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UNITED NATIONS RESEARCH INSTITUTE FOR SOCIAL DEVELOPMENT

Discussion Paper 4

INSIDE MEGALOPOLIS

**EXPLORING SOCIAL AND SPATIAL DIVERSITY OF
PROVISIONING STRUCTURES IN MEXICO CITY**

by

Cynthia Hewitt de Alcántara and Gabriel Vera

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June 1990

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Preface

Among the many elements of socio-economic structure affected by economic crisis and concomitant adjustment efforts throughout much of the Third World today, food provisioning systems must surely be one of the most strategic. And within these provisioning systems themselves, the evolution of the institutional framework for supplying the population in Third World metropoli would seem to be of particular concern. Millions of people now live in the great cities of Africa, Asia and Latin America, and are fed through the working of complex distribution networks affected in varying degree by the crisis. It is therefore important to have as clear a picture as possible of how these distribution systems function in the context of specific metropoli.

In the following paper, the authors provide a statistical picture of the commercial structure, provisioning strategies and patterns of consumption underlying the food system of one of the world's largest urban agglomerations, México City, during the years immediately preceding the onset of economic crisis in Mexico in 1982. Disaggregating census and household survey information, as well as food price surveys, by income stratum and area of the city, they illustrate the extraordinary complexity of the urban food system and the pitfalls which are encountered when one attempts to paint too general a picture of the provisioning environment of the poor.

Analysis of this kind is of clear relevance to the current debate on how best to "target" food subsidies. Utilizing adult-equivalent units rather than per capita calculations, the authors show, for example, that certain standard income categories (such as households with income below the minimum wage) actually contain very different kinds of people, with varying access to food, across the metropolitan area. Their findings also support the conclusion that, as economic crisis deepened in the post-1982 period, "traditional" family-run food outlets did a better job of keeping the low-income population of the city supplied with food than did the modern supermarket sector. In this sense, the degree of relative modernity of the retail commercial structure has not constituted the principal determinant of success in weathering the crisis.

The research which underlies this paper is related to a number of areas of concern at UNRISD, including work carried out within the programme on adjustment-related food policy, now drawing to a close; the broader UNRISD programme on Crisis, Adjustment and Social Change, which is currently being developed; and the continuing effort of the Institute to contribute to the improvement of socio-economic statistics.

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June 1990

Dharam Ghai
Director

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The authors are also most grateful for the valuable help of Rhonda Gibbes, Françoise Jaffré and Irene Ruiz at UNRISD, without whom the text could not have been processed; and of Victor Salvo, who designed graphs 6 through 12.

Introduction

If several decades ago it was still possible to discuss issues of food supply throughout much of the Third World with only a passing reference to urban provisioning, that is certainly no longer the case today. The fastest growing urban areas of the world are now to be found in Asia, Latin America and Africa; and, with increasing frequency, the largest metropolitan regions are located there as well. Intricate provisioning networks tie these burgeoning urban populations to foreign and domestic suppliers and permit the distribution of foodstuffs within an expanding urban perimeter. Analysis of urban food systems therefore takes on increasing importance for planners even during the best of economic times, and assumes an urgent relevance during periods of crisis and austerity.

The problem of how to construct an adequate picture of metropolitan food systems is a serious one, particularly in countries where reliable statistics on various aspects of the food trade, and food consumption, are not readily available. Anthropological work among various groups within the food chain can clarify the outlines of the overall provisioning structure and explain the rationale of different actors within it; but at some point the question must arise of how to depict the system in statistical terms which have both spatial and social relevance.

For a conurbation like Mexico City, political and administrative elements complicate the task of statistical analysis enormously. Greater Mexico City now enjoys the distinction of being one of the largest contiguous settlements in the history of mankind. Its approximately 18 million people inhabit the entire Federal District (containing 16 administrative delegations) and 12 surrounding municipalities of the State of Mexico. Since the Federal District and the State of Mexico are distinct political entities and have different structures for the regulation of trade, there is no single source of regular information on patterns of provisioning throughout greater Mexico City. In addition, a large part of the relevant census information is presented in aggregate form for all of the Federal District and is only selectively disaggregated (for some indicators) when dealing with the State of Mexico. Not only does this make it difficult to understand the food system of Mexico City as a single integrated unit, given the need to disaggregate and reaggregate information before being able to generalize about the dynamics of food supply within the conurbated area; but the degree of usual aggregation also constitutes a serious hindrance to understanding patterns of socio-economic differentiation within the urban environment, concealed within such categories as "the Federal District" or "the State of Mexico".

During the early 1980s, an attempt was made to work with existing statistics in a way which would provide the most detailed possible picture of the commercial structure, provisioning strategies and patterns of consumption underlying the food system of the entire metropolitan area. This was done in order to complement

qualitative studies of various groups and agents within the food system of Mexico City and to illustrate, to the extent permitted by a highly problematic data base, the enormous range of provisioning environments within which residents of the capital city met or attempted to meet their food needs.

The exercise, which involved reprocessing the 1975 commercial census, the 1977 household survey and a series of continuous price surveys, so that the specific spatial components of the metropolitan area could be identified (disaggregated) and then reaggregated, was also prompted by a certain sceptical interest in testing the validity of some commonly held assumptions concerning the functioning of the market for food in the metropolis. These assumptions were, and often still are, put forward as universal truths in food policy studies of the most diverse kinds: there has been a long-standing tendency to suppose, for example, that "modernizing" food commerce provides benefits to all consumers, since modern outlets are presumed to be more efficient (and to sell at lower prices) than traditional ones. Similarly, it has been virtually a truism in food policy circles that the poor pay more than better-off urban strata for their food purchases.

Finally, "the poor" themselves have been portrayed as a virtually undifferentiated mass, characterized by standard food preferences and buying strategies, even when they are scattered throughout an urban agglomeration covering over 1,500 square kilometres, containing within it a population larger than that of most countries in the world. In principle, such a singular lack of attention to spatial context seemed suspect.

During the six years following completion of the statistical analysis just mentioned, some important new information has become available. The household survey of 1983/84 has been partially analysed and the commercial census of 1985 provides more recent data on the structure of food trade in the Federal District and the State of Mexico. A number of price surveys, in general of limited coverage, continue to be carried out; and sporadic nutritional surveys within very small sample groups have been undertaken.

Although often not strictly comparable either in their coverage or in specific modalities of data analysis, these more recent sources will be utilized in the following pages to complement the picture of provisioning structures and mechanisms obtained from reprocessing information from the 1970s. What is striking about the picture painted for the 1980s is in fact the degree to which it reinforces the kinds of conclusions suggested by analysis of material from the 1970s. But this point will become clearer toward the end of the paper.

The Spatial Distribution of Food Commerce in the Mid-1970s

The 1970s in Mexico can be characterized in a number of ways. It should be noted, for example, that they were the last years of economic growth preceding the deep crisis of the 1980s. However, 1975 and 1977 were not particularly good years; recession, inflation and devaluation were already visible, although they were shortly to be papered over during the oil boom of 1978-1981.

The 1970s were also a time of greatly increasing government intervention in the food system, when the Echeverría and López Portillo administrations attempted to improve the terms of access to food of millions of urban and rural people through programmes which expanded the role of the state in the production and distribution of basic goods. This effort was to reach its peak during the 1980-1982 period, when oil revenues were invested in an innovative and costly effort to construct a Mexican Food System (*Sistema Alimentario Mexicano*) which could meet the needs of poor rural producers and poor urban consumers alike. The years of austerity and adjustment following the 1982 crash have of course been characterized by a reversal in this pattern, although the state still plays a fundamental part in the food system of Mexico City.

In the provisioning history of the capital, the 1970s can also perhaps be seen to represent the highest stage of spatial concentration within the wholesale sector of the food trade. It is important to note that, despite increasing efforts on the part of the government to regulate and control the food system of the metropolitan area, the provisioning structure of greater Mexico City is the historical creation of private initiative, of private response to perceived opportunity only marginally co-ordinated by any public authority. And at the centre of the food system is an oligopoly of great wholesalers, whose control over the flow of perishables, grains and groceries from countryside or industry to city retailers has been cemented over the course of a half century or more of family enterprise.

Until 1982, when they were forcibly relocated in a newly constructed, publicly run wholesale complex, built by the government with French technical assistance and said to constitute the largest central market in the world, these wholesalers operated from a profusion of privately owned warehouses in a densely populated area of downtown Mexico City. The physical and cultural impenetrability of the zone, known as La Merced, allowed the wholesale sector to function in semi-clandestinity and to resist such elemental civic duties as the payment of taxes. The ultimate elimination of La Merced as the centre of wholesale activity, and the transfer of most of that activity to Ixtapalapa, represented an attempt to end such clandestinity and to integrate the wholesale food sector clearly into the modern, formal economy. At the same time, it marked the beginning of a trend toward (still very limited) dispersion of wholesale activity, as the advantages of establishing points of sale outside the central market became more visible.

1. Supermarkets, whether public or private, intervened very little in the wholesale purchase of fresh fruits and vegetables; but their share of the wholesale grocery trade probably reached 40 per cent in 1975, and their share of the markets for meats, as much as 30 per cent. It was not possible to disaggregate the supermarket sector by product and area of the city.

The extraordinary degree of spatial concentration of the wholesale food trade during the 1970s, when La Merced was at the height of its power, is clearly illustrated in table 1. This disaggregation of the commercial census of 1975 suggests that 93 per cent of the wholesale trade in fresh fruits and vegetables took place within the two downtown municipal delegations of Venustiano Carranza and Cuauhtémoc, jointly housing the sprawling warehouse complex of La Merced. Close to 60 per cent of the total value of wholesale trade in red meats, eggs, drygoods, grains and seeds which took place outside the supermarket sector was also registered there.¹ Seventy per cent of the wholesale trade in poultry was concentrated in one other municipal delegation (Miguel Hidalgo), and an almost equal proportion of all sales of seafood and fish took place within the central fish market of La Viga (Venustiano Carranza), traditionally dominated by a handful of powerful merchant families.

The relative importance of particular parts of the city in the **wholesale** structure of the food system in 1975 was, not surprisingly, reflected in the structure of **retail** trade depicted in table 2. Thus, for example, the heavy industrial centre of Azcapotzalco, which housed a federally run slaughterhouse providing one quarter of the total value of wholesale meat sales, also contained retail outlets accounting for 32 per cent of all retail sales of red meat, despite the fact that only 5 per cent of the population of the metropolitan area was to be found in Azcapotzalco. Retailers in Venustiano Carranza, which was not only the home of a portion of La Merced but also of the central fish market of La Viga, handled 39 per cent of all fish and seafood products sold to consumers, although only 8 per cent of all metropolitan households were located in that delegation.

In a similar vein, the northern industrial delegation of Gustavo A. Madero, constituting the most populous administrative unit of the entire urban area (some 13 per cent of the total number of inhabitants) and containing important basic food industries (including the metropolitan warehouses of the National Popular Subsistence Commission, CONASUPO), provided an environment in which approximately 30 per cent of all non-supermarket retail sales of grocery items took place. It is hardly necessary to add that the wholesale pre-eminence of La Merced was further reflected in a level of retail sales of a number of products in Cuauhtémoc and Venustiano Carranza which far exceeded the share of these delegations in the overall metropolitan population. For some items, well over 50 per cent of the non-supermarket retail trade took place within the latter two delegations, which contained between them only 15 per cent of the inhabitants of greater Mexico City.

Although these patterns of spatial distribution within the retail food trade were determined in part by adaptation to the structure of power within the wholesale sector, the existing retail structure was obviously also a response to prevailing levels of real monetary demand in different parts of the urban area. Such demand was much greater within the Federal District than in the State of Mexico; and within the Federal District, it was further concentrated in 6 of the 16

Table 1

Distribution of Net Wholesale Food Sales within the Metropolitan Area of Mexico City, 1975 (per cent)											
	Grains and seeds	Fresh fruits and vegetables	Red meats	Entrails	Poultry	Eggs	Fresh fish and seafood	Specialized outlets (bread, milk, etc.)	Groceries	Super- markets	Soft drinks/ fruit drinks
Metropolitan Area	100	100	100	100	100	100	100	100	100	100	100
Federal District											
Alvaro Obregón	--	6.7	*	41.9	*	0.3	--	*	0.4	0.7	2.0
Azcapotzalco	15.0	*	25.5	--	1.6	7.5	--	--	3.2	44.6	--
Benito Juárez	--	*	2.2	--	*	13.2	--	12.8	2.4	1.3	--
Coyoacán	--	--	*	--	9.1	*	--	0.4	*	0.6	--
Cuajimalpa	--	--	*	--	--	--	--	--	--	--	--
Cuauhtémoc	50.2	71.0	31.6	--	16.9	16.7	3.8	3.2	45.7	16.7	6.9
G.A. Madero	1.4	0.1	0.7	--	1.2	0.5	--	1.2	4.7	6.7	17.1
Iztacalco	0.1	--	3.2	--	*	14.3	--	1.0	4.8	13.0	10.9
Iztapalapa	--	*	*	--	*	4.2	--	*	4.9	0.8	32.8
M. Contreras	--	--	--	--	*	--	--	--	--	*	--
Miguel Hidalgo	10.7	*	1.0	2.5	70.8	4.3	--	76.2	4.2	2.5	0.6
Milpa Alta	--	*	--	--	--	--	--	--	--	--	--
Tláhuac	--	*	*	--	--	--	--	--	--	--	--
Tlalpan	--	--	*	--	--	--	--	--	0.1	--	--
V. Carranza	9.0	21.7	26.4	55.6	*	39.0	67.1	3.8	14.6	10.2	17.8
Xochimilco	--	*	*	--	*	*	29.1	--	*	--	1.9
State of Mexico											
Atizapán de Zaragoza	--	--	--	--	--	--	--	--	--	--	--
Coacalco	--	--	--	--	--	--	--	--	*	--	--
Cuautitlán	--	--	--	--	--	--	--	--	--	--	--
Chimalhuacán	--	--	--	--	--	--	--	--	--	--	--
Ecatepec	13.5	*	*	--	--	--	--	*	*	--	--
Huixquilucan	--	--	--	--	--	--	--	--	--	--	--
Naucalpan	*	--	--	--	--	--	--	--	14.7	1.8	0.9
Netzahualcóyotl	--	*	*	--	--	*	*	*	*	1.0	4.2
La Paz	--	--	9.3	--	--	--	--	--	*	--	0.7
Tlalnepantla	--	--	--	--	--	*	--	1.2	*	0.1	4.1
Tultitlán	--	--	--	--	--	--	--	--	--	--	--

* less than 0.1 per cent.

Source: Secretaría de Programación y Presupuesto, VII Commercial Census, 1976.

Table 2

Distribution of Net Retail Food Sales within the Metropolitan Area of Mexico City, 1975 (per cent)											
	Grains and seeds	Fresh fruits and vegetables	Red meats	Entrails	Poultry	Eggs	Fresh fish and seafood	Specialized outlets (bread, milk, etc.)	Groceries	Super- markets	Soft drinks/ fruit drinks
Metropolitan Area	100	100	100	100	100	100	100	100	100	100	100
Federal District	97.3	91.4	87.6	84.4	85.0	97.4	92.0	89.4	87.2	79.9	45.9
Alvaro Obregón	0.5	5.1	3.6	3.1	2.8	0.4	2.0	3.4	2.3	4.1	0.8
Azcapotzalco	6.2	7.4	31.9	4.8	14.5	4.7	2.5	2.9	3.6	2.3	0.9
Benito Juárez	0.8	3.0	5.0	5.4	11.4	10.3	5.2	7.2	7.9	18.2	0.6
Coyoacán	0.6	1.4	2.4	1.5	3.0	0.6	1.2	1.9	2.6	4.9	0.4
Cuajimalpa	0.1	0.2	0.2	0.6	0.4	*	0.1	0.2	0.3	*	--
Cuauhtémoc	64.7	21.4	12.5	11.1	12.2	19.5	15.8	23.8	17.6	15.9	8.0
G.A. Madero	2.5	6.4	8.4	14.6	9.6	2.6	4.6	11.7	29.9	7.2	10.2
Iztacalco	0.7	1.7	3.2	3.5	3.1	8.6	1.0	2.8	3.7	2.6	12.7
Iztapalapa	11.3	3.1	3.5	9.0	9.0	6.6	2.2	2.9	3.6	2.2	1.8
M. Contreras	0.2	0.2	0.7	0.3	0.8	0.1	0.1	0.2	0.7	0.3	0.1
Miguel Hidalgo	3.8	3.3	5.4	8.3	6.2	5.7	8.8	17.2	6.3	11.2	2.2
Milpa Alta	0.1	0.2	0.2	0.1	0.2	*	0.1	0.1	0.2	--	--
Tláhuac	0.2	0.4	0.5	0.5	0.5	*	0.4	0.2	0.4	--	0.2
Tlalpan	*	0.4	0.7	0.5	1.0	*	0.1	0.4	0.7	4.1	0.1
V. Carranza	5.0	36.5	8.7	19.8	8.5	38.1	38.8	13.5	6.9	6.5	3.5
Xochimilco	0.6	0.7	0.7	1.3	1.8	0.2	9.1	1.0	0.5	0.4	4.4
State of Mexico	2.7	8.7	12.4	15.7	15.0	2.6	8.0	10.6	12.9	20.1	59.0
Atizapán de Zaragoza	--	0.1	*	0.4	0.3	0.1	0.1	0.2	0.3	0.4	--
Coacalco	--	0.2	0.3	0.5	0.3	0.2	0.1	0.1	0.3	0.8	--
Cuautitlán	*	0.1	0.4	0.2	0.2	--	--	0.2	0.2	0.1	--
Chimalhuacán	--	*	0.2	--	*	--	*	*	0.1	--	2.0
Ecatepec	0.3	1.2	0.1	2.4	2.1	0.2	0.6	1.2	1.5	1.8	1.6
Huixquilucan	--	*	1.7	--	--	--	--	*	0.2	0.2	--
Naucalpan	0.4	1.8	0.2	2.8	3.1	0.4	4.5	3.5	3.5	9.6	0.7
Netzahualcóyotl	1.8	3.8	2.3	5.7	5.8	1.2	2.1	2.8	4.1	1.0	4.9
La Paz	*	0.2	4.2	0.3	0.4	*	*	0.2	0.2	--	*
Tlalnequil	0.2	1.2	1.0	3.4	2.7	0.5	0.6	2.3	2.3	6.2	44.8
Tultitlán	--	0.1	2.0	*	0.1	*	*	0.1	0.2	*	--

* less than 0.1 per cent.

Underlining indicates that the percentage of the total value of retail food sales is larger than the percentage of the total metropolitan population contained within the municipality or delegation.

municipal delegations where 75 per cent of all retail food sales in the entire metropolitan area were registered.

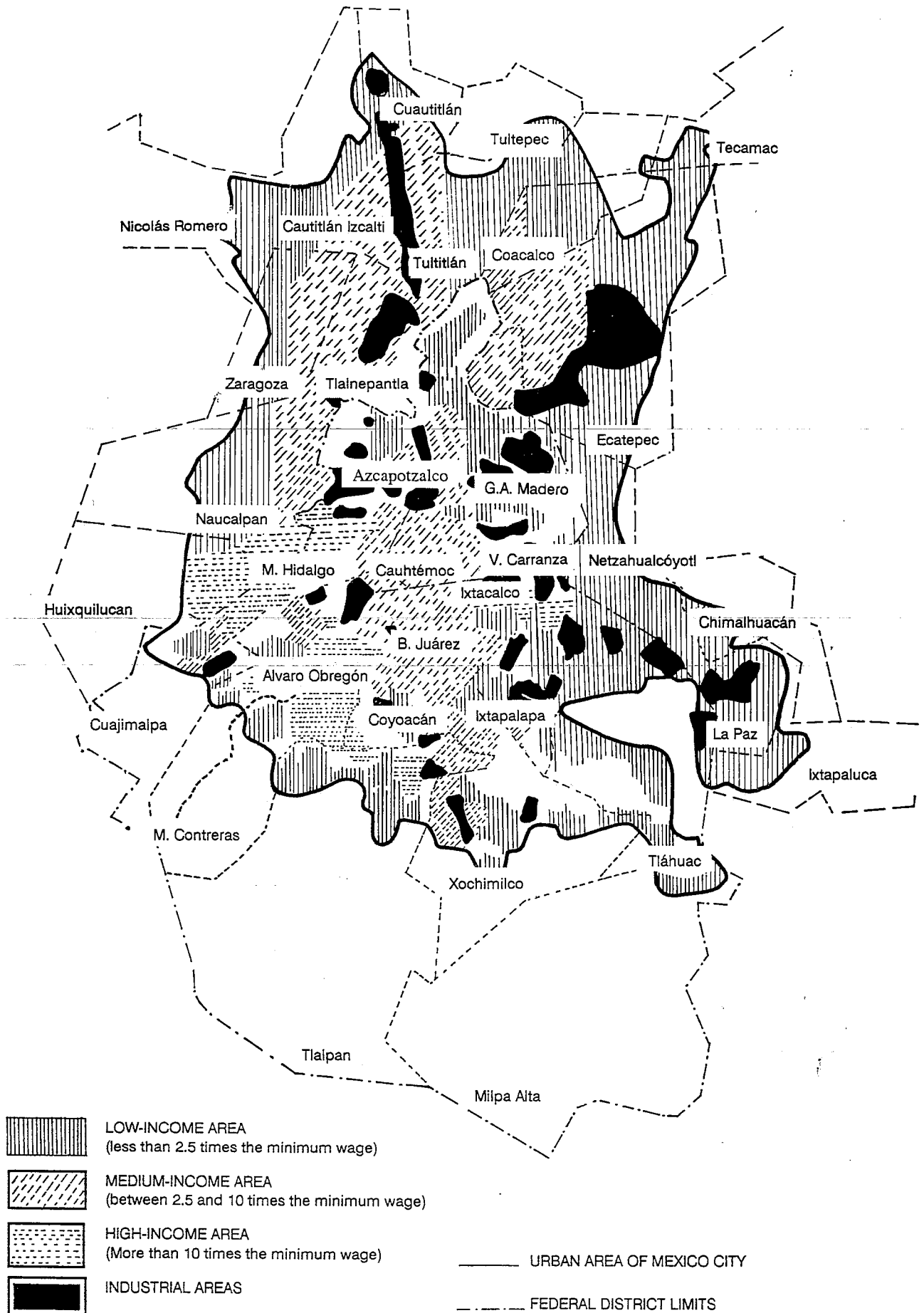
The spatial distribution of effective demand for food products, as reflected in higher or lower levels of family income, is illustrated for the mid-1970s in map 1. The delegations of Benito Juárez, Miguel Hidalgo and Cuauhtémoc stand out as immediately visible centres of concentrated high income within the metropolitan area: according to information provided by the government of the Federal District, those three administrative units alone contained in 1978 nearly 60 per cent of all families in the District earning more than 5.2 times the minimum wage. The next most important centres of high income were to be found in Coyoacán and Alvaro Obregón, but demand was weakened in those delegations by the simultaneous presence of a relatively large percentage of families earning less than one minimum wage. A more adequate picture of complexities in the distribution of income within delegations can be obtained by studying information provided in table 3.

What is perhaps most striking about table 3, aside from the commentary which it provides on the spatial distribution of effective demand for food among the relatively better-off inhabitants of Mexico City during the mid-1970s, is its documentation of patterns of poverty within the capital at that time. Even in the wealthiest delegations of the Federal District, at least one third of the economically active population earned one minimum wage or less; and in 11 of the 16 delegations of the district, around one half to two thirds of those gainfully employed were remunerated at the minimum wage or below. The vast majority of the metropolitan population thus constituted an enormous mass market of very low income consumers.

Given the patterns of spatial differentiation within the retail sector just discussed, the kinds of food commerce immediately surrounding these low income families depended a great deal upon their place of residence. If poor consumers lived in the central city, where food commerce was highly developed, or in the most important industrial zones or near wealthy neighbourhoods, they were served by a diversified commercial structure, including both public and private supermarkets, which was not available in the remainder of the metropolitan area. If they lived in the majority of the municipalities of the State of Mexico, encircling the Federal District to the north, or in the delegations forming the southern outer rim of the District itself, the commercial structure surrounding them was obviously much less developed (although there were a few areas, like Naucalpan in the State of Mexico and Tlalpan on the southern rim of the Federal District, which had modern commercial sectors serving affluent pockets of population).

A general, quantitative commentary on these differences is provided in table 4. The number of inhabitants per retail food establishment varied across the city in 1975 from a minimum of only 70 in the delegation of Venustiano Carranza (containing a part of La Merced) to a maximum of 677 in the burgeoning peripheral industrial

Map 1
Patterns of Income Distribution within the Metropolitan Area



Source: G. Garza and M. Schteingart, *Mexico City: Industrial Dynamics and the Formation of Space in a Semi Peripheral Metropolis*, CEDDU, El Colegio de México, 1984.

Table 3

Distribution of Income by Delegation of the Federal District, 1978													
Delegation	Total Population	Gainfully employed		Less than one minimum wage		1.1 to 1.6 times the minimum wage		1.61 to 2.6 times the minimum wage		2.61 to 5.2 times the minimum wage		More than 5.2 times the minimum wage	
		Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number
Azcapotzalco	591 939	30.46	180 305	43.5	82 003	25.4	45 707	17.2	31 012	8.8	15 867	3.2	5 716
G.A. Madero	1 785 386	29.73	530 795	48.1	255 312	25.3	134 291	15.8	83 866	7.7	40 811	3.1	16 455
M. Hidalgo	634 338	35.94	227 981	37.5	85 493	22.2	50 612	14.1	32 145	9.9	25 570	16.3	37 161
Cuauhtémoc	840 219	39.24	329 725	39.9	131 560	21.3	70 231	17.7	58 361	8.9	29 345	12.2	40 226
Coyoacán	579 281	32.23	186 702	48.0	89 617	18.7	34 913	12.7	23 711	10.7	19 977	9.9	18 483
A. Obregón	906 251	30.80	279 125	52.7	147 099	21.0	58 616	12.4	34 611	6.9	19 260	7.0	19 539
Benito Juárez	675 309	38.71	261 412	33.5	87 573	18.7	47 316	16.1	42 087	15.0	39 212	17.3	45 224
Cuajimalpa	103 885	25.40	26 387	62.9	16 597	23.1	6 095	9.5	2 507	3.2	844	1.3	343
Tláhuac	145 541	23.09	33 605	66.2	22 246	20.7	6 056	9.4	3 159	2.8	947	0.9	302
Iztapalapa	1 089 081	28.64	311 896	53.9	168 112	23.7	73 919	13.3	41 482	6.4	19 961	2.7	8 421
Iztacalco	624 738	29.31	183 111	53.4	97 781	24.4	44 679	13.3	24 354	6.2	11 356	2.7	4 944
V. Carranza	820 179	31.97	262 211	46.9	122 977	25.8	67 650	16.7	43 789	8.1	21 239	2.5	6 555
Xochimilco	294 912	27.00	79 626	63.2	50 324	21.5	17 120	10.7	8 520	3.3	2 628	1.3	1 035
Milpa Alta	49 399	27.15	13 412	80.9	10 850	10.3	1 381	5.9	791	1.9	255	1.0	134
Tlalpan	260 397	30.26	78 796	36.7	36 798	20.5	16 153	14.6	11 504	12.8	10 086	5.4	4 255
Contreras	154 998	26.17	40 563	60.7	24 622	24.5	9 938	10.7	4 097	3.1	1 257	1.6	649
Total Federal District	9 555 853	31.66	3 025 653	47.2	1 428 964	22.6	685 577	14.7	445 996	8.5	258 669	6.9	209 442

Source: Departamento del Distrito Federal (DDF), Plan de Desarrollo Urbano, Vol. I, 1980, p. 466.

Table 4

Indicators of the Intensity of Retail Food Trade
by Zones of the Metropolitan Area of Mexico City, 1975

	Estimated population (per cent)	Number of establishments (per cent)	Inhabitants/ establishment	Net sales (per cent)	Net sales/inhabitant	Net sales/establishment (thousands)
Metropolitan Area	100	100	146.4	100	2 329.98	341.16
Federal District	74.2	81.0	134.2	85.0	2 653.51	355.96
Alvaro Obregón	5.3	3.5	221.2	3.5	1 547.97	342.37
Azcapotzalco	5.5	5.2	155.6	6.9	2 946.99	458.43
Benito Juárez	5.2	5.4	140.7	11.7	5 292.56	745.85
Coyoacán	4.2	3.2	193.4	3.4	1 894.93	367.03
Cuajimalpa	0.6	0.6	136.8	0.2	710.47	97.39
Cuauhtémoc	8.1	12.1	97.8	17.1	4 913.31	482.54
G.A. Madero	13.3	12.5	155.0	12.6	2 221.93	344.46
Iztacalco	5.1	4.4	169.0	2.9	1 353.28	288.88
Iztapalapa	7.7	6.6	170.3	3.2	973.86	165.83
M. Contreras	1.1	1.0	160.2	0.4	916.14	146.74
Miguel Hidalgo	5.8	6.3	133.1	8.7	3 497.45	465.39
Milpa Alta	0.4	0.5	108.7	0.1	552.31	60.04
Tláhuac	0.9	0.9	154.5	0.2	524.48	81.00
Tlalpan	2.1	1.2	260.2	2.1	2 394.83	623.07
V. Carranza	7.6	15.9	70.0	10.8	3 262.43	228.44
Xochimilco	1.5	1.7	131.8	0.7	1 057.92	139.45
State of Mexico	25.8	19.0	198.7	15.0	1 407.37	269.39
Atizapán de Zaragoza	0.9	0.4	370.2	0.3	743.24	275.01
Coacalco	0.3	0.3	154.4	0.5	3 386.65	522.92
Cuautitlán	0.9	0.2	676.8	0.1	319.67	210.79
Chimalhuacán	0.4	0.2	289.9	0.1	296.35	85.92
Ecatepec	3.7	3.1	177.2	1.7	1 058.19	185.57
Huixquilucan	0.5	0.2	284.3	0.1	725.62	205.64
Naucalpan	4.9	3.1	232.8	5.8	2 784.86	610.80
Nezahualcóyotl	8.2	7.9	151.7	2.6	737.92	111.87
La Paz	0.5	0.5	158.9	0.2	988.90	83.17
Tlalnepantla	4.8	2.8	245.2	4.0	1 946.11	475.08
Tultitlán	0.8	0.3	326.7	0.1	328.07	107.17

Source: Secretaría de Programación y Presupuesto, VII Commercial Census, 1976.

area of Cuauhtitlán. Similarly, the average annual value of food sales per retail outlet varied from 745,850 pesos in Benito Juárez to 60,000 - 80,000 pesos in some of the outlying administrative units of the Federal District and the State of Mexico. In 1975 dollars, this is a difference between net sales of roughly 60,000 dollars per establishment, and net sales of only 5,000 to 6,500 dollars per store per year. Finally, the average annual expenditure per inhabitant at local retail outlets in the relatively wealthy delegation of Benito Juárez exceeded 5,000 pesos (or 400 dollars); while in several municipalities of the State of Mexico (containing hundreds of thousands of people) the same average was on the order of 25 dollars (300 pesos).

Although it is important to examine general patterns of spatial variation in the availability of retail food outlets across the metropolitan area, as well as differences in the intensity of economic activity centred on the exchange of food in various parts of the city, census figures of the kind cited above provide only the most limited first approximation to understanding the complexity of provisioning environments in Mexico City. Retail food commerce, when transformed from a single abstract census category into a universe of real people dedicating time and resources to the purchase and sale of goods, is probably one of the most diverse endeavours in the entire repertoire of activities covered by the census. Not only is the retail sector composed of a wide variety of "outlets" or forms of economic organization, generally recognizable as "supermarkets" or "grocery stores", "public markets", "street markets" or "itinerant sales"; but concomitantly, it is distinguished by the co-existence of different rationales for economic activity, at times oriented toward the mere subsistence of the merchant and his family, at times oriented toward capitalist accumulation in a modern enterprise. These different rationales cut across the boundaries of certain outlets and make generalization about retail activity as a whole an extremely problematic undertaking.

Looking first at the grocery business, it is important to note that competition between traditional outlets and a rapidly expanding supermarket sector was a hallmark of the 1970s. Spurred by the rapid development of publicly run supermarkets as well as by the growth of private chains, the modern self-service grocery business steadily increased its share of the market during that decade and confronted independent grocery stores with a devastating challenge. By the turn of the 1980s, the Federal District alone was served by over 500 supermarkets, both public and private, and *municipios* of the State of Mexico within the metropolitan area contained well over 100 more.

The source of the competitive strength of the supermarket sector, and most particularly of that part of it controlled by private corporations, was to be found primarily in the nature of relations built up over the preceding few decades with leading firms within the food processing industry. The principal private supermarket chains

Complexity of the Retail Food Trade: The Grocery Sector

were established during the late 1940s and 1950s, at the same time that the food processing industry began to take on its modern form. Both sectors of the food system were shaped by a process of imitative modernization: multi-national capital was instrumental in financing new firms which both produced and marketed food products, many of which had in fact never previously been offered to the public in any form, or had been offered in a different form by more traditional combinations of food processing and distribution channels. Therefore, although conflict between major new food processors and growing supermarket chains was by no means absent, as each set out to establish control over a part of the profit to be obtained in the food sector, both kinds of enterprise were engaged in a highly interrelated effort to reshape the habits of food consumption of the metropolitan population. And the dynamism of the effort established parameters for economic activity even among firms not financed by foreign capital, but anxious to take part in a clearly profitable modernization of the food system.

By the 1970s, constant expenditure on publicity by the leading manufacturers of new food products (powdered and canned milk, canned soups and sauces, powdered and bottled soft drinks, individually wrapped cakes and cookies, potato chips and other salty snacks, processed cheeses and cold cuts, not to mention beer, wine and liquors) had begun to assure them a steady demand for brand-name goods. And in fact, by the latter 1970s, prosperity had encouraged demand to surpass supply, creating a noteworthy sellers market in which access to output of the largest food processors was fiercely disputed by potential retail outlets whose customers demanded specific products. In this dispute, the largest private supermarket chains obtained a clear advantage, and in fact were able in some cases to impose their own terms on manufacturers, who provided them with merchandise at especially low "promotional" prices. Publicly run supermarkets found it increasingly difficult to obtain the volume of brand-name goods their clientele required, and were forced to turn to the encouragement of alternative sources of industrial supply, whether within the publicly financed food manufacturing sector or within relatively small private industry. And individual grocery stores, with a much lower volume of sales, considered joining together in co-operative ventures to buy directly at the factory door or found themselves at the mercy of an ever more expensive and unreliable wholesale distributor. The prevalence of the latter alternative was reflected in relatively high prices and scarcity of brand-name goods in unaffiliated grocery stores, and consequently in an extremely uncompetitive response to the challenge posed by supermarkets in areas of the city where the latter were strong.

Problems of relatively low-volume grocery stores within the formal sector were compounded by a second major development in commercial policy. The stratagem of setting officially determined maximum prices on basic foodstuffs, including sugar, flour, cooking oil, eggs, beans and pasta, which was inaugurated more than half a century ago, in the wake of food scarcity in the immediate post-revolutionary period, was greatly strengthened during the 1970s,

and led to the virtual elimination of many such products from the sphere of retail profit-making. Legally authorized margins on some basic staples became so low that the latter were in fact offered to the public by any retail outlet more as a service than as a business; and for small grocery stores, that was a serious blow. When confronted at the same time by an inability to obtain prestigious manufactured products on favourable terms and by the requirement that basic staples be sold virtually at the same price for which they were delivered by wholesale distributors, independent grocery stores intent upon operating as capitalist enterprises either counted upon profits made from selling high-priced goods to a stable and relatively affluent clientele (as in the case of groceries operating inside public markets in high income areas); stressing the provisioning of imported specialty items (as in the case of largely Spanish-run *ultramarinos*); becoming "efficiency outlets" in upper and middle income neighbourhoods; or abandoning the sale of most ordinary foodstuffs in favour of an increasing reliance on income from alcoholic beverages.

Such a trend did not fundamentally affect the access of consumers in lower middle, middle, and upper income areas (or low income pockets within those areas) to the basic staples and manufactured food products they ordinarily included within their diet, because they were likely to be increasingly served by private supermarkets. The wholesale supply problems of the non-supermarket sector did, however, affect the provisioning of millions of inhabitants of the metropolitan area who lived in uniformly low income neighbourhoods where no private supermarkets had entered - or could enter, given the low level of demand - and who depended upon small local grocery stores or stands for such supplies. Here one found, and still finds, a qualitatively different kind of grocery outlet from that just described above. The ubiquitous storefront operation of the *colonias populares* (generally known as a *miscelánea* or *tendajón*) is not a money-making enterprise, in the sense given the term in any modern capitalist society. If the average costs of operating a modern grocery business (including rent, equipment, electricity, transport, stock and the payment of a minimum wage to employees) were borne by most of these establishments, they could never be opened, much less continue to operate over a longer term. What makes them viable is their integration into family economies which absorb most costs outside the rationale of a capitalist enterprise and allow provisioning activities to take place in return for a semi-subsistence remuneration to the owners of the store. Thus the enterprise itself is located in a front room of the family dwelling, equipment is virtually non-existent, stock is stored in other parts of the house, family labour is provided without remuneration and the very limited earnings from sales are considered a profit which the family utilizes to meet its own daily livelihood requirements.

As Carol Meyers de Ortiz (1983) showed in her very detailed analysis of the place of such establishments in the urban economy, the thousands of semi-subsistence grocery outlets scattered throughout low income neighbourhoods of greater Mexico City have performed the vital function of supplying large contingents of the work force with food products under conditions which no capitalist enterprise

Provisioning Alternatives: Fresh Produce

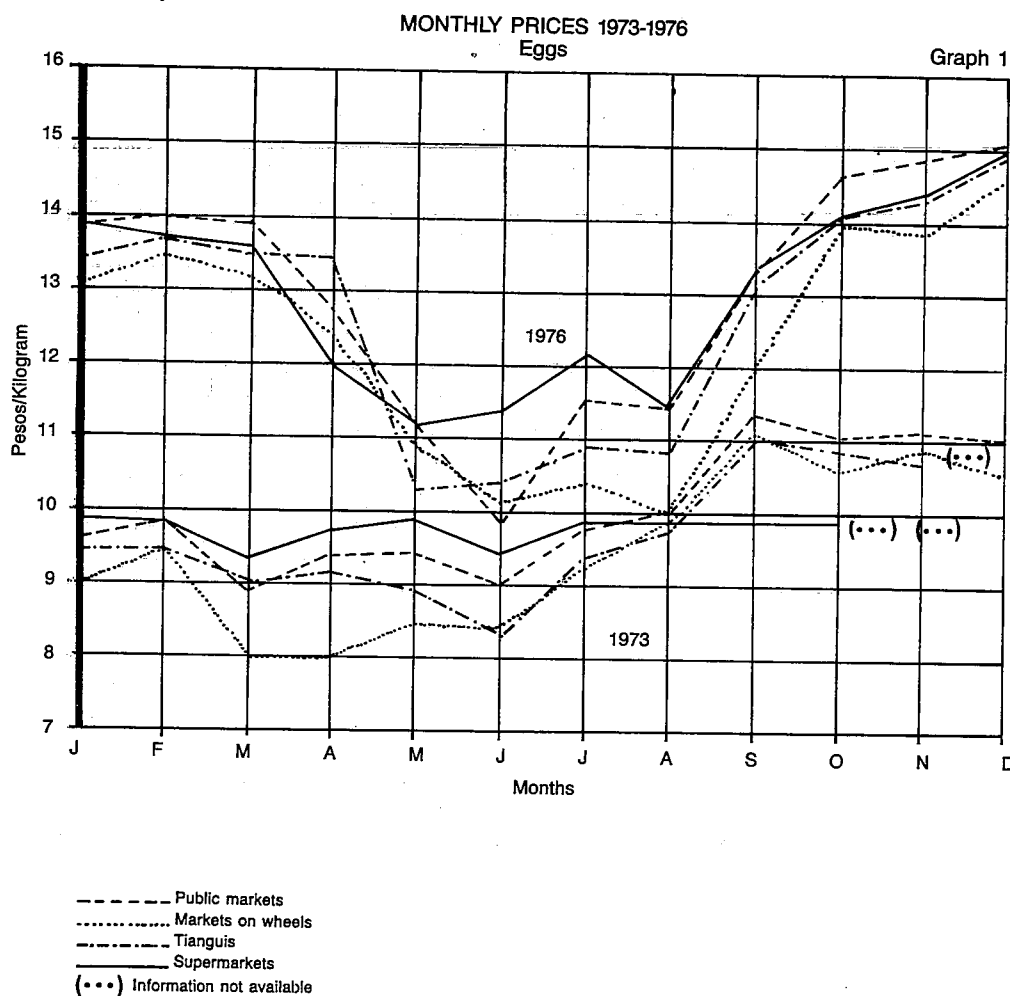
would accept. Like the latter, however, they too were being threatened in the 1970s by the increasingly high cost and difficult accessibility of manufactured products supplied to them through wholesalers, and by the virtual elimination of a profit margin on price-controlled staples. And, like other more established businesses, they were being forced to depend increasingly for their income on revenue from sales of beer, liquor, soft drinks, candy and other snacks on which passersby might willingly spend. In so doing, an increasing number of small groceries in low income areas were abandoning the terrain of basic food provisioning, to take up a much less socially useful position within the food system as a whole, as dependent distributors of the alcoholic beverages, bottled drinks and packaged "junk food" which have for decades provided a basis for the economic activity of certain sectors within the commercial structure of the *colonias populares* (Alonso, 1980).

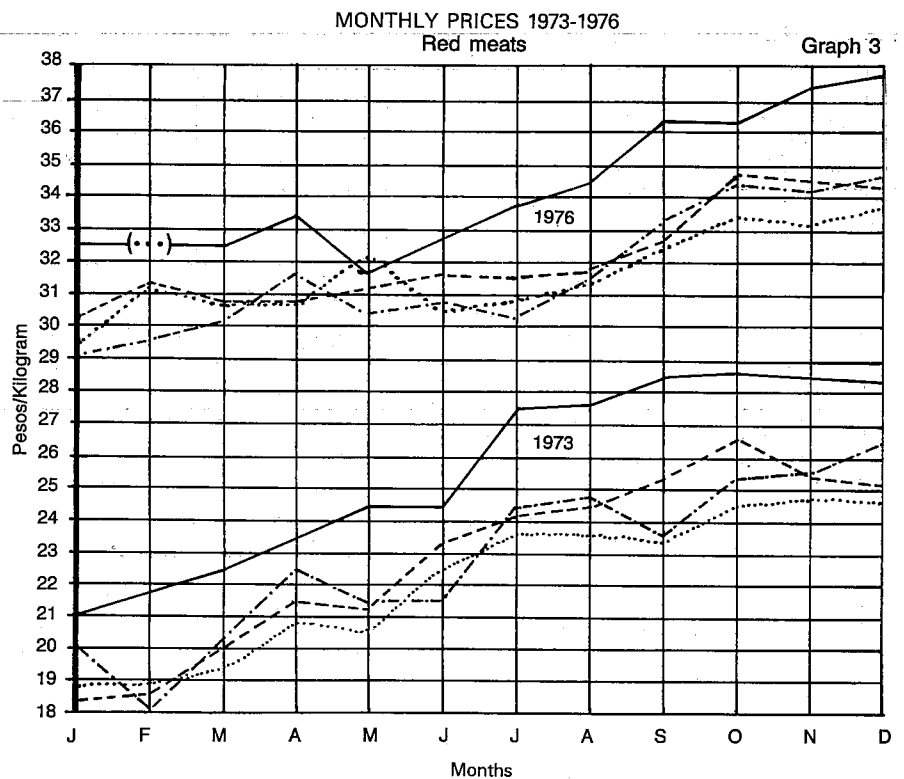
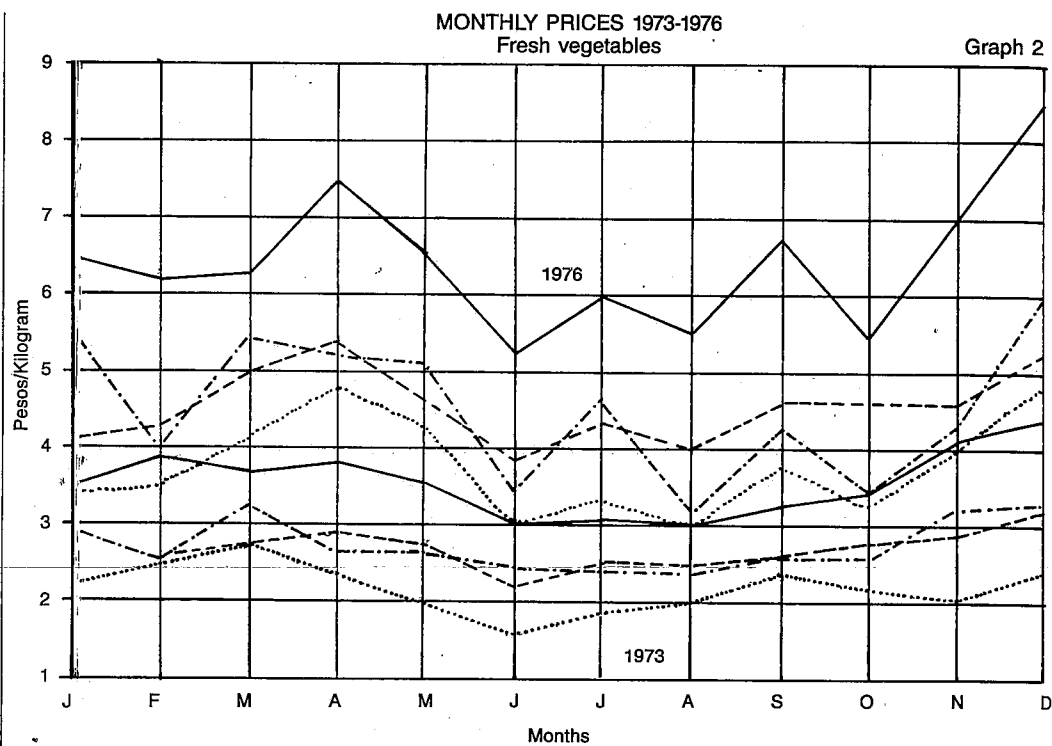
In order to forestall the further elimination of much small private enterprise from the field of basic grocery provisioning, particularly in middle and low income areas, a state-run wholesaling agency known as the Impulsora del Pequeño Comercio (IMPECSA) was established in 1977 and greatly expanded its operations during the early 1980s. If neighbourhood stores receiving goods from IMPECSA abided by the terms of agreement imposed by the latter, they maintained prices at a level which was relatively competitive with that of other outlets, including large public supermarkets. Yet the limited volume of IMPECSA-affiliated stores often made it difficult to apply the officially sanctioned retail margin and encouraged unofficial price increases.

Although consumers with access to modern self-service outlets could expect to pay a lower price for manufactured and dry goods in private or public supermarkets than in smaller independent grocery stores (as long as they were willing to accept the inflexible conditions of sale uniformly offered by the former), the same rule did not automatically apply during the 1970s to the purchase of fresh produce, and still does not apply today. The commercialization of fresh fruits and vegetables, in particular, has long been the terrain of thousands of family enterprises which have staked their economic survival on their ability to provide a relatively stable clientele with specific products at an accessible price. Unlike more modern outlets, in other words, the day-to-day activities of small produce merchants have centred around personalizing the market, adapting supply to the immediate needs of buyers; and when those buyers have little money to spend, traditional practice requires lowering the price, finding produce of lesser quality, or setting in motion a process of produce substitution which will permit sales to continue. The remarkable flexibility of this kind of provisioning activity can be observed within a single enterprise in the course of a day, as merchants rearrange their merchandise to offer highest quality and prices to certain clients, lower quality and prices to others, and leftover or damaged produce to indigents who pass by before the business is closed. Such flexibility can also be noted in the spatial

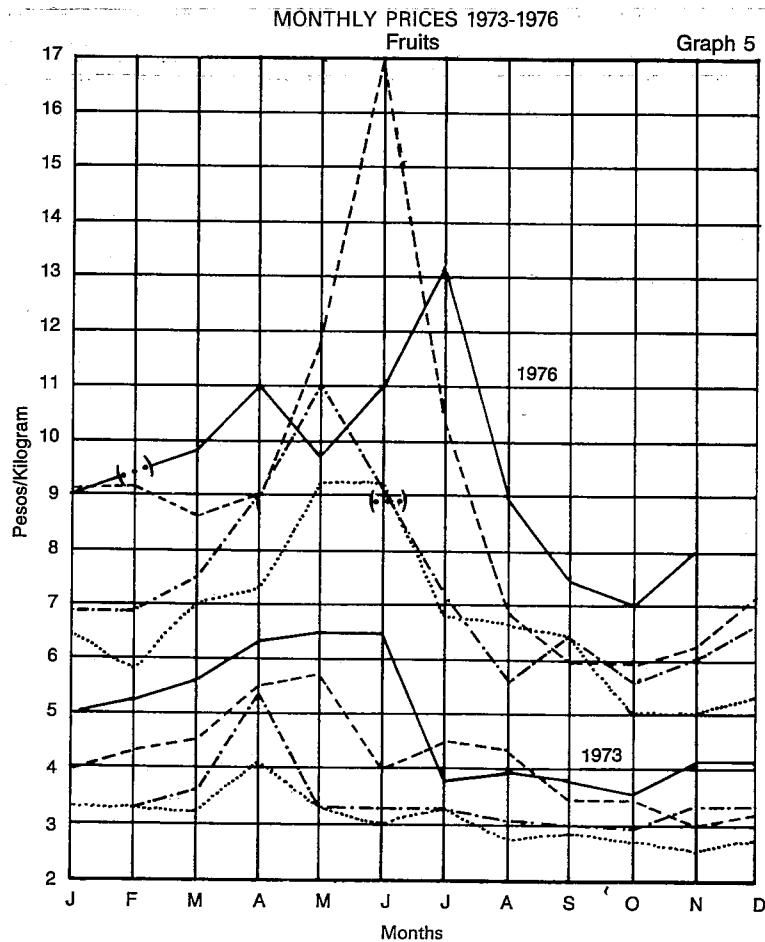
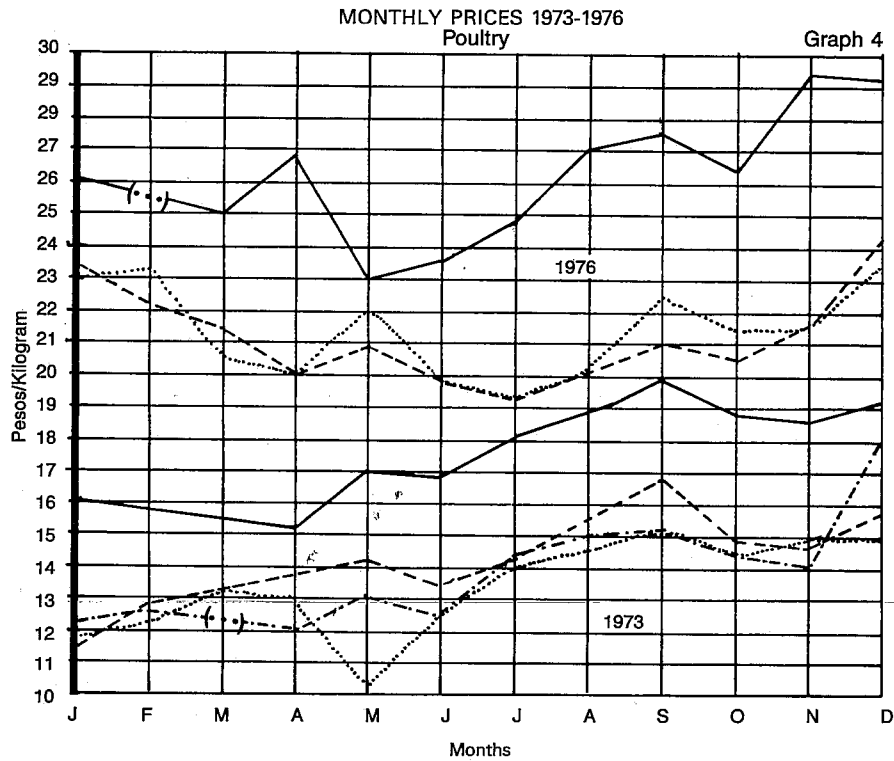
variation of price and quality characteristic of fresh produce merchandizing in different parts of the metropolitan area.

To understand the dynamics of pricing among different outlets engaged in the sale of fresh produce as well as the distinctive characteristics of each kind of outlet, it is useful to look at graphs 1 through 5. These graphs, elaborated by the Dirección General de Economía Agrícola on the basis of a survey carried out in 1973 and 1976, quite clearly suggest that, in those years, buyers of fresh fruits and vegetables, and meat, would have been well advised to frequent any small independent retailer before entering a supermarket. Supermarkets maintained the highest overall level of prices for those products, with especially large differentials for fresh vegetables and lesser ones for fruits and meats; and only in the sale of eggs did the self-service sector adopt a pricing policy which tended with certain regularity to be more favourable to the consumer than that of its more traditional competitors.





- - - - - Public markets
 Markets on wheels
 - . - . - Tianguis
 _____ Supermarkets
 (...) Information not available



- - - - - Public markets
 Markets on wheels
 - - - - - Tianguis
 ——— Supermarkets
 (. . .) Information not available

Such figures contain within them an implicit suggestion of systematic overcharging on the part of supermarkets, for the roots of higher produce prices in the latter could not be traced to any disadvantage in wholesale provisioning. On the contrary, large private supermarket chains have always been able to obtain the favourable treatment accorded to those who purchase in large quantity; and in the course of the 1970s, they also began to establish direct links between their own specially constructed wholesale produce warehouses and large farmers in various parts of the republic. Of all the sectors engaged in retail produce merchandizing, they were thus the one least affected by the heavy burden of intermediation characteristic of fresh produce wholesaling, and most likely obtain needed goods at a price which would allow them to compete efficiently with other outlets.

At the same time, however, both public and private supermarkets have suffered from disadvantages inherent in large-scale, self-service handling of perishables. Losses from spoilage of fresh fruits and vegetables displayed under the relatively improvised conditions to be found in most metropolitan supermarkets, and freely handled by hundreds of clients in the course of a few hours, are clearly much greater than those sustained by small family enterprises whose every sale is supervised. The increasing technification of produce storage among some modern chains as well as the incorporation of ancillary services such as the sale of prepared food requiring utilization of ripe produce, most certainly reduces such losses. But their incidence in modern produce merchandizing is nonetheless real, and should not be forgotten when judging differential mechanisms of pricing among various outlets in the metropolitan area and when considering the most effective way to reduce food losses throughout the entire provisioning system.

It would seem likely, judging from the structure of profits of the private supermarket sector, that the latter did not generally take full advantage of a potentially competitive position in the sale of fresh produce because such a stance had not formed a necessary part of its overall strategy of growth. With the bulk of profits coming from processed foods, liquors and non-food merchandise (including clothing, household goods, records, books and stationery), perishables were simply provided to the customer as a complementary service, necessary to satisfy housewives intent on one stop shopping. At times, there was also sporadic manipulation of "sale" prices on particular fruits and vegetables to draw in extra clientele. In the meantime, the inherent advantages of small independent produce retailers (including their personalized handling of merchandise, the flexibility of their attention to customers and the conviction with which Mexican families continue to maintain a tradition of market attendance) were sufficient to hold participation by modern retail corporations in the metropolitan produce market to a minimum, and to assure small vendors continued control over by far the greatest part of the sector, as figures contained in table 5 make amply clear.

If the strength of market vendors of all kinds has always rested upon their flexible handling of resources within the retail sphere, their weakness has perennially lain in the realm of wholesale supply. Like compatriots running small grocery stores, sellers of fresh produce can exert virtually no influence over conditions within the wholesale market. The livelihood of many in recent years has consisted of turning a fixed daily investment in perishables, made at the warehouses of wholesalers in the central market, into approximately double that amount at the end of the day, through careful management of sales. On an average, that margin has been sufficient to provide an adequate living for families whose personal frame of economic reference (once again like that of small store-keepers) does not include a capitalist accounting for labour invested, and whose operating costs and requirements for fixed capital are minimal. But if wholesale prices rise precipitously while limitations on the purchasing power of customers brake a proportional increase in retail prices, as has recently been the case, such an arrangement is no longer viable. Market vendors must reduce their margins below a level which they consider to provide an adequate income, while most probably also offering prices which many customers find too high to pay.

To the extent that market vendors are allowed to operate within a structure which permits recourse to a strategy of lowering prices by increasing volume of sales - or in other words, which places them in a position to appeal to the widest possible part of the buying public - they quite clearly are more likely to survive the crisis than if their clientele is physically circumscribed to a single neighbourhood. And, for this reason, one could expect to find in the early 1980s, superimposed upon the map of differential impact of the crisis by socio-economic zone of the city, a second intersecting differentiation by kind of market outlet. The public markets, concentrations and greengrocers (*verdulerías*) which jointly accounted at the outset of the crisis for almost 120,000 family enterprises within the confines of the Federal District alone, are stationary outlets, with a relatively fixed clientele, and are therefore least able to lower prices on the assumption that a very much larger volume of sales will be forthcoming. Street markets, including *tianguis* and markets on wheels, are in a much more favourable position, for they change location daily and can theoretically draw upon a far more substantial degree of accumulated demand. Their less than 40,000 vendors (in 1982) were in consequence the volume salesmen of the market sector, and it was toward the *tianguis*, in particular, that a significant number of fresh produce vendors were moving in the early 1980s, as they attempted to escape an otherwise untenable position.²

If *tianguis* and markets on wheels are adequately distributed among the lowest income neighbourhoods of the metropolitan area, they have the capability of supplying their clientele with fresh produce at a price similar to, or lower than that of, the private supermarkets in middle or upper income areas, and certainly lower than that of public markets. But they accomplish this feat precisely by appearing only once or twice a week in any given part of the city. Therefore low income consumers, most often without refrigerators,

2. The markets on wheels are less popular alternatives than the *tianguis* because their prices are regulated by the Ministry of Commerce and Industrial Development.

Table 5

Places of Purchase of Food Products, by Income Strata within the Metropolitan Area, 1977														
	All income strata							Less than one minimum wage						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bread	1.1	10.8	1.9	3.1	82.8	--	--	2.6	16.2	3.5	1.6	75.9	--	--
Tortilla	3.4	3.1	0.1	0.7	92.5	--	--	7.6	2.4	--	0.5	89.5	--	--
Cereals	27.9	22.3	15.2	16.5	8.5	6.2	1.9	47.1	23.9	13.1	5.9	6.9	1.4	1.4
Fresh fish and seafood	67.0	0.5	1.5	11.4	11.8	1.0	5.8	72.2	0.8	1.2	5.8	9.3	--	8.9
Meats	54.2	1.1	1.4	7.9	30.3	1.6	3.3	64.7	1.1	0.3	2.7	25.5	0.3	4.9
Milk	4.9	23.5	19.0	6.5	43.4	0.9	0.7	3.9	25.0	28.9	5.7	34.5	--	1.8
Eggs	33.9	30.2	4.5	8.7	15.6	1.8	4.5	37.1	32.9	4.2	2.8	13.1	1.7	7.8
Groceries	21.6	38.2	10.3	15.0	6.1	5.9	1.8	30.7	43.7	10.2	3.6	6.6	1.2	3.3
Fresh fruit	67.1	2.9	0.8	7.3	7.8	1.1	12.7	74.1	2.0	0.9	3.4	6.5	--	12.8
Fresh vegetables	70.0	1.7	0.6	7.2	6.6	0.7	12.8	74.5	1.2	0.9	2.9	7.7	0.6	11.7
Soft drinks	3.2	74.7	0.1	5.0	15.4	0.5	0.8	3.7	80.4	--	1.9	13.7	--	0.7
Wines and liquors	2.2	30.6	0.9	23.5	36.5	4.2	--	7.6	54.3	3.8	2.9	30.5	1.0	--
	1. to 1.8 times the minimum wage							1.8 to 3.2 times the minimum wage						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bread	0.9	11.1	2.1	0.3	82.8	--	--	0.6	9.3	1.8	1.8	85.9	--	--
Tortilla	5.2	1.8	--	--	93.1	--	--	1.4	2.6	--	0.8	95.1	--	--
Cereals	35.8	25.9	19.0	5.0	8.9	2.6	1.9	25.9	23.2	18.5	15.7	8.6	5.2	2.7
Fresh fish and seafood	80.3	0.9	1.2	1.9	8.8	0.5	6.0	67.7	0.4	2.3	8.3	15.3	0.6	4.5
Meats	63.0	1.7	1.7	2.9	26.1	1.5	2.8	52.6	0.8	2.3	5.7	34.5	0.6	3.6
Milk	5.8	26.8	25.5	2.4	38.2	--	0.4	4.6	22.3	15.2	5.1	51.1	0.6	--
Eggs	41.4	34.7	5.5	2.7	11.5	1.1	3.3	34.8	29.4	5.4	7.1	16.2	0.8	5.5
Groceries	26.9	47.3	11.3	4.6	5.1	3.0	1.7	21.8	36.6	12.5	13.5	8.5	4.3	1.4
Fresh fruit	75.3	4.1	1.2	2.5	7.4	0.6	8.4	72.1	2.5	1.1	4.2	8.0	--	11.7
Fresh vegetables	77.2	2.2	0.7	2.7	7.1	--	9.6	74.1	1.9	0.9	4.6	5.9	--	12.2
Soft drinks	3.9	79.9	--	0.9	14.6	--	--	3.4	77.0	0.4	3.0	14.9	--	1.3
Wines and liquors	0.3	36.6	--	7.0	53.8	0.3	--	1.7	32.4	1.4	18.2	39.9	3.7	--

(1) Public market

(2) Grocery stores

(3) CONASUPO

(4) Private supermarkets

(5) Specialized outlets and others

(6) Union stores

(7) Mobile markets

Table 5 (continued)

Places of Purchase of Food Products, by Income Strata within the Metropolitan Area, 1977							
	More than 3.2 times the minimum wage						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bread	0.8	8.3	1.0	8.6	80.2	1.0	--
Tortilla	0.8	5.6	0.3	1.6	90.9	0.3	--
Cereals	11.6	16.8	9.2	35.2	8.5	13.7	1.4
Fresh fish and seafood	50.1	0.7	1.3	26.9	12.8	2.4	5.2
Meats	39.5	0.8	0.8	18.9	33.7	3.5	2.5
Milk	4.6	20.2	10.2	13.1	46.5	2.4	0.6
Eggs	22.8	24.2	2.7	20.7	21.2	3.7	3.2
Groceries	10.7	26.4	7.0	34.4	4.7	13.3	1.3
Fresh fruit	48.6	2.6	--	18.4	8.5	3.0	18.9
Fresh vegetables	54.9	1.3	0.2	17.8	6.2	1.9	17.6
Soft drinks	2.0	63.7	--	13.1	17.9	1.6	0.7
Wines and liquors	2.6	18.4	0.3	45.8	22.2	8.2	--

- (1) Public market
 (2) Grocery stores
 (3) CONASUPO
 (4) Private supermarkets
 (5) Specialized outlets and others
 (6) Union stores
 (7) Mobile markets

Source: Reprocessing of the 1977 Income and Expenditure Survey for the Project on the Food System of Mexico City.

who require more frequent provisioning of highly perishable items - or whose income is so limited and sporadic that they can only buy in very small quantities on a daily basis - must still depend upon fixed outlets, where merchants are absorbing the brunt of the crisis under the most difficult of circumstances.

Armed with this brief discussion of some of the principal elements of diversity within the food-related commercial structure of the metropolitan area, the reader should not find it hard to imagine that Mexico City contains, in fact, a mosaic of spatially defined supply structures which must be reckoned with when discussing the provisioning strategies of the poor. Inhabitants of depressed, low income areas like Ciudad Netzahualcōyotl do not obtain most of their food through recourse to the same kinds of outlets, or on the same terms, as other poor families living within the context of higher income delegations like Miguel Hidalgo. And, even more to the point, low income families settling on the borders of Netzahualcōyotl

Localized Structures of Supply

are not confronted with a pattern of access to wider food circuits which can be described in comparable terms to that which they might find if living in the central area of the same municipality. The peculiar combination of specific outlets to be found at any given point within the metropolitan area presents consumers with spatially specific buying options and therefore, up to a certain point, with localized structures of prices.

Before turning to the question of spatially differentiated prices, it is useful to look for a moment at how buying strategies of consumers varied at the time the 1977 household survey was carried out. This question has already been addressed in table 5, which is concerned with the purchasing points most frequented by consumers from various income strata when buying particular kinds of food. The extraordinary importance of "traditional" outlets like public markets and neighbourhood grocery stores in the provisioning strategies of all residents of the metropolitan area, but particularly of the lowest income groups, is dramatically illustrated by this kind of analysis.

Graphs 6 through 12 provide a different perspective of the provisioning activity of consumers, looking at the relative importance of various kinds of food outlets in the purchasing strategies of families living in a particular delegation or municipality within greater Mexico City. The reader should note that these consumers are not stratified by level of income, because the size of the survey sample within certain parts of the city made it inadvisable to disaggregate data simultaneously by income and by geographical area of the capital.

Perhaps the first point which captures the attention of anyone consulting these graphs on buying strategies of families during the latter 1970s is the overwhelming importance of public markets and small groceries in virtually all areas and for most products throughout the city. The second, however, is the clear play of competition between these small businesses and more modern retail outlets like CONASUPO, private supermarkets and self-service stores run by labour unions. The balance of power tilts notably more toward the self-service alternative in some delegations, including the four wealthier central ones (Venustiano Carranza, Cuauhtémoc, Miguel Hidalgo, and Benito Juárez) earlier described as the commercial core of the city and here coded as "Centre"; the heterogeneous high and low income delegations of Alvaro Obregón, Coyoacán, and Naucalpan; and - most significantly - two of the three areas of the city containing the bulk of all heavy industry (Azcapotzalco and Tlalnepantla). The third strongly industrial delegation, Gustavo A. Madero, is less clearly oriented toward the supermarket sector and has a somewhat stronger showing among small independent retailers.

In general, the growing importance of the capital intensive self-service sector seems to be closely associated with the modernization of non-supermarket outlets, so that the business practice of independent grocers, specialty stores (bakeries, sweet shops, dairy outlets, etc.) and meat markets forced into competition with public

or private supermarkets tends to incorporate elements of capitalist enterprise which are not evident when that competition is absent. This trend, incipient in most cases during the 1970s, appears in census figures presented in table 6 and serves as a reminder that certain kinds of establishments making up the lower half of the bar graphs have begun to adopt new forms of operation which distinguish them from counterparts in less dynamic areas of the city. As they substitute hired employees for unpaid family labour, the structure of economic activity in food commerce is altered, even though household surveys like the one on which these graphs are based simply register the uniform presence of broadly defined types of outlets.

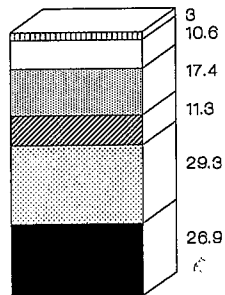
Although the principal element differentiating the commercial structure of delegations considered in graphs 6 through 12 is no doubt the balance between supermarket (or self-service) and non-supermarket outlets just discussed, it is important to consider other relationships among parts of the graphs which also offer significant commentary on the alternatives available to consumers in various parts of the metropolis at the time. The line dividing purchases in public markets from purchases in markets on wheels, for example, is in fact a measure of the extent to which periodic street markets have wrested clientele from fixed market vendors. In some delegations, this process seemed by 1977 to have been surprisingly advanced: that approximately a quarter to a third of all purchases of fresh fruits and vegetables in Alvaro Obregón, Coyoacán, Tlalnepantla and other peripheral northern suburbs of the State of Mexico (included in the category "various") should be attributable to markets on wheels is noteworthy indeed. The special socio-economic heterogeneity of these delegations and municipalities makes it difficult to know whether the advantage of lower prices in street markets was taken by high or low income groups; but it is obvious from the graphs that markets on wheels made a poor showing in the two metropolitan areas where lower prices were most desperately needed (the densely populated, low income municipalities of Netzahualcóyotl and Ecatepec), and in that sense were not yet fulfilling the function for which they were created.

Within the supermarket sector making up the upper part of the graphs, one can also judge the balance of power between public and private outlets, as this relationship emerged in replies to the household survey of 1977. The extremely important role of CONASUPO as a supplier of milk (in rehydrated form through its affiliate LICONSA and in canned and powdered form in public supermarkets) emerges clearly, although certain northern *municipios*, in the state of Mexico, were relatively unattended. In basic grains and groceries, the showing of CONASUPO was also surprisingly strong in various parts of the city. The publicly managed chain surpassed private supermarkets in share of the market for both kinds of products in Azcapotzalco, Ixtapalapa, Ecatepec and Netzahualcóyotl, in the first two delegations supplying almost 20 per cent of all shoppers and in the second two somewhat over 10 per cent.

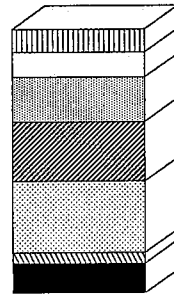
Graph 6

Purchasing Point of Groceries by Zone of City
1977 - All Income Strata

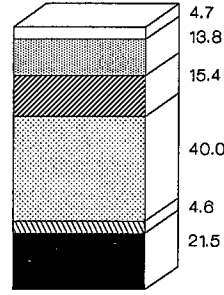
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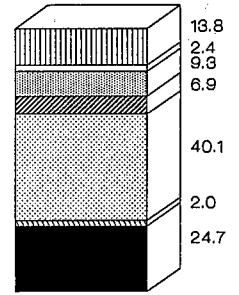
AZCAPOTZALCO



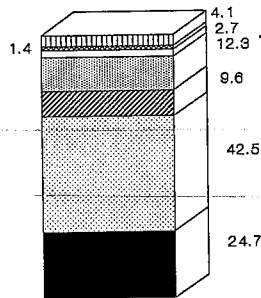
COYOACAN



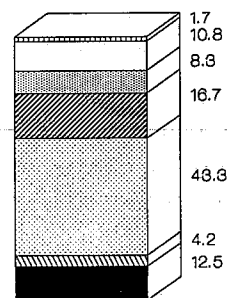
MADERO



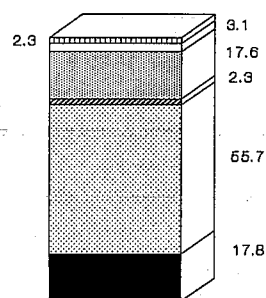
IXTACALCO



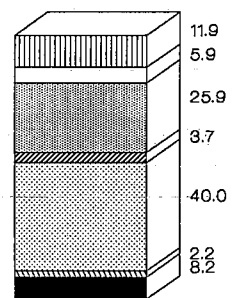
IXTAPALAPA



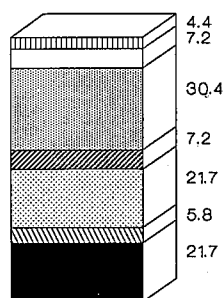
SOUTH



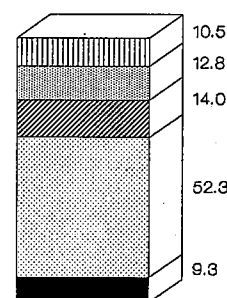
OBREGON



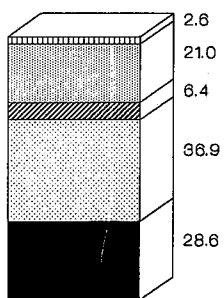
VARIOUS



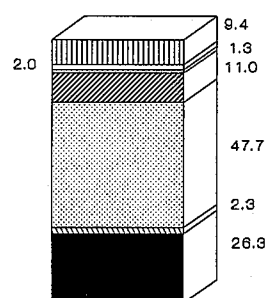
ECATEPEC



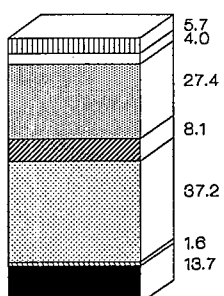
NAUCALPAN



NETZAHUALCOYOTL



TLALNEPANTLA

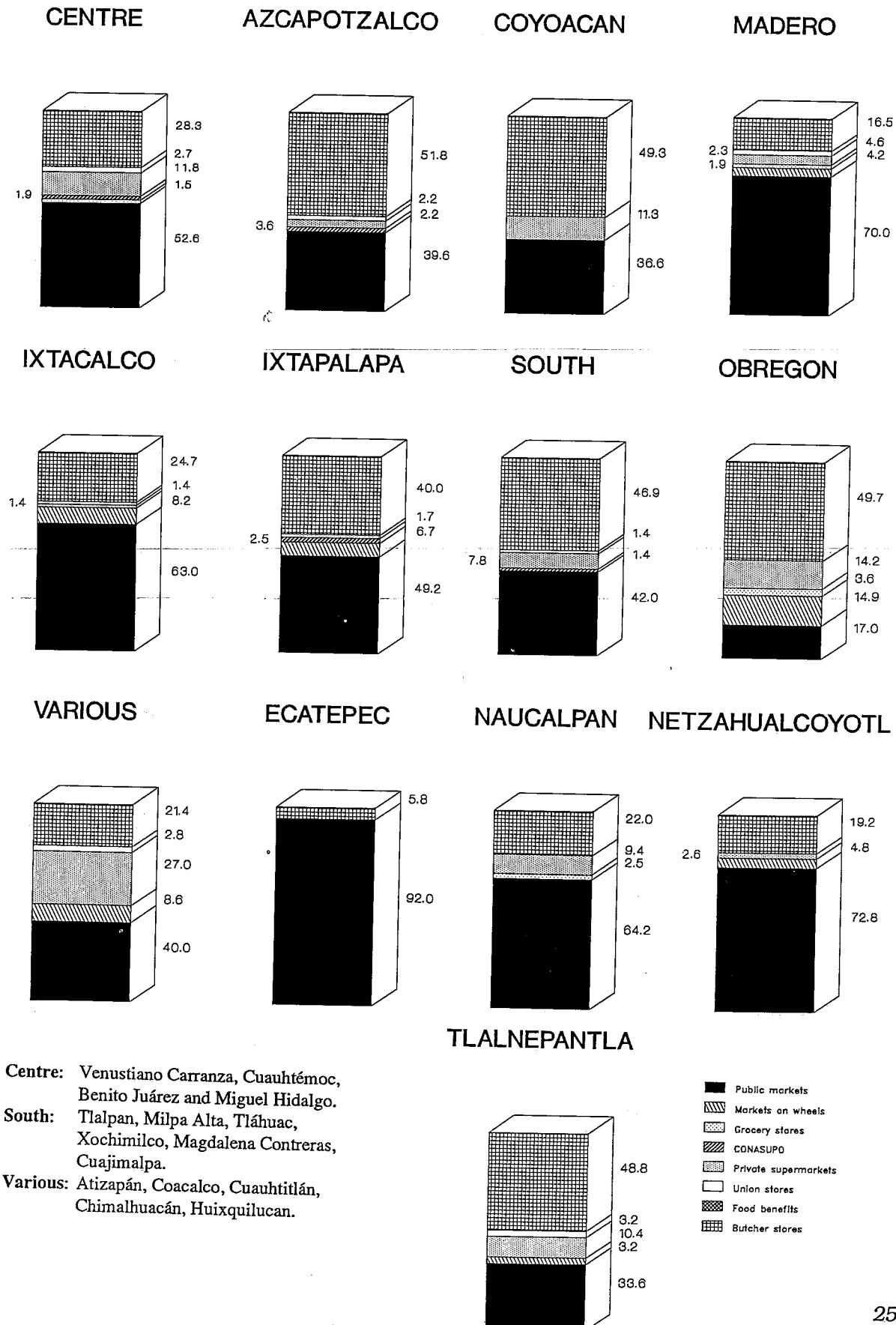


Centre: Venustiano Carranza, Cuauhtémoc,
Benito Juárez and Miguel Hidalgo.
South: Tlalpan, Milpa Alta, Tláhuac,
Xochimilco, Magdalena Contreras,
Cuajimalpa.
Various: Atizapán, Coacalco, Cuauhtitlán,
Chimalhuacán, Huixquilucan.

Public markets
Markets on wheels
Grcery stores
CONASUPO
Private supermarkets
Union stores
Food benefits
Specialty stores

Graph 7

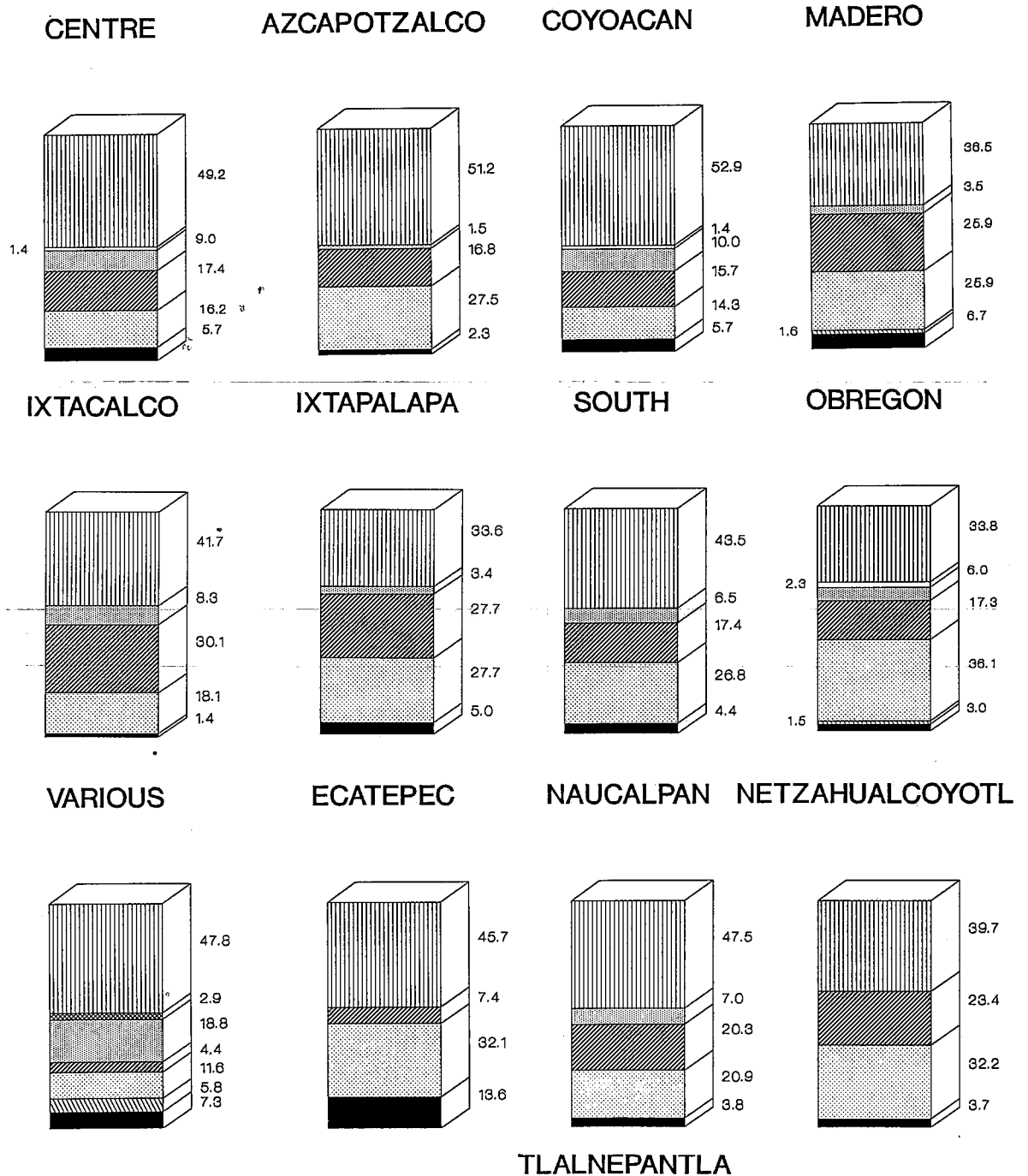
Purchasing Point of Fresh Red Meat by Zone of City
1977 - All Income Strata



Centre: Venustiano Carranza, Cuauhtémoc, Benito Juárez and Miguel Hidalgo.
South: Tlalpan, Milpa Alta, Tláhuac, Xochimilco, Magdalena Contreras, Cuajimalpa.
Various: Atizapán, Coacalco, Cuauhtitlán, Chimalhuacán, Huixquilucan.

Graph 8

Purchasing Point of Milk by Zone of City
1977 - All Income Strata



Centre: Venustiano Carranza, Cuauhtémoc, Benito Juárez and Miguel Hidalgo.

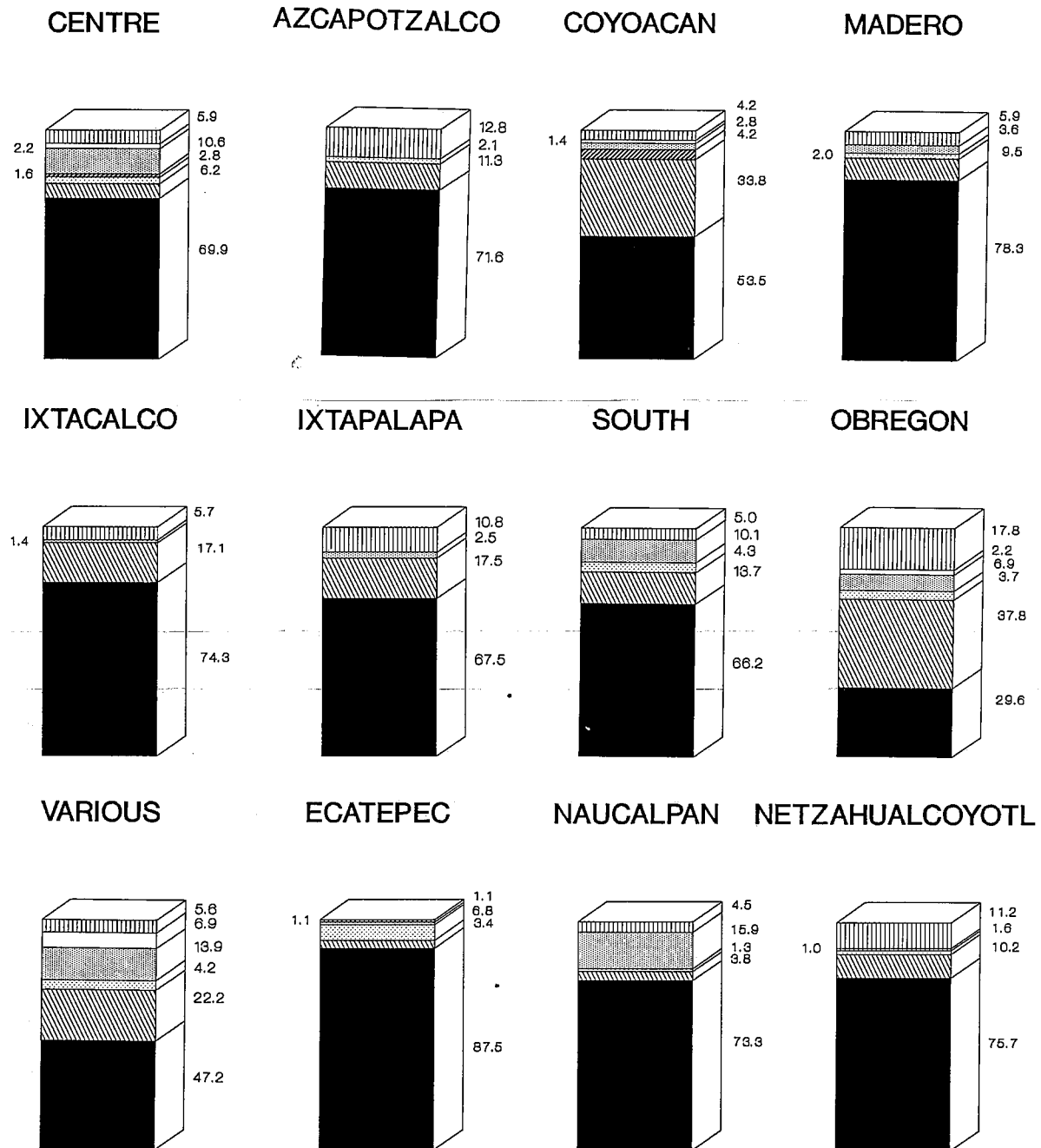
South: Tlalpan, Milpa Alta, Tláhuac, Xochimilco, Magdalena Contreras, Cuajimalpa.

Various: Atizapán, Coacalco, Cuauhtitlán, Chimalhuacán, Huixquilucan.

- Public markets
- Markets on wheels
- Grocery stores
- CONASUPO
- Private supermarkets
- Union stores
- Food benefits
- Specialty stores

Graph 9

Purchasing Point of Fresh Fruit by Zone of City
1977 - All Income Strata

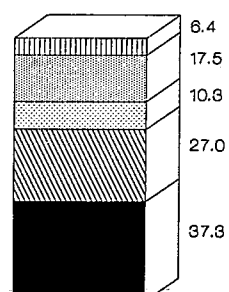


Centre: Venustiano Carranza, Cuauhtémoc, Benito Juárez and Miguel Hidalgo.

South: Tlalpan, Milpa Alta, Tláhuac, Xochimilco, Magdalena Contreras, Cuajimalpa.

Various: Atizapán, Coacalco, Cuauhtitlán, Chimalhuacán, Huixquilucan.

TLALNEPANTLA

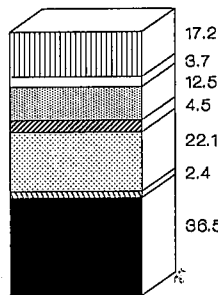


- Public markets
- Markets on wheels
- Grocery stores
- CONASUPO
- Private supermarkets
- Union stores
- Food benefits
- Specialty stores

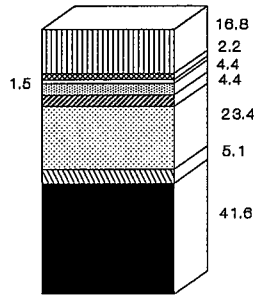
Graph 10

Purchasing Point of Eggs by Zone of City
1977 - All Income Strata

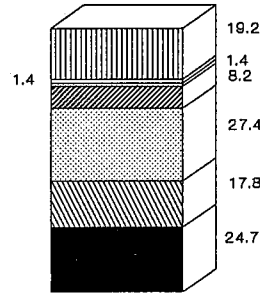
CENTRE



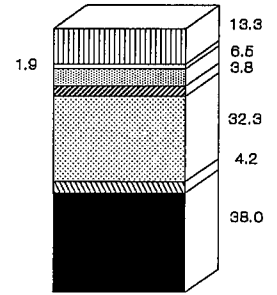
AZCAPOTZALCO



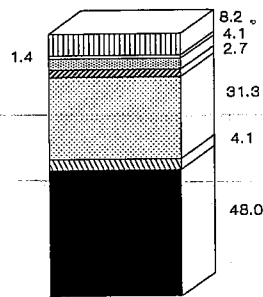
COYOACAN



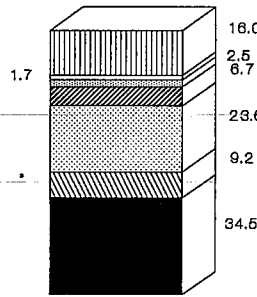
MADERO



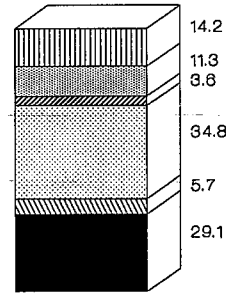
IXTACALCO



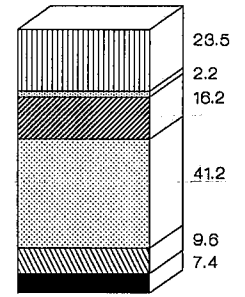
IXTAPALAPA



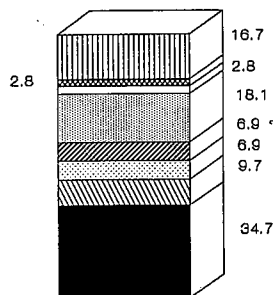
SOUTH



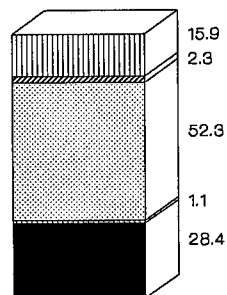
OBREGON



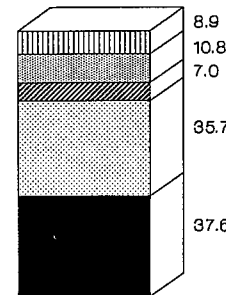
VARIOUS



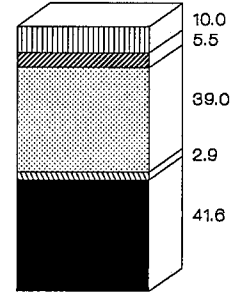
NORTH-EAST



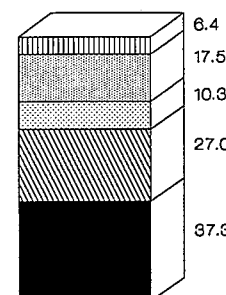
NAUCALPAN



NETZAHUALCOYOTL



TLALNEPANTLA

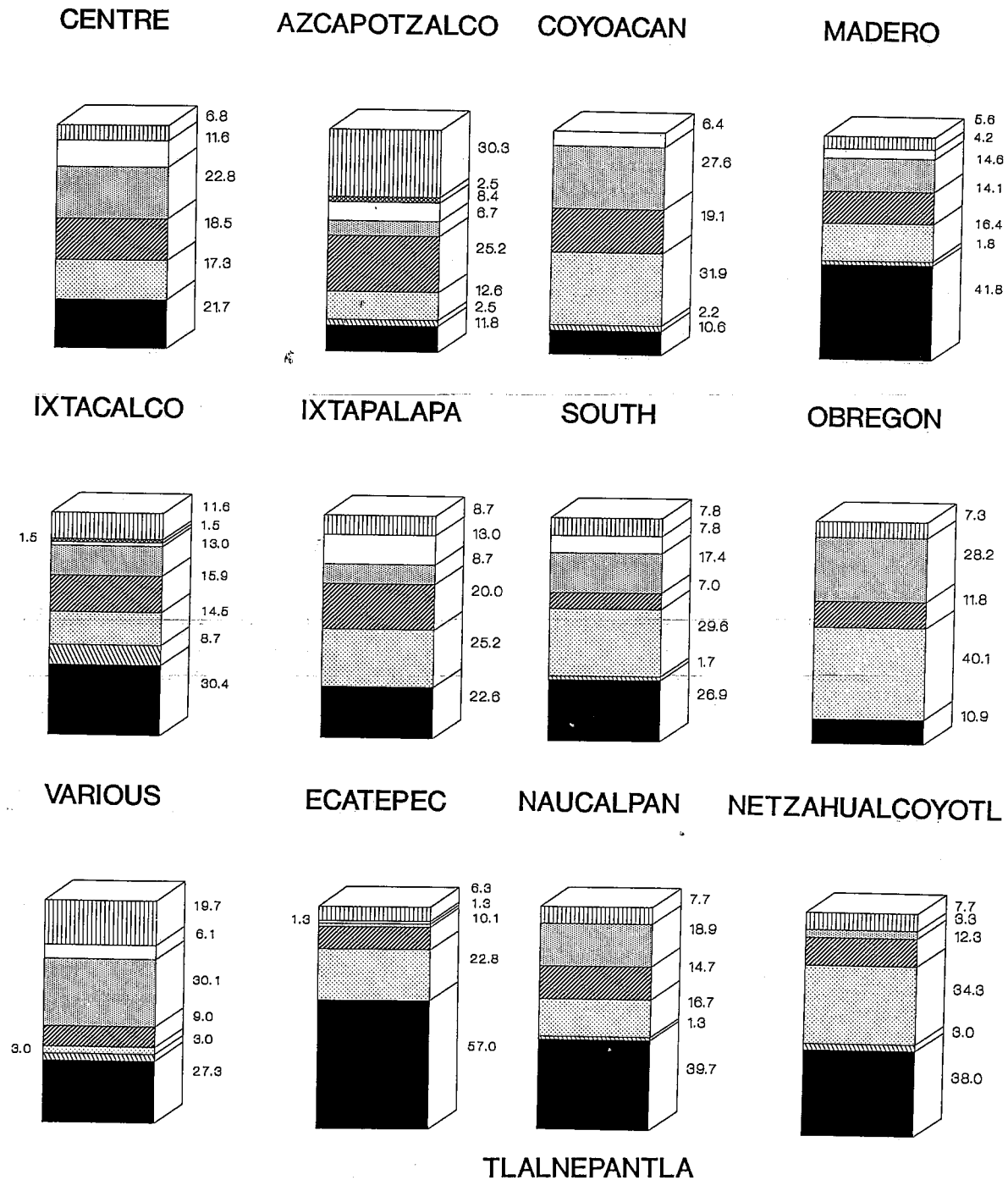


Centre: Venustiano Carranza, Cuauhtémoc,
Benito Juárez and Miguel Hidalgo.
South: Tlalpan, Milpa Alta, Tláhuac,
Xochimilco, Magdalena Contreras,
Cuajimalpa.
Various: Atizapán, Coacalco, Cuauhtitlán,
Chimalhuacán, Huixquilucan.

Public markets
Markets on wheels
Grocery stores
CONASUPO
Private supermarkets
Union stores
Food benefits
Specialty stores

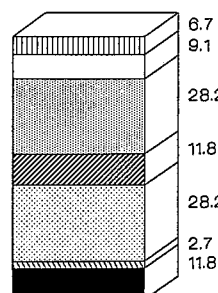
Graph 11

Purchasing Point of Grains by Zone of City
1977 - All Income Strata



Centre: Venustiano Carranza, Cuauhtémoc, Benito Juárez and Miguel Hidalgo.
South: Tlalpan, Milpa Alta, Tláhuac, Xochimilco, Magdalena Contreras, Cuajimalpa.
Various: Atizapán, Coacalco, Cuauhtitlán, Chimalhuacán, Huixquilucan.

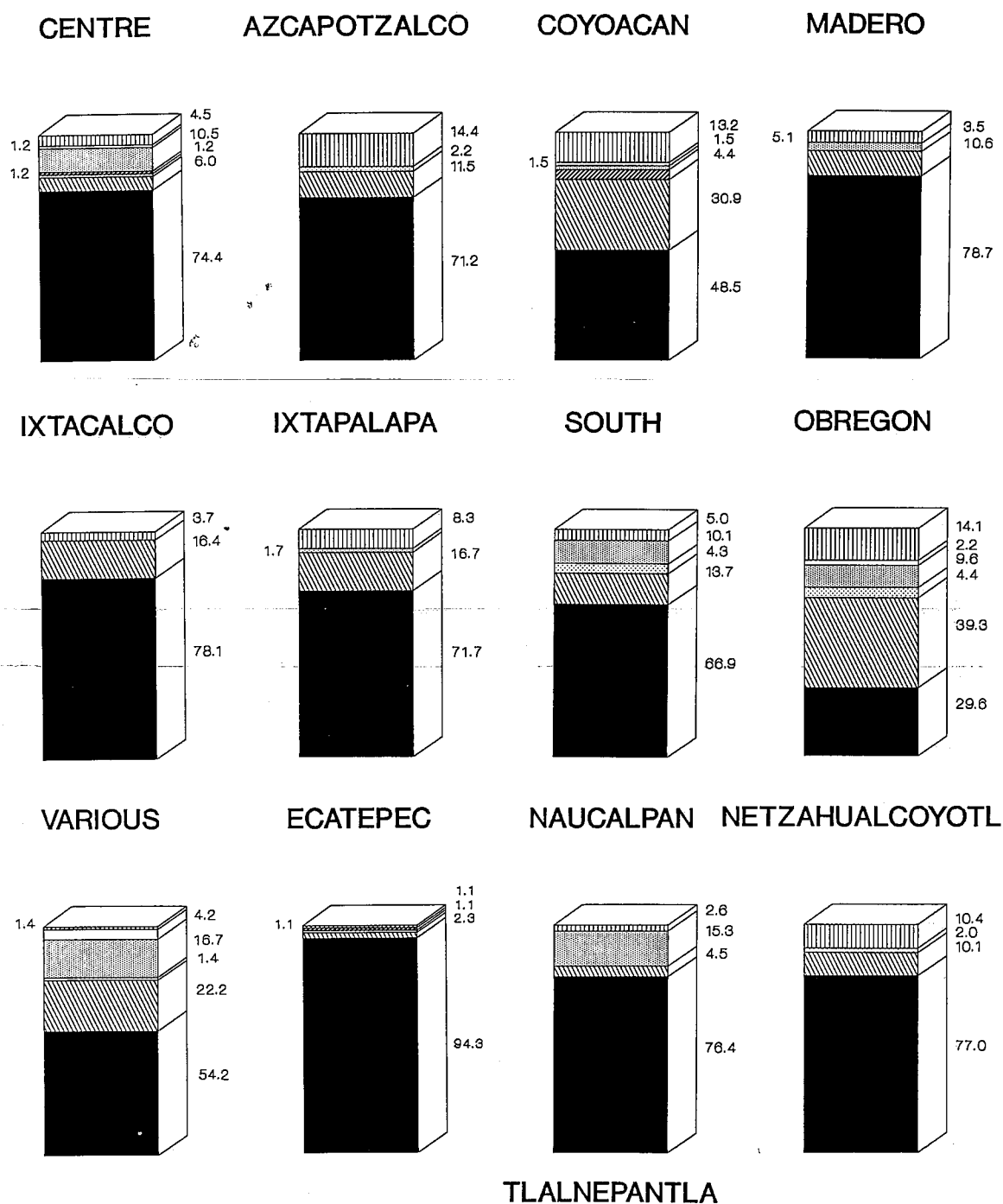
TLALNEPANTLA



Public markets
Markets on wheels
Grocery stores
CONASUPO
Private supermarkets
Union stores
Food benefits
Specialty stores

Graph 12

Purchasing Point of Fresh Vegetables by Zone of City
1977 - All Income Strata



Centre: Venustiano Carranza, Cuauhtémoc, Benito Juárez and Miguel Hidalgo.
South: Tlalpan, Milpa Alta, Tláhuac, Xochimilco, Magdalena Contreras, Cuajimalpa.
Various: Atizapán, Coacalco, Cuauhtitlán, Chimalhuacán, Huixquilucan.

Public markets
Markets on wheels
Grocery stores
CONASUPO
Private supermarkets
Union stores
Food benefits
Specialty stores

Variations in Terms of Access

Although this information makes patent the wide variation in buying strategies, closely related to equally noteworthy differences in kinds of supply structure, which can be found at different points within the confines of the metropolitan area, it does nothing to elucidate how particular combinations of food outlets, forming localized provisioning environments, may affect the buying power of the population.

There is considerable evidence in the historical literature on food prices in Mexico City to suggest that the terms of access to particular products have traditionally varied widely within the urban area. In 1960, for example, a household survey conducted in the metropolitan zone by the Ministry of Commerce registered differences in "retail prices of foodstuffs at the outlet nearest the home" which reached 500 per cent across the city on milk and pasta; 300 to 350 per cent on rice, beans, pork and beef; and was likely to be more than 200 per cent on all other basic goods considered. More recent surveys, like those conducted by the Sistema Alimentario Mexicano in 1980, registered price differences on a single product, on a single day, of up to 300 per cent. And information gathered by the National Consumers Institute in 1983 suggested that, if anything, the effect of economic crisis was at least initially to exacerbate uncertainty concerning the price prevailing in different provisioning environments, not to lessen it.

It should be noted that such price variation has not been simply a concomitant of differences among outlets; it is also related to differences within a single kind of outlet, according to the area of the city involved. Thus, in late 1982, observers carrying out field work in specific neighbourhoods found that oranges cost 450 pesos a kilo in a public market in Azcapotzalco, but 250 pesos less in another market in Cuauhtémoc; fresh fish (*cazón*), 640 pesos in a *tianguis*, in Ixtapalapa, but only 420 pesos in another *tianguis* in Netzahualcóyotl. Uncertainties during a period of devaluation and inflation no doubt played a significant part in shaping such disparities, as did differences in the quality of the produce in question.

These extreme differences, registered at single outlets and for particular products, may of course be lessened when a broader price survey is conducted. It is therefore useful to refer to table 6, in which data from the continuous price survey of the Banco de México were utilized to calculate the average cost of a standard "basket" of basic foods in different delegations and municipalities of the metropolitan area during 1981 - that is to say, during a period of inflation but not yet of economic crisis. The table is based upon prices recorded at all surveyed food outlets, excluding supermarkets, and the universe is limited to working class or lower middle income zones within all administrative areas of the city.

The first conclusion that can be drawn from this analysis is that the average total cost of a standard group of basic foods, taken

together, was held within relatively narrow bounds: there was a difference of approximately 11 per cent between the highest cost (25.06 pesos), registered in Ixtapalapa, and the lowest (22.95) in Tlalnepantla. Subsidies and price control held prices constant for a large number of dietary staples, including maize *tortillas*, white bread, milk, sardines, lard, cooking oil and sugar. Such a situation continued to prevail at least until 1988: an analysis of price variation within the confines of the capital, carried out by the Provisioning Commission of the Federal District toward the end of the 1980s, found that, on the whole, a basic "basket" of foods varied in cost by roughly 10 per cent in various sampling points across the Federal District (although analysis was not extended to include contiguous areas of the State of Mexico) (Ponce and Rello, 1988).

Within the group of staples, however, average prices do vary considerably. Thus even when survey data are obtained within a relatively standardized socio-economic environment, as they were in the sample underlying table 6, the amount required to purchase pasta in 1981 was 64 per cent higher at the highest-price sampling point than at the lowest, and the amount required to purchase beans was 18 per cent higher. Both pasta and beans are among the most basic elements in the diet of the population. And, not surprisingly, variation in average price of perishables was far greater: 24 per cent for chicken, 43 per cent for tomatoes, 55 per cent for carrots, and 68 per cent or more for all basic fruits.

If the modernization of the retail food sector were a decisive factor in lowering the cost of provisioning, then the areas of the city with the most modern establishments should have had the lowest levels of prices. This, however, is not a conclusion which can be drawn from the 1981 survey. A comparison of tables 6 and 7 will show that one of the three most expensive buying points in the Banco de México sample (Benito Juárez) had perhaps the most modern commercial infrastructure in the metropolitan area, in terms of the proportion of all those employed in food commerce who were to be found in supermarkets. A second relatively expensive buying point (Azcapotzalco) was characterized by a weak supermarket sector but a relatively more modernized non-supermarket sector. Only the third (Ixtapalapa) could be described as more "traditional" than the average; but Ixtapalapa was also a special case, since its residents depended heavily on the most temporary and undeveloped kind of traditional food commerce, that of temporary public markets or *concentraciones*.

What of the assertion that variations in levels of food prices across the metropolitan area were likely to reflect the economic power of different income groups, so that better-off inhabitants would be favoured by lower prices while poorer families would in all likelihood pay more? A hypothesis of this kind is often a correlate of the one just examined: since higher income groups live in areas with a more modern commercial infrastructure, they must pay lower prices. The price statistics available at the turn of the 1980s suggest a rather complex picture, with important policy implications.

Table 6

**Unremunerated Family Members as a Per Cent of the Population Gainfully Employed (PGE)
in Retail Food Commerce, by Zone of the Metropolitan Area, 1975**

	All establishments except supermarkets						Average, all establishments except supermarkets	PGE in supermarkets + total PGE in food commerce	Average, food sector including supermarkets
	Groceries	Specialized outlets	Fresh fruits and vegetables	Meats	Poultry	Fresh fish			
Azcapotzalco	92.0	79.8	80.7	26.0	92.4	93.9	72.0	13.8	68.0
Cuauhtémoc	78.1	57.4	96.7	67.3	89.9	68.4	79.8	20.2	62.8
G. A. Madero	72.9	71.8	99.3	84.5	95.0	91.7	81.8	9.0	74.6
Coyoacán	73.1	85.9	100.0	87.7	94.3	94.7	82.4	20.1	65.2
Benito Juárez	78.5	69.3	100.0	72.9	90.7	76.5	83.1	38.5	50.9
Miguel Hidalgo	84.5	68.5	99.5	71.2	88.4	82.4	86.7	24.2	65.7
Average for the metropolitan area							86.0	15.1	72.5
Ixtacalco	84.5	94.5	99.5	84.9	96.0	95.3	89.8	9.0	81.8
Alvaro Obregón	94.4	70.9	99.7	81.1	95.2	81.4	91.7	18.2	75.3
Venustiano Carranza	86.7	88.7	97.9	84.2	93.6	64.7	92.3	6.2	84.1
Xochimilco	93.7	83.3	95.6	83.1	92.3	67.6	92.8	4.6	89.0
Ixtapalapa	97.1	96.9	99.7	89.4	95.1	90.2	96.2	7.9	88.7
Tlalpan	97.4	86.6	100.0	91.4	98.6	90.0	96.8	35.3	62.7

Source: Secretaría de Programación y Presupuesto, VII Commercial Census, 1976.

Table 7

Cost of Products Included in the Recommended Food Basket of the SAM in Various Parts of the Metropolitan Area, 1981*										
	V. Carranza	Cuauhtémoc		Ixtapalapa	B. Juárez	Atzacapotzalco	Hidalgo	Iztacalco	G.A. Madero	Tlalnepantla Naucalpan
		1	2				1	2		
Maize	1.47	1.41	1.88	2.23	2.08	1.59	1.43	1.48	1.54	1.37
Tortilla	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
Maize meal (<i>masa</i>)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Wheat flour	0.23	0.23	0.22	0.22	0.22	0.23	0.23	0.27	0.22	0.23
Sweet bread	0.43	0.41	0.43	0.57	0.52	0.64	0.57	0.52	0.47	0.52
White bread	0.15	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Animal crackers	0.29	0.28	0.28	0.29	0.28	0.29	0.29	0.29	0.29	0.28
Pasta	0.33	0.36	0.32	0.32	0.29	0.31	0.24	0.35	0.32	0.31
Rice	0.37	0.40	0.37	0.42	0.36	0.36	0.36	0.36	0.36	0.42
Beans	1.50	1.63	1.47	1.64	1.38	1.67	1.49	1.63	1.64	1.42
Potatoes	0.55	0.56	0.56	0.54	0.57	0.49	0.54	0.55	0.59	0.51
Tomatoes	0.86	0.90	0.88	1.13	1.11	0.85	0.88	0.79	1.05	0.94
Chiles	0.32	0.40	0.39	0.34	0.42	0.37	0.35	0.30	0.49	0.39
Onions	0.31	0.29	0.26	0.32	0.32	0.28	0.28	0.23	0.30	0.26
Lettuce	0.10	0.11	0.06	0.11	0.11	0.13	0.13	0.13	0.09	0.13
Carrots	0.17	0.16	0.11	0.13	0.17	0.15	0.11	0.11	0.16	0.12
Bananas	0.21	0.21	0.18	0.21	0.18	0.25	0.20	0.19	0.20	0.16
Apples	0.27	0.29	0.17	0.21	0.16	0.21	0.20	0.17	0.28	0.21
Limes	0.24	0.29	0.28	0.32	0.30	0.27	0.30	0.19	0.26	0.24
Oranges	0.21	0.28	0.31	0.38	0.36	0.34	0.36	0.33	0.27	0.23
Beef (<i>bistec</i> or <i>pulpa</i>)	5.77	5.77	5.43	6.02	5.97	5.87	5.58	5.78	5.88	5.65
Pork rib	1.13	1.18	1.10	1.16	1.14	1.19	1.16	1.12	1.12	1.10
Whole chicken	0.96	0.98	1.01	0.95	0.99	0.96	0.94	1.02	0.91	1.13
Eggs	0.91	0.91	0.91	0.91	0.90	0.90	0.90	0.89	0.89	0.87
Milk	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99	3.99
Lard	0.10	0.10	0.11	0.10	0.11	0.10	0.09	0.10	0.09	0.10
Sardines	0.07	0.07	0.06	0.07	0.07	0.07	0.07	0.07	0.07	0.07
Vegetable oil	0.38	0.40	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.39
Sugar	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
TOTAL	23.26	23.70	23.25	25.06	24.48	23.99	23.17	23.25	23.96	22.95
										22.97

Source: Banco de México.

* All establishments except supermarkets.

There is no doubt that the worst conditions in the metropolitan food market have been and are confronted by inhabitants of peripheral low income areas, far from the main centres of demand, badly served (or simply not served) by wholesalers and with limited recourse to public outlets which would otherwise provide a relatively steady supply of the most basic staples at controlled prices. This is the *raison d'être* of efforts made by the government to maintain provisioning programmes within the constantly growing shantytowns of the urban periphery.

There is also no doubt that small grocery retailers serving a low income clientele have a difficult time maintaining prices for staples like flour, pastas, beans and oil at a level which can compete with supermarkets, for reasons which have already been discussed. This is the reason why the Mexican government attempts to provide wholesale facilities to part of the small grocery sector.

At the turn of the 1980s, however, it was wrong to assume that the majority of the poor, not settled in the most peripheral areas of the city, paid higher prices for most elements of their diet. For many items, they in fact paid less. In part this may be seen as a positive result of governmental regulation of the food system. To a considerable degree, however, it was also related to the capacity of small market vendors to pursue a flexible provisioning strategy for perishables, channelling lower quality produce (smaller or riper fruits and vegetables, less desirable cuts of meat), not necessarily of lesser nutritional value, toward areas of lesser buying power.

Support for this conclusion appears in a multiple regression analysis of information on prices of certain products, by type of outlet and area of the city, provided for 1982 by the Department of Economic Studies of the Metropolitan Division of DICONSA, the retail provisioning agency of CONASUPO. There was a tendency (though not always significant) for prices of fresh fruits and vegetables, eggs, and even a few manufactured products, to be higher in wealthier delegations and lower in poorer ones, whatever the kind of outlet involved. At the same time, there was a tendency for small market vendors to offer lower prices than supermarkets on fresh fruits and vegetables, while supermarkets systematically offered better terms for the purchase of beef and manufactured foodstuffs, just as the earlier discussion of structural determinants of different kinds of retail practice would lead one to suspect. Thus it is not surprising that low income zones of well-established retail commerce, like downtown Ciudad Netzahualcóyotl, surveyed by the Provisioning Commission of the Federal District in mid-1983, were associated with the least expensive overall provisioning of basic perishables in the metropolitan area; and relatively high income zones like Miguel Hidalgo or Alvaro Obregón received the best quality perishables at the highest price.

Dietary Patterns and Expenditure on Food

Variation in the quality, price and availability of various food products within localized provisioning environments was related in the late 1970s to differences in diet not only among income strata but also to some extent within the ranks of the urban poor. The basket of food products purchased and consumed by low income families was not uniform throughout the metropolitan area, nor was the proportion of household income expended on food.

In order to understand real differences in patterns of consumption and expenditure across the city, certain demographic factors must be taken into account at the outset. Just as levels of income and kinds of commercial structure vary within different regions of the metropolis, so too do family size and composition. The household survey of 1977 showed families to be smaller than average in the downtown areas of the Federal District and to increase in size as they moved toward the outer edges of the metropolitan area. At the same time, the population of the poorer peripheral zones was much younger than that of central Mexico City: data provided by the Centre for Research on Demography and Urban Development of El Colegio de México suggest, for example, that in 1975, only 28 per cent of the population of Cuauhtémoc was 15 years old or less, while in the peripheral industrial municipality of Cuautitlán 57 per cent of the population could be found in the same category. And finally, women made up a considerably greater part of all members of households between 15 and 55 years of age in the smaller and older families in downtown areas than in peripheral municipalities (32 per cent of the total population in Cuauhtémoc were women of 15 to 55 years of age, compared to 20 per cent in Cuautitlán) (Ham, Saavedra and Partida, 1983).

Such wide differences in the demographic profile of various parts of the city make it inadvisable to rely entirely on per capita calculation either of income levels or of the proportion of income spent on food. To calculate per capita income or expenditure, one simply divides a total figure by the number of members of each family interviewed, without taking into account the age or sex of those members, and therefore without considering the differential needs of each. A procedure of this nature is adequate when differences of demographic composition among units to be compared are not particularly great; but when the kinds of families to be found in various parts of any given region are very different, as indeed they are in the metropolitan area of Mexico City, then it is wise to supplement per capita figures with other measures which take demographic factors more specifically into account.

This is done in table 8, where spatial variation in levels of income and patterns of expenditure on food during 1977 is illustrated both in per capita terms and through use of adult equivalent units (AEU) which adjust for the differing nutritional requirements of the young, the old and women. It can be noted that the proportion

Table 8

Expenditure on Food as a Per Cent of Income, by Area of the City and at the National Level: Alternative Forms of Analysis			
Utilizing the per capita concept		Utilizing Adult Equivalent Units	
(a) Per capita Income	(b) Per capita expenditure on food	(a) AEU Income	(b) AEU expenditure on food (c) b/a
Delegations and municipalities within the metropolitan area			
1. Centre*	2 716	3 513	30.0
2. Various**	2 575	3 318	28.0
3. Obregón	2 343	3 229	29.4
4. Tlalnepantla	2 266	3 053	35.1
5. Ixtacalco	1 962	2 427	39.4
6. Naucalpan	1 665	2 121	38.8
7. G.A. Madero	1 627	2 102	45.0
8. Azcapotzalco	1 611	2 098	40.4
9. Sur***	1 608	2 052	46.5
10. Coyoacán	1 591	2 027	51.4
11. Iztapalapa	1 582	2 013	43.1
12. Ecatepec	1 178	1 431	54.1
13. Netzahualcóyotl	1 102	1 388	48.4
Average for metropolitan area			
Federal District	1 983	2 563	36.1
State of Mexico	2 167	2 818	34.6
	1 581	2 041	40.0
National average			
Non-agricultural	1 184	1 542	43.7
Agricultural	1 532	1 999	40.9
	444	574	63.4

* Venustiano Carranza, Cuauhtémoc, Benito Juárez and Miguel Hidalgo.

** Atizapán, Coacalco, Cuauhtitlán, Chimalhuacán and Huixquilucan.

*** Tlalpan, Milpa Alta, Tláhuac, Xochimilco, Magdalena Contreras and Cuajimalpa.

Source: See previous tables.

3. The category "various" is an anomaly; it is made up of very low income regions which also contain pockets of great wealth on the borders of the city.

of AEU income spent on food during 1977 varied from around 30 per cent in the relatively better-off delegations and municipalities to 54 per cent in the lowest income areas.³ While there was a general progression from lesser to greater proportional expenditure on food, as average income declined, this tendency was not uniform. Thus in two different zones of the city with almost identical AEU incomes (Naucalpan and Azcapotzalco) the amount dedicated to the purchase of food was reported to be 40 per cent in one case but 51 in another.

Since the analysis underlying table 8 does not discriminate by income level within each delegation or municipality of greater Mexico City, it provides only the broadest indication of differences in patterns of consumption and expenditure within the metropolitan area.

The structure of the sample underlying the 1977 survey did, however, permit more detailed comparison of the resources available to particular income groups, and the way these resources were allocated to food products, in three different parts of the metropolis (downtown, Gustavo A. Madero and Ciudad Netzahualcóyotl); and when one looks at this data, the complexity of consumption patterns is noteworthy.

In the first instance, disaggregation of survey information both by area of the city and by level of income, while standardizing demographic variables through recourse to adult-equivalent units, quite graphically illustrates the limitations of general statements concerning the consumption patterns of "the poor". As information presented in the first column of table 9 makes clear, households registered as living on "less than one minimum wage" in 1977 had adult equivalent incomes ranging from 1,330 pesos in downtown delegations to only 785 in Netzahualcóyotl; and the proportion of income dedicated to the purchase of food varied from 48 to 66 per cent. In the following income stratum, containing families earning between 1 and 1.8 times the minimum wage, adult equivalent income was similarly disparate across regions of the city, and expenditure on food ranged from 38 to 54 per cent.

For a family in the poor neighbourhoods of Ciudad Netzahualcóyotl to have an adult equivalent income equal to that of counterparts in downtown neighbourhoods registered at the level of "less than one minimum wage" (1,330 pesos AEU), the Netzahualcóyotl household had in fact to be registered in these survey statistics not in the lowest income category, but somewhere between the second and third lowest.

By the time the income levels of poor Netzahualcóyotl households did reach those prevailing in downtown areas, it might be added, the level of expenditure of the latter on food also began to approach that characteristic of families living in the central area of the metropolis.

Does this mean that AEU income was the only, or even the principal, determinant of differences in provisioning patterns between this sample of populations living in outlying and central areas of the

Table 9

Monthly Expenditure on Food as a Percentage of Income, by Income Strata in Three Zones of the Metropolis, 1977 (pesos)															
	Less than one minimum wage			1 - 1.8 times the minimum wage			1.8 - 3.2 times the minimum wage			More than 3.2 times the minimum wage			Total, all strata		
	(a) Income	(b) Expenditure on food	(c) b/a	(a) Income	(b) Expenditure on food	(c) b/a	(a) Income	(b) Expenditure on food	(c) b/a	(a) Income	(b) Expenditure on food	(c) b/a	(a) Income	(b) Expenditure on food	(c) b/a
Downtown N=768	1 330	642	48.3	1 854	696	37.5	2 567	971	37.8	6 711	1 589	23.7	3 513	1,052	29.9
Gustavo A. Madero N=276	1 035	662	64.0	1 155	626	54.2	1 765	851	48.2	4 400	1 120	25.5	2 121	824	38.9
Netzahualcóyotl N=319	785	518	66.0	1 074	578	53.8	1 584	768	48.5	2 564	948	37.0	1 388	672	48.4
Total, metropolitan area of Mexico City N=2 573	992	600	60.5	1 339	680	50.8	2 139	940	44.0	5 310	1 379	26.0	2 563	925	36.1

Source: Reprocessing of the National Income and Household Survey, 1977, for the Project on the Food System of Mexico City.

Table 10

Composition of Monthly Expenditure AEU on Food, among Families Earning Less than the Minimum Wage Downtown, and the General Total of Families in Netzahualcóyotl				
	Expenditure in pesos		Per cent higher in	
	Downtown (AEU Income 1 330)	Netzahualcóyotl (AEU Income 1 388)	Downtown	Netzahualcóyotl
Maize flour	0.82	0.16	412.5	----
Maize dough	1.55	0.67	131.3	----
Maize grain	1.21	1.16	4.3	----
Maize tortilla	32.41	40.74	----	25.7
Maize products	35.99	42.73	----	18.7
White bread	25.14	16.75	50.1	----
Sweet bread	22.91	15.99	43.3	----
Packaged bread	3.31	1.87	77.1	----
Cakes/pastries	2.42	1.90	27.4	----
Wheat flour	1.80	0.58	210.3	----
Cookies/crackers	7.53	2.48	203.6	----
Pastas	6.79	7.10	----	4.6
Other wheat products	1.66	1.26	31.7	----
Wheat products	71.56	47.93	49.3	----
Rice	9.01	5.54	62.6	----
Other grains/flours	7.54	18.48	----	145.1
Beans	9.61	12.84	----	33.6
Other legumes	2.32	0.95	144.2	----
Nuts/seeds	1.24	0.99	25.3	----
Oils and fats	31.65	19.42	63.0	----
Entrails	3.01	5.72	----	90.0
Beef	70.37	67.03	5.0	----
Pork	7.63	20.31	----	166.2
Chicken	51.31	34.04	50.7	----
Processed meats	11.11	9.75	14.0	----
Fresh fish/seafood	14.90	6.52	128.5	----
Canned/dried fish	3.14	3.63	----	15.6
Eggs	33.03	23.88	38.3	----
Fresh milk	52.86	43.88	20.5	----
Condensed/powdered/evaporated milk	20.89	20.38	2.5	----
Other milk products	10.25	12.81	----	25.0
Animal products	278.50	247.95	12.3	----
Fresh fruits/vegetables (including potatoes)	102.17	150.91	----	47.7
Canned/dried fruits/vegetables	1.10	1.26	----	14.6
Soups and sauces	5.54	24.63	----	344.6
Canned juices and other non-alcoholic beverages	0.95	2.59	----	172.6
Baby food	1.83	0.39	369.2	----
Snacks	1.04	0.39	166.7	----
Sweets and desserts	15.29	41.00	----	168.2
Sugar, honey and syrups	17.56	10.21	72.0	----
Coffee, tea, chocolate	22.72	9.93	128.8	----
Soft drinks	9.13	12.51	----	37.0
Spices	5.13	7.13	----	39.0
Take-home prepared foods	11.61	9.47	22.6	----

Source: Reprocessing of the National Income and Household Survey, 1977, for the Project on the Food System of Mexico City.

capital? Information contained in table 10 would suggest that it was not, for poor families in Netzahualcóyotl and the downtown delegations had clearly distinguishable patterns of consumption, congruent with differences in the commercial structures surrounding them.

When adult equivalent income is held virtually constant (at 1,330 AEU pesos for downtown households and 1,388 for Netzahualcóyotl), one sees that respondents in Netzahualcóyotl dedicated significantly more of their food budgets to a rural diet: tortillas, beans, pasta and pork (the consumption of which was facilitated by the widespread raising of pigs within households selling to clandestine slaughterhouses in the municipality). They were more likely to buy fresh produce and far more likely to consume entrails (*vísceras*). And they spent more on certain kinds of processed foods, including canned *chiles*, condiments like bouillon concentrate, various processed drinks and sweets than equally poor families in central Mexico City. The latter, in contrast, dedicated more resources to various kinds of bread, cake and cookies, rice, chicken and fish, eggs, coffee, tea and chocolate, baby food and manufactured snacks (*botanas*).

The tendency for expenditure on manufactured food products within poor neighbourhoods to be correlated with the prevailing commercial structure is suggested not only by reference to table 10 but also to table 11, where standardization of the income factor is again pursued through comparison of food budgets of families disposing of a very similar amount per month in Netzahualcóyotl and Gustavo-A.-Madero. Respondents in the latter (industrial) delegation, like those in downtown areas, were offered a wider variety of processed foods, through the activity of relatively modern independent grocery stores or supermarkets, than were counterparts in Netzahualcóyotl, and at the same time their patterns of expenditure were skewed toward greater outlays on such items as packaged bread, cold cuts, processed milk products, canned soups, sauces and juices, baby foods, sweets and so-called "junk food". It seemed likely, in other words, that they were significantly more integrated than residents of Netzahualcóyotl into the circuit of sales which began and ended in the most profitable sectors of the modern food processing industry.

Despite the fact that non-essential manufactured food products were undoubtedly gaining ground within the budget of low income families throughout greater Mexico City at the end of the 1970s, their importance even in zones where expenditure was greatest appeared relatively minor when compared with the proportion of food budgets destined to the purchase of other products, most especially animal products. According to the household survey of 1977, families within the metropolitan area earning less than one minimum wage destined more than one third of their food expenditures to fresh and processed meats, eggs, milk and milk products in that year. The general comportment of expenditures at higher income

Diet and Nutrition

Table 11

Composition of Monthly Expenditure AEU on Food in Netzahualcóyotl and Gustavo A. Madero, among Families Earning from 1 to 1.8 Times the Minimum Wage, 1977				
	Expenditure in pesos		Per cent higher in	
	G.A. Madero (AEU Income 1 155)	Netzahualcóyotl (AEU Income 1 074)	G.A. Madero	Netzahualcóyotl
Maize flour	0.31	----	----	----
Maize dough	1.23	0.88	39.7	----
Maize grain	0.35	0.76	----	117.1
Maize tortilla	35.49	42.94	----	21.0
Maize products	37.38	44.58	----	19.3
White bread	20.02	16.49	21.4	----
Sweet bread	15.96	16.41	----	2.8
Packaged bread	2.58	1.26	104.8	----
Cakes/pastries	2.26	1.92	17.7	----
Wheat flour	1.35	0.31	335.5	----
Cookies/crackers	5.09	2.23	128.3	----
Pastas	6.68	6.48	3.1	----
Other wheat products	2.06	0.99	108.1	----
Wheat products	56.00	46.09	21.5	----
Rice	5.97	6.73	----	12.7
Other grains/flours	34.13	15.01	127.4	----
Beans	10.87	11.88	----	9.3
Other legumes	0.77	0.77	----	----
Nuts/seeds	0.29	0.71	----	144.8
Oils and fats	19.80	19.17	----	----
Entrails	3.15	8.22	----	161.0
Beef	59.40	59.64	----	0.4
Pork	12.29	21.58	----	75.6
Chicken	26.30	28.74	----	9.3
Processed meats	11.00	6.08	80.9	----
Fresh fish/seafood	6.22	4.64	34.1	----
Canned/dried fish	1.65	3.67	----	122.4
Eggs	22.41	22.64	----	1.0
Fresh milk	54.19	41.96	29.2	----
Condensed/powdered/evaporated milk	13.98	15.69	----	12.2
Other milk products	17.30	8.69	99.1	----
Animal products	227.89	221.55	2.9	----
Fresh fruits/vegetables (including potatoes)	101.02	109.26	----	8.2
Canned/dried fruits/vegetables	2.96	6.51	----	119.9
Soups and sauces	26.66	21.00	27.0	----
Canned juices and other non-alcoholic beverages	1.79	0.86	108.1	----
Baby food	2.09	0.15	1 293.3	----
Snacks	1.03	0.22	368.2	----
Sweets and desserts	42.56	32.40	31.4	----
Sugar, honey and syrups	9.92	9.07	9.4	----
Coffee, tea, chocolate	18.72	9.49	97.3	----
Soft drinks	10.59	10.65	----	0.6
Spices	8.59	8.28	3.7	----
Take-home prepared foods	6.63	3.56	86.2	----

Source: Reprocessing of the National Income and Household Survey, 1977, for the project on the Food System of Mexico City.

levels, implying extraordinary - and often commented - overconsumption of animal protein among the wealthy, is presented in table 12.

The nutritional implications of patterns of expenditure on food, associated with different income groups and with residents of different zones of the metropolitan area, are far from clear. Since information registered in the 1977 household survey does not allow data on monetary expenditure to be translated into a picture of the real quantity of food products consumed, there is no way to analyse the nature of the diet which prevailed in that year among families of varying economic means in different parts of the city. One can note, however, that, according to a detailed field study conducted by the National Nutrition Institute and the Sistema Alimentario Mexicano in 1979, families living in a well-established working class neighbourhood (the only socio-economic environment considered) were not likely to be well nourished once their total income dropped below the minimum wage, even though they spent heavily on animal products. Their diets, which were not well balanced and tended to be deficient in calories and vitamins, might in fact have been improved by distributing available resources more widely over the spectrum of food products (Batrouni et al., 1981). In this sense, then, extraordinarily high expenditures on animal protein represented a deformation of traditional consumption patterns which did not necessarily serve the best nutritional interests of the population.

Taking the ability to ensure a monthly family income equal to one minimum wage or more as a rough indication of adequate nutrition in Mexico City, one could conclude on the basis of the 1977 survey that approximately 12 per cent of all inhabitants of the metropolitan area, or 1.5 million people, living in families with an income of one minimum wage or less, were unable to pay for an adequate diet toward the end of the 1970s. But it should be clear from the preceding discussion of the characteristics of demographic structure and provisioning in various parts of the city that an absolute poverty line drawn at "one minimum wage" would be very misleading if applied in any detailed attempt to pinpoint specific areas of greatest nutritional stress within the metropolitan region. Table 9 well illustrated the likelihood that, given wide fluctuation in the demographic composition of low income families in various parts of the capital, there might be a difference of 200 per cent between AEU resources at the disposition of families earning less than a minimum wage from one delegation or *municipio* to another. And, in addition, unusually low adult equivalent unit expenditure on food might continue to characterize families formally earning almost two times the minimum wage (1 to 1.8 times, or income stratum 2) in certain parts of the city.

Several years into the deep recession of the 1980s, this difficulty in "targetting" the neediest by setting arbitrary cut-off points was confirmed in results of a survey conducted by the Provisioning Commission of the Federal District (COABASTO) in the downtown delegation of Cuauhtémoc. There, the survey showed that families earning under one minimum wage in February 1984

Table 12

Monthly Expenditure on Food by Adult Equivalent Unit, by Decile of the Population in the Metropolitan Area, 1977 (pesos)										
	I	II	III	IV	V	VI	VII	VIII	IX	X
Maize products	49.47	54.91	56.35	48.04	59.40	46.62	40.39	36.54	32.88	25.31
Wheat products	36.27	44.82	60.37	61.82	58.57	77.16	89.01	97.14	96.94	111.02
Rice and other cereals	12.88	14.51	18.22	17.47	14.07	17.07	14.57	13.56	14.15	15.69
Non-alcoholic drinks	5.66	10.10	11.71	16.37	17.57	18.33	23.14	30.59	28.91	51.19
Meats	68.37	97.80	115.25	151.53	162.55	175.44	214.33	235.24	299.10	388.66
Fish and seafood	6.47	11.30	8.94	13.27	24.77	23.47	24.56	30.56	67.26	54.79
Milk products	32.19	49.20	58.23	68.53	82.37	113.56	128.00	134.47	193.85	258.29
Eggs	17.63	18.17	22.66	29.11	27.81	31.37	35.14	35.62	41.78	48.38
Fats and oils	15.87	18.36	22.37	24.60	23.46	22.25	28.83	27.69	26.48	33.86
Fresh fruits	31.84	52.65	69.34	96.68	99.13	100.74	168.55	148.14	211.53	200.36
Processed fruits	0.27	0.00	0.18	0.68	0.56	1.80	2.34	2.67	4.93	7.20
Fresh vegetables	34.72	53.29	55.56	65.37	71.52	67.32	82.63	81.17	101.73	115.22
Processed vegetables	2.28	2.68	3.21	3.47	3.28	5.42	5.68	5.10	20.03	25.18
Potatoes and sweet potatoes	4.59	5.19	4.79	6.10	7.13	6.60	7.47	8.04	8.30	9.69
Legumes	12.50	14.51	15.43	12.75	12.75	12.47	13.01	12.40	13.54	13.61
Dehydrated canned soups	0.00	0.49	0.00	0.51	0.18	0.22	0.00	1.87	4.74	9.92
Nuts and seeds	0.42	0.18	0.43	0.66	0.50	0.39	1.49	1.84	7.67	5.84
Sugar, honey and syrups	6.47	7.90	9.15	10.60	12.30	10.09	12.04	15.52	18.19	25.04
Tea, chocolate and coffee	7.16	11.15	12.70	15.50	16.18	19.96	27.61	18.81	34.99	45.69
Sauces and spices	20.30	31.84	25.63	40.26	35.49	39.37	40.18	42.40	50.13	60.13
Sweets and desserts	4.80	6.95	26.10	11.03	15.27	10.76	14.83	17.64	23.27	33.95
Snacks	0.63	0.27	1.03	0.48	0.53	0.89	2.20	1.75	1.81	3.31
Baby food	1.43	0.49	0.45	1.82	1.64	1.86	2.78	2.51	1.95	4.08

Source: Reprocessing of the National Income and Household Survey, 1977, for the Project on the Food System of Mexico City.

(constituting 19 per cent of the total population) were not malnourished. Their average caloric consumption per person per day was 2,467, and their consumption of protein reached 61 grams per capita. These tended to be small families, with an average of 2.9 members. Nutritional problems appeared, however, among families earning from one to two times the minimum wage, containing more members (4.2) but unable to afford much more food. In their case, average consumption of calories was only 1,835 and of protein 52 grams. Thirty-one percent of all families in the delegation fell into this income category (COABASTO, 1984).

If there is a broad zone of nutritional vulnerability, differentially manifested among various kinds of families earning two times the minimum wage or less, then by 1986 almost one half of the population of the metropolitan area was at least potentially at risk. Under the impact of recession, low income consumers were dealing with this risk by reordering their expenditures and modifying their diets, consuming less meat and manufactured products, and depending even more upon such basic products as beans, eggs, milk and *tortillas* (the latter two still subsidized).

At the same time, sharp differences within the provisioning structure were being reinforced. The 1985 commercial census, as well as supplementary commercial statistics generated by COABASTO, illustrate the limits of growth among modern food outlets in a period of crisis. The extraordinary expansion characteristic of the supermarket sector during the 1970s had been sharply curtailed by 1985, although private self-service stores were holding their own in wealthier areas of the city; and responsibility for provisioning the growing low income population of the metropolis fell more heavily upon "traditional" outlets, among which the shifting or mobile markets and *tianguis* were assuming greater importance.⁴

With all their potential competitive advantage, rooted in wholesale power, the private supermarkets were still not offering better prices for most products than the public markets, the mobile markets and *tianguis*. The ability of family units to make maximum use of scarce resources - to be more flexible and efficient in situations where consumer income is limited and the volume of sales consequently low - was illustrated in the evolution of prices for basic foodstuffs over the 1983-1985 period, when "traditional" commerce outperformed private supermarkets on all products except meats (Ponce and Rello, 1988). The fact that this accomplishment occurs within a context of extraordinary turnover and instability within the commercial structure of low income areas, and at the cost of an increasing rate of self-exploitation within households dedicated to commerce, must of course not be lost from view.

It would seem that the great heterogeneity and complexity characteristic of the food system of Mexico City has stood its population in good stead during the crisis. A more homogeneous

Conclusions

4. Analysis of these trends will be found in Rello and Sodi, 1989. The authors note that approximately 64 per cent of the total value of retail food sales in the Federal District could be attributed to small family merchants in 1986; 25 per cent to private supermarkets and 11 per cent to public supermarkets.

and "modern" structure could not have done as well. Even the most flexible of provisioning systems, based upon badly remunerated or unremunerated family labour, can nevertheless suffer a breakdown if costs of operation rise beyond a certain limit and the buying power of low income clients is reduced beyond a critical minimum. As macro-economic policies of the latter 1980s continue to affect both the structure of commercial costs (through reduction of subsidies throughout the economy) and the income of poor residents, it is perhaps particularly important to reflect upon the vital role of small family enterprises in the food system of the capital.

At the turn of the 1990s, it is also important to consider the effects which proposed reforms in the state-run retailing system would have on the provisioning environment of various groups in different parts of the metropolis. As shown above, modern CONASUPO stores have provided a significant alternative to private supermarkets in certain areas of Mexico City, offering items within a "basket" of basic consumer goods at a somewhat lower price than that prevailing in the modern private sector. As part of the overall effort to cut subsidies and reduce the role of the state in the food system, it seems that these stores will now be closed, transferred to labour unions or sold.

Such a step may have little effect on the poorest inhabitants of Mexico City, especially if they live on the periphery of the city or in uniformly low income areas where modern CONASUPO outlets were at any rate never very important. But the change will eliminate an important source of provisioning for low income families living in many less uniformly poor zones within the metropolis, as well as for the working class, lower-middle and middle income groups who have constituted the principal clientele of state-run stores.

At the same time, responsibility for providing basic manufactured products, grains and *tortillas* to residents of poor and especially peripheral areas of the city will fall increasingly to the community-run co-operative stores promoted insistently by neighborhood organizations and the government during the 1980s. These Popular Provisioning Centres, integrated into the **Programa de Abasto de Zonas Populares** and supplied by the CONASUPO retail affiliate called DICONSA, did not exist when the 1977 household survey was carried out; and they were still in a relatively experimental stage at the time of the following household survey of 1983/84. If the present study is replicated in the 1990s, however, they should figure prominently in the emerging picture of provisioning alternatives for low income households.

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