.70
150,001-200,000	156,925	50,965	10.73	81.56	4.37	95.06
200,001-300,000	216,650	43,904	12.76	94.32	3.76	98.82
300,001-400,000	308,535	13,714	5.68	100.00	1.17	100.00
400,001-500,000	428,960	0				
500,000 and more	610,445	0				
TOTAL	63,859	1,167,219			100.00	

Source: Metra Survey

FIGURE 1 DISTRIBUTION OF EXPENDITURE IN URBAN AREAS FOR 1338, 1347, 1348, 1349 and 1350*

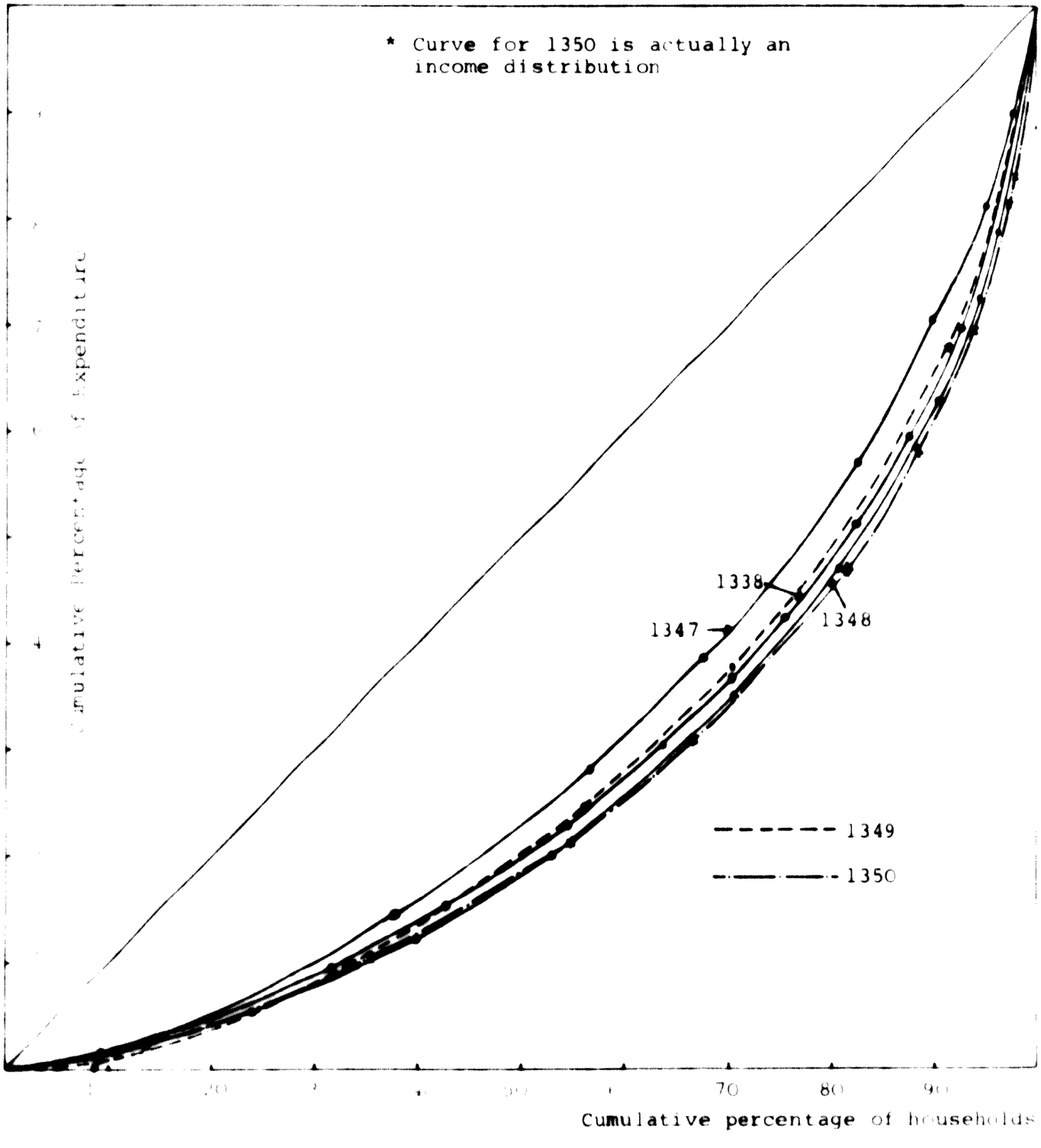

FIGURE 2 DISTRIBUTION OF EXPENDITURE IN TEHRAN FOR 1347, 1348 AND 1350*

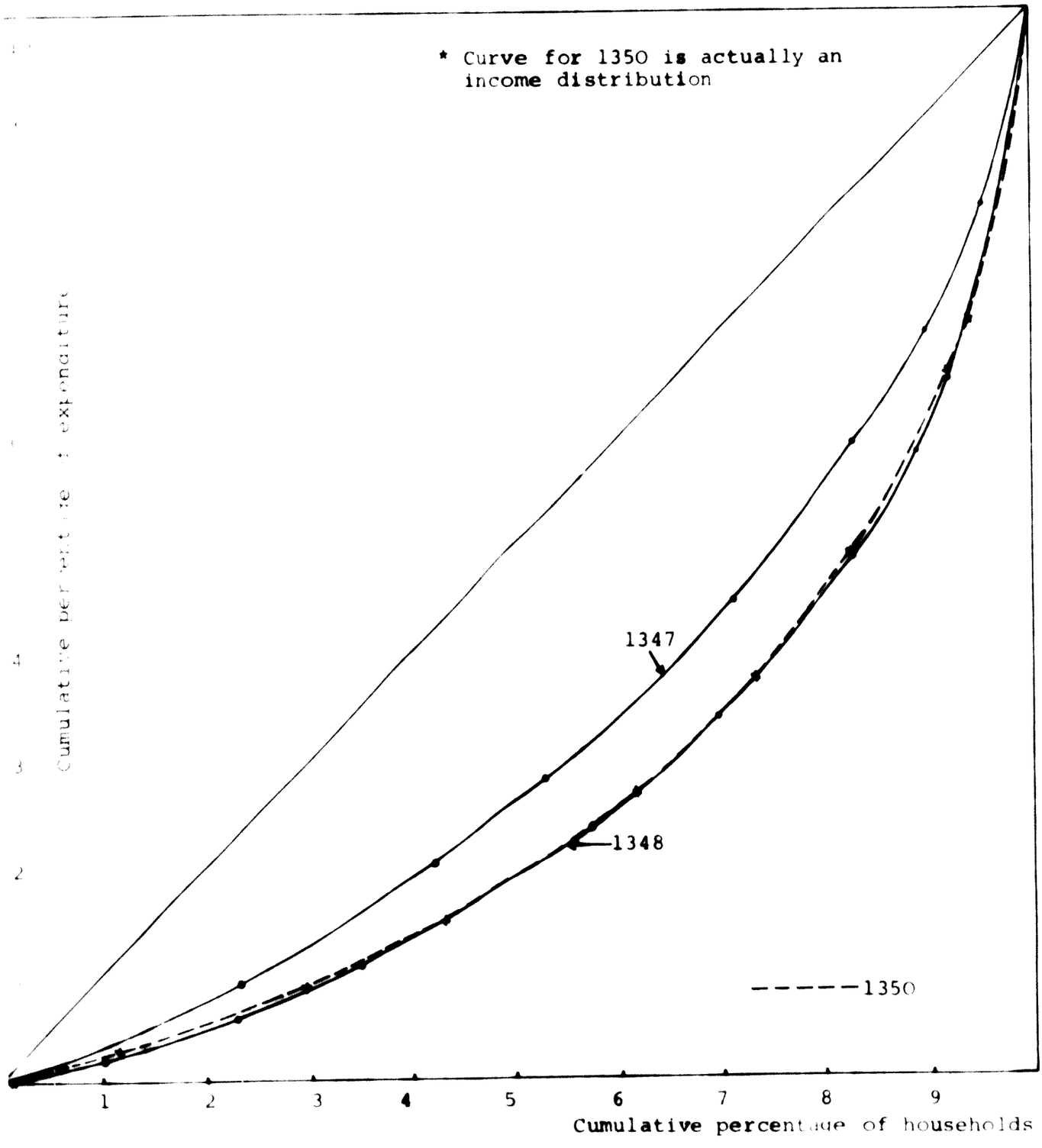

FIGURE 3 DISTRIBUTION EXPENDITURE IN LARGE CITIES FOR 1347, 1348 AND 1350*

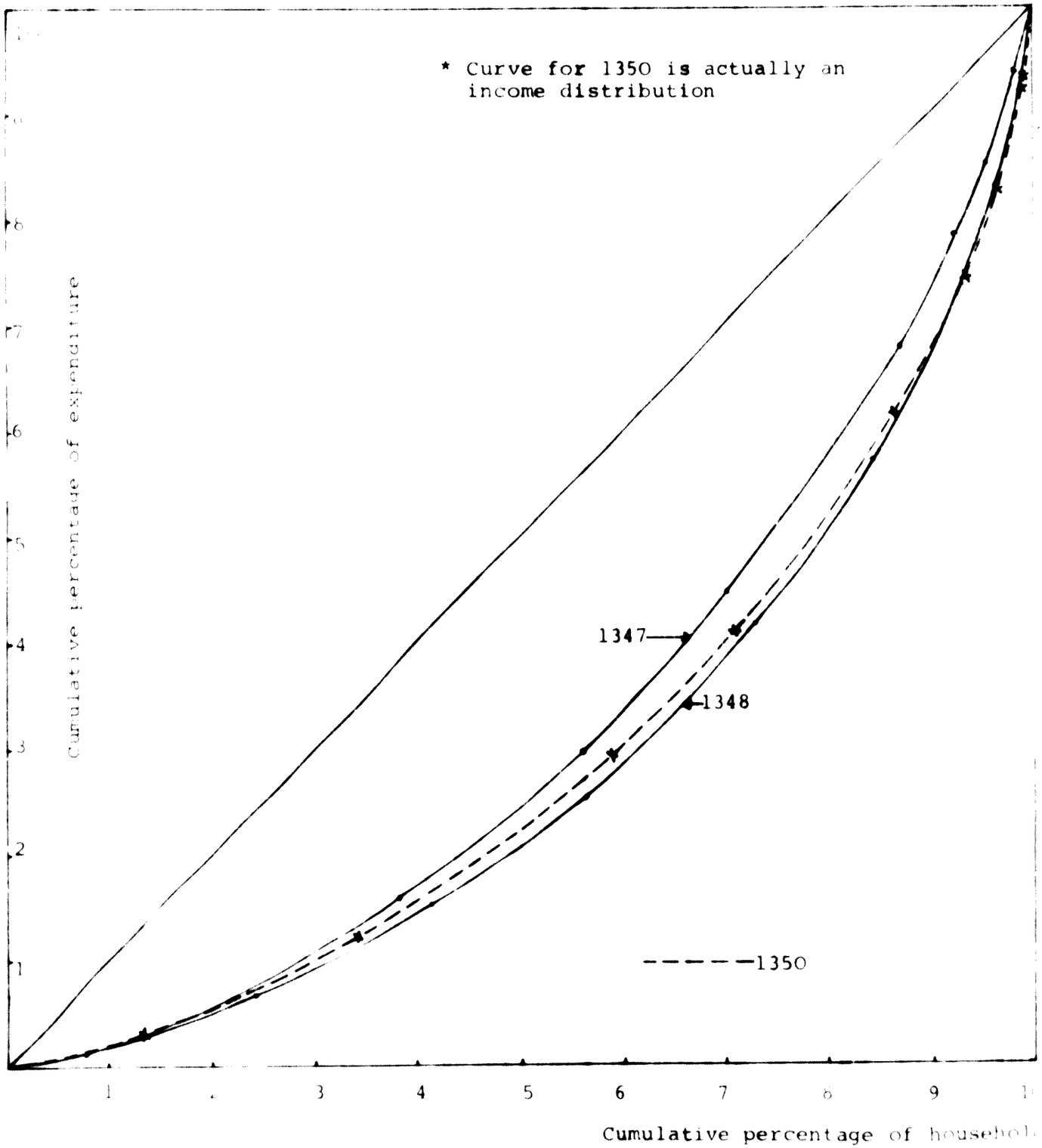

FIGURE 4 DISTRIBUTION OF EXPENDITURE IN SMALL CITIES FOR 1347, 1348 and 1350*

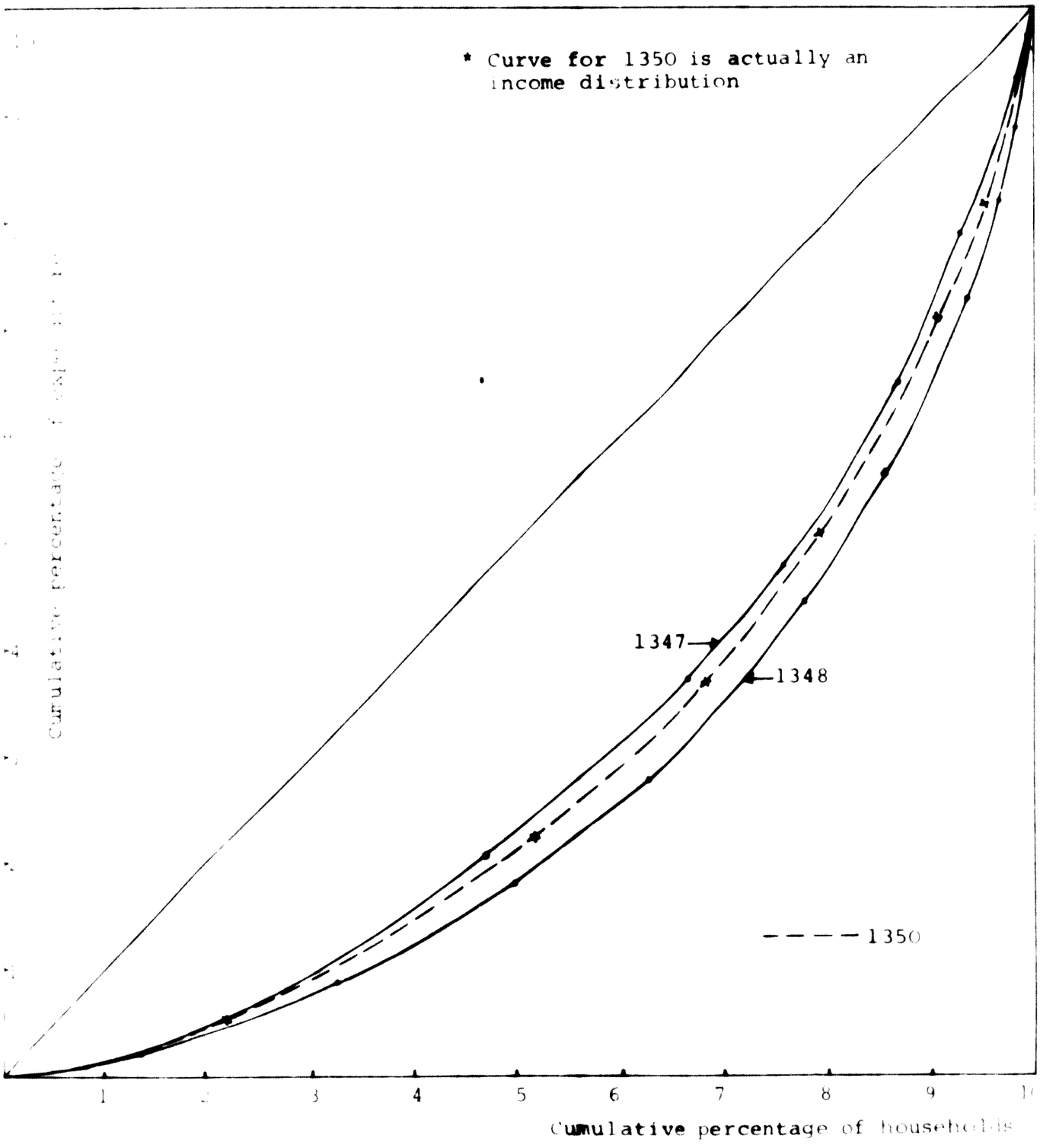

FIGURE 5 DISTRIBUTION OF INCOME IN URBAN AREAS FOR 1338, 1347 AND 1350

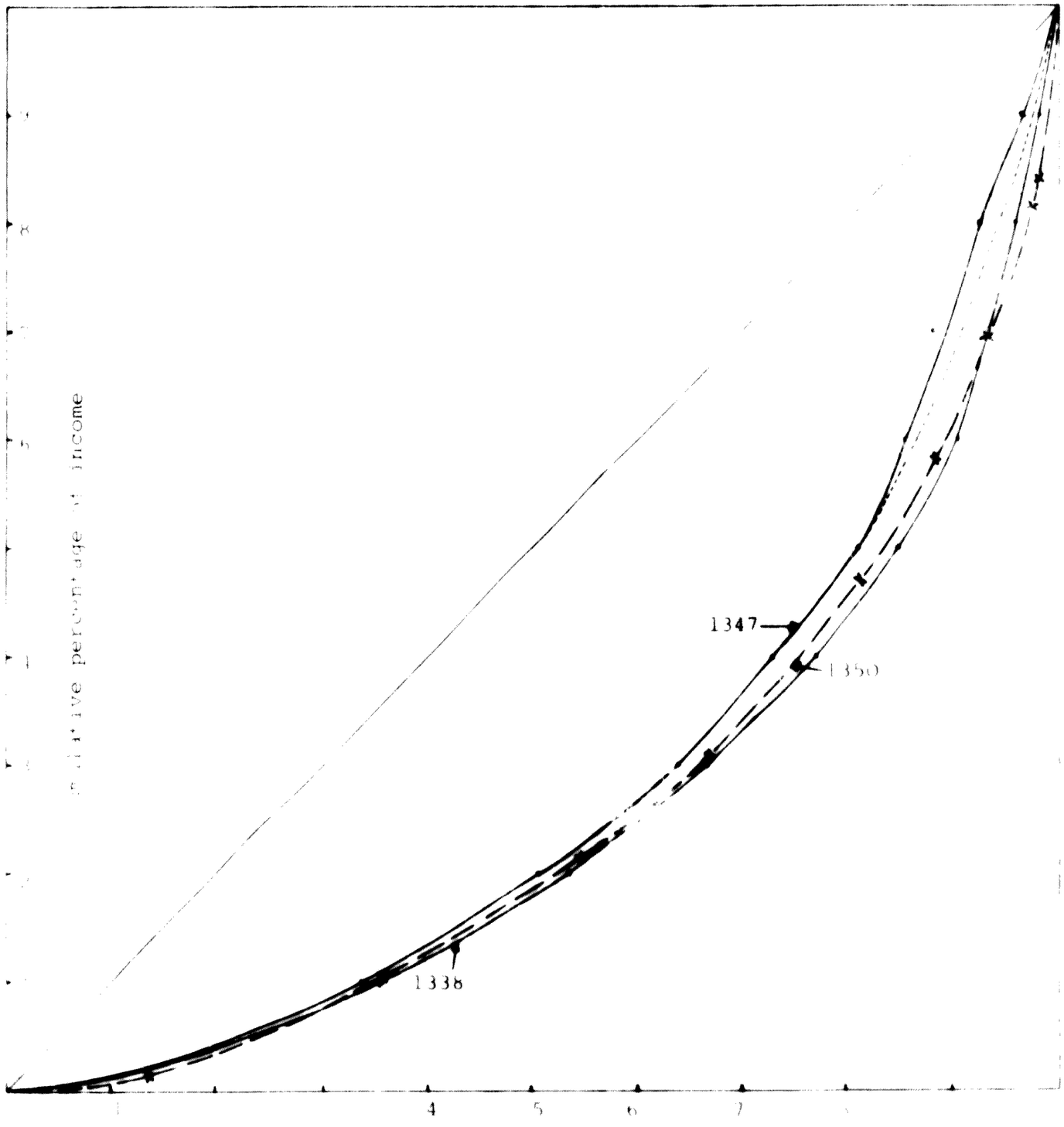

FIGURE 6 COMPARISON OF DISTRIBUTION OF INCOME AND EXPENDITURE IN URBAN AREAS IN 1338 AND 1347

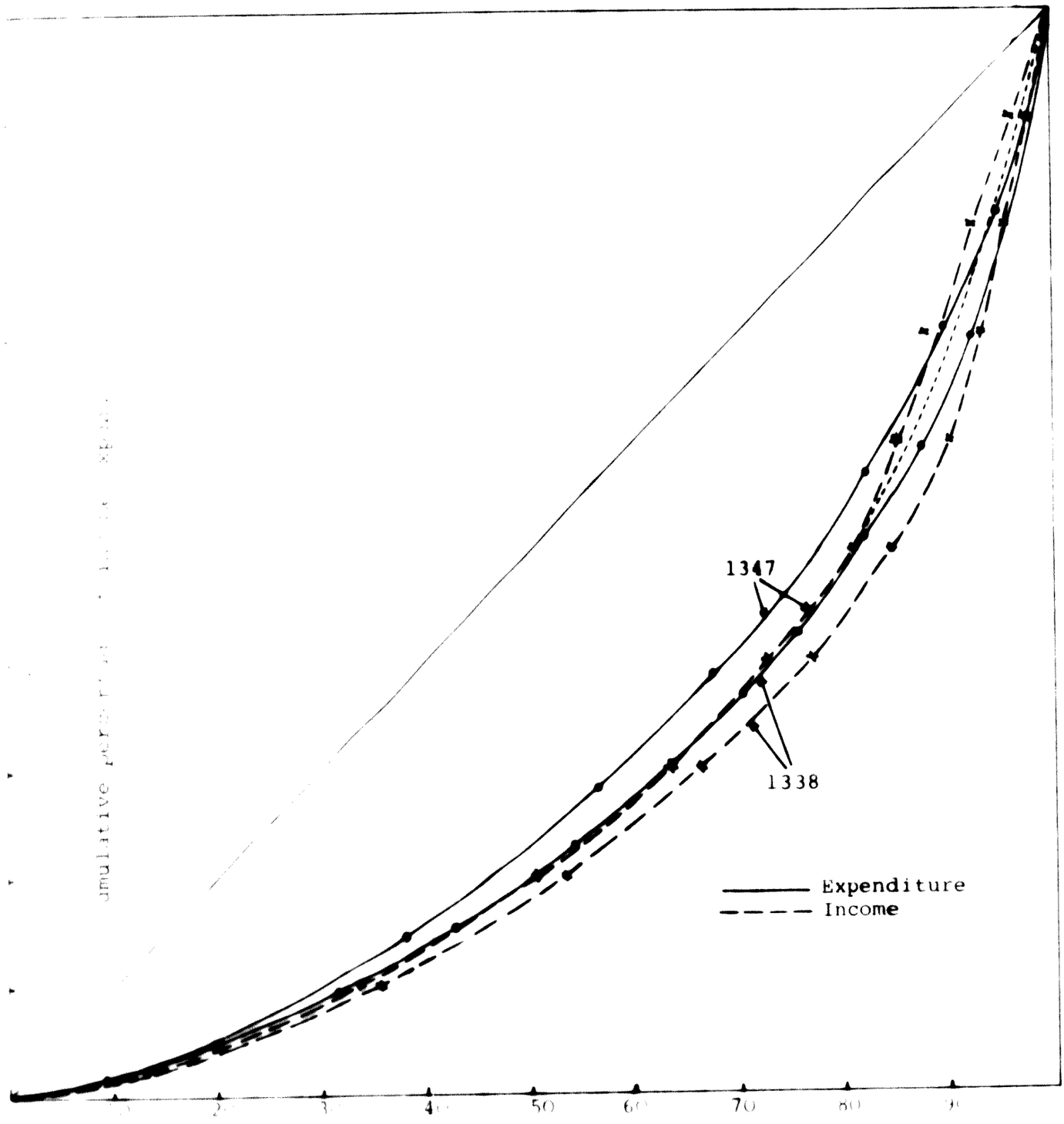

TABLE 27 CHANGES IN THE DISTRIBUTION OF INCOME AND EXPENDITURE IN URBAN AREAS OF IRAN

SURVEY \ YEAR	1338 1339 1340 1341 1342 1343 1344 1345 1346 1347 1348 1349 1350	INCOME/EXPENDITURE
BM	→	Income & Expenditure
BM	→	Expenditure
BM	←	Expenditure
BM/ISC	→	Expenditure
BM/ISC	←	Expenditure
BM/METRA	←	Income
BM/METRA	→	Income

BM - Bank Markazi

ISC - Iran Statistical Centre

over such a short period without fundamental changes in the overall economy of the country. It is therefore worthwhile to examine each of the surveys in more detail.

The Bank Markazi survey of 1338 was the first income and expenditure survey undertaken in Iran. The survey was designed to cover all urban areas with a population of 5,000 or more. In total thirty-two urban cities were surveyed. These comprised the ten cities which according to the population census of 1335 had populations in excess of 100,000 and twenty-two cities selected as a sample of all towns and cities in Iran with populations between 5,000 and 100,000. A total of 3,600 dwellings were selected within the sample cities and 3,237 questionnaires were completed.

Whilst it is claimed that seasonal purchasing patterns were taken account of by dividing the total sample into sub-samples and taking one sub-sample per month, in reality seasonal purchasing patterns were only partially covered. Fieldwork was carried out over a period of seven months (approx. May to November) with the winter months and No Rus (New Year), both periods when seasonal purchasing factors are important, being neglected.

Surveys carried out in 1346 and 1347 were based on much smaller samples. The 1347 survey sample totalled 1,500 and this is frequently cited as a reason for the unreliability of the 1347 survey. During 1347 the Bank Markazi carried out complete block ennumeration (re-ennumeration) and this new block ennumeration provide the basis for the 1348 survey.

In 1348 the sample size was increased to over 3,000. The sample frame had been modified such that the survey represented 264 cities and towns within Iran. Furthermore, because of increases in population two towns (cities) previously included in the small cities categories were included with other large cities. As has been mentioned above the results of the 1348 survey showed variations from the results of the 1347 survey to an extent which could not be accounted for on the basis of natural economic changes within the country. The general concensus of opinion within Iran, particularly within Bank Markazi, has been that the 1348 survey, rather than the 1347 survey, gave the most realistic picture of the situation in Iran. This line of argument seems rational, the 1348 survey was based on a revised sample frame and used a much larger sample than was used in the surveys of 1346 and 1347.

Quantitatively, however, it is very difficult to assess the accuracy of the 1348 survey. Metra had initially intended to base all forecasts for consumer durable goods on the findings of the 1348 (or if available 1349) Bank Markazi survey results for income distribution. Indeed this was initially done; however, on this basis sales of appliances in, for example, 1349 were considerably in excess of those estimated on the basis of interviews with manufacturers in Iran. A closer examination of the results of the 1348 Bank Markazi survey highlighted a number of inconsistencies in the results. For example, in several cases the average expenditure within a group exceeded the maximum expenditure within that group*. Thus in the final analysis income data as generated in the Metra Survey was used for grossing up purposes.

It is generally considered with the Bank Markazi that whilst data on both income and expenditure is collected in each survey the latter is much more accurate than the former. Metra believe that this may not be the case and this particular aspect is discussed more fully in Section 10 of Volume 1 of the Report on the Domestic Appliance Industry in Iran. Basically it is believed that the summation of food items purchased during the last two days, general expenditure of heating, lighting and education over the past month, and certain other items over a 12 month period is as open to error as is under or over recording of income, particularly when due account is taken of non-money income.

In summary it is felt that whilst the Bank Markazi surveys give an indication of the distribution of income and expenditure within Iran, at the present time the surveys are not sufficiently well developed to enable definitive conclusions to be drawn on the basis of apparent year by year variations. The publication of the 1349 Bank Markazi survey should serve to give some indication of the internal consistency of the Bank's surveys; the question of reliability of the basic sample frame and sampling method, in terms of how representative it is of the urban population, will, however, remain. Nevertheless it is felt that credit and encouragement should be given to the Bank Markazi Statistical Centre and it is important that surveys on income, expenditure and consumption are carried out on an increasing rather than decreasing scale.

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*Discussions with representatives of Bank Markazi in October 1972 established that these errors have now been eliminated from the 1348 survey.

Very little is known about the ISC survey of 1349. Indeed the results of this survey were only published after completion of the analysis work on the Metra Survey. The ISC sample was much larger than that used in any of the Bank Markazi surveys, a total of 6,048 interviews were completed. The ISC survey also included more centres (cities and towns) in its sample than did the Bank Markazi and this should in theory give a better coverage. Being a single survey however means that comparison for internal consistency is not possible. The expenditure distribution in urban areas of Iran according to this survey is very similar to that in 1338 according to the Bank Markazi Survey.

The Metra Survey of 1350 used a sample equal in size to that used by the Bank Markazi in 1347 but smaller than that used by either the Bank Markazi in 1348 or the ISC in 1349. Since the Metra sample was based on the Bank Markazi sample frame in large cities and small cities the extent to which the sample is representative of the population cannot be better in the Metra Survey in these areas than in the Bank Markazi surveys. In Tehran the sample frame used for the Bank Markazi survey of 1348 was not used as the base for the Metra sample. The Bank Markazi sample frame was not considered to be representative of Tehran because since the sample frame was drawn up significant changes, in the form of housing development, had taken place. A completely new sample was therefore used in Tehran. The Metra Survey was not designed to determine the income distribution in urban areas of Iran, although questions on income were included as a precaution. Since it ultimately became necessary to use the Metra data on income it is worthwhile to first subjectively assess the likely accuracy of this data compared with data from other surveys. The total sample size in the Metra survey was about half that of the Bank Markazi survey of 1348. The Metra sample was however highly stratified, including proportionately a much higher percentage of households in the upper income groups. Indeed the Metra sample included more households with annual incomes in excess of 300,000 rials per annum than did the Bank Markazi survey of 1348. Thus in these groups the Metra survey theoretically gives a much better coverage. In the middle income groups, 150,000 to 300,000 rials per annum, the number of interviews carried out in the Metra Survey is very similar to that in the 1348 Bank Markazi survey. The lower income groups, less than 150,000 rials per annum, are definitely under represented in the Metra survey; the Bank Markazi survey of 1348 contained a much greater proportion and a much higher number of interviews than did the Metra Survey. Thus on this criteria alone the Metra Survey is likely to be more accurate in measurement of

average income in the higher income groups than is the Bank Markazi survey of 1348, but much less accurate in lower income groups. The Metra Survey does give a reasonable consistency in terms of numbers of appliances purchased in any one year, as determined by the survey, and the number of appliances sold, according to manufacturers in Iran. For this reason the data on income generated in the Metra Survey has been used as the basis for forecasting.

11. PROJECTIONS OF HOUSEHOLD INCOME/EXPENDITURE

An analysis of the available historical data on the distribution of income and expenditure in urban areas of Iran show many anomalies. It has been mentioned in Section 9 above that depending on the specific pieces of data selected, trends of progressive income redistribution, regressive trends in income distribution and a virtually static income distribution in urban areas can all be supported. These conflicting conclusions are believed to arise because of a number of factors. Firstly all the income/expenditure surveys carried out in Iran have used very small samples. In other more developed countries samples of ten to thirty times those used in Iran are the norm. Secondly the extent to which the samples used in surveys in Iran are representative of the urban population as a whole is open to question. Smaller cities and towns generally appear to be under-represented. Thirdly, by considering the urban population in isolation one is not considering a closed unit. Migration to urban areas from rural areas is a very important factor; indeed it exceeds natural birth rate in urban areas. Whereas changes in birth rate have only a gradual effect on income distribution migration has an immediate effect. It is not known who are the people who migrate. Whilst there are more poor people than rich people migrating to urban areas this is to be expected since there are more of the former in the total population. In the absence of information on the income distribution of families who migrate from rural to urban areas it has been assumed that these are families having the average income in rural areas. If this assumption is correct, assuming that initially at least the families who migrate retain their previous income level (increasing by no more than GNP growth rate) then since the average income in rural areas is below that in urban areas, migration will result in a regressive trend in the distribution of income in urban areas but will, in this simple relatively static case, have no effect on the overall income distribution within Iran.

Furthermore, whilst progressive and regressive trends in the distribution of income and expenditure in urban areas of Iran can be identified from the available data it is true that if the 1347 Bank Markazi Survey is ignored changes are much smaller. On the income side the Bank Markazi survey of 1338 shows in overall terms a very similar dis-

tribution to the Metra Survey of 1350. Comparison of these two surveys suggests that whilst the very rich have become richer, the top 2.1% of households increasing their share of total income from 10% to 16% this has been achieved at the expense of the very low income groups (i.e. the bottom 20-25%) with the middle groups (ca 75% of the urban population) showing a slightly progressive trend. A similar pattern is found if the 1338 Bank Markazi and 1349 ISC expenditure distributions are considered.

Consideration of all the historical data on income distribution coupled with subjective analyses of other factors in Iran suggests that over a period of ten or fifteen years the income distribution in urban areas of Iran has changed only slightly. It has been assumed that this trend will continue at least until 1361 and thus in projections a constant Lorenz curve has been assumed. In reality it is likely that there will be a slightly regressive trend in the first part of the decade, due at least in part to the effect of migration from rural areas, with possibly a progressive trend in the latter part of the decade as the benefits of economic development in Iran are felt further down the social scale.

The number of households by income group cannot be read off a Lorenz curve for 1356 or 1361 until both the total number of households (H) and the total expenditure (X) are known. From these the average household expenditure can be calculated. Furthermore, in order to increase the accuracy of the forecasts, the share of expenditure and the total households can be divided into three groups, namely : Tehran, Large Cities and Small Cities.

Initially the method of forecasting the relative shares of total urban household expenditure between the above three city groups and the total expenditure was based on historical Bank Markazi data. This method which is discussed in the mathematical section of this report was found to give a relatively constant share of expenditure between the above three groups and thus it is reasonable to assume that this situation will continue in the future. For reasons discussed earlier in this report it was decided to use the data on income generated in the Metra Survey as the basis for projections rather than Bank Markazi survey data, however this does not invalidate the above

distribution between city groups. Thus assuming that the shares of total income by city group remains constant the distribution and total income by city group in 1356 and 1361 will be as shown in Table 28.

TABLE 28 URBAN HOUSEHOLD EXPENDITURES BY CITY GROUP

CITY GROUP	SHARE OF EXPENDITURE		
	1350	1356	1361
Tehran	0.4925	0.4925	0.4925
Large Cities	0.2247	0.2247	0.2247
Small Cities	0.2828	0.2828	0.2828
Total Expenditure (Rials x 10^6)	263511	504017	785263
Tehran	129785	248228	386742
Large Cities	59292	113253	176449
Small Cities	74524	142536	222072

The average household incomes can be estimated by dividing the total income of each city group in Table 28 by the number of households in each city group in 1356 and 1361. These average incomes are given in Table 29.

TABLE 29 AVERAGE HOUSEHOLD EXPENDITURE

		1350	1356	1361
TEHRAN	Total Expenditure (X)	129785	248228	386742
	Total Households (H)	742764	1072537	1439360
	Average Expenditure X/H	174734	231440	268690
BIG CITIES	X	59202	113253	176449
	H	699591	1006640	1363071
	X/H	84623	112504	129449
SMALL CITIES	X	74524	142536	222072
	H	1167220	1609864	2098021
	X/H	63847	88539	105848
ALL CITIES	X	263511	504017	785263
	H	2609575	3689041	4900452
	X/H	100978	136625	160242

X in millions of rials per annum
H in households
Average Expenditure (A) = X/H in rials per annum

Source: 1350 data Metra Survey
1356/1361 Projections from 1350 data

12. FORECASTS OF HOUSEHOLDS BY INCOME GROUP

Given a Lorenz curve and the average household income, the percentage of households in each income group may be determined. the method is demonstrated in Figure 8. Because the Lorenz curve plots cumulative measures, the household income at any given point on the curve is proportional to the slope of the curve. For example, the point in Figure 8 labelled "6" is nearly parallel to the diagonal and has a slope nearly equal to one; this point corresponds to 65% of households and implies that households which lie in the top 64-66% of the population have a household income nearly equal to the average for the whole of Tehran. Point "6" is in fact the dividing point between income group 6 and group 7 (200,000 rials per annum). Hence households in the top 64-66% of the population are expected to expend about 200,000 rials. Checking back to Table 29 confirms that the average household expenditure for Tehran is 231,000 rials. This is in fact higher than 200,000 rials because "point 6" on Figure 8 is below the point on the curve where the slope is unity.

The 10 points labelled in Figure 8 correspond to the cumulative percentages of each of the ten income groups. Each point has been drawn in where the slope of the Lorenz curve is equal to:

$$\frac{\text{Upper expenditure level for the group}}{\text{Average expenditure for all ten groups}}$$

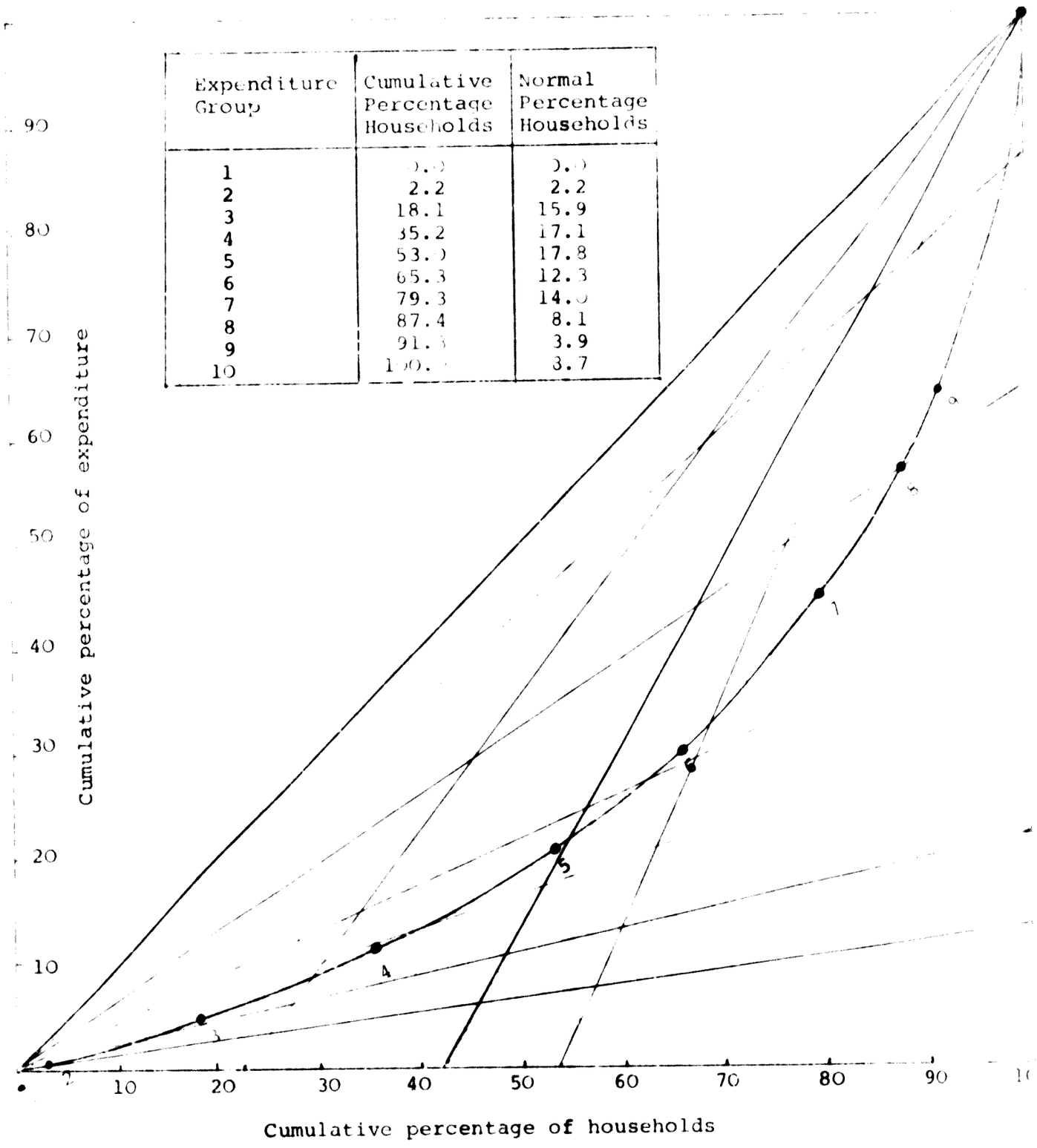
These ten points correspond to the ten household expenditure groups and the readings off the household axis of the graph are shown in the table on Figure 8.

Similar points and tables are shown in Figures 9 to 15 for the other years and city groups. The Lorenz curves and the slopes at the 10 points, change of course according to year and city group.

The slopes in Figures 8-15 were drawn in by marking on the vertical or horizontal axis and producing lines of the required slope. The 10 points on the graph were then positioned such that the tangents at the points were parallel to the set lines. The slopes for each graph are shown in Table 30. For convenience in applying the slopes, the inverses of slopes greater than unity were calculated as shown in the lower part of Table 30.

FIGURE 8 [illegible] 1256

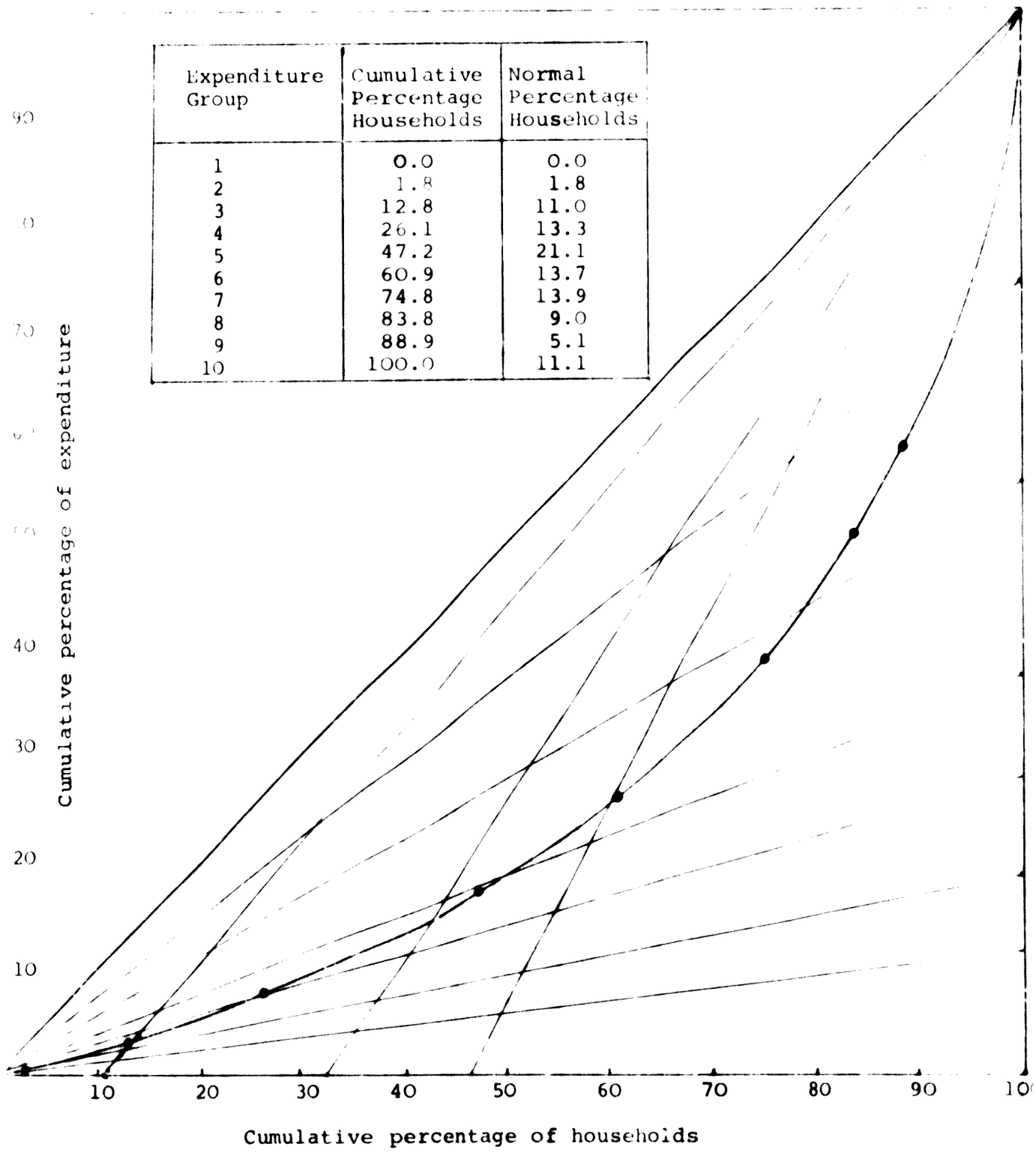
Expenditure Group	Cumulative Percentage Households	Normal Percentage Households
1	[illegible]	[illegible]
2	2.2	2.2
3	18.1	15.9
4	35.2	17.1
5	53.0	17.8
6	65.3	12.3
7	79.3	14.0
8	87.4	8.1
9	91.3	3.9
10	100.	8.7



Source: Metra Survey

FIGURE 9 TEHRAN 1361

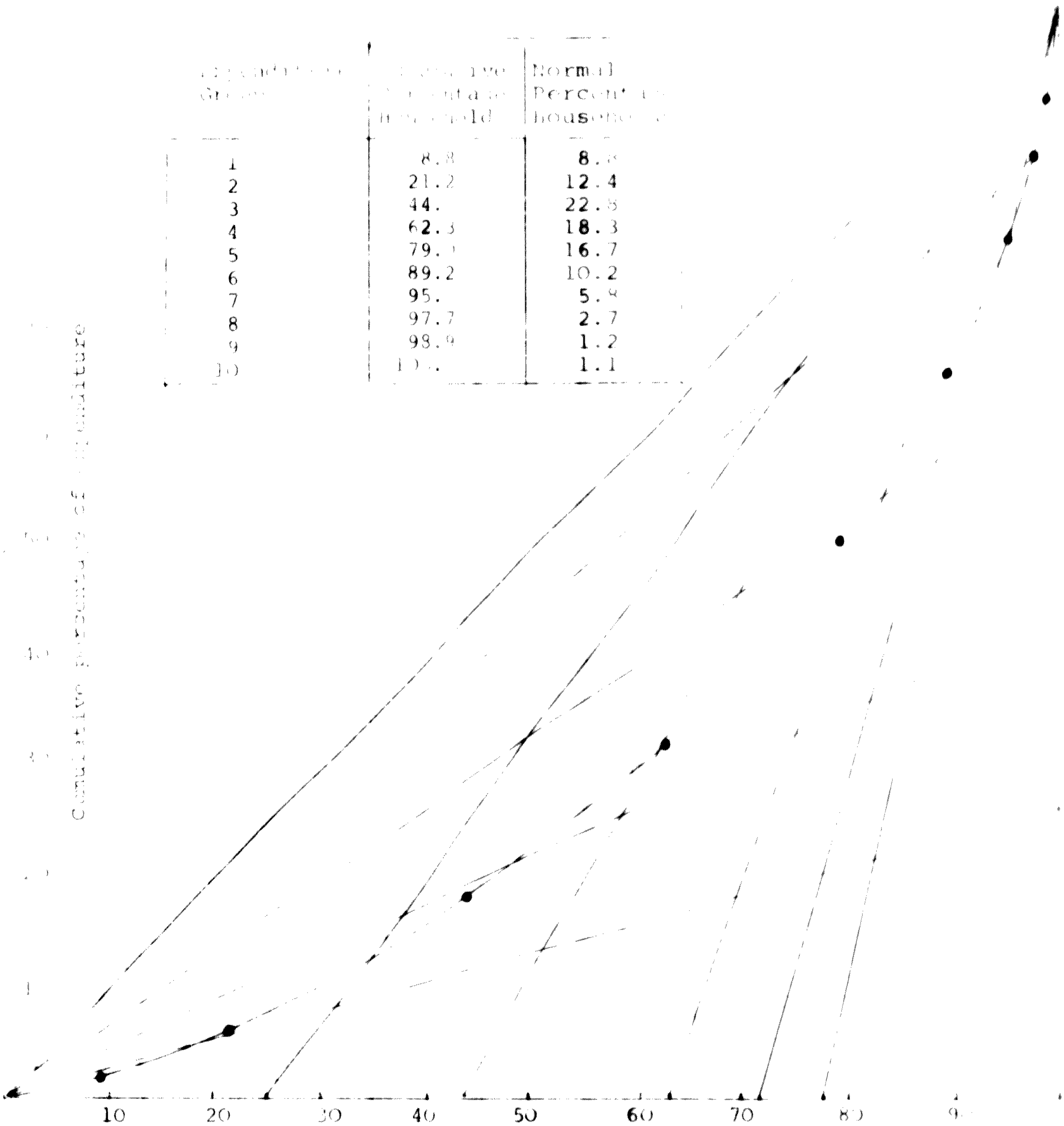
Expenditure Group	Cumulative Percentage Households	Normal Percentage Households
1	0.0	0.0
2	1.8	1.8
3	12.8	11.0
4	26.1	13.3
5	47.2	21.1
6	60.9	13.7
7	74.8	13.9
8	83.8	9.0
9	88.9	5.1
10	100.0	11.1



Source: Metra Survey

[illegible] 1Q [illegible] 1356

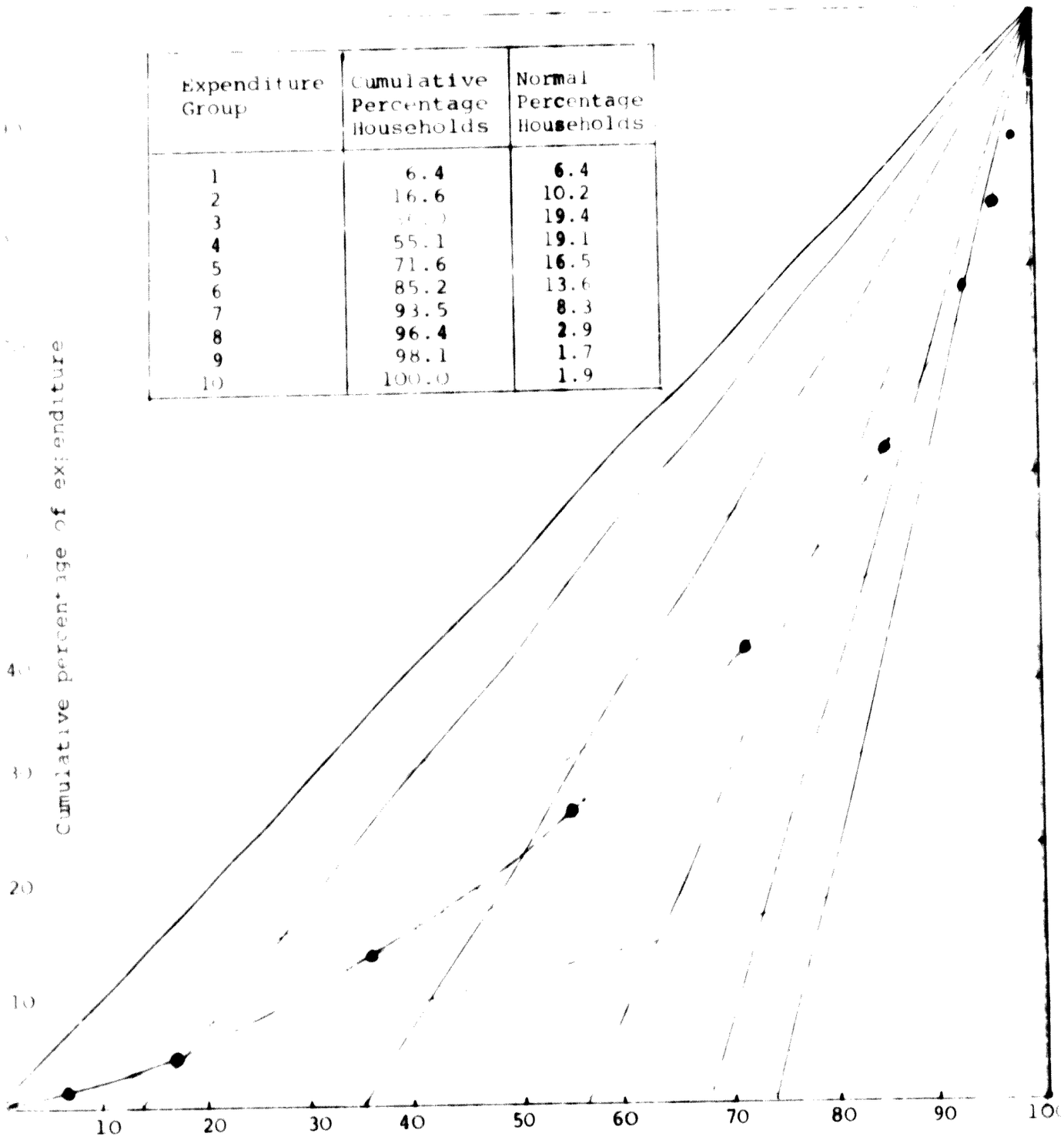
[illegible] Group	[illegible] household	Normal Percent[illegible] households
1	8.8	8.[illegible]
2	21.2	12.4
3	44.	22.[illegible]
4	62.3	18.3
5	79.[illegible]	16.7
6	89.2	10.2
7	95.	5.[illegible]
8	97.7	2.7
9	98.9	1.2
10	10[illegible].	1.1



[illegible] Matrix Survey [illegible]

FIGURE 11 BIG CITIES 1361

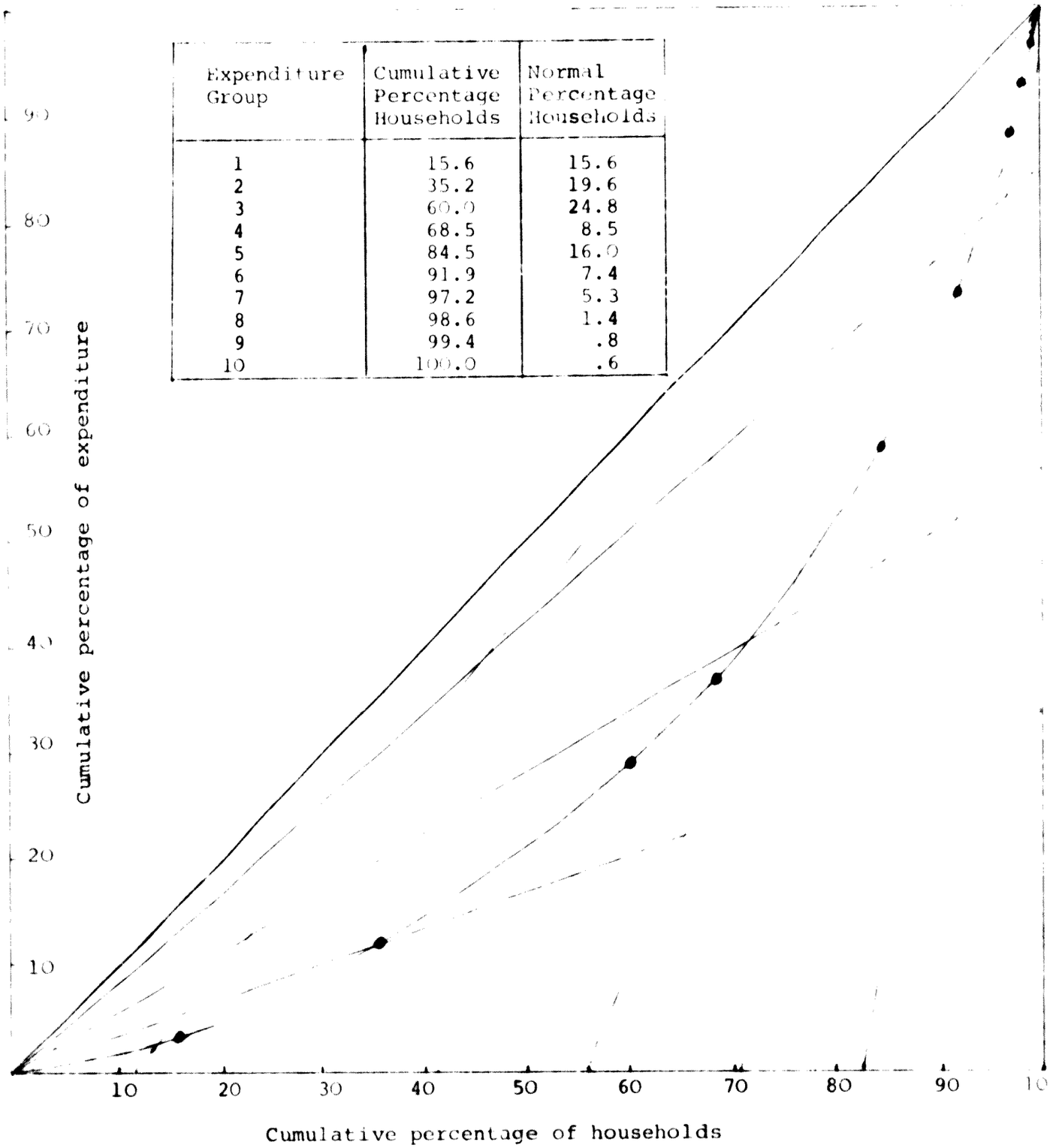
Expenditure Group	Cumulative Percentage Households	Normal Percentage Households
1	6.4	6.4
2	16.6	10.2
3	[illegible]	19.4
4	55.1	19.1
5	71.6	16.5
6	85.2	13.6
7	93.5	8.3
8	96.4	2.9
9	98.1	1.7
10	100.0	1.9



Source: Metra Survey

FIGURE 12 SMALL CITIES 1356

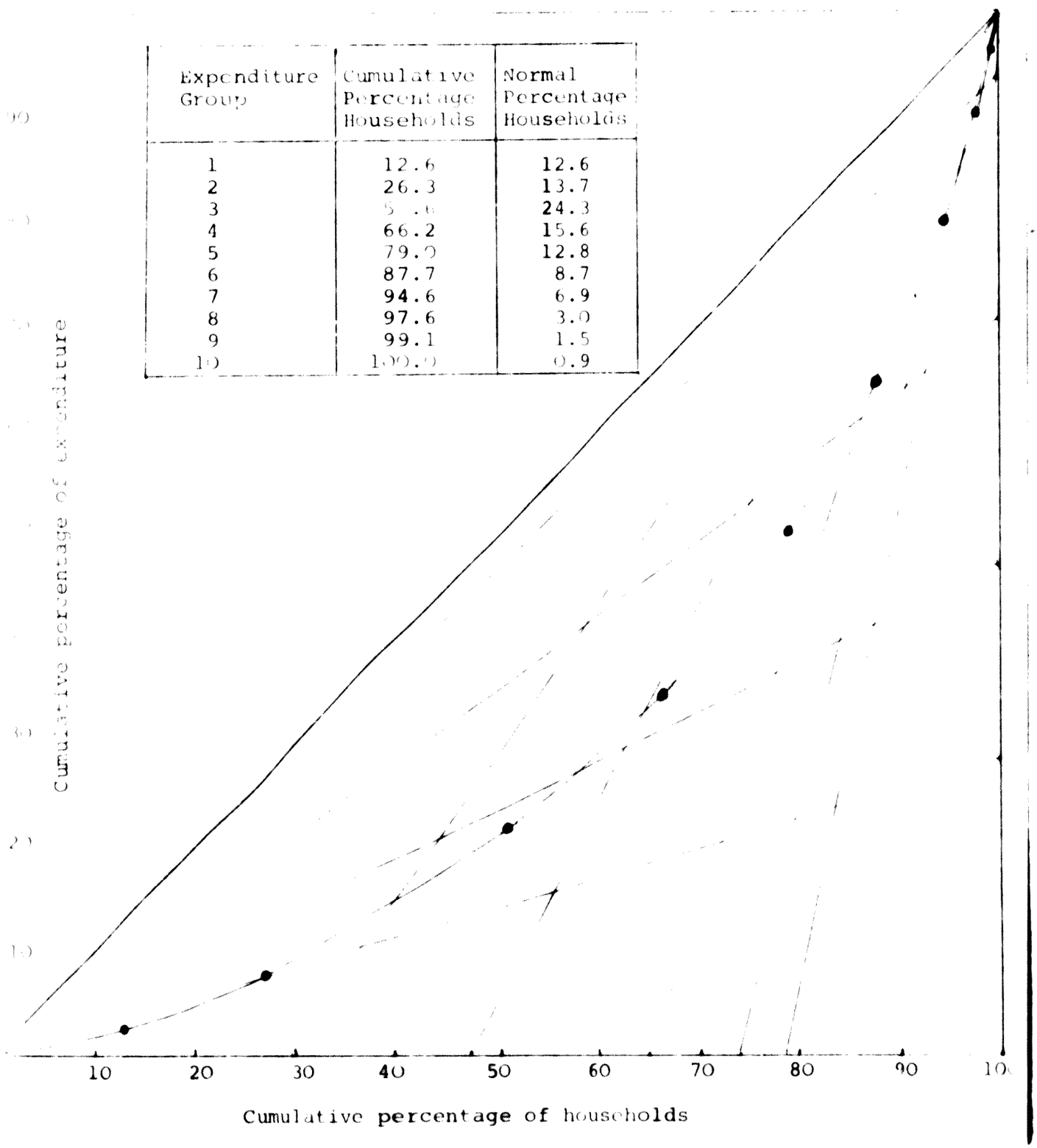
Expenditure Group	Cumulative Percentage Households	Normal Percentage Households
1	15.6	15.6
2	35.2	19.6
3	60.0	24.8
4	68.5	8.5
5	84.5	16.0
6	91.9	7.4
7	97.2	5.3
8	98.6	1.4
9	99.4	.8
10	100.0	.6



Source: Metra Survey

FIGURE 13 SMALL CITIES 1361

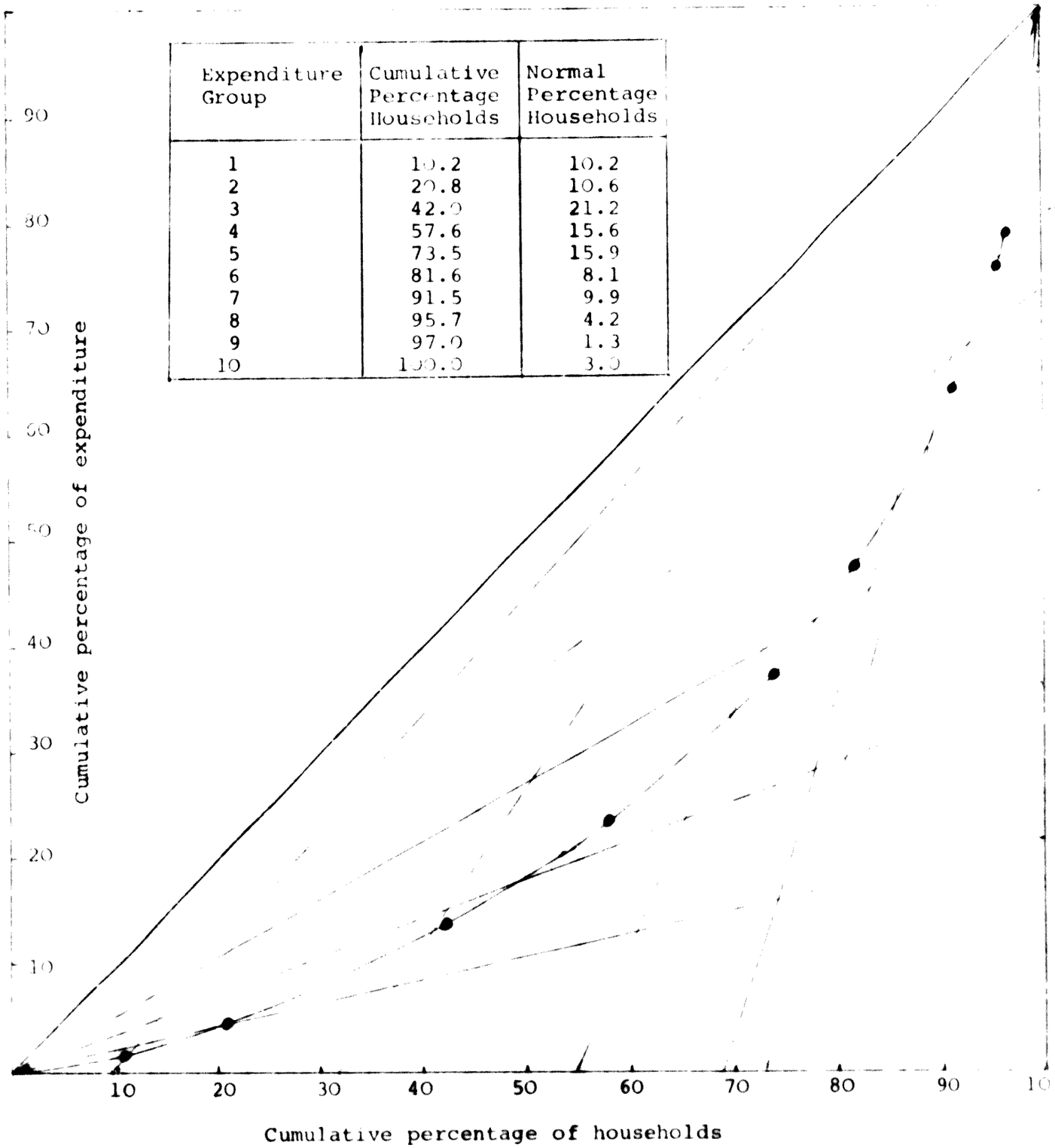
Expenditure Group	Cumulative Percentage Households	Normal Percentage Households
1	12.6	12.6
2	26.3	13.7
3	[illegible]	24.3
4	66.2	15.6
5	79.0	12.8
6	87.7	8.7
7	94.6	6.9
8	97.6	3.0
9	99.1	1.5
10	100.0	0.9



Source: Metra Survey

FIGURE 14 ALL URBAN CITIES 1356

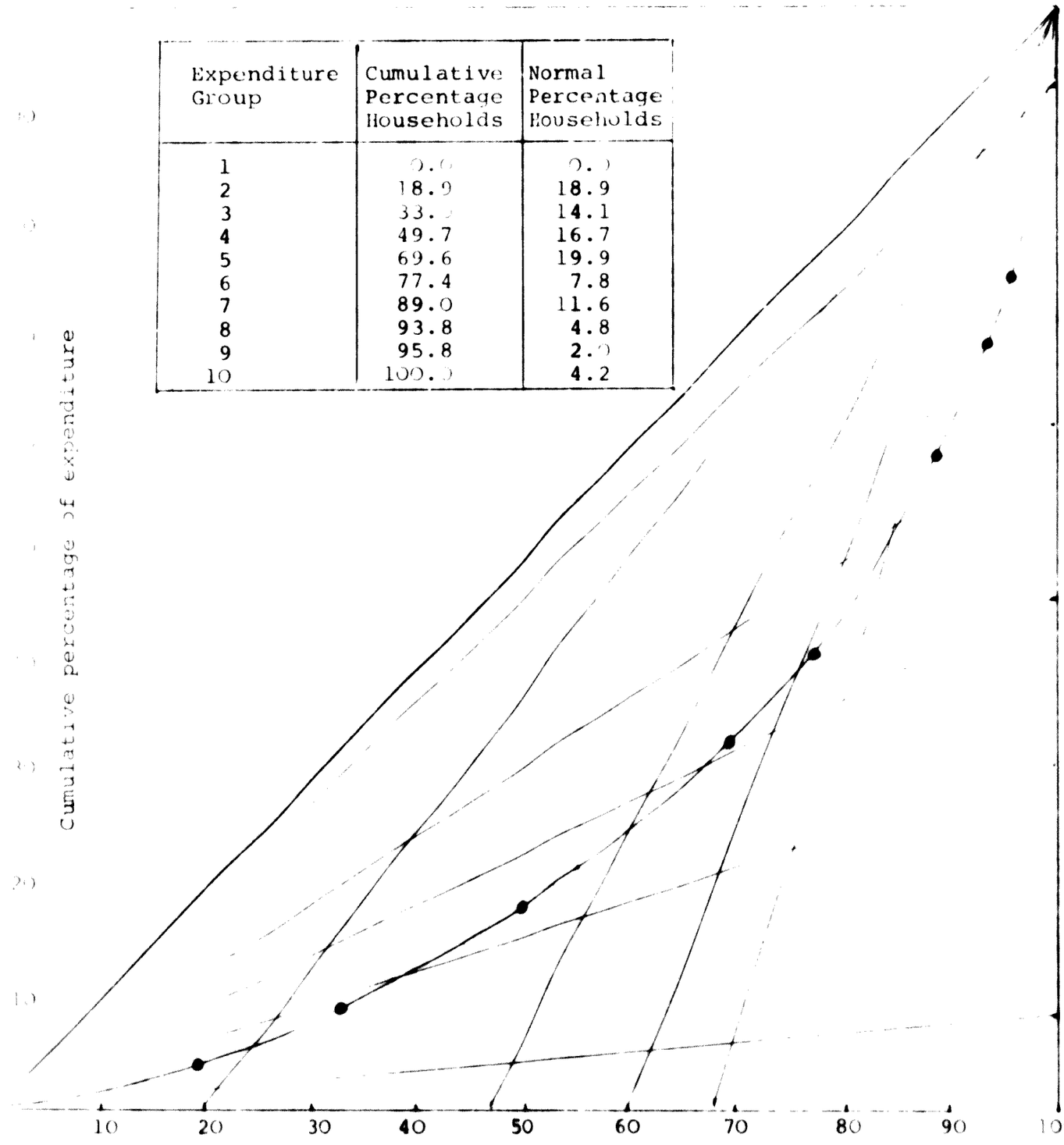
Expenditure Group	Cumulative Percentage Households	Normal Percentage Households
1	10.2	10.2
2	20.8	10.6
3	42.0	21.2
4	57.6	15.6
5	73.5	15.9
6	81.6	8.1
7	91.5	9.9
8	95.7	4.2
9	97.0	1.3
10	100.0	3.0



Source: Metra Survey

FIGURE 15 ALL URBAN CITIES 1361

Expenditure Group	Cumulative Percentage Households	Normal Percentage Households
1	9.0	9.0
2	18.9	18.9
3	33.0	14.1
4	49.7	16.7
5	69.6	19.9
6	77.4	7.8
7	89.0	11.6
8	93.8	4.8
9	95.8	2.0
10	100.0	4.2



Source: Metra Survey

TABLE 30 LORENZ CURVE SLOPES CORRESPONDING TO EXPENDITURE GROUPS

HOUSEHOLD EXPENDITURE	TEHRAN			BIG CITIES			SMALL CITIES			ALL CITIES		
	1350	1356	1361	1350	1356	1361	1350	1356	1361	1350	1356	1361
RIALS PER ANNUM (A)	A 174,734	A 231,440	A 268,690	A 84,623	A 112,504	A 129,449	A 63,847	A 88,539	A 105,848	A 100,978	A 136,625	A 160,242
30,000	.1717	.1296	.1117	.3545	.2667	.2318	.4699	.3388	.2834	.2971	.2196	.1872
50,000	.2861	.2160	.1861	.5909	.4444	.3863	.7831	.5647	.4724	.4952	.3660	.3120
75,000	.4292	.3241	.2791	.8863	.6666	.5794	1.1747	.8471	.7086	.7427	.5489	.4680
100,000	.5723	.4321	.3722	1.1817	.8889	.7725	1.5662	1.1294	.9448	.9903	.7319	.6241
150,000	.8584	.6481	.5583	1.7726	1.3333	1.1588	2.3494	1.6942	1.4171	1.4855	1.0979	.9361
200,000	1.1446	.8642	.7444	2.3634	1.7777	1.5450	3.1325	2.2589	1.8895	1.9806	1.4639	1.2481
300,000	1.7169	1.2962	1.1165	3.5451	2.6666	2.3175	4.6987	3.3883	2.8343	2.9709	2.1958	1.8722
400,000	2.2892	1.7283	1.4887	4.7268	3.5554	3.0900	6.2650	4.5178	3.7790	3.9613	2.9277	2.4962
500,000	2.8615	2.1604	1.8609	5.9086	4.4443	3.8625	7.8312	5.6472	4.7238	4.9516	3.6597	3.1203
INVERSES OF ABOVE SLOPES FOR APPLICATION TO GRAPHS												
75,000							.8513					
100,000				.8462			.6385	.8854				
150,000				.5641	.7500	.8630	.4256	.5902	.7057	.6732	.9108	
200,000	.8737			.4231	.5625	.6472	.3192	.4427	.5292	.5049	.6831	.8012
300,000	.5824	.7715	.8957	.2821	.3750	.4315	.2128	.2951	.3528	.3366	.4554	.5341
400,000	.4368	.5786	.6717	.2116	.2813	.3236	.1596	.2213	.2646	.2524	.3416	.4006
500,000	.3495	.4629	.5374	.1692	.2250	.2589	.1277	.1771	.2117	.2020	.2732	.3205

The results of the calculations are shown as percentages in Table 31 and as households in Table 32 for Tehran, the 11 big cities and the 252 small cities. The number of households in each of the 30 expenditure/city group cells for each year has been applied to the percentage ownership levels from the household survey in each cell, to give the total number of households owning an appliance. The total number of appliances was obtained by multiplying each of the 30 cells by the average number of appliances per household for households owning an appliance in that cell. The grossing up procedures however are described more fully elsewhere in this report.

TABLE 31 PERCENTAGE OF HOUSEHOLDS

INCOME GROUP	TEHRAN			11 BIG CITIES			252 SMALL CITIES		
	1350	1356	1361	1350	1356	1361	1350	1356	1361
1	1.00	0.0	0.0	13.44	8.8	6.4	22.01	15.6	12.6
2	10.58	2.2	1.8	20.51	12.4	10.2	29.70	19.6	13.7
3	17.96	15.9	11.0	24.68	22.8	19.4	16.54	24.8	24.3
4	13.37	17.1	13.3	12.29	18.3	19.1	11.00	8.5	15.6
5	18.56	17.8	21.1	15.43	16.7	16.5	11.45	16.0	12.8
6	11.78	12.3	13.7	6.86	10.2	13.6	4.37	7.4	8.7
7	9.38	14.0	13.9	3.08	5.8	8.3	3.76	5.3	6.9
8	9.18	8.1	9.0	2.56	2.7	2.9	1.17	1.4	3.0
9	2.00	3.9	5.1	.20	1.2	1.7	0	.8	1.5
10	6.19	8.7	11.1	.95	1.1	1.9	0	.6	0.9
TOTAL	100.00	100.0	100.0	100.00	100.0	100.0	100.00	100.0	100.0

TABLE 32 HOUSEHOLDS

INCOME GROUP	TEHRAN			11 BIG CITIES			252 SMALL CITIES		
	1350	1356	1361	1350	1356	1361	1350	1356	1361
1	7413	0*	0*	94025	88584	87237	256904	251139	264351
2	78576	23596	25908	143486	124823	139033	346674	315533	287429
3	133430	170533	158330	172659	229514	264436	193028	399246	509819
4	99332	183404	191435	85980	184215	260347	128407	136838	327291
5	137878	190912	303705	107947	168109	224907	133623	257578	268547
6	87471	131922	197192	47992	102677	185378	50965	119130	182528
7	69680	150155	200071	21547	58385	113135	43904	85323	144763
8	68198	86875	129542	17910	27179	39529	13714	22538	62941
9	14826	41829	73407	1399	12080	23172	0*	12879	31470
10	45959	93311	159769	6646	11073	25898	0*	9659	18882
TOTAL	742764	1072537	1439360	699591	1006640	1363071	1167220	1609864	2098021

* Do not take literally; accuracy is not claimed for the last three digits of any number.

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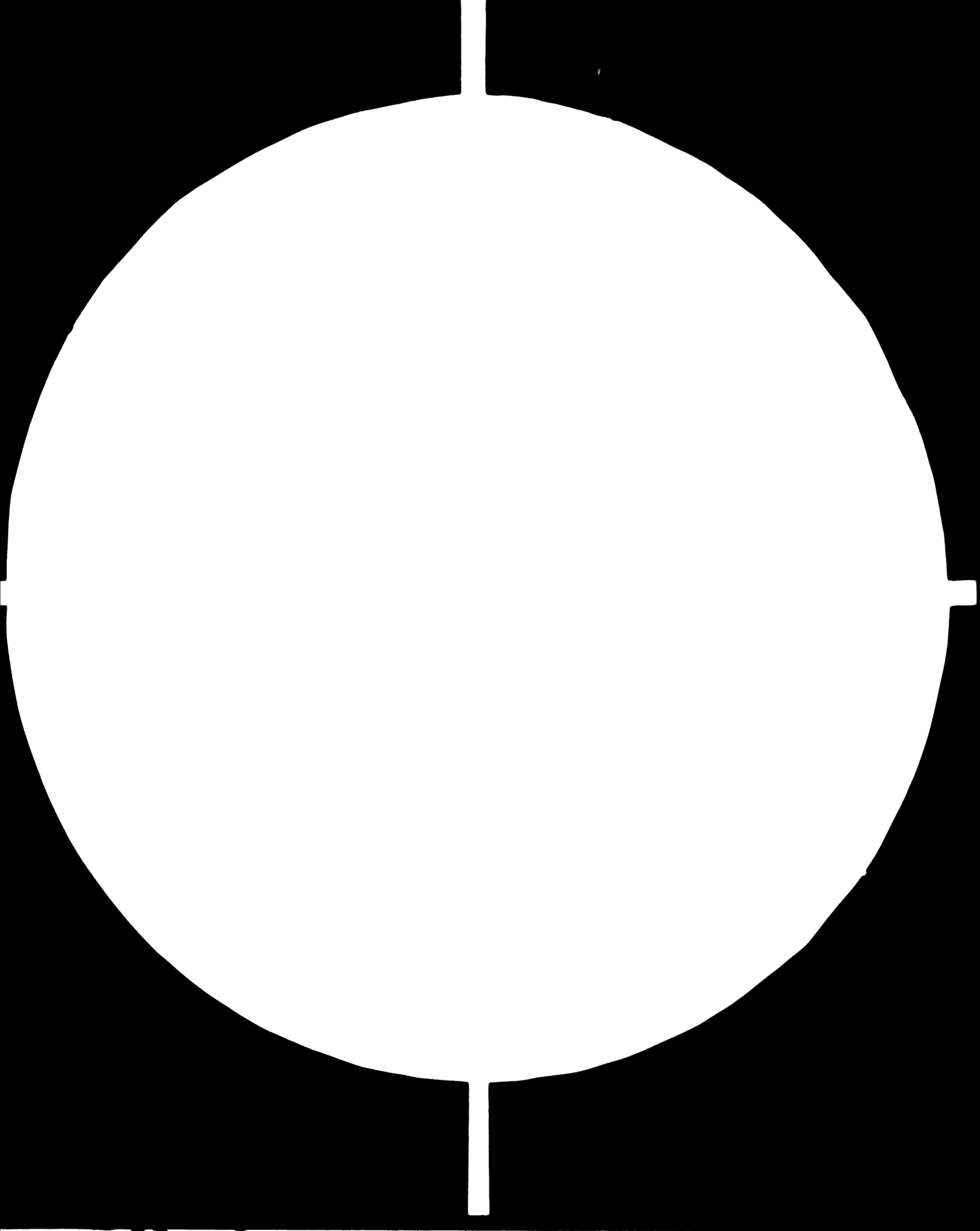

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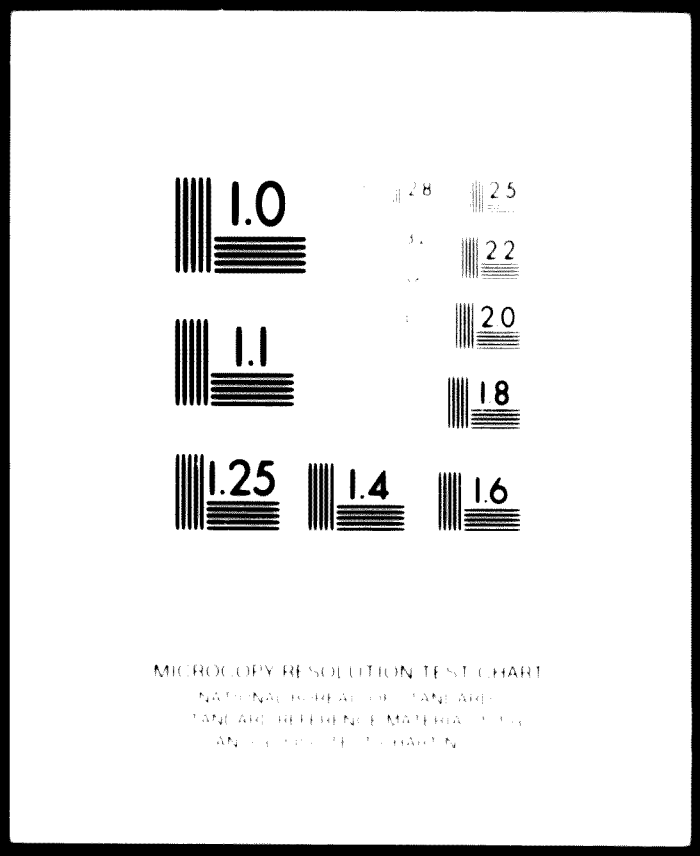

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Two checks on the accuracy of the graphical method have been made. The first check was to compare the forecasts of urban households as obtained directly from Figures 14 and 15 (DIRECT)[1], against the aggregated figures from Table 13 (SUMMED)[2]. When expressed in cumulative percentage terms, the consistency of the method is shown in Table 33.

TABLE 33 AGREEMENT BETWEEN ALL URBAN HOUSEHOLDS CALCULATED A) DIRECTLY AND B) BY SUMMATION OF RESULTS FOR TEHRAN, BIG CITIES AND SMALL CITIES

HOUSEHOLD EXPENDITURE GROUP	CUMULATIVE PERCENTAGE HOUSEHOLDS			
	1356		1361	
	DIRECT	SUMMED	DIRECT	SUMMED
1	10.2	9.21	0.0	7.17
2	20.8	21.79	18.9	16.41
3	42.0	43.45	33.0	35.44
4	57.6	57.13	49.7	51.33
5	73.5	73.84	69.6	67.60
6	81.6	83.43	77.4	79.13
7	91.5	91.40	89.0	88.48
8	95.7	95.10	93.8	93.21
9	97.0	96.91	95.8	95.83
10	100.0	100.00	100.0	100.00

As can be seen from Table 33, some households have been misclassified across the boundary of an expenditure group. However, what is most important for forecasting appliances, there is no consistent misclassification at either the lower percentage end or the higher percentage end. If some households have been misclassified across one boundary, the percentage appliance ownership level does not change dramatically between two adjacent groups of the ten expenditure groups, and the resulting forecast will not be subject to an appreciable error. The forecast would only be subject to appreciable error if misclassification occurred consistently for all groups. This is not so, hence there is no justification for developing a more elaborate and expensive mathematical forecasting model. The estimated forecasting error

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1. Calculated on basis of ALL URBAN

2. Calculated on basis of Tehran, Large Cities, Small cities and then summed.

due to approximate graphical methods is small compared to the sensitivity of forecasts to assumptions such as GNP growth, population growth or redistribution of income.

The forecasts of households within each expenditure/ city group cell are of course only a stepping stone to forecasts of demand for domestic appliances. It is not intended that they should be taken out of context for other purposes. No special limits of accuracy are claimed for the number of households in any particular cell. If the number of households in a particular cell is too high, then the number for an adjacent cell will probably compensate in the other direction and taking the two (or more) cells together, the accuracy is much higher.

The cumulative percentages of Table 33 are shown alongside normal percentages and households in Tables 34 and 35.

TABLE 34 URBAN HOUSEHOLDS CALCULATED DIRECTLY

HOUSEHOLD EXPENDITURE GROUP	1350			1356			1361		
	PERCENTAGE HOUSEHOLDS		HOUSEHOLDS	PERCENTAGE HOUSEHOLDS		HOUSEHOLDS	PERCENTAGE HOUSEHOLDS		HOUSEHOLDS
	NORMAL	CUMULATIVE		NORMAL	CUMULATIVE		NORMAL	CUMULATIVE	
1	13.73	13.73	358342	10.2	10.2	376282	0.7	0.7	426000
2	21.79	35.53	568736	10.6	20.8	391038	10.2	18.9	500000
3	19.13	54.65	499117	21.2	42.0	782077	14.1	33.0	690964
4	12.02	66.67	313719	15.6	57.6	575490	16.7	49.7	818375
5	14.54	81.21	379448	15.9	73.5	586558	19.9	69.6	975190
6	7.14	88.36	186428	8.1	81.6	298812	7.8	77.4	382235
7	5.18	93.54	135131	9.9	91.5	365215	11.6	89.0	568452
8	3.83	97.36	99822	4.2	95.7	154940	4.8	93.8	235222
9	0.62	97.98	16225	1.3	97.0	47958	2.0	95.8	98009
10	2.02	100.00	52605	3.0	100.0	110671	4.2	100.0	205819
TOTAL	100.00		2609573	100.0		3689041	100.0		4900452

TABLE 35 URBAN HOUSEHOLDS AGGREGATED FROM FORECASTS OF TEHRAN, BIG CITIES AND SMALL CITIES

HOUSEHOLD EXPENDITURE GROUP	1350			1356			1361		
	PERCENTAGE HOUSEHOLDS		HOUSEHOLDS	PERCENTAGE HOUSEHOLDS		HOUSEHOLDS	PERCENTAGE HOUSEHOLDS		HOUSEHOLDS
	NORMAL	CUMULATIVE		NORMAL	CUMULATIVE		NORMAL	CUMULATIVE	
1	13.73	13.73	358342	9.21	9.21	339729	7.17	7.17	351588
2	21.79	35.53	568736	12.58	21.79	463951	9.23	16.41	452369
3	19.13	54.65	499117	21.67	43.45	799293	19.03	35.44	932585
4	12.02	66.67	313719	13.67	57.13	504457	15.90	51.33	779073
5	14.54	81.21	379448	16.71	73.84	616599	16.27	67.60	797159
6	7.14	88.36	186428	9.59	83.43	353729	11.53	79.13	565098
7	5.18	93.54	135131	7.97	91.40	293863	9.35	88.48	457969
8	3.83	97.36	99822	3.70	95.10	136592	4.73	93.21	232012
9	0.62	97.98	16225	1.81	96.91	66788	2.01	95.83	128049
10	2.02	100.00	52505	3.09	100.00	114043	4.17	100.00	204549
TOTAL	100.00		2609573	100.00		3689041	99.99		4900452

The second check on the accuracy of the graphical method[1] was to use the Lorenz curve for 1348, drawn from the original Bank Markazi Survey data and to apply the method of marking the 10 points with slopes corresponding to the expenditure levels of the 10 groups. The results shown in Columns C and D in Figure 16 should agree with the original data shown in Columns B and E. Once more it can be seen that the percentages are in reasonable agreement except for direct comparisons of individual groups.

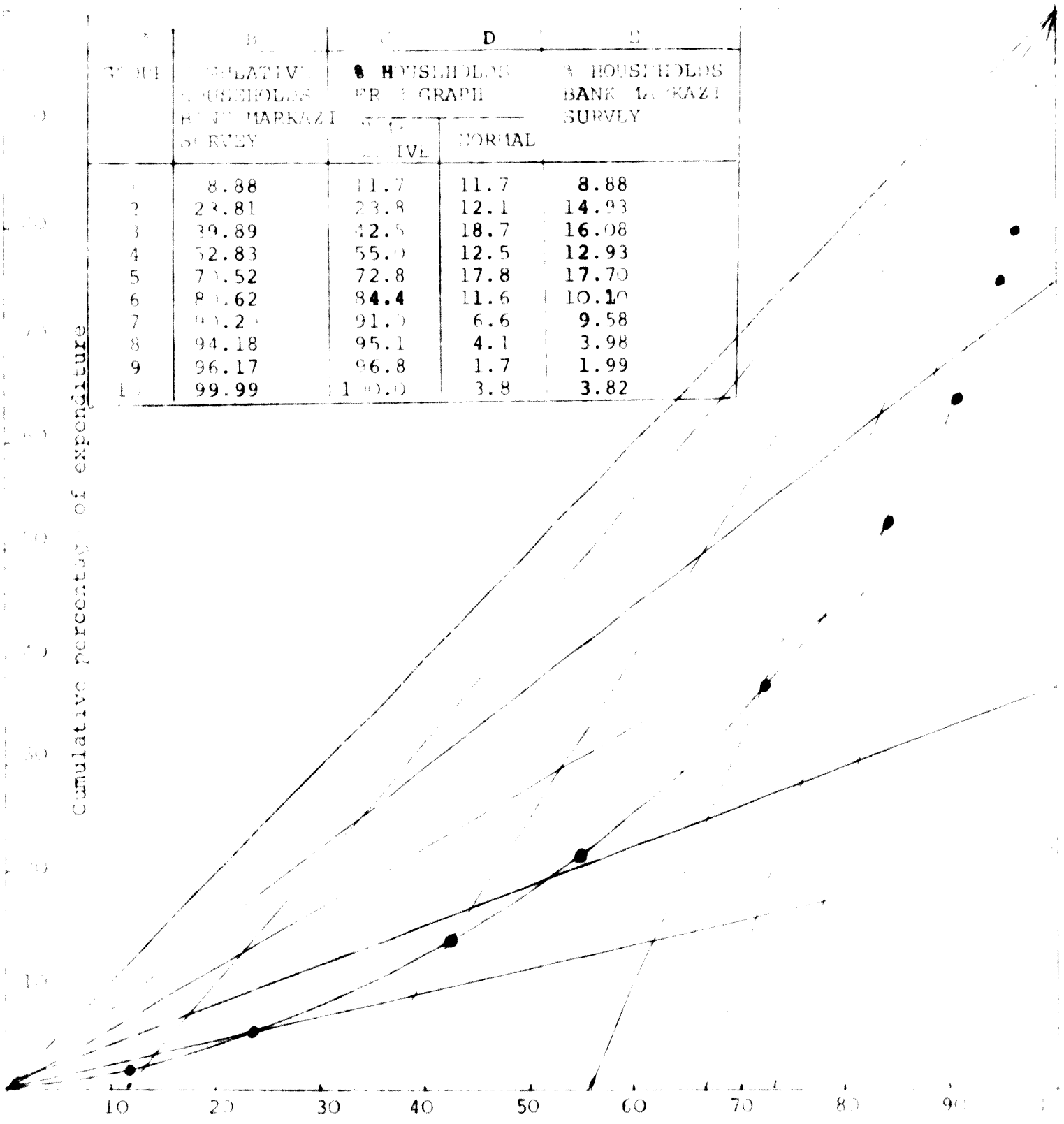
Because the slope of the Lorenz curve does not change markedly along the curve, it is obvious how a single point may be placed perhaps 2 or 3% of households too high or too low. It is also reasonable to suppose errors will not be consistently in one direction, or accumulate with each other.

---

1. i.e. to measure the accuracy with which a point can be plotted with a given slope.

16 URBAN HOUSEHOLDS, 1348

A	B	C	D	E
DECILE	CUMULATIVE % HOUSEHOLDS BANK MARKAZI SURVEY	% HOUSEHOLDS FROM GRAPH		% HOUSEHOLDS BANK MARKAZI SURVEY
		CUMULATIVE	NORMAL	
1	8.88	11.7	11.7	8.88
2	23.81	23.8	12.1	14.93
3	39.89	42.5	18.7	16.08
4	52.83	55.0	12.5	12.93
5	70.52	72.8	17.8	17.70
6	82.62	84.4	11.6	10.10
7	90.20	91.0	6.6	9.58
8	94.18	95.1	4.1	3.98
9	96.17	96.8	1.7	1.99
10	99.99	100.0	3.8	3.82



Source: Bank Markazi

13. INCOME REDISTRIBUTION

In Section 11 the distribution of income and expenditure in urban areas of Iran has been discussed. It was shown that there is evidence available from earlier surveys to support regressive and progressive redistribution of income/expenditure in Iran. Metra on the basis of historical data coupled with other more subjective factors have assumed that the distribution of income in urban areas of Iran remains constant over the period under study. It is however, worthwhile to examine what the effect would be on the forecasts made for different appliances should the Lorenz curve shift and to assess what is the probability of any shift in the Lorenz curve.

Unfortunately, very little data is available on income distribution in developing countries and the changes in such distributions over time. In his book* Jan Pen states that for developing countries, the Lorenz curve shifts through time towards the diagonal. He does not, however, present any statistical data to support this statement. Examples can however be found. In Figure 17 the Lorenz curves for Japan for 1963 and 1970 are given. From these curves it can be seen that during this period a progressive redistribution of income has occurred in Japan. Even in 1963, however, Japan was much more a developed country than Iran is today. Unfortunately, comparable data for less developed economies is not available. Several mainly theoretical arguments have been put forward concerning the effects of industrial development on income distribution, generally suggesting a regressive effect on the latter. Unfortunately, quantitative data is seldom presented to substantiate such arguments.

The European countries are not directly comparable with Iran. However, the distribution of income has been studied along with average incomes of European countries. The Lorenz curves for 14 European countries are shown in Figure 18. The curves are numbered in order of median net weekly household income per country. It can be seen that the richer countries have flatter Lorenz curves.

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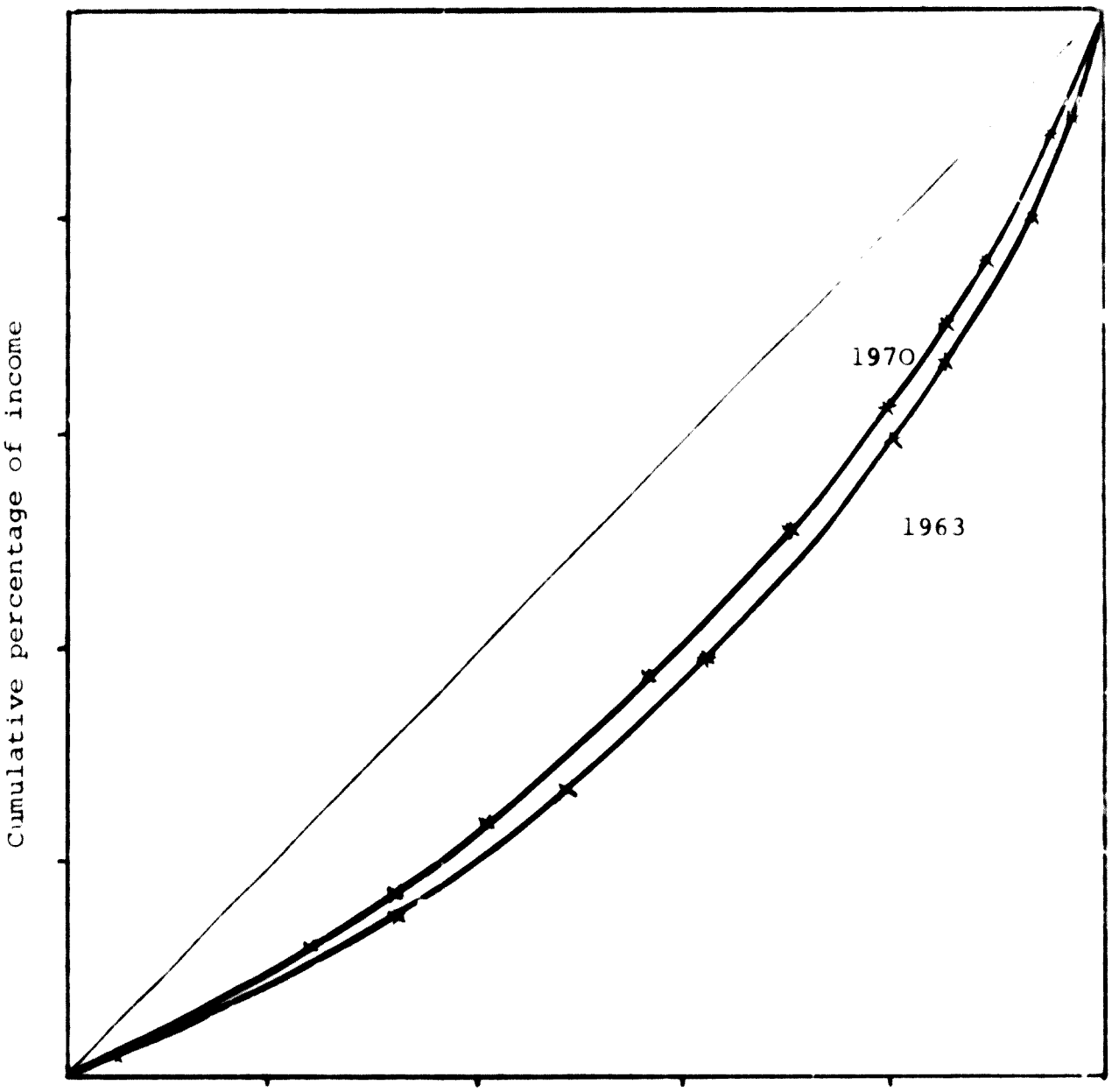
* "Income Distribution", Jan Pen, Allen Lane, Penguin Press, 1971.

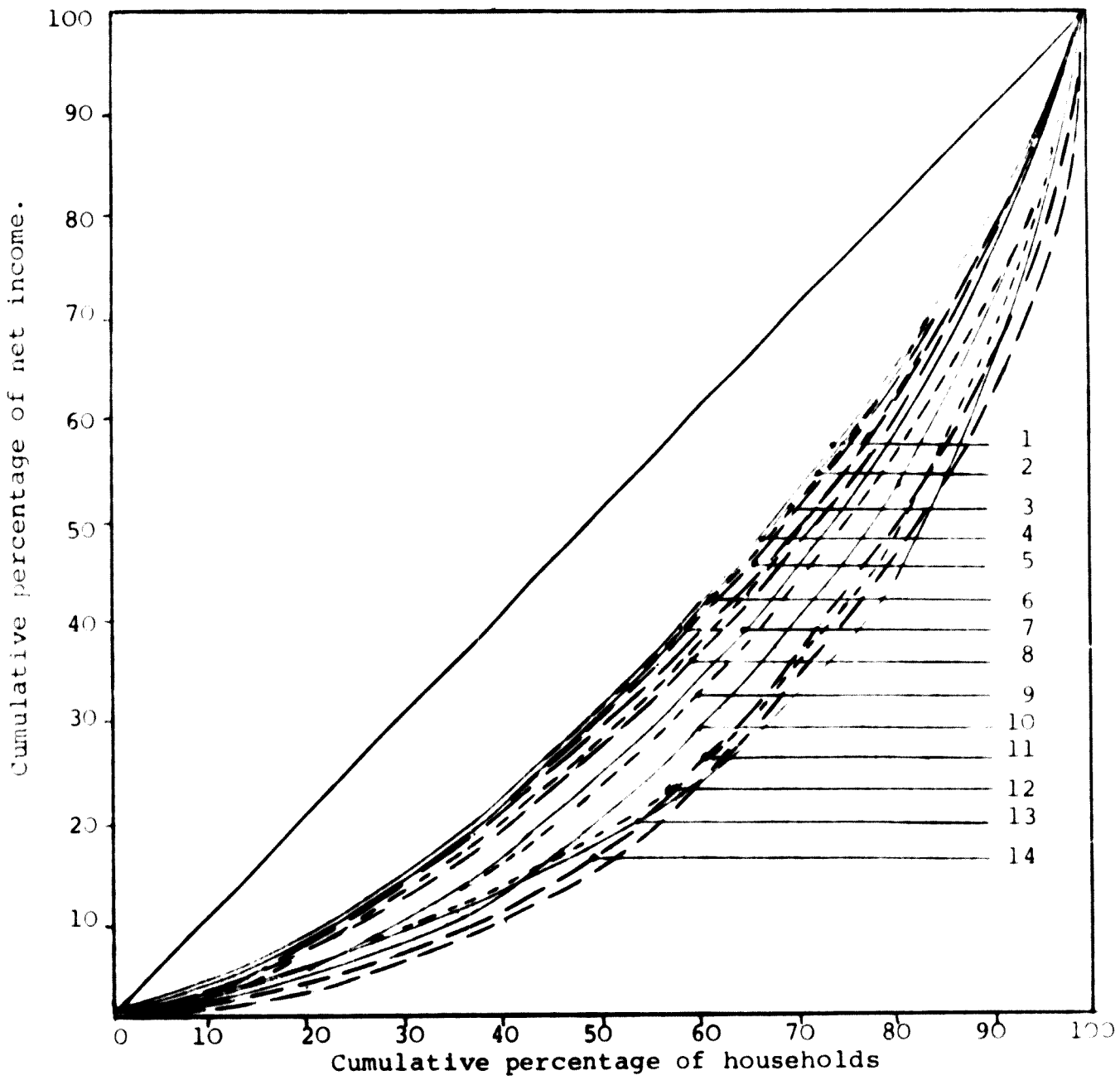
FIGURE 17 ALL JAPAN DISTRIBUTION OF HOUSEHOLDS BY YEARLY INCOME.



Note: 1970 all households.
1963 all households except farmers, fishermen, and forestry workers.

Source: 1970 Annual Report on the Family Income and Expenditure, Bureau of Statistics, Japan.
1963 Households Income and Expenditure Statistics No.1 1950-1964, ILO 1967.

FIGURE 18 INCOME DISTRIBUTION IN EUROPE 1969



1. Switzerland
2. Sweden
3. Luxemberg
4. West Germany
5. Netherlands
6. U.K.
7. France
8. Austria
9. Belgium
10. Finland
11. Italy
12. Ireland(Rep.)
13. Spain
14. Portugal

Source of data: Readers Digest Survey, early 1969 (1348).

The area between the Lorenz curve and the diagonal, expressed as a fraction of the total area under the diagonal (Gini's coefficient) is shown, together with average net weekly household income in Table 36.

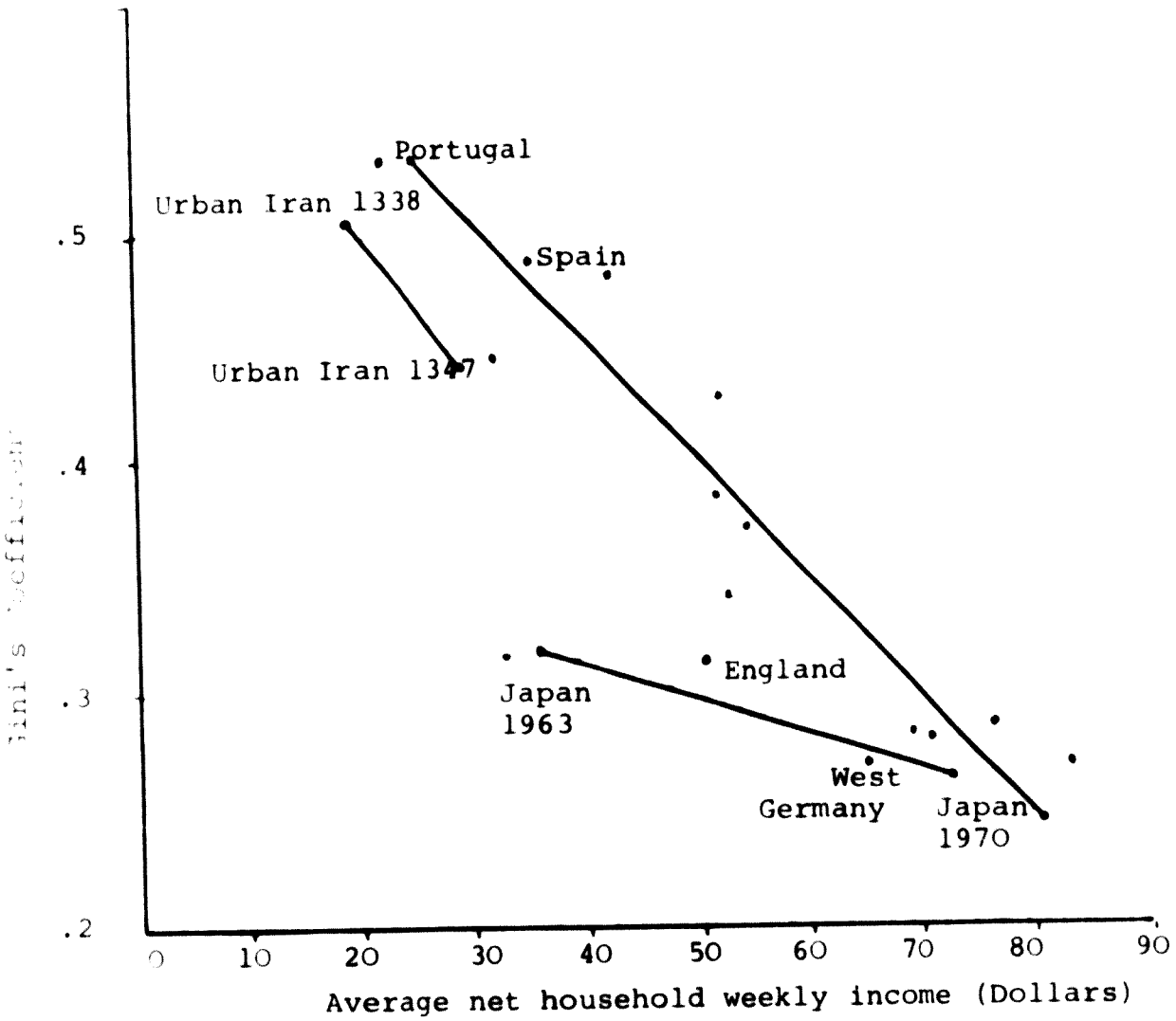
TABLE 36 COMPARISON OF INCOME DISTRIBUTION

COUNTRY EARLY 1969	AVERAGE NET WEEKLY HOUSE-HOLD INCOME $ DOLLARS	MEDIAN INCOME	GINI'S COEFFICIENT (2)
1. Switzerland	82.74	73	.2676
2. Sweden	76.08	68	.2892
3. Luxemburg	71.16	62	.2810
4. West Germany	62.10	55	.2786
5. Netherlands	69.84	55	.2840
6. U.K.	50.64	46	.3158
7. France	54.36	44	.3722
8. Austria	52.20	43	.3436
9. Belgium	51.66	42	.3862
10. Finland	51.72	38	.4304
11. Italy	41.94	30	.4820
12. Ireland (Rep.)	32.28	30	.4462
13. Spain	34.68	21	.4885
14. Portugal	21.48	13	.5324
IRAN, 1347, 32 Cities	29.13 (1)		.4464
IRAN, 1338, 32 Cities	19.50 (1)		.5006

(1) 76.25 rials per dollar, incomes from Bank Markazi
(2) Area between Lorenz curve and diagonal expressed as a fraction of total area below diagonal.

The relationship between income distribution (Gini's coefficient) and average net weekly household income is shown in Figure 19. The European countries display a decreasing value of Gini's coefficient with income (the outlying points have been identified). The rate of decrease is very similar to Urban Iran between 1338 and 1347. The decrease for Japan however,

FIGURE 19 EUROPEAN COUNTRIES HOUSEHOLD INCOME DISTRIBUTION, EARLY 1969 (LATE 1347) COMPARED TO URBAN IRAN (32 CITIES, 1338 AND 1347)



between 1963 (1342) and 1970 (1349) was more gradual.[1] However, Japan's Lorenz curve was in 1963 (1342) much flatter (smaller Gini's coefficient) than Iran even in 1347, and is, of course, limited in rate of decrease by the lower limit of Gini's coefficient of zero.

A similar pattern of points is displayed when plotting income per capita, rather than average household income, as shown in Figure 26.

It is concluded that income redistribution is highly dependent on Government policy and an individual country's situation. Hence for the purposes of forecasting domestic appliances no change has been assumed. Because of the possibility of change, however, the sensitivity of forecasts to income/expenditure distribution has been tested.

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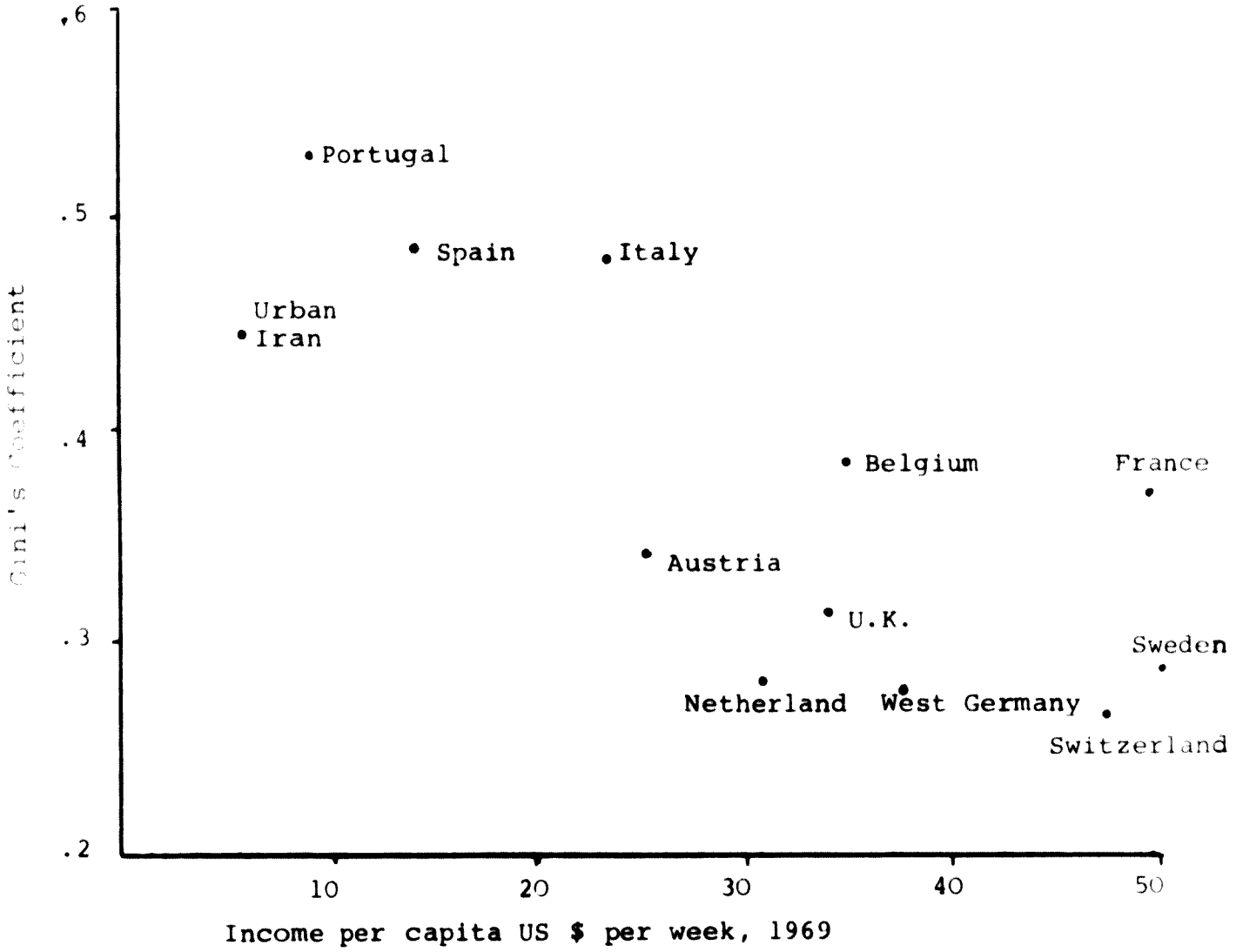
1. Indications are that a country has to reach a significant level of development before any appreciable shift in the domestic curve occurs. Unfortunately adequate statistical data to substantiate this is not available.

FIGURE 20 EUROPEAN COUNTRIES HOUSEHOLD INCOME DISTRIBUTION, EARLY 1969 (LATE 1347) COMPARED TO URBAN IRAN (32 CITIES, 1348)



14. SENSITIVITY OF RESULTS TO ASSUMPTIONS

The assumptions in order of magnitude of effect on resulting forecasts are:

1. GNP growth and total urban household expenditure growth.
2. Urban households growth.
3. Income redistribution.

a) GNP Growth Rate

Suppose that the GNP growth and total household expenditure growth were 1% less than forecasts. Then the forecasts of household expenditure would be over-estimated by the factors in the third column of Table 37.

TABLE 37

YEAR	N	$(1.01)^N$	$(1.02)^N$	$(1.03)^N$
1350	0	1.0000	1.0000	1.0000
1356	6	1.0615	1.1262	1.1940
1361	11	1.1156	1.2433	1.3842

Hence for every year beyond 1350 the forecasts of household expenditure would be over-estimated by about 1%. If the GNP growth turned out to be more than 1% below forecast, then the compounding effect would be greater as shown in the fourth column for 2% per annum and in the fifth column for 3% per annum. The effect on appliance sales would probably be greater than the percentage effect on average income due to income elasticity being greater than unity. For example an income elasticity of 1.3 under the assumption of an over-estimate in GNP growth of 11.6 would result in a over-estimate of 15% on demand in 1361.

b) Rural Migration

If migration from rural to urban areas turns out to be less than the current 3% per annum, then there would probably be a similar drop in the urban share of total household income and the two effects combined would have little effect on average income per urban household. There would, however, be less urban households and more rural households. Unless rural households bought domestic appliances in a similar pattern to urban households of the same income group, forecasts of appliace sales would be too high. For example, suppose that the annual increase in urban population was 1% per annum lower than forecast, then at the end of an 11 year period from 1350, the base year for population forecasts, the urban population and their demand for domestic appliances would be over-estimated by some 10%.

c) Income Distribution

The distribution of households by expenditure group has been deduced from a static expenditure distribution curve. It is however, quite possible that there will be a redistribution of income (and hence expenditure). If the redistribution of expenditure from 1350 to 1361 is similar in magnitude to the implied redistribution of income between 1338 and 1347 shown in Figure 4, then the Lorenz curve for 1361 will be as shown in Figure 21. The corresponding percentage households in each income group have been calculated as shown in the Table of Figure 21.

These percentages are shown against those deduced from a static expenditure distribution curve in Table 38.

[illegible] 21 INCOME REDISTRIBUTION, ALL URBAN CITIES

Expenditure Group	Cumulative Percentage Received	Normal Percentage Households
1	5.4	5.4
2	18.3	12.9
3	30.8	12.5
4	45.2	14.4
5	62.4	17.2
6	75.7	13.3
7	86.2	10.5
8	94.0	7.8
9	96.3	2.3
10	100.0	3.7

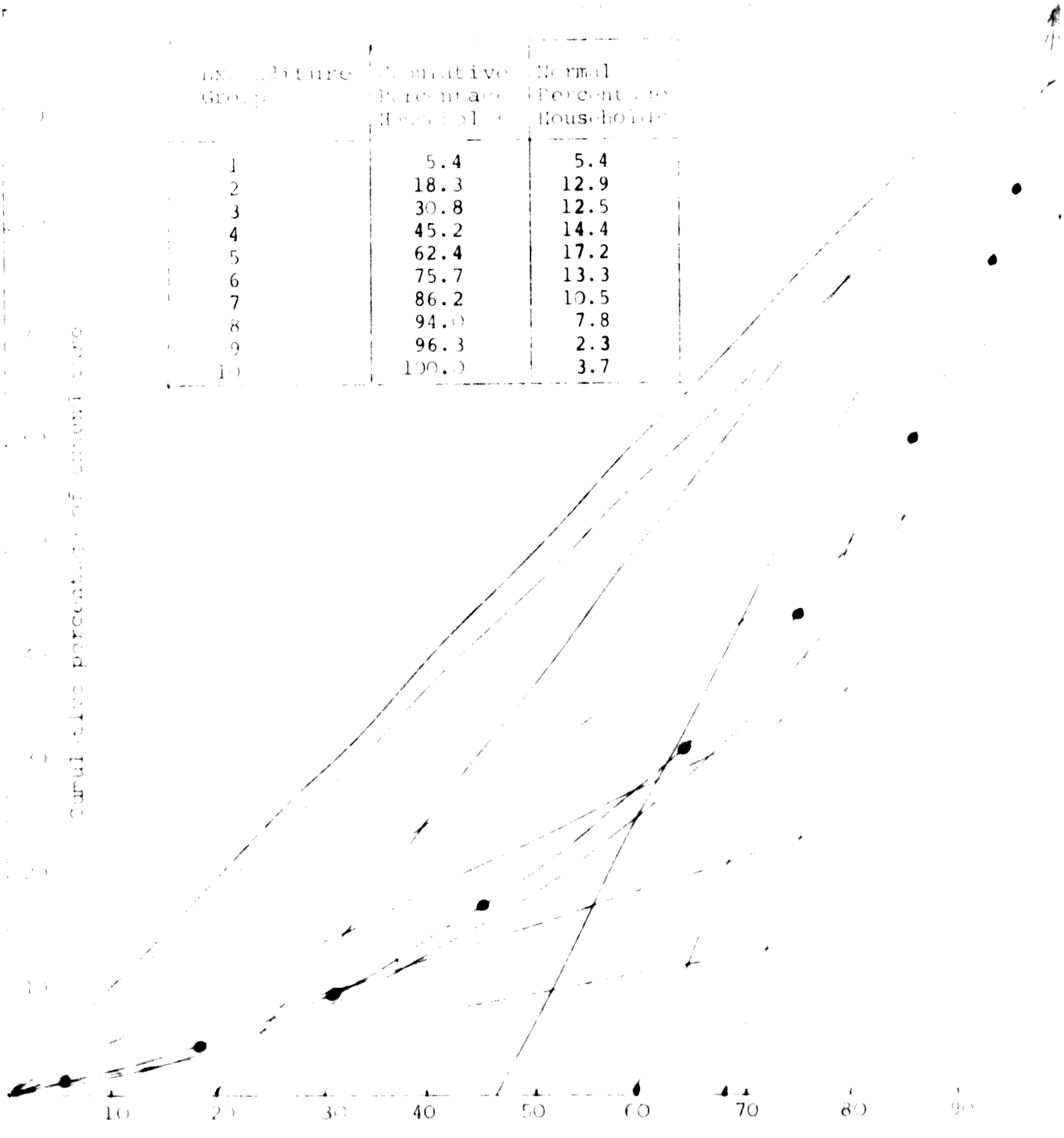


TABLE 38 SENSITIVITY OF HOUSEHOLDS BY EXPENDITURE GROUP, TO INCOME REDISTRIBUTION 1361

PERCENTAGE HOUSEHOLDS				HOUSEHOLDS		
No Income Redistribution		With Income Redistribution		No Income * Redistribution	With Income Redistribution	Difference
Cumulative	Normal	Cumulative	Normal			
6.5	6.5	5.4	5.4	318,529	264,624	- 53,905
18.9	12.4	18.3	12.9	607,656	632,158	+ 24,502
33.0	14.1	30.8	12.5	690,964	612,556	- 78,408
49.7	16.7	45.2	14.4	818,375	705,665	- 112,710
69.6	19.9	62.4	17.2	975,190	842,877	- 132,313
77.4	7.8	75.7	13.3	382,235	651,760	+ 269,525
89.0	11.6	86.2	10.5	568,452	514,547	- 53,905
93.8	4.8	94.0	7.8	235,222	382,235	+ 147,013
95.8	2.0	96.3	2.3	98,009	112,710	+ 14,701
100.0	4.2	100.0	3.7	205,819	181,316	- 24,503
	100.0		100.0	4,900,452	4,900,452	0

* as shown in Table 17

The difference in numbers of households is applied to ownership levels for televisions in Table 39.

TABLE 39 EFFECT OF INCOME REDISTRIBUTION ON HOUSEHOLDS WITH TELEVISIONS

Expenditure Group	Televisions % household ownership level	Difference in households due to income redistribution	Difference in households with televisions, due to income redistribution
1	13	- 53,905	- 7,008
2	31	+ 24,502	+ 7,596
3	45	- 78,408	- 35,284
4	58.5	- 112,710	- 65,935
5	69.5	- 132,313	- 91,958
6	82.5	+ 269,525	+ 222,358
7	97	- 53,905	- 52,288
8	99	+ 147,013	+ 145,523
9	99	+ 14,701	+ 14,554
10	99	- 24,503	- 24,258
TOTAL		0	+ 113,320

The effect of income redistribution is to that more households in the middle classes will have televisions. The total number of households with televisions forecast for 1361 is 3,079,000. If income redistribution occurs to the degree used in this sensitivity analysis, the number of households with televisions would increase by 113,000 to 3,192,000. This represents an increase of 3.5%.

15. MATHEMATICAL SECTION

Note that this work was undertaken before the Metra survey results were analysed and has since become partially redundant. However, the analysis does indicate that the assumptions about a static share of expenditure between the city groups are reasonable.

In section 11 reference was made to the way in which the shares of total urban household expenditure for Tehran, the big cities and the small cities were forecast. Figure shows the forecast distribution of households by expenditure group. The point corresponding to the average household expenditure for Tehran is marked with slope S_T^{48} on the Lorenz curve for 1348. Similar points are marked corresponding to the average household expenditure for the big cities (S_B^{48}) and for the small cities (S_S^{48})

Consider the average household expenditure for Tehran in 1348 is A_T^{48}. This corresponds to a point on the 1348 Lorenz curve where:

$$\frac{dX}{dH} \quad \frac{X}{H} \quad = \quad A_T^{48}$$

where X is expenditure for all Iran
H is households for all Iran

hence $$\frac{dX}{dH} = A_T^{48} \quad \frac{H}{X} = \frac{A_T^{48}}{A^{48}}$$

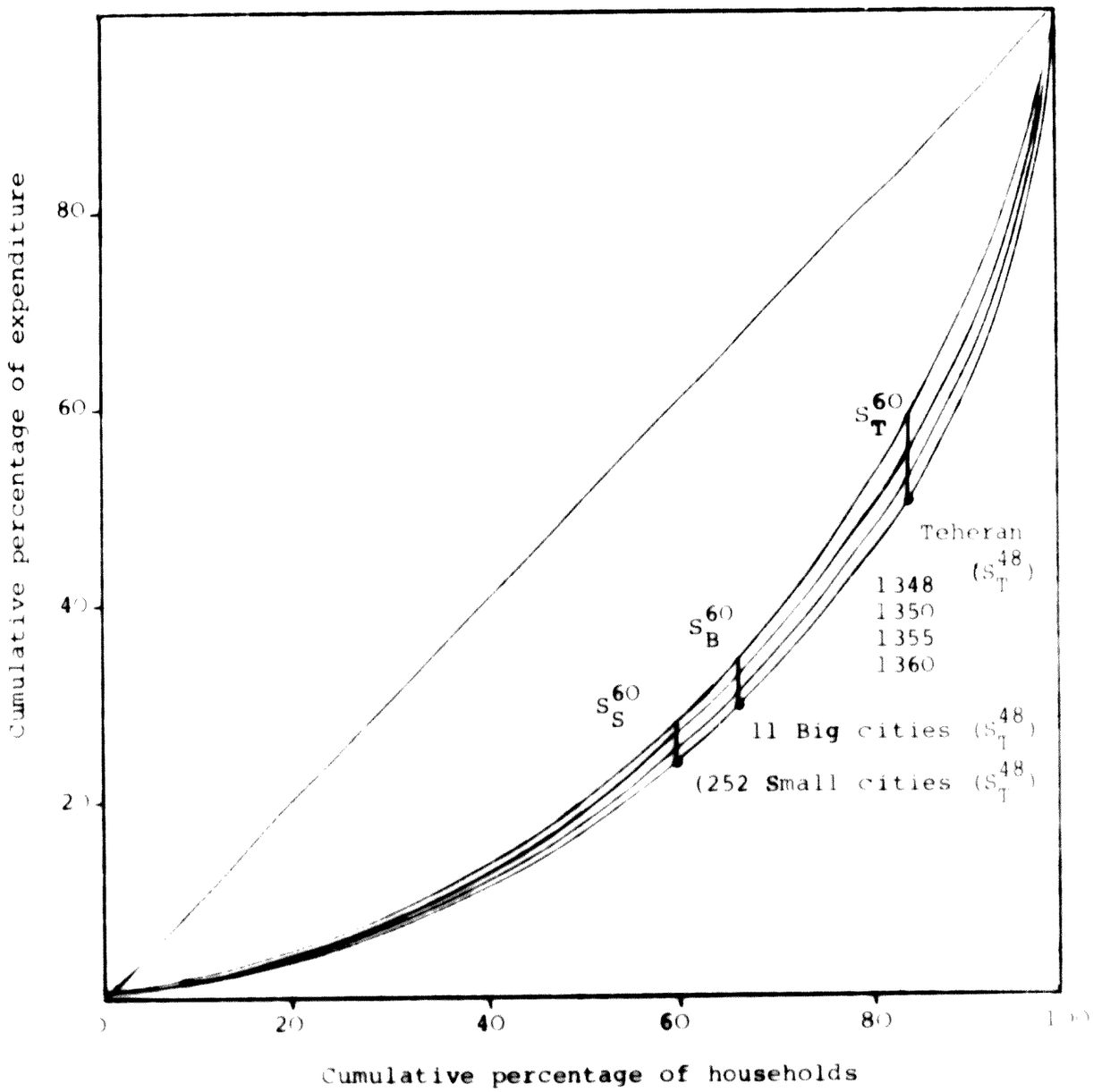
where A^{48} is the average household expenditure of all city groups

let $$\frac{dX}{dH} \quad (H_T^{48}, X_T^{48}) = \frac{A_T^{48}}{A^{48}} = S_T^{48}$$

similarly define:

$$\frac{dX}{dH} \quad (H_B^{48}, X_B^{48}) = \frac{A_B^{48}}{A^{48}} = S_B^{48}$$

FIGURE 22 ALL URBAN HOUSEHOLDS



and $\frac{dX}{dH}\left(H_S^{48}, X_S^{48}\right) = \frac{A_S^{48}}{A^{48}} = S_S^{48}$

S_T^{48}, S_B^{48} and S_S^{48} are the three slopes.

Tehran's share of total expenditure in 1348 can now be expressed as:

$$\frac{A_T^{48} H_T^{48}}{A_T^{48} H_T^{48} + A_B^{48} H_B^{48} + A_S^{48} H_S^{48}}$$

$$= \frac{S_T^{48} A^{48} H_T^{48}}{S_T^{48} A^{48} H_T^{48} + S_B^{48} A^{48} H_B^{48} + S_S^{48} A^{48} H_S^{48}}$$

$$= \frac{S_T^{48} H_T^{48}}{S_T^{48} H_T^{48} + S_B^{48} H_B^{48} + S_S^{48} H_S^{48}}$$

Similarly, Tehran's share for 1360 is:

$$\frac{S_T^{60} H_T^{60}}{S_T^{60} H_T^{60} + S_B^{60} H_B^{60} + S_S^{60} H_S^{60}}$$

and there are similar terms for the other years and the big cities and for the small cities.

The slopes S_T^{48}, S_B^{48} and S_S^{48} are indicated on the 1348 Lorenz curve for 1348 and the slopes S_T^{60}, S_B^{60} and S_S^{60} on the 1360 Lorenz curve in Figure 27.

The above formulae have been applied, together with the four sets of slopes for 1348, 1350, 1355, 1360 in Table 40.

TABLE 40 SHARES OF TOTAL URBAN HOUSEHOLD EXPENDITURE *

		1348	1350	1355	1360
Tehran	Lorenz slope for average expenditure S_T	1.466	1.493	1.605	1.720
Big Cities	S_B	.86	.90	1.00	1.06
Small Cities	S_S	.78	.80	.88	.92
Tehran	Households H_T	663770	774371	1058870	1448468
Big Cities	H_B	612688	699591	965749	1333679
Small Cities	H_S	1033749	1167220	1550652	2060041
Tehran	S_T H_T	973087	1156136	1699486	2491365
Big Cities	S_B H_B	526912	629632	965749	1413700
Small Cities	S_S H_S	806324	933776	1364574	1895238
TOTAL	$S_T H_T + S_B H_B + S_S H_S$	2306323	2719543	4029809	5800302
Tehran	$S_T H_T$ / Total	0.4219	0.4251	0.4217	0.4295
Big Cities	$S_B H_B$ / Total	0.2284	0.2315	0.2395	0.2437
Small Cities	$S_S H_S$ / Total	0.3496	0.3433	0.3386	0.3267
	TOTAL	0.9999	0.9999	0.9999	0.9999
TOTAL	TOTAL URBAN EXPENDITURE (million rials)	307518	379907	653352	1018776
Tehran	Urban expenditure	129742	161498	275519	437564
Big Cities		70237	87948	156543	248276
Small Cities		107508	130422	221225	332834

* Note that this analysis has been superceeded by Table 28. However Table 40 does indicate that city group shares will not alter appreciably.

QUESTIONNAIRE AND HOLE COUNT

SURVEY ON PURCHASES OF DOMESTIC APPLIANCES

City Name:

Questionnaire Number

	1	2	3	4
0	994	199	151	151
1	496	200	149	150
2	10	201	149	151
3	0	202	149	149
4	0	198	151	152
5	0	101	150	149
6	0	100	150	149
7	0	100	149	150
8	0	100	152	149
9	0	99	150	150

Card Number

	5	6
0	1500	0
1	0	1500

City Code

	7	8
0	0	685
1	500	102
2	473	141
3	25	101
4	452	83
5	45	59
6	0	100
7	1	48
8	0	73
9	0	104

Block Number

	9	10	11	12
0	1012	1107	599	114
1	78	0	501	171
2	41	172	195	186
3	150	0	130	159
4	30	111	56	194
5	5	0	11	147
6	76	55	5	126
7	0	0	0	123
8	105	47	0	136
9	0	5	0	141

Expenditure

	Expenditure 13	City Stratum 14
0	0	42
1	501	255
2	499	229
3	500	652
4	0	79
5	0	64
6	0	80
7	0	31
8	0	40
9	0	20

Do the following items exist in the blocks?

	Gas 15	Paved Road 16	T.V 17	Tel. 18	Elec. 19	Water 20
0	0	0	0	0	0	0
1	1435	0	0	0	0	0
2	0	1283	0	0	0	0
3	0	0	1214	0	0	0
4	0	0	0	1169	0	0
5	0	0	0	0	1480	0
6	0	0	0	0	0	1423
7	0	0	0	0	0	0
8	0	0	0	0	1	0
9	0	0	0	0	0	0

Name of interviewer:

Name of Supervisor:

Date of Questionnaire completion:

Block Address;

May I get some information about your household members?

Head

	33	34	35	36	37	38	39	40
	Average Monthly Income	Occu-pancy	Age Group	Marital Status			Sex	
				Widow	Single	Married	Female	Male
0	21	0	0	0	0	0	0	0
1	153	35	6	0	0	1362	1	1400
2	283	575	186	0	44	0	99	0
3	315	82	444	94	0	0	0	0
4	203	308	408	0	0	0	0	0
5	252	343	257	0	0	0	0	0
6	110	95	133	0	0	0	0	0
7	72	1	50	0	0	0	0	0
8	63	52	8	0	0	0	0	0
9	13	0	1	0	0	0	0	0

Spouse

	41	42	43	44	45	46	47	48
	Average Monthly Income	Occu-pancy	Age Group	Marital Status			Sex	
				Widow	Single	Married	Female	Male
0	1	0	0	0	0	0	0	0
1	23	5	82	0	1	1344	0	24
2	10	12	424	0	2	0	1331	0
3	11	3	437	0	0	0	0	0
4	10	15	278	0	0	0	0	0
5	10	31	101	0	0	0	0	0
6	3	3	31	0	0	0	0	0
7	3	0	1	0	0	0	0	0
8	1	1275	1	0	0	0	0	0
9	0	0	1	0	0	0	0	0

Age, Income and Occupation Groups

Monthly Income	Age Group	Occupation
Up to 2500	1 - 20	Unemployed
2501 - 4000	21 - 30	Employer
4001 - 6290	31 - 40	Non-Gvt.employees
6251 - 8500	41 - 50	Non-Gvt. workers
8501 - 12500	51 - 60	Gvt. employees
12501 - 17500	61 - 70	Gvt. workers
17501 - 25000	71 - 80	Unpaid Family Worker
25001 - 35000	81 - 90	Housewife
35001 - 41500	90 and over	
41501 and over		

Anybody at home? 21

Yes	1482
No	9

Did you contact the head of the household or the spouse? 22

Yes	1439
No	37

If the answer is no, write the reason: 23

(a) not suitable for the interview	3
(b) on journey	2
(c) not at home at the time of the interview	15
(d) did not co-operate	0
(e) others (specify)	5

Would you please tell me the number of nights you were at home at this time in the last seven days 24

1	2
2	2
3	7
4	10
5	26
6	125
7	1293
8	2

Time of interview start

	25	26	27	28
0	125	248	380	796
1	1345	230	268	10
2	16	122	159	28
3	0	86	279	31
4	0	129	226	29
5	0	172	181	497
6	0	144	3	26
7	0	125	0	34
8	0	108	0	27
9	6	133	0	19

Time of interview end

	29	30	31	32
0	81	192	294	726
1	1375	246	218	17
2	35	180	199	38
3	0	95	274	34
4	0	91	266	19
5	0	161	242	532
6	0	159	1	23
7	0	140	0	38
8	0	96	1	42
9	3	136	0	26

Number of children under 14

None
49

0	347
1	0
2	0
3	2
4	1

50

0	1
1	236
2	287
3	282
4	186
5	79
6	51
7	16
8	7

Other members of household in addition to head and spouse

None
53

0	1082
1	2

54

0	4
1	229
2	94
3	38
4	15
5	15
6	10
7	2
8	5

Number of children of 14 and over

None
51

0	782
1	0
2	1
3	1

52

0	2
1	218
2	218
3	148
4	66
5	33
6	18
7	3
8	5

Would you please tell me how many members of the household, in addition to the head and spouse, earn money income?

None
55

0	1284

56

0	1
1	153
2	43
3	8
4	1
5	2

Would you please tell me how much the three members of the household who earn the most money income, earn per month.

Income groups
(as in previous page)

	Third	Second	First
	57	58	59
0	0	0	1
1	3	18	63
2	0	8	43
3	3	8	44
4	3	10	26
5	1	6	22
6	1	3	9
7	0	1	2
8	0	0	4
9	0	0	0

Now would you please tell me how much money income your household earns altogether (per month).

(Use income group codes)

	60
0	39
1	132
2	247
3	297
4	208
5	249
6	134
7	97
8	72
9	15

Refrigerator

Do you own any refrigerators at home?

	61
Yes	737
No	759

Do you have more than one?

	62
Yes	26
No	706

How many refrigerators does your household have altogether?

	63
1	709
2	17
3	0
4 or more	0

Is the refrigerator mainly used by your household:

	64
smaller than 5'	5
5'	28
6'	26
7'	241
8'	53
9'	218
11'	73
12' and over	93

Would you please tell me when you bought the refrigerator which is mainly used by your household?

Please tell me what year and then in which season.

Season 65		Year 66
138	1350	84
474	1349	93
60	1348	135
35	1347	107
	Before 1347	316

Was it new or second-hand when you bought it?

67

New	686
secondhand	38

What is the trademark?

68

55	Westinghouse
84	Philco
118	Arj
44	General
104	Azmayesh
21	General Electric
11	Emerson
103	General Steel
187	Others

Is the refrigerator mainly used by your household:

69

648	The first one you ever had?
57	Replacement?
11	Addition?

What was the trademark of your previous refrigerator?

70

16	Westinghouse
9	Philco
4	Arj
2	General
5	Azmayesh
2	General Electric
1	Emerson
4	General Steel
42	Other

In case answer "B" is given to question number 8, ask:

What was the reason why you replaced your previous refrigerator?

71

23	It was small
0	Did not have lock
1	Did not have defrost
2	Did not freeze quickly
12	It was old
1	It made noises
3	The engine was burnt
0	Consumed too much electricity
15	Others

If answer "C" is given to question 8, ask:

Why did you buy another refrigerator while you already had one?

72

12	The first was small
0	Did not have lock
0	Did not defrost
1	Did not freeze
4	Was old
0	Made noise
1	Engine was burnt
0	Consumed too much electricity
2	Others

If the answer does not correspond with any one of the above answers, circle code "9".

Would you please tell me from what kind of store you purchased the refrigerator you mainly use now?

73

24	From a consumer co-op
11	Any other co-operative
106	From a shop which sells domestic appliances and does repairs
391	From a shop which sells domestic appliances but does not repair
82	From a shop that sells domestic appliances and other commodities
44	Direct from manufacturer or agent
35	From other types of store (specify)

Do you or any other member of your household intend to buy a refrigerator (or another refrigerator) in the next 12 months?

74

100	Yes
1380	No

If answer is yes, what type of refrigerator do you intend to buy?

75

1	Up to 5'
8	5'
1	6'
34	7'
7	8'
20	9'
3	11'
13	12'

If intend to buy do you want to replace the previous one or do you want to buy one in addition to the previous one?

76

14	Replace
11	Addition
182	Have no refrigerator for the time being

Would you please tell me what is the reason you want to buy a refrigerator

/ point to the answer to question 14

In case intend to buy:

77

5	Because it is cheaper
8	Because it is larger
21	Because we have a large household
23	Because it suits us better
17	Other

Card 2.

Questionnaire Number	1	2	3	4
0	994	199	151	151
1	496	200	149	150
2	10	201	149	151
3	0	202	149	149
4	0	198	151	152
5	0	101	150	149
6	0	100	150	149
7	0	100	149	150
8	0	100	152	149
9	0	99	150	150

Card Number	5	6
0	1500	0
1	0	0
2	0	1500

Do you have any TV at home?

7

443	Yes
1057	No

Do you have more than one?

8

9	Yes
434	No

How many TV does your household have altogether?

9

1	440
2	3
3	2

Is the TV (mainly used by your household (show the pictures)

10

212	A standard TV without radio
218	A large TV without radio
2	A standard TV with radio
7	A large TV with radio
5	A portable TV
1	Other (specify)

When did you buy it? In which year and which season?

	Season 11	Year 12	
1	70	88	1350
2	144	92	1349
3	137	65	1346
4	74	56	1347
		141	Before 1347

Was it new or secondhand?

13

413	New
20	Secondhand

What is the trademark?

14

106	Schaub Lorenz
18	Azmayesh
50	Philips
21	R.C.A.
22	Westinghouse
68	R.T.A.

15

3	National
76	Mofid
1	Belemont
17	Grundig
6	Bel-Air
3	Sanyo
9	Novister
30	Temp
11	Other

Is the TV you mainly use:

16

412	The first one your household has ever had
22	Replacement
3	Addition

If answer is "B" or "C" ask:

What was the trademark of your previous TV?

17

7	Schaub Lorenz
0	Azmayesh
2	Philips
0	R.C.A.
1	Westinghouse
2	R.T.A.

18

0	Sanyo
0	National
0	Mofid
0	Belemont
3	Grundig
1	Bel-Air
0	Philips
0	Novister
0	Temp
1	Other

If answer "B" to question 8, ask:

Would you please tell me why you replaced your previous TV.

19

1	Was small
0	Was not portable
3	Picture not clear
3	Was old
9	Was out of order
0	Was not elegant
6	Other

If answer "C" to question 8 ask:

Would you please tell me why you purchased another TV while you already had one?

20

0	Was small
0	Was not portable
1	We needed for another room
0	It was a gift
2	Other

From what type of store did you buy it?

21

16	From a consumer co-op
6	Any other co-operative
67	From a shop which sells domestic appliances and does repairs
226	From a shop which sells domestic appliances but does not repair
36	From a shop that sells domestic appliances and other commodities
45	Direct from manufacturer or agent
36	From other types of store (specify)

Do you intend to buy in the next 12 months?

22

54	Yes
1304	No
107	Don't know

If the answer is yes: What type of TV do you want to buy?

23

20	Standard without radio
3	Standard with radio
21	Large without radio
0	Large with radio
1	Portable
1	Others (specify

If you intend to buy, do you want to replace the present one or buy an additional?

24

6	Replace
0	Addition
103	Haven't got TV now

In case they intend to buy ask: What is the reason why you want to buy (point to the answer to question 14) a TV?

25

12	Is cheap
1	Has a clear picture
1	Is portable
0	Has easy purchasing terms
15	Is elegant
9	Other

Space Heater

Do you have a central heating at home?

26

27	Yes
1442	No

If the answer is yes, What kind of fuel do you use in it?

27

16	Kerosene
6	Fuel Oil
17	Gas Oil
0	Natural Gas
0	LPG
3	Charcoal
2	Firewood
0	Coal
0	Electricity
0	Other (specify)

If the answer is No, what kind of fuel do you use for heating your house?

28

973	Kerosene
3	Fuel Oil
1	Gas Oil
0	Natural Gas
1	LPG
349	Charcoal
53	Firewood
1	Coal
23	Electricity
10	Others (specify)

Would you please tell me in which room the space heater which uses the above-mentioned fuel is located?

29

1336	Sitting room
17	Bedroom
28	Guest room
3	Dining room
0	Study room
0	Servants' quarter
38	Hall
4	Kitchen
1	Store
9	Other (specify)

Is this fuel, in the above room, used in a closed appliance or an open one?

30

689	Closed
733	Open

Ask this question only from the households who use kerosene, gas or electricity for heating the house): Does this appliance heat water for washing or not?

31

54	Yes
1248	No

Would you please tell me how many appliances you have (altogether) for heating the house (and not water). First tell me how many appliances you have in which you use the following fuel:

	Others 32	Fire-wood 33	Char-coal 34	Coal 35	Elec. 36	Gas 37	Ker-sene 38
1	22	77	383	0	20	6	737
2	3	6	16	0	5	0	223
3	1	0	0	1	4	0	62
4	0	0	0	0	1	0	27
5	0	0	0	0	0	0	11

Were they new or secondhand when you bought them?

Prior to the last		The last one	
39		40	
385	New	1289	New
20	Secondhand	72	Secondhand

Would you please tell me when you bought (or got) them:

Prior to the last				The last one			
	Season 41	Year 42			Season 43	Year 44	
1	5	12	1350	1	30	122	1350
2	21	26	1349	2	125	205	1349
3	202	31	1348	3	662	223	1348
4	184	31	1347	4	514	157	1347
		323	Before 1347			658	Before 1347

Would you please tell me what kind of fuel you use in the last appliance you got?

45

1028	Kerosene
3	Gas
25	Electricity
1	Coal
239	Charcoal
79	Other

Would you please tell me what trade mark it is?

47

212	Arj
89	Azmayesh
3	General Steel
41	General
1	Volta
4	Universal
948	Others

Is it a closed one or an open one?

46

735	Closed
659	Open

Do you seriously intend to change the fuel you use for heating the house, or not?

48

56	Yes
1355	No

In case the answer is positive, ask:

Would you please tell me what kind of fuel you want to substitute for for the present one?

49

41	Kerosene
11	Gas
1	Electricity
0	Coal
0	Firewood
1	Charcoal
3	Gas Oil
0	Others

Water Heaters

What kind of fuel do you mostly use for heating water?

50	
356	Kerosene
41	LPG
4	Electricity
4	Charcoal
0	Coal
5	Firewood
8	Gas Oil
0	Fuel Oil
1	Natural Gas
65	Others

Is this water used in radiators for heating the house or not?

51	
9	Yes
597	No

In how many water heaters is this fuel used?

	52
1	342
2	14
3	7
4	2
5	1

How many water heaters do you have in which you use the following fuels?

	Other 53	Gas 54	Kerosene 55	Electricity 56
1	5	41	279	6
2	1	0	3	0

Were they new or secondhand when you got them?

57

295	New
23	Secondhand

When did you buy them?

	Season 58	Year 59	
1	28	41	1350
2	132	41	1349
3	93	49	1348
4	41	47	1347
		140	Before 1347

What is its trademark?

60

70	Arj
45	Azmayesh
116	General
11	General Steel
0	Volta
3	Universal
88	Others

Do you seriously intend to change the fuel which you use for heating water or not?

61

10	Yes
441	No

If yes, ask what kind of fuel do you want to substitute for it?

62

10	Kerosene
6	Gas
0	Electricity
0	Coal
0	Firewood
0	Charcoal
1	Gas Oil

Washing Machine

Do you have a washing machine at your house?

63

85	Yes
1410	No

Do you have more than one?

64

1	Yes
87	No

How many washing machines does your household have altogether?

65

1	83
2	1

Is the washing machine (mainly) used by your household : (show pictures)

66

64	Single tub, automatic
9	Single tub, but not automatic
4	Twin tub
8	Other

Would you please tell me when you bought your washing machine?

	Season 67	Year 68	
1	14	14	1350
2	24	16	1349
3	25	22	1348
4	18	10	1347
		23	Before 1347

Was it new or secondhand?

69

82	New
2	Secondhand

What brand is your washing machine?

70

1	Arj
8	Zanoosi
17	Hoover
1	Emerson
18	A.E.G.
3	General Electric
2	Philips
1	Westinghouse
33	Other

If "B" or "C", ask, what was the brand name of your previous washing machine?

72

0	Arj
0	Zanoosi
1	Hoover
0	Emerson
0	A.E.G.
0	General Electric
0	Philips
1	Westinghouse
5	Others

Is your washing machine

71

73	The first your household has ever had
7	Replacement
0	Addition

If answer "B" ask, what was the reason why you replaced your previous washing machine?

73

1	Was old
0	Was small
1	Did not work well
4	Was not automatic
0	Others (specify)

If answer "C", ask, would you please tell me why you bought another washing machine while you already had one?

74

0	Wanted to sell previous one but no demand for it
0	It was small
1	Others

If yes, what kind?

77

25	Automatic single tub
2	Unautomatic single tub
5	Twin tub
5	Other types

From what kind of store did you buy it?

75

2	A consumer co-operative
0	Any other co-operative store
7	A store which sells domestic appliances and does repairs
42	A store which sells domestic appliances but does not repair
5	A store which sells domestic appliances and other commodities
11	Directly from manufacturer or agent
7	Other stores

Do you or any other member of your household seriously intend to buy a washing machine in the coming 12 months?

76

47	Yes
1425	No

Card 3.

Questionnaire Number	1	2	3	4
0	994	199	151	151
1	496	200	149	150
2	10	201	149	151
3	0	202	149	149
4	0	198	151	152
5	0	101	150	149
6	0	100	150	149
7	0	100	149	150
8	0	100	152	149
9	0	99	150	150

Card Number	5	6
0	1500	0
1	0	0
2	0	0
3	0	1500

If they intend to buy,
do they want a
replacement or addition?

7

0	Replacement
2	Addition
77	Haven't got one now

If they want to purchase,
what is the reason you
want to buy a
washing machine?

8

28	Easy to work with
0	Occupies limited space
1	Cheaper
5	Others

Cooker

Would you please tell me what kind of fuel you use for cooking:

9

716	Kerosene
670	LPG
8	Natural Gas
19	Firewood
6	Charcoal
4	Electricity
3	Others

Do you have a gas range at your house?

10

686	Yes
793	No

Do you have more than one?

11

43	Yes
647	No

How many gas ranges does your household have (altogether)?

12

646	1
35	2
3	3
0	4 and more

Is your gas range a

13

10	One burner without oven
53	Two burner without oven
389	Three burner without oven
165	One or more burner with oven
73	Other

(If they haven't got a gas range, ask Question 14)

When did you buy it?

	Season 14	Year 15	
1	112	86	1350
2	273	131	1349
3	186	138	1348
4	88	115	1347
		217	Before 1347

Was it new or secondhand when you bought it?

16

665	New
14	Secondhand

What is the manufacturer?

17

26	Universal
15	Arj
36	General
1	Do gas
186	Iran gas
195	Persi gas
80	Butan
0	Ardel
9	Azmayesh
140	Other

Is your present gas range

18

632	The first one your household has ever had
23	Replacement
27	Addition

If answer "B" or "C" is given ask, what was the trademark of your previous gas range?

19

0	Universal
1	Arj
2	General
0	Do Gas
11	Iran Gas
10	Persi Gas
10	Butan
0	Ardel
0	Azmayesh
16	Others

If answer "B" is given ask, would you please tell me why you you replaced your previous gas range?

20

7	Was small
2	Had no oven
5	Was old
2	Consumed too much gas
3	Went out of order frequently
2	Not enough burners
1	
6	Others

If answer "C" is given to question 9 ask, would you please tell me why you purchased another gas range although you already had one?

21

15	One was not enough
2	
3	Was old
1	Did not have oven
8	Not enough burners
1	Others (specify)

In case the answer does not correspond with any one of the above possible answers, circle 6 and explain.

Would you please tell me from what kind of store you purchased your gas range?

22

14	Consumer co-operative
9	Any other co-operative
59	A store which sells domestic appliances and does repairs
322	A store which sells domestic appliances but does not repair
92	A store which sells domestic appliances and other commodities
56	Directly from manufacturer or agent
21	Other stores

Do you or any other member of your household intend to buy a gas range in the next 12 months?

23

100	Yes
1306	No

If yes, ask what kind of gas range do you want to buy?

24

2	One burner
13	Two burners
45	Three burners
26	Four burners with oven
5	Others

Cooler

Do you have a cooler at home?

25

221	Yes
1271	No

Does the cooler belong to your household or to the house you have rented?

26

195	Belongs to household
27	Belongs to the house

Do you have more than one?

27

24	Yes
199	No

How many coolers does your household have altogether?

28

199	1
17	2
5	3
0	4
1	5 and more

Is the cooler mainly used by your household:

29

153	The type which is directly connected to the water pipes of the house
31	The type of cooler which you you supply with water your-self (manually)
39	None of the above

Is it portable?

30

44	Yes
177	No

Was it new or secondhand when you bought it?

34

195	New
12	Secondhand

Does your cooler have any heating instrument?

31

1	Yes
215	No

What is the trademark of the cooler you have purchased?

35

104	Arj
24	General
26	Azmayesh
10	Universal
0	General Steel
2	General Electric
2	Westinghouse
0	Volta
0	Max
49	Others

If the cooler belongs tot the household ask, when did you buy? (season and year)

	Season 32	Year 33	
1	27	31	1350
2	159	51	1349
3	9	40	1348
4	8	38	1347
		48	Before 1347

Is the cooler you mainly use now:

36

187	The first one you have purchased
5	You have replaced your previous one
17	It is in addition to the one you already have

If the answer is "B" or "C" ask, What was the trademark of your previous cooler?

37

6	Arj
2	General
2	Azmayesh
0	Universal
0	General Steel
0	General Electric
1	Westinghouse
0	Volta
0	Max
11	Others

If the answer to question number 11 is "B" ask, Why did you replace your previous cooler?

38

0	Did not work well
0	Was noisy
0	Was old
2	Was small
0	Was portable
1	Consumed too much electricity
0	Went out of order frequently
1	Others

If the answer is "C" ask, Why did you buy another cooler while you already had one?

39

12	One was not sufficient
2	The first one was out of order
2	The first one was old
0	The first one was portable
3	Others

If the answer does not correspond with any one of the above answers circle code 5.

From what kind of store have you purchased your cooler?

40

9	A consumer co-operative
4	Any other co-operative store
13	A store which sells domestic appliances and does repairs
114	A store which sells domestic appliances but does not repair
34	Directly from the manufacturer or his sole agent
10	From other types of store(specify)
17	From a store which sells domestic appliances and other commodities

Do you or any member of your household intend to buy a cooler (or another cooler) within the next 12 months?

41

53	Yes
1398	No

What kind of cooler do you intend to buy?

42

37	Cooler directly connected to the house pipe water
3	Cooler for which water is supplied by hand
6	A portable cooler
0	Cooler which also has heating instrument
3	None

In case they intend to buy, ask, Do you want to change your present cooler or do you want to buy one in addition to the present one?

43

2	Replacement
4	Addition
97	Do not have a cooler

If they intend to buy ask, What is the main reason you want to purchase a cooler (refer to answer to question 17)?

44

4	We need a better cooler
4	We need another cooler
3	We need a portable cooler
23	Others

Radiogram

Do you have a radiogram, record player or tape recorder at home?

45

139	Radiogram
177	Record player
113	Tape recorder
1109	None

How many radiograms, record players and tape recorders do you have at home altogether?

Tape Recorder 47	Record Player 48	Radiogram 49	
120	197	150	1
3	5	6	2
0	0	0	3
0	0	1	4
0	0	0	5 or more

Does any member of your household have a radiogram, record player or tape recorder?

46

40	Radiogram
53	Record player
31	Tape recorder
1129	None

May I have some information about the last radiogram, record player and tape recorder you purchased or received as a present?

Is the last radiogram, record player and tape recorder mostly used by:

Tape Recorder 50	Record Player 51	Radiogram 52	
111	187	151	All members of the household
6	1	1	Head
1	1	3	Housewife
1	8	4	Son
3	3	1	Daughter
0	0	0	Other members
0	0	0	Servants and maids

What is the trade mark of your radiogram?

53

8	Sony
12	National
0	Pars
2	Lord
13	Grundig
1	Sonyo
9	Toshiba
133	Others

What is the trade mark of your tape recorder?

55

12	Sony
8	National
0	Pars
0	Lord
10	Grundig
2	Sonyo
5	Toshiba
83	Others

What is the trademark of your record player?

54

8	Sony
17	National
0	Pars
4	Lord
3	Grundig
1	Sonyo
12	Toshiba
139	Others

Does your radiogram, record player and tape recorder work by:

Tape Recorder 56	Record Player 57	Radiogram 58	
15	32	17	battery only
53	81	87	electricity only
54	80	54	both battery and electricity

Are the radiogram, tape recorder and record player stereo?

Tape Recorder 59	Record Player 60	Radiogram 61	
28	39	47	Yes
95	162	107	No

Were they new or secondhand when you got them?

Tape Recorder 62	Record Player 63	Radiogram 64	
108	179	143	New
13	21	14	Secondhand

When did you buy them?

Tape Recorder		Record Player		Radiogram		
Season 65	Year 66	Season 67	Year 68	Season 69	Year 70	
20	22	35	19	38	12	1350
37	29	87	26	60	16	1349
37	16	43	40	33	36	1348
24	12	26	25	25	24	1347
	43		87		73	Before 3147

Is there any possibility that either you or any other member of your household will purchase a radiogram, record player or tape recorder within the next 12 months (or receive one as a gift)?

Tape Recorder 71	Record Player 72	Radiogram 73	
13	11	5	Definitely
90	165	93	Possibly
1359	1288	1368	Not possible

Which of the following items would you like to have first?

74

205	Television
175	Washing machine
251	Gas cooker
146	Space heater
104	Cooler
294	Refrigerator

With regard to prices of the above items, the money you have and other necessities of your household, which one of these items do you think you will possibly purchase?

75

137	Television
127	Washing machine
179	Gas range
69	Space heater
87	Cooler
175	Refrigerator

Would you please tell me how much money your household spends per month?

76

134	Up to 2500 Rls
266	2501 - 4000
318	4001 - 6250
200	6251 - 8500
266	8501 - 12500
120	12501 - 17500
83	17501 - 25000
52	25001 - 35000
10	35001 - 41500
15	41501 and over

<u>Motor Vehicle</u>

Do you or any other member of your household have a 3 or 4 wheel motor vehicle at his service permanently, i.e. 24 hours per day and 7 days per week?

77

218	Yes
1279	No

Questionnaire Number:

	1	2	3	4
0	994	199	151	151
1	496	200	149	150
2	10	201	149	151
3	0	202	149	149
4	0	198	151	152
5	0	101	150	149
6	0	100	150	149
7	0	100	149	150
8	0	100	152	149
9	0	99	150	150

Card Number:

	5	6
0	1500	0
1	0	0
2	0	0
3	0	0
4	0	1500

If the answer is yes ask, Do your household members have more than one motor vehicle permanently at their service?

7

20	Yes
209	No

Would you please tell me how many 3 or 4 wheel motor vehicles your household has altogether?

8

200	1
9	2
1	3
0	4
0	5 and more

If they have more than one motor vehicle, ask, Which one of these motor vehicles is used the most? i.e., which one of them is run the longest distance within a week?

Now ask, How many Km does this motor vehicle (which is mostly used) go each week (on average)?

9

2	Up to 100 Km
3	101-150 Km
2	151-225 Km
7	226-350 Km
3	351-500 Km
3	501-750 Km
1	751-1150 Km
1	1151-1700 Km
0	1701 and more

(If they have only one motor vehicle ask, How many Km does your motor vehicle run per week on average?)

10

31	Up to 100 Km
14	101-150 Km
32	151-225 Km
49	226-350 Km
16	351-500 Km
14	501-750 Km
7	751-1150 Km
6	1151-1700 Km
10	1701 and more

If they have more than one motor vehicle ask, What kind of motor vehicle is the one which is run the most per week?

11

89	Saloon car
6	Pick-up
1	Closed van (lorry)
2	Station wagon
5	Jeep or landrover
9	Other

What is the manufacturer?

Imported:

12

28	Any American car
31	Volkswagen
4	Fiat
14	Mercedes Benz
40	Other (specify)

Locally produced (Domestic) cars:

13

6	Citroen
58	Peikan
18	Rambler
4	Jeep
1	Landrover
2	Mazda
6	Other

Does the above motor vehicle:

14

204	Belong to you or another member of your household
1	You have rented it full time
2	Belongs to the organisation where you or another member of your household works
1	Belongs to a friend or relative and is temporarily given to you
1	None of the above answers

Does it have a radio?

15

134	Yes
75	No

Which member of your household uses it most?

16

184	The head
5	Housewife
17	Daughter or son
6	Others

The one who uses it the most - for what purpose does he use it?

17

115	For business
99	For household affairs

If they use it for business ask, Is it ever used for household affairs too?

18

86	Yes
36	No

If the answer to question 11 is 2, ask, Is it ever used for business too?

19

49	Yes
60	No

If the vehicle is also used for business (the answer to question 11 or 13 is yes) ask, Would you please tell me for what purpose do you use it in your business?

20

105	To go to work only but it is not used during the day
36	It is mainly used during the day to go from place to place, but is not used for carrying goods or large quantities of goods
21	It is used for carrying passengers in lieu of money

Now would you please tell me what other use you make of it in addition to the above-mentioned uses? (Select the correct answer from answers to question 14)

21

31
65
6

If it is used for carrying goods ask, what type of goods is usually carried by this vehicle?

22

3	Livestock, animals, poultry, etc.
4	Building materials, e.g. bricks, cement, lumber, wood beam etc.
1	Furniture, gas ranges, washing machines, etc.
0	Clothing materials, carpets and rugs
1	Fuels, e.g. charcoal, firewood, etc.
3	Metals, e.g. Ironbeam, iron pipes, metal sheets etc.
8	Others

Would you please tell me when you got this vehicle?

Season 23	Year 24	
59	30	1350
82	40	1349
35	54	1348
30	40	1347
	49	Before 1347

Was it new or secondhand when you got it?

25

110	New
104	Secondhand

Is the vehicle mainly used now:

26

120	The first your household has ever had
74	Replacement
18	Addition

If "B" or "C" ask, What was the manufacturer of your previous one?

Domestic:

Type of vehicle
27

68	Saloon car
1	Pick up
1	Closed van
1	Station wagon
1	Jeep & Landrover
5	Others

Manufacturer
28

1	Citroen
8	Peikan
0	Rambler
2	Jeep
1	Landrover
1	Mazda
3	Other

Imported:

29

18	Any American car
18	Volkswagen
1	Fiat
17	Mercedes Benz
25	Any other motor vehicle

If the answer to question 19 is "B" (replacement) ask, Why did you replace your previous car?

30

42	Was old
5	Too much fuel cost
10	Too much repair costs
11	Was small
1	Was big
0	Spare parts were expensive or not available
3	Had accident
13	Others

Do you or any other member of your household intend to buy a (or another) motor vehicle within the next 12 months?

31

29	Yes
1430	No

If intend to buy, what kind of motor vehicle do you intend to buy?

32

26	Saloon car
0	Pick up
0	Closed lorry
0	Station wagon
1	Jeep
0	Others

If they intend to buy ask, Do you want to replace your present motor vehicle or want to buy an additional one?

33

3	Replacement
22	Addition

If they intend to buy another one ask, What is the main reason why you want to buy a (refer to the answer to question 23)?

34

3	One is not sufficient
3	For business use
1	The first one is old
0	The first one was in an accident
1	For another member of the household
7	Others

If the household has more than one motor vehicle, ask question No.5 as follows: Which one of your household motor vehicles is run the next longest distance in an average week?

35

9	Saloon car
0	Pick up
0	Closed lorry
0	Station wagon
1	Jeep or landrover
0	Others

If the household has only one more motor vehicle (i.e. has 2 motor vehicles altogether) ask, How many kilometers does your second motor vehicle run in an average week?

36

0	Up to 100 Km
0	101-150
0	151-225
3	226-350
0	351-500
1	501-750
0	751-1150
0	1151-1700
0	1701 and more

What type of motor vehicle is it?

37

6	Saloon car
1	Pick up
0	Closed lorry
0	Station wagon
1	Jeep or landrover
0	Others

What is its manufacturer?

Imported

38

0	Any American car
0	Volkswagen
0	Fiat
2	Mercedes Benz
4	Any other car

Domestic

39

1	Citroen
2	Pikan
1	Rambler
1	Jeep
0	Landrover
0	Mazda
0	Others

Does the vehicle:

40

9	Belong to you or any other member of your household
0	You have rented it full time
0	Belongs to the organisation where you or another member of your household works
0	Belongs to a friend or relative but it is at your service temporarily
0	If none of the above answers, circle code 5.

Does it have a radio?

41

6	Yes
2	No

Which one of the members of your household uses it the most?

42

4	Head
0	Housewife
4	Son or daughter
0	Others

The one who uses it most, for what purpose does he use it?

43

5	Business
3	Household affairs

If for business ask, Is it ever used for household affairs?

44

4	Yes
0	No

If the answer to question 33 is 2, ask, Is it ever used for business too?

45

0	Yes
5	No

If the vehicle is used for business too, (i.e. the answers to questions 33 or 35 are yes) ask, Would you please tell me for what purpose you mostly use it in business?

46

3	To go to work only but not used during the day
1	Mainly used during day for going from place to place; not usually used for carrying goods
0	It is used for carrying passengers in lieu of money

What additional use do you make of it (the next most important use - select proper code from answers to question 36)?

Second use:

47

4	1
0	2
0	3

If used for carrying goods ask, What type of goods is usually carried?

48

0	Livestock, poultry, animals
0	Building materials, e.g. bricks
0	Furniture, gas range, washing machine
0	Clothing, carpets
0	Fuels
0	Metals
0	Others

Was it new or secondhand when you got it?

51

5	New
3	Secondhand

Is this vehicle:

52

11	The first one your household has ever had
5	Replacement
3	Addition

When did you buy it?

Season 49	Year 50	
3	3	1350
2	0	1349
1	2	1348
1	0	1347
	3	Before 1347

If the answer is "B" or "C", ask, Would you please tell me what was the manufacturer of your previous car?

53

3	Saloon car
1	Pick up
0	Closed lorry
0	Station wagon
2	Jeep or landrover
0	Others

Domestic:

54

0	Citroen
1	Peikan
0	Rambler
1	Jeep
1	Landrover
0	Mazda
0	Others

Imported:

55

2	Any American car
1	Volkswagen
0	Fiat
1	Mercedes Benz
2	Any other car

If the answer to question 41 is "B" or "C" ask, Would you please tell me why you changed your previous vehicle and got this one?

56

3	Was old
0	Too much fuel (costly)
0	Too much cost of repairs
2	Was small
0	Was big
0	Spare parts were expensive (or could not be found)
0	Had accident
1	Others

Do you or any other member of your household intend to purchase a 3 or 4 wheel vehicle within the next 12 months?

57

12	Yes
671	No

If intend to buy ask, What type of vehicle do you intend to purchase?

58

14	Saloon car
0	Pick up
0	Closed van
0	Station wagon
0	Jeep or landrover
1	Others

If they intend to buy ask, Do you want to replace your present vehicle or do you want to purchase another one in addition?

59

0	Replacement
8	Addition

If they want to purchase an additional one ask, Would you please tell me what is the most important reason why you want to purchase another one? (Refer to the answer to question 45.)

60

1	One is not enough
1	For business use
0	First one is too old
0	First one has had an accident
0	For another member of household
4	Others

If the household has more than one vehicle repeat the question 5 as follows, Would you please tell me which one of the vehicles belonging to your household goes the longest distance in an average week (next to the vehicle previously mentioned in question 6)?

61

1	Saloon car
1	Pick up
0	Closed van
0	Station wagon
1	Jeep or landrover
0	Others

Radio

Do you have any radios at all in your house?

62

1052	Yes
440	No

Does any member of your household have any radios?

63

382	Yes
748	No

How many radios does your household have altogether?

64

931	1
92	2
20	3
4	4
5	5 or more

May I have some information about the last radio(s) you purchased or received as a gift? (If they have several radios complete the following question up to the second radio). Is the mentioned radio:

Before last 65	Last radio 66	
112	994	Mainly used by all members of household
1	22	Head of household
0	10	Housewife
8	17	Son of household
1	10	Daughter of household
4	1	Servants
0	1	Others

What trademark is (are) these radios?

Prior to last 67	Last 68	
1	6	Pars Electric
0	2	Iran Radio
7	61	National
14	194	Toshiba
13	154	Philips
8	40	Grundig
81	592	Others

Do these radios work only by:

Prior to the last 69	The last one 70	
51	524	Battery
68	470	Electricity
6	57	Battery and electricity

Are the radios:

Prior to the last 71	The last one 72	
43	443	A small transistor
9	82	A non-transistor
74	523	A table radio

Was(were) it(they) new or secondhand when purchased?

Prior to the last 73	The last one 74	
116	936	New
9	117	Secondhand

Questionnaire Number:

	1	2	3	4
0	994	199	151	151
1	496	200	149	150
2	10	201	149	151
3	0	202	149	149
4	0	198	151	152
5	0	101	150	149
6	0	100	150	149
7	0	100	149	150
8	0	100	152	149
9	0	99	150	150

Card Number:

	5	6
0	1500	0
1	0	0
2	0	0
3	0	0
4	0	0
5	0	1500

When did you buy it(them)?

Prior to last		The last		
Season 7	Year 8	Season 9	Year 10	
25	3	167	65	1350
33	5	369	131	1349
33	12	268	149	1348
25	10	150	128	1347
	92		544	Before 1347

Do you think it possible that you or another member of your household will purchase, or receive as a gift, a radio in the next 12 months?

11	
23	Very possible
267	Just possible
1120	Impossible

Electric Fan

Do you have any table fan at your house?

12

609	Yes
885	No

Do you have more than one?

13

48	Yes
562	No

How many does your household have altogether?

14

568	1
34	2
8	3
1	4
2	5 or more

Has the fan mainly used by your household:

15

18	Only one speed without rotating around
55	Multiple speeds without rotating around
50	Only one speed but rotates in different directions
487	Multiple speeds but rotates in different directions

When did you purchase the fan used mainly by your household?

Season 16

81	
433	
58	
24	

Year 17

39	1350
67	1349
92	1348
96	1347
316	Before 1347

Was it new or secondhand when you bought it?

18

564	New
37	Secondhand

What is the trademark of your fan (manufacturer)?

19

148	Toshiba
1	Iran Fanco
7	Emerson
88	National
364	Others

Is the fan mainly used by your household:

20

532	The first one your household has ever had
25	A replacement
38	An addition

If the answer to question 8 is "B" or "C" ask, What was your previous fan?

21

9	Toshiba
0	Iran Fanco
1	Emerson
3	National
46	Others

If the answer to question 8 is "B" ask, What was the main reason why you replaced your previous fan?

22

5	Was old
13	Was out of order
0	Was noisy
7	Others

If the answer to question 8 is "C" ask, Why did you purchase another fan while you had one?

23

38	One was not enough
2	The first one was out of order
0	The first one was old
1	It was noisy
2	Others

Would you please tell me from what type of store you purchased the fan used mainly by your household?

24

9	Consumer co-operative
7	Any other co-operative
24	A store which sells domestic appliances and does repairs
295	A store which sells domestic appliances but does not repair
95	A store which sells domestic appliances and other commodities
9	Directly from manufacturer or agent
34	Other stores

Do you or any other member of your household seriously intend to buy an electric fan within the next 12 months?

25

35	Yes
1268	No
168	Don't know

If the answer is positive (they want to buy) ask, What type of fan do you intend to buy?

26

0	Fan with one speed, no movement
3	Fan with multiple speed, no movement
6	Fan with one speed moving in different directions
24	Fan with multiple speed moving in different directions

If they intend to purchase a fan ask, Would you please tell me why you want to purchase a fan (refer to answer to question 14)?

28

7	Looks better
12	Is better
0	Is cheaper
8	Others

In case they intend to purchase a fan ask, Do you want tc replace your present fan, or do you want to purchase an additional one?

27

1	Replacement
5	Addition
56	Have no fan at present

If they intend to purchase a fan: Would you please tell me why you want to purchase a fan (refer to answer

Vacuum Cleaner

Do you have any vacuum cleaners at your house?

29

61	Yes
1425	No

Does your household have more than one vacuum cleaner?

30

1	Yes
73	No

How many vacuum cleaners does your household have?

31

61	1
0	2
0	3
0	4
0	5 or more

When did you buy your vacuum cleaner?

Season
32

12
17
17
10

Year
33

7	1350
10	1349
9	1348
8	1347
26	Before 1347

What type is your last vacuum cleaner (show pictures)?

34

33	Upright stick (picture 1)
10	Cylinder type (picture 2)
3	Picture 3
14	Picture 4

What is the brand name of your last vacuum cleaner (manufacturer)?

35

1	Toshiba
13	Hoover
6	Electrolux
5	Siemens
1	Sanyo
3	Emerson
6	Philips
26	Others

Was it new or secondhand when you bought it?

36

57	New
4	Secondhand

Did you buy it or was it a gift?

37

54	Purchase
6	Gift

Is there any possibility that you or a member of your household will purchase a vacuum cleaner or receive one as a gift during the next 12 months?

38

10	Very likely
102	Possible
1253	Impossible

Freezer

Do you have a freezer at your house?

39

0	Yes
1497	No

Do you have more than one electric freezer?

40

0	Yes
2	No

How many freezers does your household have?

41

0	1
0	2
0	3
0	4

When did you purchase (or receive as a gift) your freezer?

Season 42	Year 43	
0	0	1350
0	0	1349
0	0	1348
0	0	1347
	0	Before 1347

What is the trademark of your freezer?

44

0	Arj
0	Azmayesh
0	Philco
0	General Electric
0	Others

Was it new or secondhand when you got it?

45

0	New
0	Secondhand

Have you purchased it or received it as a gift?

46

0	Purchase
3	Gift

Electric Hair Curler

Do you have any electric hair curlers at your home?

47

7	Yes
1489	No

How many electric hair curlers does your household have?

48

7	1
1	2
0	3
0	4 or more

When did you buy it (or receive it as a gift)?

Season 49	Year 50	
1	2	1350
2	3	1349
2	0	1348
1	1	1347
	0	Before 1347

What is the trademark of your hair curler?

51

0	Nazic
2	Philips
0	National
0	Toshiba
5	Others

Was it new or secondhand when you got it?

52

7	New
0	Secondhand

Did you purchase the hair curler or was it a gift?

53

5	Purchase
3	Gift

Electric Blanket

Do you have any electric blankets at your house?

54

9	Yes
1483	No

Do you have more than one electric blanket?

55

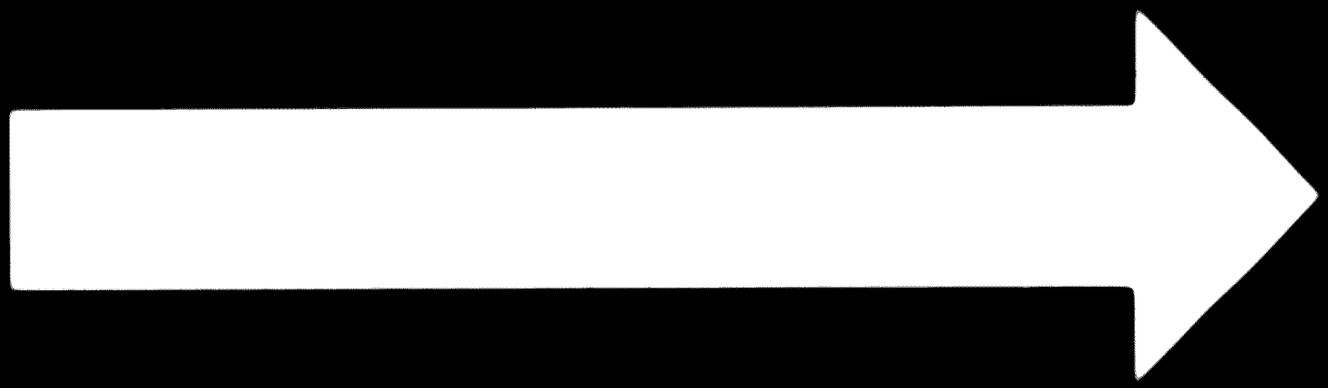
2	Yes
9	No

How many electric blankets does your household have?

56

7	1
1	2
0	3
0	4 or more

C-846



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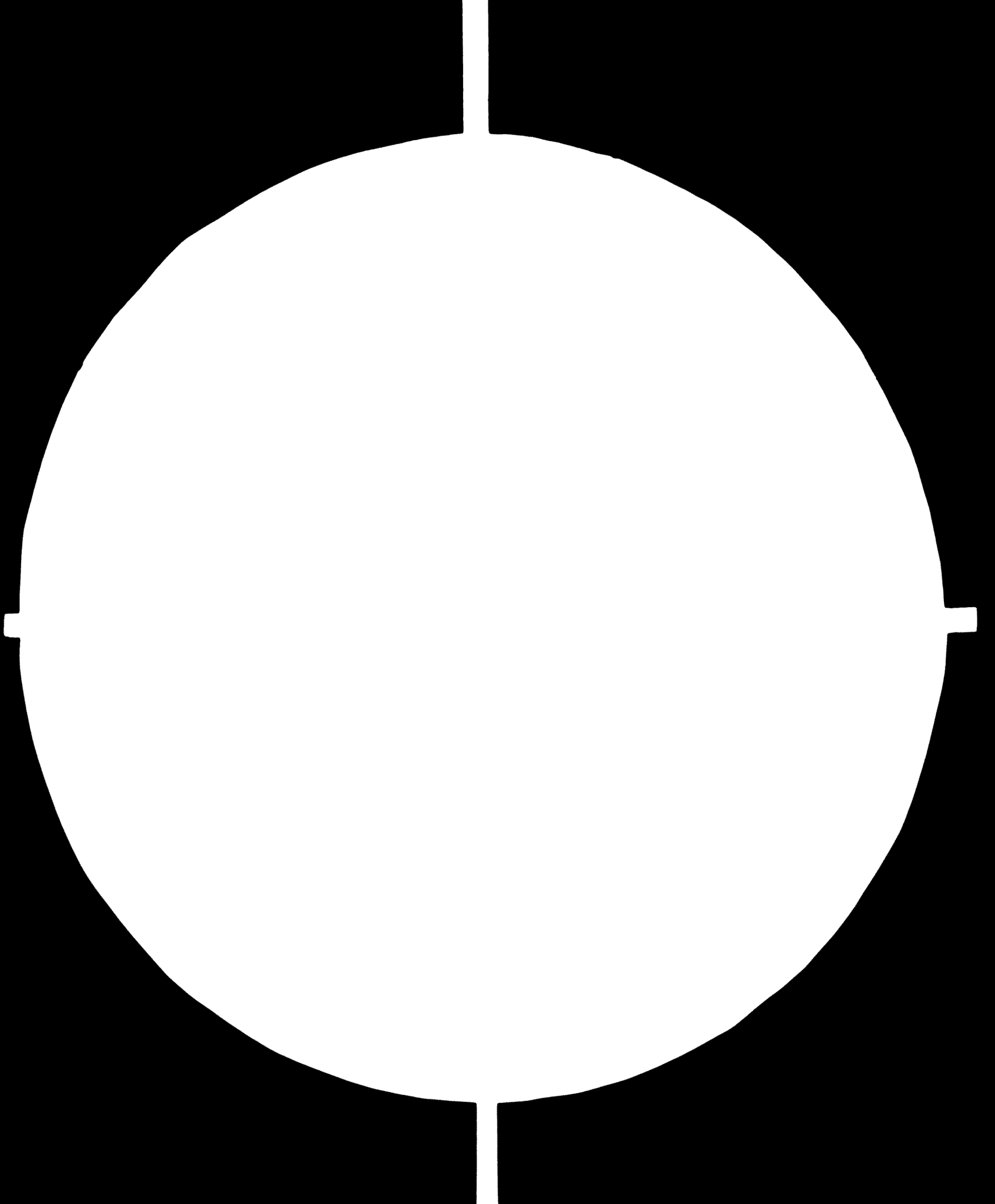

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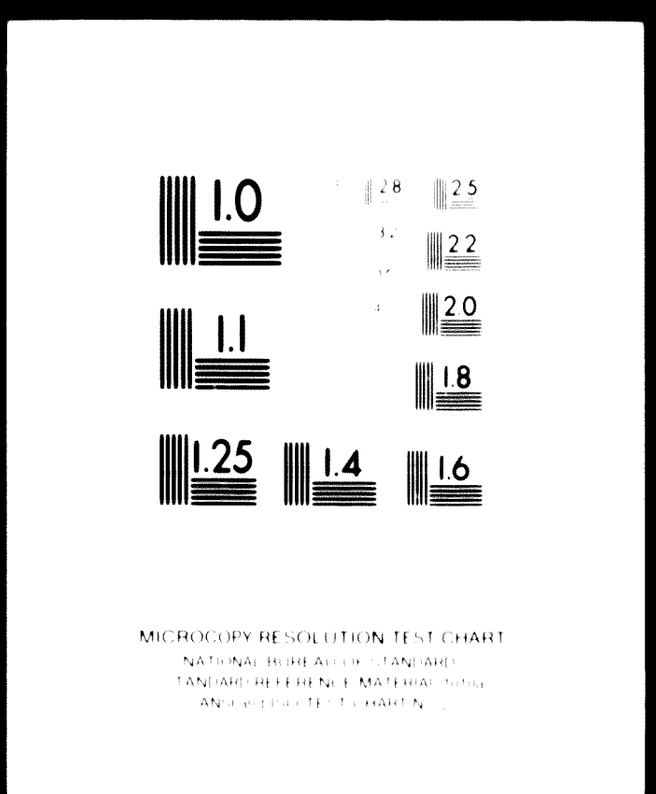
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STANDARD REFERENCE MATERIAL
AND
TEST CHART

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When did you buy your electric blanket?

Season 57	Year 58	
1	1	1350
2	1	1349
4	2	1348
2	0	1347
	5	Before 1347

Did you purchase it or receive it as a gift?

61

3	Purchase
7	Gift

What is the brand name of your electric blanket?

59

0	General Electric
0	Philips
8	Others

Was it new or secondhand when you bought it?

60

9	New
0	Secondhand

Dish Washer

Do you have a dish washer at your house?

62

4	Yes
1488	No

Do you have more than one dish washer?

63

0	Yes
6	No

How many dish washers does your household have altogether?

64

4	1
0	2
0	3
0	4
0	5 or more

When did you purchase your last dish washer?

Season	Year	
65	66	
0	0	1350
0	2	1349
2	0	1348
2	1	1347
	1	Before 1347

What is the trademark of your dishwasher?

67

0	Hoover
0	General Electric
3	AEG
0	Philips
1	Others

Was it new or secondhand when you got it?

68

4	New
0	Secondhand

Did you purchase it or was it a gift?

69

5	Purchase
1	Gift

Electric Iron

Do you have any electric irons at your house?

70

792	Yes
697	No

Do you have more than one electric iron?

71

62	Yes
728	No

How many electric irons does your household have altogether?

72

738	1
46	2
7	3
0	4
3	5 or more

How many steam irons do you have?

73

39	1
0	2
0	3
2	4
1241	5 or more

When did you buy your electric iron?

Season 74	Year 75
136	34
270	82
205	110
136	68
	503

What is the trademark of your electric iron?

76

118	AEG
13	General Electric
70	National
28	Philips
30	Toshiba
182	Olympia
340	Others

Was it new or secondhand when you bought it?

77

773	New
12	Secondhand

Questionnaire Number:

	1	2	3	4
0	994	199	151	151
1	496	200	149	150
2	10	201	149	151
3	0	202	149	149
4	0	198	151	152
5	0	101	150	149
6	0	100	150	149
7	0	100	149	150
8	0	100	152	149
9	0	99	150	150

Card Number:

	5	6
0	1500	0
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	1500

Did you purchase it or was it a gift?

7

638	Purchase
78	Gift

How many electric kettles does your household have altogether?

10

26	1
1	2
0	3
0	4
0	5 or more

Electric Kettle

Do you have any electric kettles at your house?

8

28	Yes
1470	No

When did you purchase your last electric kettle?

Season 11	Year 12	
5	2	1350
7	1	1349
4	1	1348
8	3	1347
	21	Before 1347

Do you have more than one electric kettle?

9

2	Yes
29	No

What is the trademark of your electric kettle?

13

0	Majic
5	Olympia
0	Morphy Richards
0	Philips
2	Ziemens
20	Others

Was it new or secondhand when you bought it?

14

27	New
1	Secondhand

Did you purchase it or receive it as a gift?

15

25	Purchase
3	Gift

Electric Meat Grinder

Do you have any electric meat grinders at your house?

16

115	Yes
1382	No

Do you have more than one electric meat grinder?

17

4	Yes
110	No

How many electric meat grinders does your household have altogether?

18

115	1
0	2
0	3
0	4
0	5 or more

When did you buy your last electric meat grinder?

Season
19

19
44
28
21

Year
20

21	1350
32	1349
25	1348
21	1347
18	Before 1347

What is the trademark of your electric meat grinder?

21

63	National
24	Toshiba
3	Molinex
2	Philips
1	Lord

Was it new or secondhand when you got it?

22

114	New
1	Secondhand

Have you purchased it, or did you receive it as a gift?

23

105	Purchase
9	Gift

Electric Hair Dryer

Do you have any electric hair driers at your house?

24

73	Yes
1417	No

Does your household have more than one electric hair dryer?

25

7	Yes
67	No

How many electric hair driers does your household have altogether?

26

69	1
5	2
0	3
0	4
0	5 or more

When did you purchase your last electric hair dryer?

Season 27

10
29
18
13

Year 28

15	1350
17	1349
19	1348
9	1347
14	Before 1347

What is the trademark of your last electric hair dryer? (show the pictures)

2[illegible]

56	Manual
9	With special hat
6	Others

What is the trademark of your last electric hair dryer?

30

3	Morphy Richards
5	ABC
7	National
5	Philips
1	Molinex
1	Olympia
50	Others

Electric Shaver

Do you have any electric shavers at your house?

31

411	Yes
1083	No

Does your household have more than one electric shaver?

32

34	Yes
376	No

How many electric shavers does your household have altogether?

33

369	1
26	2
6	3
0	4
0	5 or more

When did you purchase your last electric shaver?

Season 34	Year 35
69	26
159	55
94	54
57	70
	201

What is the trademark of your last electric shaver?

36

37	Brown
281	Philips
33	Remington
0	Toshiba
56	Others

Was it new or secondhand when you got it?

37

396	New
9	Secondhand

Did you purchase it or receive it as a gift?

38

351	Purchase
31	Gift

Is there any possibility that you or any other member of your household will purchase an electric shaver or receive one as a gift?

39

26	Very likely
272	Possible
1159	Impossible

Electric Food Mixer

Do you have any electric food mixers at your house?

40

10	Yes
1482	No

Do you have more than one electric food mixer?

41

0	Yes
20	No

How many electric food mixers does your household have?

42

10	1
0	2
0	3
0	4
0	5 or more

When did you purchase your last electric food mixer?

Season 43	Year 44	
3	1	1350
5	3	1349
1	1	1348
1	1	1347
	4	Before 1347

What is the trademark of your last electric food mixer?

45

5	National
0	Molinex
0	ABC
0	Philips
0	Toshiba
0	Lord
5	Other

Was it new or secondhand when you got it?

46

10	New
0	Secondhand

Did you or any other member of your household purchase it or receive it as a gift?

47

7	Purchase
6	Gift

Electric Toaster

Do you have any electric toaster in your house?

48

32	Yes
1464	No

Do you have more than one electric toaster?

49

1	Yes
31	No

How many electric toasters does your household have?

50

31	1
1	2
0	3
0	4
0	5 or more

When did you purchase your last toaster?

Season 51	Year 52	
4	3	1350
12	5	1349
6	9	1348
7	2	1347
	13	Before 1347

What is the trademark of your toaster?

53

1	Morphy Richards
0	Philips
7	Toshiba
24	Others

Was it new or secondhand when you got it?

54

29	New
3	Secondhand

Did you purchase the toaster or was it a gift?

55

26	Purchase
5	Gift

How many electric juicers does your household have altogether?

58

272	1
5	2
0	3
0	4
0	5 or more

Electric Juicer

Have you got an electric juicer at your house?

56

277	Yes
1215	No

When did you buy it?

Season 59	Year 60	
35	28	1350
162	27	1349
50	53	1348
23	43	1347
	126	Before 1347

Do you have more than one electric juicer?

57

8	Yes
267	No

What is the trademark of the juicer?

61

2	General Electric
10	AEG
71	National
1	Molinex
28	Toshiba
1	Lord
52	Romix
111	Others

Was it new or secondhand when you got it?

62

259	New
6	Secondhand

Did you purchase the juicer or receive it as a gift?

63

242	Purchase
21	Gift

Motorcycle - Motorbike

Does any one of your household members have a motorcycle?

64

87	Yes
1406	No

How many motorcycles does your household have altogether?

65

84	1
2	2
0	3
0	4
0	5 or more

Has any member of your household a motorbike?

66

24	Yes
1276	No

How many motorbikes does your household have altogether?

67

24	1
1	2
0	3
0	4
1	5 or more

Does any member of your household intend to purchase a motorcycle or a motorbike in the next 12 months?

68

15	Yes
1386	No

General Questions

How long has your household been living in this house?

69

97	Less than 6 months
72	More than 6 months and less than one year
129	1 to 2 years
146	2 to 3 years
96	3 to 4 years
131	4 to 5 years
820	5 years and more

Do you think that unemployment will increase, decrease or remain unchanged during the next 6 months?

70

332	Increase
443	Decrease
643	Stable

Do you think that prices will go up, down, or remain unchanged during the next 6 months?

71

1200	Increase
60	Decrease
200	Unchanged

Do you think that tbe bulk of work of the organisation where you work has become more, less or is the same since the corresponding month of last year?

72

354	More
184	Less
674	No change

Do you think that your income will increase, decrease or remain the same during the next 12 months?

73

445	Increase
143	Decrease
868	The same

Do you think that your financial commitments will increase, decrease or remain the same during the next 12 months?

74

358	Increase
358	Decrease
738	The same

How much is the total income of your household on average?

75

39	Up to 2500 Rls
132	2501-4000
248	4001-6250
305	6251-8500
208	8501-12500
254	12501-17500
134	17501-25000
94	25001-35000
74	35001-41500
12	41501 and more

What is the nationality of the household?

76

1495	Iranian
3	Foreigner


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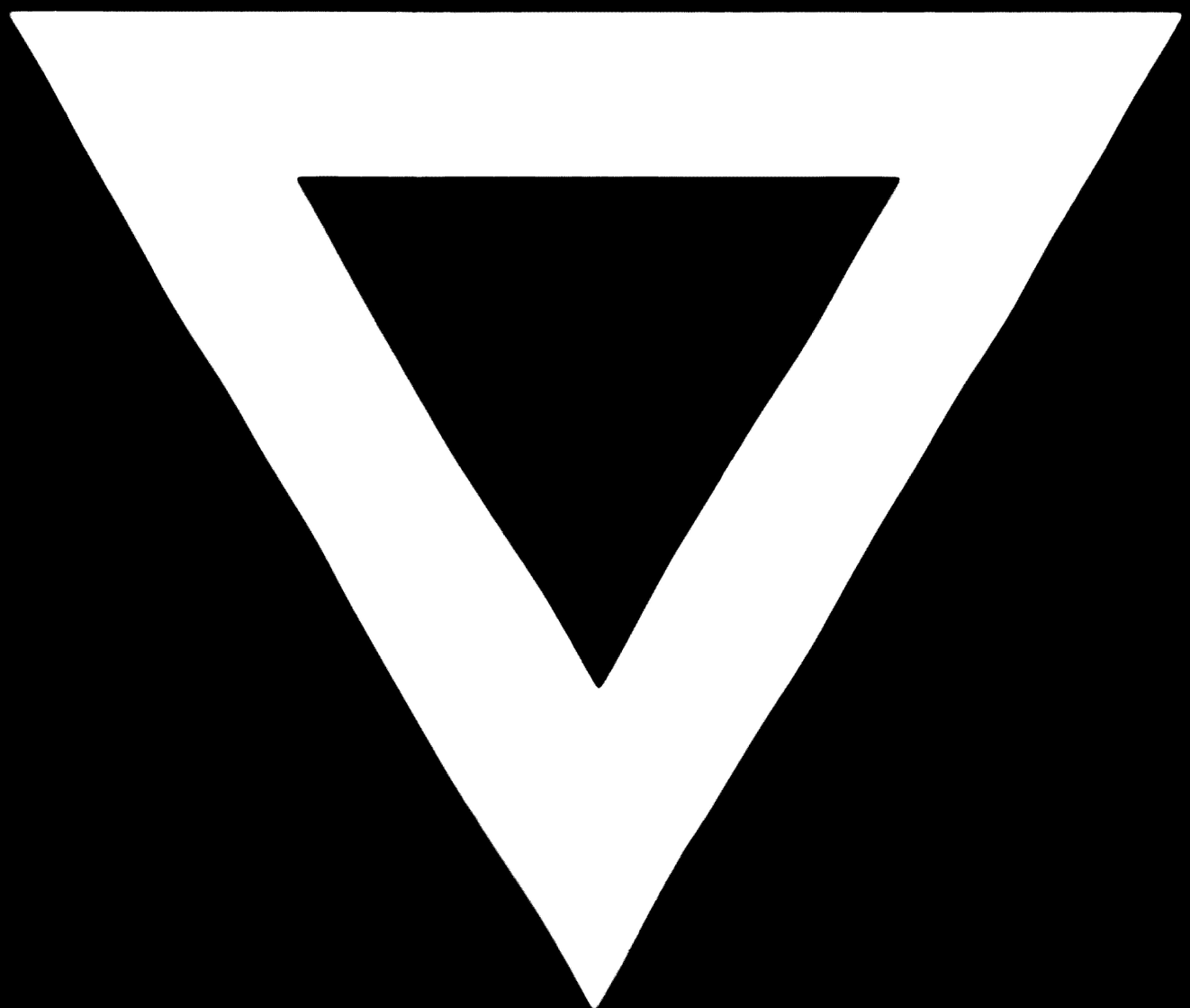

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