

CHAPTER 7

Housing Needs and Housing Outcomes

It is widely alleged that a severe shortage of housing exists in Egypt, particularly in Cairo. Other research, however, has indicated that the concept of a "housing shortage" must be carefully defined in the Egyptian context if evidence is to be found concerning its existence. For example, Wheaton (1980, p. 51), in reviewing available evidence claimed that by some definitions "the shortage of housing really does not seem to exist." To reach such a conclusion, Wheaton compared housing unit changes to population changes, examined space consumption (persons per room), and access to infrastructure and found that improvements were being realized in each area in Greater Cairo.

In this chapter, a broad range of housing outcomes is examined to define the nature of current housing needs and to identify the major dimensions in which housing "shortages" may be said to exist. Section 7.1 examines factors affecting the aggregate demand for housing units by the population--migration, household formation, moves by established households from one residence to another, and investment demand for units. The aggregate housing supply is compared to aggregate demand and the distribution of excess units (vacancies and units under construction) among formal and informal housing areas is noted. The following sections examine the incidence of doubling-up or crowding (in the form of maintaining non-nuclear families, subletting, or having high numbers of persons per room), the incidence of specific housing unit and building features (presence of toilet and kitchen facilities, building structural condition, etc.), and access to infrastructure and services. Expressed levels of satisfaction with dwelling and neighborhood characteristics and their determinants are explored, and expressions of willingness to pay for specific neighborhood improvements are noted.

7.1 Aggregate Demand for Housing

It is important to understand the broad trends that shape the demand for housing in Cairo and Beni Suef. As indicated in Chapter 3,

population growth in Cairo has been particularly rapid for several decades-- from 3.8 to 3.9 percent per year, while that in Beni Suef has been lower-- only about 2.4 percent per year.

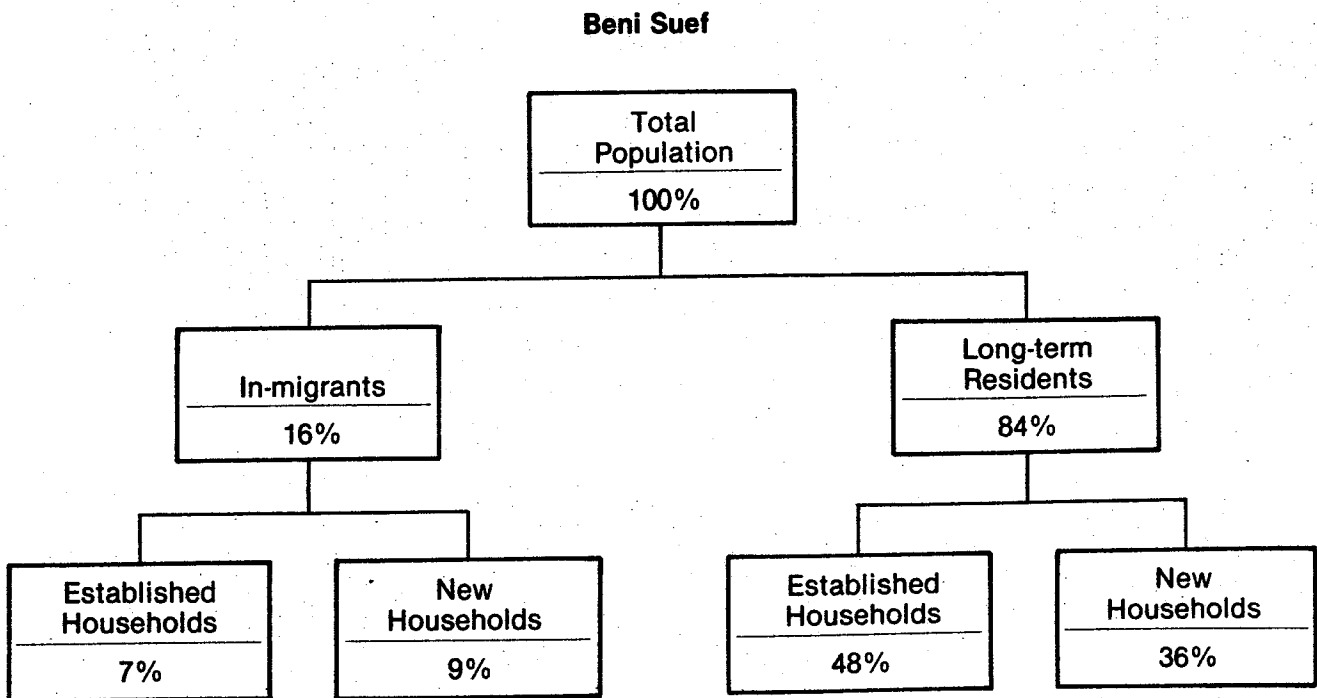
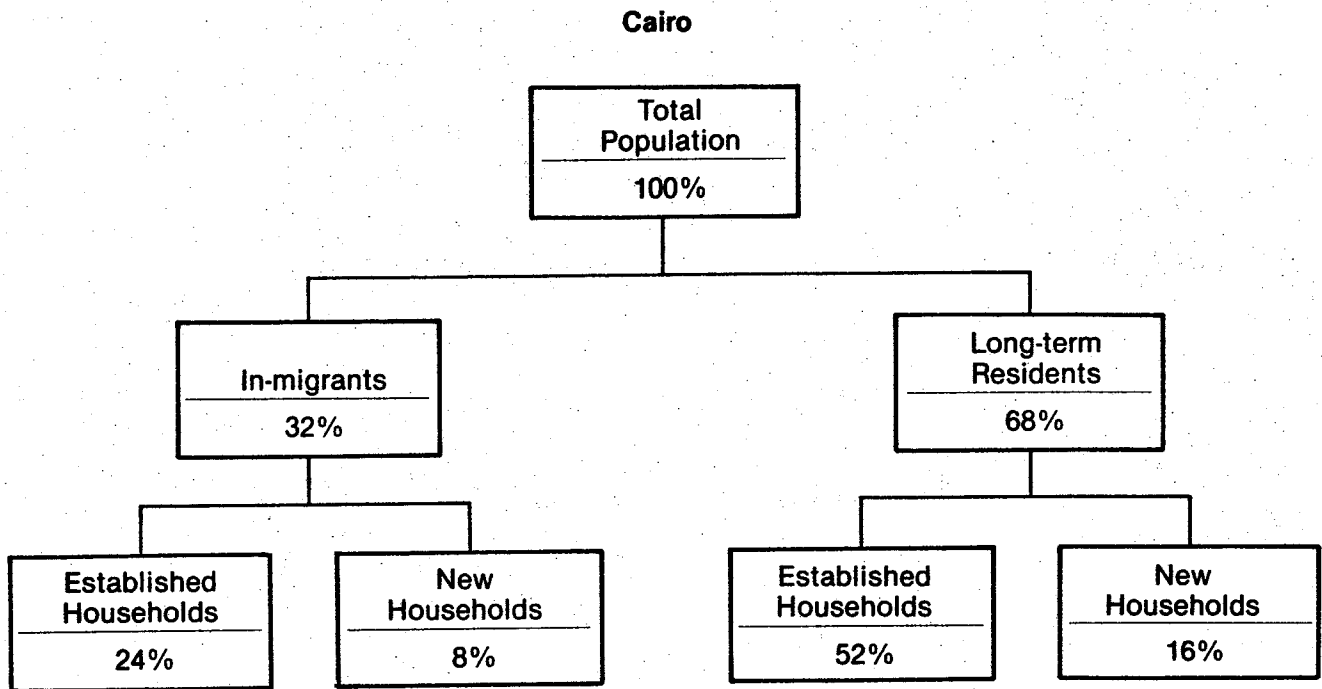
In evaluating the pressures for housing construction created by these population changes, it is important not simply to disaggregate the changes into those caused by natural increase and migration, but rather into behavioral units more fundamentally related to demand pressure in the housing market; namely, household formation, net immigration, and moves from one dwelling to another by the established (non-migrant) population. Newly formed households, immigrants, and moving established households may create quite different kinds of demand pressures because of differences in incomes, wealth, family sizes, or locational preferences. Each group may choose different types of housing, different areas in the city, and different tenure patterns.

Figure 7-1 illustrates how households that moved within the past ten years in Cairo and Beni Suef are divided among these groups. As the figure indicates, migration plays an important, though far from dominant role in housing demand in Cairo. For example, of households that moved into units in Greater Cairo between 1971 and 1981, 32 percent were headed by recent immigrants--persons who spent the greater part of their lives outside the Cairo area.¹ Of the remaining 68 percent of recent movers, roughly 24 percent of them (16 percent of all recent movers) were headed by persons who previously lived with their families and thus constituted newly formed households.² The remaining 76 percent (52

¹Of households moving into units within the past 10 years, 45 percent were headed by persons born outside the Cairo area. The difference in the proportions of migrants defined in terms of birth-place and migrants defined in terms of where household heads spent most of their lives is considerable, indicating that a substantial fraction of immigrants to Cairo move again after first settling into the area.

²About one-quarter of recent immigrants were also newly formed households.

**Figure 7-1
Components of Aggregate Demand**



Source: Weighted Occupant Survey

percent of the total) were headed by persons who were previously renting or owned a unit, who had lived in the Cairo area for most of their lives, and who were simply changing their place of residence.

Migration is even less important in Beni Suef than in Cairo. Only about 16 percent of movers within the past ten years had spent the greater part of their lives outside of Beni Suef governorate. Household formation is comparatively more important in influencing aggregate demand in Beni Suef than in Cairo, with 43 percent of recent non-migrant movers (36 percent overall) constituting newly formed households. The remaining 57 percent of non-migrant movers (48 percent overall) were previously established renters or owner households simply changing place of residence.

Thus migration is not the dominant factor in creating pressure on either housing market; rather it is the movement of established households. These latter households outnumber migrants by roughly two to one, and also outnumber newly formed households.

As indicated in Chapter 3, the housing stock in each city has increased at a rate sufficient to meet the demands of both immigrants and newly formed households over the past decade. Indeed, in Cairo, recent increases in the stock have permitted a sizeable number of already formed households to move and a growth in the number of vacant housing units (to about 5.5 percent of the occupied housing stock). In Beni Suef, previously formed resident households have also been permitted to move, but vacancies have contracted slightly to about 3 percent of the 1981 housing stock.

Case study and in-depth interviews have tended to confirm the apparent anomaly of a large and possibly growing housing surplus during a time of widely perceived housing shortages. In study areas around Cairo, reasons advanced for high vacancy levels were that (1) many vacancies are in luxury buildings with prices far beyond the reach of even relatively well-off Egyptians; (2) vacant units are being held by some speculator-owners in expectation of higher future housing prices; and (3) empty units are being held by some owners for future occupancy for married offspring. Each of these explanations constitutes in a sense an expression of an investment demand for housing that goes beyond a

demand for housing use. In each case, examples were heard of how the future rather than the present sales or rental price was the relevant motivation for construction and for holding units off the market. As the next chapter indicates, housing costs and rentals have been rising so rapidly that investment in housing which is not immediately placed on the market appears capable of providing some owners with higher rates of return than investment in housing which is leased immediately. Moreover, as the next chapter indicates, repatriations from abroad appear to have a high propensity to be directed into land and housing investments; given the rate at which such repatriations have been increasing, a substantial part of the recent surge in construction in Cairo must be attributed to the pressure of households with repatriated earnings in search of appropriate investments.

Regardless of the sources of rapid housing stock and vacancy increases in Cairo, it is clear that that they are not confined to the luxury housing market. As indicated in Chapter 4, recent construction has been overwhelmingly informal. Moreover, it appears that housing vacancies are more heavily concentrated in highly informal areas than in formal areas. Table 7-1, for example, presents estimated vacancy rates in enumeration districts sampled in Greater Cairo broken out by the percentage of the housing stock estimated to be informal in those areas:

As the table indicates, vacancy rates are estimated to be higher than average in primarily informal areas--from 5.7 to 6.3 percent compared to from 4.2 to 4.3 percent for primarily formal areas. Moreover, because highly informal areas (those with an estimated 76-100 percent informal units) comprise a larger share of enumeration districts than any single other group, a majority (56.2 percent) of all vacant units in 1981 were estimated to be in highly informal areas.¹

These figures suggest that whatever mismatch may have existed between supply and demand for housing in the Cairo area, it is highly

¹Units under construction were estimated to be even more heavily skewed to highly informal areas--72 percent of all units under construction were estimated to be in such areas.

Table 7-1

Estimated 1981 Vacancy Rates in Cairo
 Enumeration Districts by Degree of Informality¹
 (percent)

<u>Estimated Percentage of Informal Housing in District</u>	<u>Vacancy Rate</u>	<u>Percentage of all Vacancies in Greater Cairo</u>
0-25	4.3%	19.1%
26-50	4.2	12.8
51-75	6.3	11.9
76-100	5.7	<u>56.2</u>
		100.0

¹Source: Scanning survey. Vacancy rate is defined as vacant units divided by occupied units.

unlikely that it has become worse in recent years--at least in the sense of population changes exceeding the performance of the housing supply sector. Nor does it appear that the apparent surplus of housing that has been produced recently has been concentrated in the formal sector; both vacancy rates and rates of construction have been higher in the informal sector than in the formal sector within the past five years.

Thus explanations for the apparent housing shortage must be sought elsewhere than in a simple mismatch between the number of households and the number of housing units. As the following sections indicate, there are indeed major housing needs among Egyptians but these are more related to specific features of housing and infrastructure and to housing cost than to the inability of households to find shelter.

7.2 "Unsatisfied Demand" for Housing?

It is presumed that in the face of an alleged housing shortage households will modify their housing consumption patterns to accommodate the squeeze imposed by the marketplace. Ways in which this might occur are by "doubling up," in some cases by maintaining extended, inter-generational families rather than splitting into nuclear families, and in other cases by subletting rooms to non-relatives; or by allowing interior densities to increase rather than by moving to larger accommodations or expanding existing ones. If such accommodations are necessary one might expect to find a high incidence of expressed dissatisfaction with housing. Thus one may expect to find evidence of "unsatisfied demand" either in quantitative measures such as the incidence of extended or intergenerational families, subletting, or interior densities (e.g. persons per room) or in the expressed opinions of households about their housing.

The Incidence of Extended or Intergenerational Families

Households were classified in this study on the basis of relationships among household members. Four categories were established, nuclear (single individuals or couples living alone or with their unmarried children); intergenerational (families with married children present), extended (families with adult relatives but without married

children), and intergenerational-extended (families with both married children and other adult relatives). The distribution of these household types among formal and informal households is given in Table 7.2. There are no significant differences in household types between formal and informal households in either city. Nuclear families dominate family structure in both cities, with over 80 percent of all households in this category. Evidence is not strong of market-imposed doubling-up in the form of maintaining other than nuclear families. While Cairo is alleged to have a more serious housing shortage than Beni Suef, Cairo has no higher incidence of non-nuclear families. Furthermore, there is only a modest association between family structure and income (82 percent of Cairo households below the median income are nuclear families but 87 percent of above median income households are); were households modifying family structure to accommodate to market conditions, one might expect to find a greater difference in family structure between households "forced" to accommodate and those able to afford not to.

Subletting

Subletting in many countries takes the form of renting to unrelated individuals within a dwelling unit. In neither Cairo nor Beni Suef is this practice common. In Cairo, only 1.0 percent of households report subletting within their dwelling; in Beni Suef, only 3.2 percent. As is the case with family structure, there is only a modest negative relationship between the incidence of subletting and income, indicating that few households have been economically forced to accommodate to housing shortages by subletting within their own dwelling units.

Space Consumption

Space consumption may be measured in two principal ways: the number of rooms in a family's dwelling unit and the number of persons per room. The number of rooms is an absolute measure of the space available to the family, while persons per room is a crowding measure which varies with the size of the family.

Table 7-2

Distribution of Households by Household Type
(Percentage)

<u>Household Type</u>	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Nuclear	83.3%	85.2%	86.3%	81.2%
Intergenerational	6.3	4.8	0.0	4.4
Extended	7.6	6.3	10.7	12.5
Intergenerational-Extended	1.0	1.6	3.0	1.3
Missing (unclassified)	1.8	2.0	0.0	0.6

Source: Weighted occupant survey.

Previous research has suggested that space consumption in Egypt and in Cairo in particular has increased moderately over the past two decades. Wheaton (1980), for example, cites CAPMAS data which indicate that the number of persons per room in Cairo declined from 2.3 in 1960 to 2.0 in 1966 and 1.9 in 1976.¹ While definitional problems cloud the confidence that can be placed in this result, it is consistent with the data of this study.

Unit size--The median unit size of sampled households is three rooms, regardless of whether a household is from Cairo or Beni Suef, an owner or renter, or in the formal or informal sector. Mean numbers of rooms vary somewhat, as indicated in Table 7-3. Owners have about 20 percent more rooms than renters in each city. Formal and informal households have comparable numbers of rooms in Cairo, but in Beni Suef informal households have more rooms. This is attributable mainly to a higher incidence of ownership among informal households in Beni Suef. These figures are in line with the norm established by the Egyptian government policy, which declares that a family should have three to four rooms in its dwelling (Wheaton, 1981, p. 55).

The most important determinant of space consumption is family income (see Table 7-4). As owners' incomes increase from the lowest to the highest income quartile, mean rooms increase from 3.3 to 4.4 in Cairo and from 2.5 to 5.1 in Beni Suef. Among renters the increase in rooms from the lowest to the highest income quartile is from 2.6 to 3.8 in Cairo and from 2.0 to 3.9 in Beni Suef.

The number of rooms is affected less by family size than by income (see Table 7-4). While larger families generally occupy somewhat more rooms than do smaller families, the difference is far less than proportional--indicating that crowding (in terms of persons per room) increases rapidly with family size.

¹As Wheaton notes, it is possible that this decline is overstated because of the potential impact of a change in the CAPMAS definition of a "room" from 1960 to later periods. Even with parametric adjustments to 1966 and 1976 figures, however, it did not appear to Wheaton that persons per room had increased (pp. 5 and 6).

Table 7-3

Mean Rooms per Dwelling Unit by Submarket

	<u>Mean Rooms</u>
<u>Cairo</u>	
Owners	3.64
Renters	3.22
Formal	3.35
Informal	3.37
All	3.35
<u>Beni Suef</u>	
Owners	3.46
Renters	3.10
Formal	3.01
Informal	3.41
All	3.35

Source: Weighted occupant survey.

Table 7-4

Mean Rooms per Dwelling Unit by Income and Household Size

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
<u>Income Quartile</u>				
1 (Lowest)	3.3	2.6	2.5	2.0
2	3.2	3.0	3.4	2.5
3	3.7	3.4	3.6	2.5
4 (Highest)	4.4	3.8	5.1	3.9
<u>Household Size</u>				
1 - 2	3.6	2.4	2.8	2.1
3 - 4	3.5	2.4	3.2	3.2
5 - 6	3.8	2.7	3.2	3.3
7+	3.6	3.2	4.0	2.8

Source: Weighted occupant survey.

A multivariate regression confirms the comparative impacts of income and family size on space consumption. The natural logarithm of rooms was regressed on the natural logarithm of household income (using a measure of "permanent" income¹), and categorical variables indicating household size categories, educational attainment of the head of household, homeownership, and formal/informal status. Results of the estimated equations are given in Table 7-5.

The coefficient of the log of permanent income indicates that as permanent income increases by 10 percent, the average number of rooms increases by 3 percent in Cairo and by 2 percent in Beni Suef. The size of the family has no effect on the number of rooms in Beni Suef. In Cairo families with 5-6 people have on average 11 percent more rooms than either smaller or larger families. In Beni Suef families whose head has a university degree have an average of 35 percent more rooms than other families. These two variables are not significant in the equations estimated for only homeowners. For owners, only permanent income affects the number of rooms the family occupies. On average, owners have more rooms than renters. In Cairo the average number of rooms for owners is 19 percent higher than the average for renters, controlling for other variables. In Beni Suef the difference is larger--27 percent. In Cairo there is no difference between the formal and the informal sectors in terms of number of rooms. In Beni Suef there is a difference mainly in the rental sector where families that rent in the informal sector have an average of 35 percent more rooms than those that rent in the formal sector.

The regression equations just discussed imply that crowding as measured by number of persons per room will be negatively related to permanent income, because the number of rooms occupied increases as income increases. And, crowding will be positively related to the size of the family because in general the number of rooms a family occupies is unrelated to its size. These relationships are indicated in Tables 7-6 and 7-7, which indicate mean and median persons per room by submarket and

¹Permanent income is the "normal" or "expected" income of a family exclusive of transitory elements. It was estimated for sample households by the predicted income from a regression of reported income on total reported expenditures, education, occupation, and birthplace of the household head.

Table 7-5

The Determinants of Space Consumption
[Dependent Variable-- ln (Rooms)]
(Standard Errors in Parentheses)

	Cairo			Beni Suef		
	<u>All</u>	<u>Renter</u>	<u>Owner</u>	<u>All</u>	<u>Renter</u>	<u>Owner</u>
Intercept	-.428	-.425	-.203	.008	-.370	.432
Owner	.175** (.049)	--	--	.236** (.075)	--	--
Informal	.052 (.045)	.080 (.053)	--	.163+ (.092)	.299** (.097)	--
ln Permanent Income	.304** (.042)	.301** (.048)	.307** (.086)	.190** (.032)	.252** (.076)	.167** (.037)
University Degree	--	--	--	.298** (.118)	.293** (.110)	--
Size 1 - 2	--	--	--	--	--	--
Size 5 - 6	.105* (.048)	.101+ (.057)	--	--	--	--
Size 7 +	--	--	--	--	--	--
R ²	.15	.14	.11	.20	.46	.15
N	372	262	109	240	64	176

Key: **Significant at the 0.01 level.
 *Significant at the 0.05 level.
 +Significant at the 0.10 level.

Source: Occupant survey

Table 7-6

Mean and Median Persons Per Room by Submarket

	<u>Mean Persons Per Room</u>	<u>Median Persons Per Room</u>
<u>Cairo</u>		
Owners	1.78	1.60
Renters	1.92	1.67
Formal	2.05	1.67
Informal	1.76	1.50
All	1.87	1.67
<u>Beni Suef</u>		
Owners	1.97	1.60
Renters	1.80	1.50
Formal	2.28	1.67
Informal	1.85	1.50
All	1.92	1.50

Source: Weighted occupant survey.

Table 7-7

Mean Persons Per Room by Income and Household Size

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
<u>Income Quartile</u>				
1 (Lowest)	1.59	2.17	1.79	1.12
2	1.77	2.02	2.19	1.91
3	2.17	1.92	2.32	2.18
4 (Highest)	1.53	1.58	1.35	1.59
<u>Household Size</u>				
1 - 2	0.68	0.87	0.69	0.69
3 - 4	1.29	1.79	1.48	1.35
5 - 6	1.58	2.64	2.19	1.86
& +	2.52	2.94	2.69	3.59

Source: Weighted occupant survey.

variations by income and family size, and further confirmed by regression equations with the log of the number of persons per room as a dependent variable (see Table 7-8). Table 7-6 indicates that mean persons per room are essentially the same in 1981 as indicated in 1976 CAPMAS statistics. Based on the regression equations, in Cairo the number of persons per room declines by about 2.5 percent for every 10 percent increase in permanent income. In Beni Suef a similar income increase induces a 2 percent decrease in the number of persons per room in the rental sector. Among owners the decrease is 1 percent. Renters with university degrees are less crowded than other renters. The difference is 15 percent in Cairo and 22 percent in Beni Suef.

The household size coefficients indicate crowding relative to families with three to four people, which serve as a reference group. They illustrate dramatically the effect of variations in the size of the family with relatively uniform dwelling unit size. Families with only one or two people are 52 percent less crowded in Beni Suef. In Cairo, families with five to six people are 32 percent more crowded than those with three to four people; in Beni Suef the difference is 49 percent. In both cities families with seven or more people have twice as many people per room as families with three to four people.

Thus, while the incidence of crowding, in terms of persons per room, does not appear to have been increasing over time, it is clear that among low income groups and large families, crowding is acute.

7.3 Housing Tenure

The mode of housing tenure, whether the dwelling unit is owned by the occupant or rented from others, is, as shown by the previous section, an important determinant of housing consumption. It is also an important housing outcome in its own right.

Most households, whether owners or renters, would prefer to own rather than rent. Among owners in Cairo and Beni Suef, 91 percent and 100 percent respectively expressed a preference for owning; among renters, Cairo and Beni Suef proportions who would prefer to own were 75 and 82 percent respectively. Expressed reasons for preferring to own were overwhelmingly "not having to pay rent" and "security." Hardly any households

Table 7-8

The Determinants of Crowding
[Dependent Variable: ln (Persons per Room)]
(Standard Errors in Parentheses)

	<u>Cairo</u>			<u>Beni Suef</u>		
	<u>All</u>	<u>Renter</u>	<u>Owner</u>	<u>All</u>	<u>Renter</u>	<u>Owner</u>
Intercept	1.463	1.468	1.316	0.871	1.416	.659
Owner	-.145** (.052)	--	--	--	--	--
Informal	-.077+ (.047)	-.111* (.056)	--	-.210* (.098)	-.363** (.094)	--
ln Permanent Income	-.240**	-.238** (.065)	-.245** (.094)	-.105** (.037)	-.198* (.094)	-.110** (.042)
University Degree	-.155+ (.087)	-.165+ (.100)	--	-.294* (.125)	-.251* (.133)	--
Size 1 - 2	-.734** (.087)	-.705** (.107)	-.778** (.155)	-.1876** (.107)	-.832** (.167)	-.867** (.132)
Size 5 - 6	.279** (.061)	.288** (.070)	.211+ (.132)	.399** (.089)	.426** (.115)	.434** (.119)
Size 7 +	.707** (.062)	.703** (.075)	.671** (.122)	.638** (.083)	.761** (.145)	.641** (.104)
R ²	.51	.52	.51	.51	.65	.48
N	373	263	110	240	64	176

Key: **Significant at the 0.01 level.
 *Significant at the 0.05 level.
 +Significant at the 0.10 level.

Source: Occupant survey.

mentioned housing as a good "investment" as the principal reason to own.

These preferences are not reflected in actual behavior, as only 31 percent of Cairo households and 74 percent of Beni Suef households surveyed are owners of their dwellings. Among informal households in Cairo, owning is somewhat more prevalent (32 percent versus 29 percent for formal households). In Beni Suef, most formal sector households (58 percent) are renters, located in Beni Suef city rather than in surrounding villages.

In Cairo, ownership of a dwelling does not always imply ownership of the building in which the dwelling is located; 26 percent of Cairo owners own the dwelling unit only, 15 percent own the dwelling and part of the building, and the remaining 59 percent own both the dwelling unit and the building. In Beni Suef, where buildings contain fewer units, owners are much more likely to own the entire building (91 percent do so).

Ownership status, despite being preferred by households, is not positively related to income. In Cairo the first quartile of the income distribution has 38 percent owners while the highest quartile has only 29 percent. In Beni Suef, the relationship is even stronger and, like Cairo, negative; 92 percent of the lowest quartile are owners compared to 48 percent for the highest quartile. Household size is positively related to ownership, although the relationship is a weak one.

Patterns of ownership appear to be strongly influenced by housing market conditions, especially housing costs. Cairo, which has higher costs of ownership than Beni Suef (mainly because of higher land costs) has comparatively fewer owners.¹ At the margin of new construction, there appear to be neither more nor less new units being built for renter or owner occupancy in Cairo, however, indicating that relative prices of owning and renting have probably not changed much there recently.²

¹Costs for renters are more similar between the two cities since densities adjust to land cost differences. Thus, for example, in Beni Suef a typical rental unit is in a two unit building whereas in Cairo it is in a four unit building. Thus, in Beni Suef, land costs are prorated over two units but in Cairo, where land costs are twice as high they are prorated over four units--making rents similar.

²Of households that moved into units between 1976 and 1980, 29 percent were owners; of those moving into units in earlier periods, 27 percent were owners.

7.4 Dwelling Unit, Building and Neighborhood Outcomes

A number of different aspects of housing may be related to family health, safety, well-being, and convenience. This section discusses the following housing and neighborhood attributes:

1. Building Structural Condition
2. Public Utilities and Sanitation
 - a. Connection to electricity
 - b. Piped water for the unit or building
 - c. Connection to public sewer system
 - d. Bathroom or toilet in the unit
 - e. Separate kitchen in the unit
3. Neighborhood Services
 - a. Access to public transportation
 - b. Hospital or clinic in the area
 - c. School and/or nursery in the area
4. Environmental Problems
 - a. Garbage accumulation on the street
 - b. Stagnant water on the street

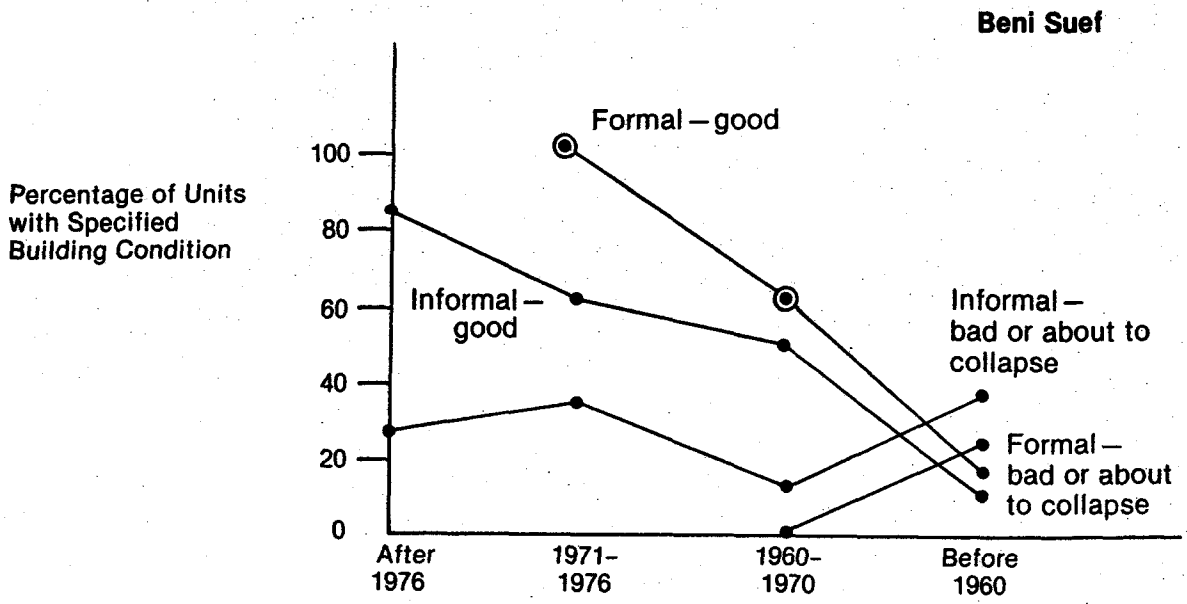
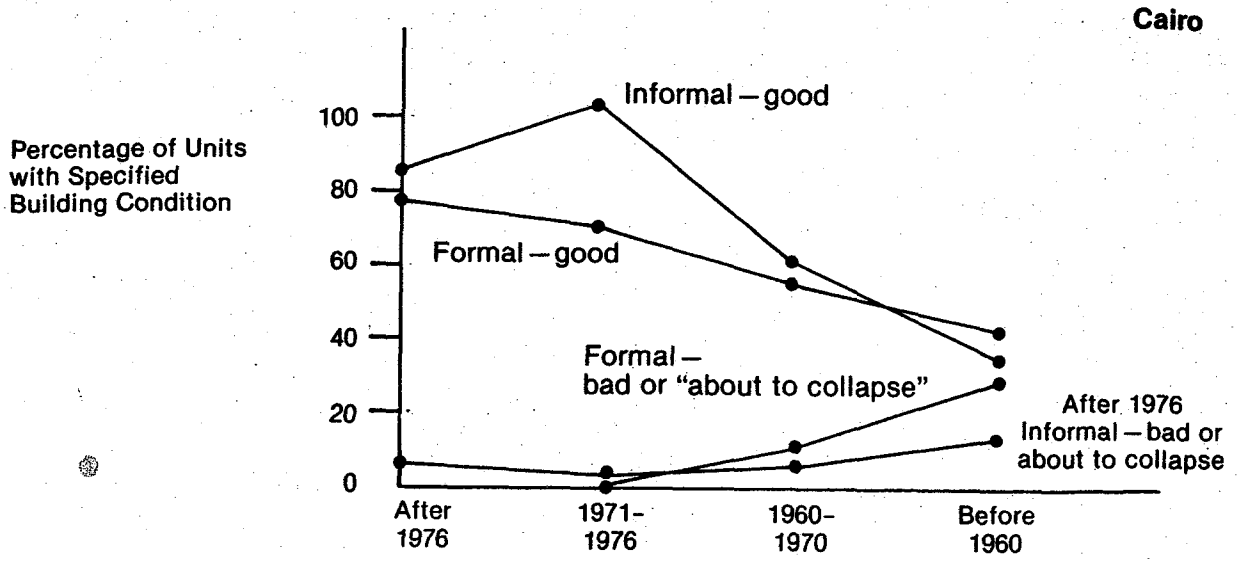
Building Condition

Household interviewers in the occupant survey (most of whom were graduate students or junior faculty members in Cairo area architecture/engineering university departments) categorized buildings into four categories of structural soundness--"good," "average," "bad," and "about to collapse." While far from scientific, these categories are broadly indicative of the condition of the housing stock. Figure 7-2 illustrates the distribution of good housing vis-a-vis "bad" or "about to collapse" for housing built at different times in Cairo and Beni Suef. As the figure indicates, overall 50 percent of Cairo housing is classified as being in "good" condition, whereas only 31 percent of Beni Suef housing is so classified. By contrast, 13 percent of the Cairo sample was classified as "bad" or "about to collapse" and 27 percent of the Beni Suef sample was so classified.¹

Overall, informal housing is estimated to be in better average structural condition than formal housing, with 56 percent of informal housing units in Cairo classified as "good," compared with only 40 percent

¹Two percent and three percent, respectively, of units in Cairo and Beni Suef were in buildings classified as "about to collapse." Based on estimates of units in 1981 by the scanning survey, this implies that roughly 40,000 housing units in Greater Cairo are in buildings classified as "about to collapse."

**Figure 7-2
Building Condition by Time of Construction**



⊙ Fewer than 5 observations

Source: Weighted Occupant Survey

of formal housing units. In Beni Suef, the situation is the same, with 33 and 20 percent respectively of informal and formal housing classified as good. The main explanation for this surprising result may be found in Figure 7-2, recalling that recent construction has been heavily dominated by the informal sector.

As Figure 7-2 illustrates, all housing built since 1970 in each city is characterized by the fact that formal housing is more likely on average to be classified as good than is informal housing. One would expect formal housing to be better than informal housing at the time it is built and, indeed, it appears to be. On the other hand, most recently built informal housing is better than most older formal or informal housing; since 1960, a higher proportion of newly built informal units have been classified as good than is true of the housing stock as a whole. The converse is that most pre-1960 units, whether formal or informal, are less likely than average to be classified as good. Because informal construction has dominated recent additions to the stock, the average condition of informal housing is heavily weighted by the "good" units that have been added recently. Conversely, because the formal housing stock is dominated by older units, its average condition is heavily weighted by the older units classified as "average," "bad," and "about to collapse."

It should further be noted that overall, in Cairo, units classified as "bad" or "about to collapse" in the formal sector outnumber those so classified in the informal sector by roughly two to one; in Beni Suef, the situation is reversed. In part because there are so few formal units in Beni Suef, there appear to be about ten times as many informal units classified as "bad" or "about to collapse" as there are similarly classified formal units.

In summarizing the information presented in Figure 7-2, it is clear that recently built informal housing has added significantly to the overall physical quality of the housing stock. Thus, informal housing has been the source not only of most housing units in recent years, but also of most units of good structural quality.

On the other hand, there is a significant fraction of the housing stock that is in poor structural condition--an estimated 13 percent of the Cairo stock and 27 percent of the Beni Suef stock. Thus, overall improvement in housing will depend on continuing high levels of both formal and informal construction and, at the same time, upgrading or replacing old existing buildings in poor condition.

Public Utilities and Sanitation, Neighborhood Services, and Environmental Problems

Tables 7-9 and 7-10 present comparative data on outcomes in a number of areas for renters and owners in the formal and informal sectors. Salient differences among different households are as follows:

1. Public utilities and sanitation services. The availability of these services is quite high in Cairo, less so in Beni Suef. Comparing renters and owners, in Cairo a larger proportion of renters than owners has water and sewer connections and a bathroom or toilet.¹ Both renters and owners are almost universally served by electricity. The lack of services in Beni Suef is more concentrated among owners than renters. While Beni Suef renters have almost the same access to electricity as do Cairo households, the incidence of electrical connections among owners there is only 65 percent. Among Beni Suef owners only one in three is served by public water connections; only one in six by public sewer connections. Partly as a consequence, the incidence of bathrooms, toilets, and kitchens is also low for Beni Suef owners.

As suggested in Chapter 3, the incidence of connections to public water and sewer lines is significantly lower among informal households in Cairo, although electricity connections are comparable between formal and informal households. In Beni Suef the informal sector has significantly lower availability of all public utilities, bathrooms or toilets, and kitchens.

2. Neighborhood services. Neighborhood services are generally better provided in Cairo than in Beni Suef. In both cities renters have better access to public transportation than do owners. Informal households are significantly less well served than formal households in terms of all neighborhood

¹These differences between renters and owners are significant at the 0.01 level. Such differences are explainable in light of the different sorts of buildings occupied by renters and owners. Renters, for example, tend to occupy buildings with a greater number of dwelling units than owners; as noted in Section 5.1, larger buildings are much better served by public utilities than are smaller buildings.

Table 7-9

Housing Outcomes: Percent Distribution by Formality and Tenure Status

	<u>Cairo</u>					
	<u>Formal</u>			<u>Informal</u>		
	<u>Renter</u> n=128	<u>Owner</u> n=51	<u>All</u> n=179	<u>Renter</u> n=198	<u>Owner</u> n=91	<u>All</u> n=289
Electricity	98.4	98.8	98.5	98.9	95.2	97.7
Water	98.9	98.8	98.9	77.3	59.7	71.7**
Sewer	94.2	92.7	93.8	91.2	72.8	85.4**
Bath/Toilet	98.9	100.0	99.2	100.0	92.3	97.6
Kitchen	91.1	88.3	90.3	95.3	75.5	89.1
Public Transport	100.0	85.7	95.9	84.8	74.6	91.6**
Hospital/Clinic	85.3	90.2	86.7	90.5	88.4	89.9*
School/Nursery	94.8	81.4	91.0	83.4	79.2	82.1**
Garbage on Street	36.2	33.9	35.5	44.9	51.8	47.1**
Stagnant Water	50.0	49.0	49.8	43.6	46.2	44.4

Note: *Significant difference between formal and informal sector at the 0.05 level; **significant difference between formal and informal sector at the 0.01 level.

Source: Weighted occupant survey.

Table 7-10

Housing Outcomes: Percent Distribution by Formality and Tenure Status

	<u>Beni-Suef</u>					
	<u>Formal</u>			<u>Informal</u>		
	<u>Renter</u> n=19	<u>Owner</u> n=14	<u>All</u> n=33	<u>Renter</u> n=52	<u>Owner</u> n=157	<u>All</u> n=209
Electricity	100.0	93.5	97.3	94.1	63.2	70.9**
Water	90.6	93.5	91.6	89.0	27.4	44.3**
Sewer	90.6	80.2	86.4	55.2	11.2	22.8**
Bath/Toilet	100.00	100.0	100.0	93.0	46.1	58.1**
Kitchen	62.3	35.1	51.0	85.0	18.4	35.5+
Public Transport	0.0	10.0	4.2	58.9	14.4	25.8**
Hospital/Clinic	61.9	47.9	56.1	82.3	52.0	59.8
School/Nursery	87.8	76.3	83.0	76.7	82.3	80.8
Garbage on Street	9.0	0.0	5.3	15.0	14.9	14.9
Stagnant Water	0.0	0.0	0.0	21.9	3.6	8.3

Note: **Significant difference between the formal and informal sector at the 0.01 level.

*Significant difference at the 0.05 level.

+Significant difference at the 0.10 level.

Source: Weighted occupant survey.

services.¹ In Beni Suef neighborhood service levels are generally comparable in the two sectors.

3. Environmental Problems. The incidence of garbage and stagnant water in the streets is much higher in Cairo than in Beni Suef. While in Cairo there are no differences between renters and owners in terms of these outcomes, in Beni Suef renters are significantly more likely to experience stagnant water in streets.

7.5 Attitudes and Preferences Regarding Housing and Neighborhood Problems

An important part of assessing housing needs is to know what households themselves perceive to be desirable and undesirable housing and neighborhood features. This section examines households' expressed satisfaction with dwelling units and neighborhoods, perceptions of good and bad features of each, and attitudes concerning willingness to pay for certain improvements. The comparative importance of various dwelling and neighborhood features is assessed.

Overall Satisfaction With Housing and Neighborhoods

Households were asked to express opinions about their dwellings and neighborhoods in terms of whether they were "very satisfied," "somewhat satisfied," or "not satisfied." Households that said they were very or somewhat satisfied were classified as "satisfied." Percentages of different types of households classified as satisfied with housing and neighborhoods are given in Table 7-11.

The majority of Cairo and Beni Suef households are satisfied with both housing and neighborhoods, although in each city a significant minority claims not to be satisfied. In Cairo, 71 percent of households are satis-

¹Other neighborhood amenities are also less well provided among informal areas in Cairo. The following, for example, indicates the incidence of various neighborhood amenities in Cairo:

<u>Percentage of households with:</u>	<u>Formal</u>	<u>Informal</u>
Streetlights	65.1	49.8
Paved road	34.9	28.6
Sidewalks	45.9	31.4
Curbs	44.3	29.5

where all differences are significant at or above the 0.05 level. As in the case of basic utilities, informal housing units in informal neighborhoods have lower incidence of infrastructure than informal units in formal neighborhoods.

Table 7-11

Satisfaction with Housing and Neighborhood
(Percent "Satisfied")

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Housing</u>	<u>Neighborhood</u>	<u>Housing</u>	<u>Neighborhood</u>
<u>All</u>	71.3	82.2	86.1	85.2
Renters	66.4**	81.0	82.9	95.3
Owners	82.2	85.0	87.4	80.1
<u>Formal</u>	70.9	89.0++	73.0+	87.0+
Renters	65.6	88.4	58.5	94.8
Owners	84.5	90.6	93.5	100.0
<u>Informal</u>	70.3	76.4	87.8	82.9
Renters	66.0	74.2	91.4	95.4
Owners	79.0	81.1	86.6	78.6

Note: **Significant difference between owners and renters at the 0.01 level.
 ++Significant difference between formal and informal sector at the 0.01 level.
 +Significant difference between formal and informal sector at the 0.05 level.

Source: Weighted occupant survey.

fied with their dwellings (29 percent not satisfied); in Beni Suef, 86 percent of households are satisfied with their dwellings. With regard to neighborhoods, Cairo and Beni Suef residents hold similar opinions, with 82 and 85 percent respectively claiming to be satisfied.

Most people that are satisfied with their housing are also satisfied with their neighborhood. In Cairo, 64 percent of families are satisfied with both housing and neighborhood, 25 percent with one or the other and 11 percent with neither. In Beni Suef, 76 percent of families are satisfied with both, 19 percent with one or the other, and 5 percent with neither.

Satisfaction is not uniform among groups. In Cairo, renters are significantly less satisfied with their dwellings than owners, but satisfaction with neighborhoods is about the same in the two groups. On the other hand, there is no difference between formal and informal sector households in terms of housing satisfaction. In light of similarities in objective features of Cairo formal and informal housing noted in Sections 7.3 and 7.4, this is not particularly surprising. Formal and informal households in Cairo hold significantly different opinions of their neighborhoods, however, with informal households less likely to be satisfied. Again, this is consistent with observed differences in objective features of neighborhoods. Within each sector, owners are more satisfied with both housing and neighborhood than are renters.

In Beni Suef, by contrast, there is no significant difference overall between renters' and owners' satisfaction; owners are slightly better satisfied with housing; renters, better satisfied with neighborhoods. Formal and informal sector households differ in their sources of satisfaction; formal households are less likely than informal households to be satisfied with housing, but the reverse is true for neighborhoods.

Sources of Satisfaction and Dissatisfaction

Households were asked to list the three most important features of dwelling units and neighborhoods which they liked and did not like. Tables 7-12 and 7-13 present the distribution of all responses regarding dwelling unit satisfaction; table entries represent the percentage of all responses (either first, second, or third choice) falling into a given response area.

Table 7-12

Sources of Satisfaction and Dissatisfaction With Housing -- Owners and Renters
(Percent of Total Responses)

	"Like About Dwelling"			
	Cairo		Beni Suef	
	Owners	Renters	Owners	Renters
Sufficient number of rooms	20*	16*	18	20
Healthy dwelling	14	14	11	16
Social environment	15	11	20	22*
Quiet/clean neighborhood	7	9	1	7
Cheap rent	2	15	0	13
Close to transportation	9	13	3	4
Close to schools	4	6	3	6
Close to workplace	4	9	3	5
Close to family/friends	7	5	11	5
Ownership	16	0	29*	0
Other	2	1	0	2

	"Don't Like About Dwelling"			
	Cairo		Beni Suef	
	Owners	Renters	Owners	Renters
Insufficient number of rooms	27*	31*	26*	28*
Unhealthy dwelling	11	20	20	17
Inappropriate social environment	9	5	0	9
Noisy/unclean neighborhood	22	18	4	7
Expensive rent	0	4	0	5
Far from transportation	7	3	17	7
Far from schools	5	1	16	2
Far from workplace	7	5	7	9
Far from family/friends	7	6	3	16
Other	12	6	7	2

*Most important reason

Source: Weighted occupant survey.

Table 7-13

Sources of Satisfaction and Dissatisfaction With Housing --
Households in Formal and Informal Housing
(Percent of Total Responses)

"Like About Dwelling"

	Cairo		Beni Suef	
	Formal	Informal	Formal	Informal
Sufficient number of rooms	15*	18*	17	20
Healthy dwelling	15	13	8	13
Social environment	10	14	17	21
Quiet/clean neighborhood	9	8	3	3
Cheap rent	13	9	7	4
Close to transportation	13	12	10	2
Close ot schools	6	5	14*	3
Close to workplace	9	7	1	4
Close to family/friends	5	6	14*	8
Ownership	4	7	8	22*
Other	2	1	0	1

"Don't Like About Dwelling"

	Cairo		Beni Suef	
	Formal	Informal	Formal	Informal
Insufficient number of rooms	33*	28*	30*	26*
Unhealthy dwelling	20	17	26	18
Inappropriate social environment	7	6	15	3
Noisy/unclean neighborhood	20	17	11	2
Expensive rent	1	4	0	2
Far from transportation	2	5	0	16
Far from schools	2	2	0	13
Far from workplace	5	6	0	8
Far from family/friends	2	8	15*	6
Other	8	6	4	6

*Most important reason

Sample: Weighted occupant survey.

Patterns of likes and dislikes concerning housing are similar for owners and renters and for households in formal and informal housing in both sites. Concern with adequate interior space is reflected in the fact that "insufficient number of rooms" was the major dislike of each group in each site, while "sufficient number of rooms" was the major positive dwelling feature for every group of Cairo households and was often cited by each Beni Suef subgroup. Ownership per se is highly valued among owners, being cited most often as a preferred feature in Beni Suef and second in Cairo. The social environment of the neighborhood, while strictly speaking a neighborhood rather than a dwelling feature, is also ranked high among positive features for all groups. Another preferred feature is a "healthy" dwelling, often cited in each city; correspondingly, an "unhealthy" dwelling is often cited as a disagreeable characteristic in each city. Differences in centrality and access between formal and informal households in Beni Suef are apparent with the former more likely to cite proximity to schools, transportation, and family and friends as positive features; the latter more likely to cite distance from schools and transportation as negative features.

When households were asked if they thought their dwelling needed changes or modifications, a minority in each city responded affirmatively; 26 percent of owners in both Cairo and Beni Suef, and 17 and 6 percent of renters in Cairo and Beni Suef respectively thought changes were needed. Features thought deserving of change were highly dispersed in each city; "adding one or more rooms" was the most often cited response.

Sources of satisfaction and dissatisfaction concerning neighborhoods are similar among different renter and owner household groups but somewhat different among formal and informal households. As indicated in Table 7-14 the "social environment" of the neighborhood is cited most often by all renter and owner groups as the neighborhood feature they like. In Cairo, renters are just as likely to cite "adequate transport," however. In Cairo, "stores and shops" are next most often cited by both renters and owners, followed by "adequate transport" for owners and "healthy area" for renters. In Beni Suef, "healthy area" follows social environment for both renters and owners.

Among the principal dislikes of all renter and owner groups are the related problems of "garbage in the streets" and "flies and insects" which together comprise from 31 percent to 41 percent of all responses concerning disagreeable neighborhood features. These problems are followed, in Cairo,

Table 7-14

Sources of Satisfaction and Dissatisfaction With
Neighborhood -- Owners and Renters
(Percent of Total Responses)

"Like About Neighborhood"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
Healthy area	13	15	22	24
Social environment	23*	19*	33*	27*
Quiet and clean	13	11	8	17
Adequate transportation	14	19*	10	9
Schools	11	11	10*	9
Stores and shops	17	16	11	11
Health services	5	5	1	1
Other	5	4	6	1

"Don't Like About Neighborhood"

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Owners</u>	<u>Renters</u>	<u>Owners</u>	<u>Renters</u>
Garbage in streets	19*	25*	10	20
Garbage in canals/ditches	3	1	7	4
Rats	3	3	6	1
Flies and insects	16	19	21*	21*
Overflowing sewers	12	12	1	5
Air pollution	3	3	0	0
Lack of pure water	5	4	11	0
Lack of sewers	4	2	12	12
Lack of adequate health facilities	4	4	11	10
Lack of electricity	1	1	3	0
Lack of adequate transportation	5	2	6	5
Lack of schools	3	2	5	1
Lots of power outages	7	5	5	7
Water pressure problems	5	5	1	8
Lots of workshops/noise	6	7	1	1
Inappropriate social environment	1	3		3
Other	3	2	1	2

*Most important reason

Sample: Weighted occupant survey.

by "overflowing sewers" and, in Beni Suef, by lack of infrastructure such as pure water, sewerage, and transport systems. In Cairo, where levels of infrastructure provision are higher than in Beni Suef, lack of infrastructure is not often cited. Indeed, "power outages" and "lots of workshops/noise" are each more often cited by renters and owners than either lack of pure water or sewer systems.

Among formal and informal households (Table 7-15), differences in patterns of dwelling and neighborhood satisfaction tend to follow differences in objective features of households' dwellings and neighborhoods. In Cairo patterns of likes and dislikes of dwelling unit features were nearly identical for formal and informal households, paralleling objective dwelling unit similarities. Concerning neighborhood features, informal households are modestly more likely than formal households to cite shortfalls in sewer, water, schools, and health facilities--in each case consistent with observed objective differences. In Beni Suef the comparative shortfalls in utilities and other infrastructure among informal households are also reflected in a higher incidence of perceived subjective shortfalls in those areas by informal households.

Overall satisfaction was examined using a multivariate analysis in an attempt to quantify the comparative importance of dwelling and neighborhood features. Logit regressions were estimated with dwelling unit and neighborhood satisfaction as dependent variables and with dwelling and neighborhood features as explanatory variables. Results of these analyses are presented in Table 7-16. In both cities the number of persons per room is the most important determinant of housing satisfaction. In Cairo, the probability that a family is satisfied with its housing declines by ten percentage points for each additional person per room. In Beni Suef, the probability declines by two percentage points for each additional person per room. As was noted above, Cairo owners are more likely to be satisfied with their housing than Cairo renters; even after controlling for differences in renters' and owners' housing and neighborhood outcomes, the difference in the probability of satisfaction is approximately 21 percentage points. Thus, ownership per se appears to be a significant source of satisfaction in Cairo. In Beni Suef, however, this does not appear to be the case. On the other hand, in Beni Suef residents of informal housing, who are far more likely than formal households to be owners, are approximately 12 percentage points more likely to be satisfied with their housing.

Table 7-15

Sources of Satisfaction and Dissatisfaction With Neighborhood --
Households in Formal and Informal Housing
(Percent of Total Responses)

"Like About Neighborhood"

	Cairo		Beni Suef	
	Formal	Informal	Formal	Informal
Healthy area	14	12	4	27
Social environment	18	22*	25	32*
Quiet and clean	10	12	3	13
Adequate transportation	21*	16	19	8
Schools	11	11	21	7
Stores and shops	17	16	26*	8
Health services	5	5	1	1
Other	4	6	0	5

"Don't Like About Neighborhood"

	Cairo		Beni Suef	
	Formal	Informal	Formal	Informal
Garbage in streets	21*	25*	31*	9
Garbage in canals/ditches	2	2	0	7
Rats	3	3	0	5
Flies and insects	21*	16	27	20*
Overflowing sewers	13	11	4	2
Air pollution	3	2	0	0
Lack of pure water	2	6	0	0
Lack of sewers	2	3	15	13
Lack of adequate health facilities	3	4	0	10
Lack of electricity	1	1	2	2
Lack of adequate transportation	2	4	2	7
Lack of schools	1	3	8	4
Lots of power outages	6	6	4	5
Water pressure problems	6	4	0	2
Lots of workshops/noise	9	5	6	2
Inappropriate social environment	2	3	0	1
Other	3	2	0	1

*Most important reason

Sample: Weighted occupant survey.

Table 7-16

Logit Model of Housing and Neighborhood Satisfaction
(Regression Coefficients; Standard Errors in Parentheses)

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Housing</u>	<u>Neighborhood</u>	<u>Housing</u>	<u>Neighborhood</u>
Intercept	1.179** (.430)	1.610** (.316)	.834 (.737)	-2.062** (.620)
Owner	1.044** (.283)	.515 (.333)		
Informal	--	-.832** (.294)	1.000+ (.557)	
Persons Per Room	-.460** (.102)		-.182 (.122)	
Kitchen	.677* (.313)			
Public Water Connection	.470 (.313)			
Electricity Connection			.789+ (.451)	
Public Sewers				3.900** (1.099)
Schools				2.118** (.471)
Garbage Accumulation	-.740** (.248)	-1.090** (.285)		
Stagnant Water Accumulation	-.491* (.245)			
Housing Satisfaction	--	1.490** (.278)		1.913** (.500)

Note: **Significant at the .01 level.
 *Significant at the .05 level.

It is likely that problems of collinearity between formality and ownership have obscured the "true" relationship between ownership and satisfaction in Beni Suef, and that in fact ownership per se is also highly valued in Beni Suef. In Cairo, informal housing status per se does not affect housing satisfaction.

In Cairo, families who have a kitchen and public water connection in the building or the unit are more likely to be satisfied with their housing than families who do not. In Beni Suef, where electricity is not universally available, families with electricity are 36 percentage points more likely to be satisfied with their housing than families without electricity.

In Section 7.4 it was noted that environmental problems are common in Cairo. Analysis indicates that above average accumulations of garbage and stagnant water on the street result in significantly lower levels of housing satisfaction. The depressing effects of these environmental problems on housing satisfaction are approximately of the same magnitude as not having a kitchen or water in the building.

It was noted above that there is a high correlation between housing and neighborhood satisfaction. Therefore, housing satisfaction was included in the logit equation for neighborhood satisfaction. After controlling for this correlation, the logit estimates imply that, in Cairo, informal housing status reduces the probability of the neighborhood satisfaction by 12 percentage points (in Beni Suef informal housing status does not affect neighborhood satisfaction beyond its effect on housing satisfaction). The likelihood that Cairo families who are satisfied with their housing will also be satisfied with their neighborhood is reduced by 7.5 percentage points by accumulation of stagnant water.

In Beni Suef, availability of public sewer connections and access to schools increase the likelihood of neighborhood satisfaction.

It should be noted that the specification of the logit equation used here makes it somewhat arbitrary to allocate effects between housing and neighborhood satisfaction. It might be more appropriate to conclude that the housing and neighborhood characteristics discussed above affect both housing and neighborhood satisfaction. Thus, one may conclude that in Cairo crowding, environmental problems and informal housing status are negative determinants of satisfaction. Homeownership, availability of

kitchen and water connection are positive determinants. In Beni Suef, informal housing status (or possibly homeownership), electricity, public sewers and schools are positive determinants of satisfaction. Crowding is a negative determinant.

Perceptions of Recent Neighborhood Changes

Households in both Cairo and Beni Suef are more likely than not to perceive that neighborhood conditions have remained stable or improved in the recent past. In Cairo approximately 45 percent of owners and 34 percent of renters thought that neighborhood conditions had improved in the recent past, while 15 and 19 percent respectively thought that conditions had declined. In Beni Suef, households perceived even more favorable changes; 53 and 60 percent of owners and renters respectively perceived there to have been recent neighborhood improvements while only one household of 250 interviewed perceived any neighborhood decline.

Sources of perceived improvements, which are shown in Tables 7-17 and 7-18 mirror the changes in infrastructure noted in Chapter 3. In Cairo significant fractions of households cite sewer, water, and electricity connections; slightly lower fractions cite street paving, schools, shops, and transport improvements. In Beni Suef substantial improvements in electricity and pure water connection are noted and street paving appears to have occurred in many renters' neighborhoods. Other neighborhood improvements such as those cited in Cairo (schools, shops, and transport) appear to have been extremely limited in Beni Suef. Despite having been cited as disagreeable aspects of neighborhoods, street cleaning, garbage removal, and control of flies and insects are almost never cited as areas of recent improvement in either city. Indeed, in Cairo, substantial fractions of households perceive that neighborhood conditions have recently worsened with regard to garbage, dirty streets, and flies and insects. Other problem areas included overflowing sewers, water outages and low pressure, and power outages--evidently reflecting the tenuous upkeep of some public utilities in Cairo. Interestingly, these are not cited as problems in Beni Suef--probably reflecting a better level of maintenance and/or better comparative peak load capacity of systems that do exist in Beni Suef.

Table 7-17

Perceptions of Recent Neighborhood Changes
(Percent of Total Responses)

	"Improvements"			
	Cairo		Beni Suef	
	Owners	Renters	Owners	Renters
Streets paved	10	8	8	18
Electricity connected	15	15*	36*	25*
Pure water connected	14	9	27	18
Sewers connected	16*	12	5	3
Schools put in	8	10	4	6
Health facilities put in	3	7	5	6
Transport improved	8	10	5	0
Shops moved in	8	12	4	3
Control of flies/insects	1	1	0	0
Streets cleaned/garbage removed	2	4	1	6
Prevention of overflowing sewers	3	2	2	4
Rising social class	5	5	3	6
Other	6	5	1	0

	"Declines"			
	Cairo		Beni Suef	
	Owners	Renters	Owners	Renters
Garbage/dirty streets	26*	28*		
Overflowing sewers	16	13	n/a**	n/a**
Flies/insects	15	15		
Mud in streets	12	8		
Water outages/low pressure	5	8		
Power outages	9	11		
Workshops/noise	7	6		
Air pollution	1	1		
Drop in social class	6	6		
Other	4	3		

*Most important reason

**fewer than 5 cases

Sample: Weighted occupant survey.

Table 7-18

Perceptions of Recent Neighborhood Changes --
Households in Formal and Informal Housing
(Percent of Total Responses)

"Improvements"

	Cairo		Beni Suef	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Street paved	17*	8	13	11
Electricity connected	9	12	21*	35*
Pure water connected	5	15	21*	26
Sewers connected	3	21*	17	3
Schools put in	9	7	4	4
Health facilities put in	7	5	8	3
Transport improved	15	7	4	5
Shops moved in	11	11	8	3
Control of flies/insects	1	1	0	0
Streets cleaned/garbage removed	3	3	0	3
Prevention of overflowing sewers	2	2	4	2
Rising social class	7	4	0	4
Other	10	4	0	0

"Declines"

	Cairo		Beni Suef	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Infromal</u>
Garbage/dirty streets	30*	25*		
Overflowing sewers	15	13	n/a**	n/a**
Flies and insects	15	13		
Mud in streets	11	8		
Water outages/low pressure	9	7		
Power outages	8	13		
Workshops/noise	6	6		
Air pollution	0	2		
Drop in social class	4	9		
Other	3	3		

*Most important reason

**Fewer than 5 cases

Sample: Weighted occupant survey.

Comparisons of informal and formal households suggest that recent neighborhood improvements have been more substantial in informal than in formal areas. For example, while 35 percent of formal owners in Cairo perceive that neighborhood conditions have improved recently, 53 percent of informal owners perceive recent improvements. Among formal households, improvements were most often noted in street paving, transportation, and electricity connections; while among informal owners, improvements were most often noted in sewer, water, and electricity connections. In Beni Suef, improvements in electricity and water connections are also more often cited by informal than formal households; sewer connections and installation of health facilities are more often cited by formal households.

Willingness to Pay for Neighborhood Changes

Despite recent improvements in neighborhood conditions, many households perceive continuing shortfalls, for many of which they express a willingness to pay to overcome. Households were asked "What improvements in the area should be done?" and "Would you be prepared to participate in paying for them?" Households were asked to list the three improvements they considered most important. Tables 7-19 and 7-20 tabulate the percentage of all responses (first, second, or third choice) for each of a number of improvement areas, including the response "nothing needs to be done."¹

Few households responded that "nothing needs to be done"--only about five percent of both Cairo and Beni Suef respondents. Among those expressing a willingness to pay for neighborhood improvements, regular street cleaning was for every group the most often cited improvement needed. In Cairo, the next most often cited improvements needed were (in order) street paving, regular garbage collection, water connections to the area, street repair, and eradicating flies and insects. In Beni Suef, improvements needed (following street cleaning) were regular garbage collection, sewer connections, and eradicating flies and insects (the three of which were tied in importance), followed by water connections to the area and paved streets. Social infrastructure such as health care, day care,

¹Survey responses were coded to indicate when a household indicated a given improvement and whether or not the household indicated a willingness to pay. Few households indicated that improvements were necessary without indicating willingness to pay. Thus, these responses are not presented here.

Table 7-19

Neighborhood Improvements for Which Households Express A Willingness to Pay
(Percent of Total Responses)

	Cairo		Beni Suef	
	Owners	Renters	Owners	Renters
Nothing needs to be done	4	6	1	14
Water connections to area	9	8	7	4
Electrical connections to area	1	1	3	0
Sewer connections to area	7	4	12	10
Paved streets	13	19	6	4
Street repair	7	8	8	9
Regular street cleaning	17*	24*	19*	21*
Regular garbage collection	11	12	10	13
Health care center	2	2	5	1
Day care center	1	1	1	1
Public schools	4	3	3	2
Sufficient transport	2	2	2	3
Sufficient shopping	2	1	3	3
Church/mosque	3	1	2	0
Eradicate rats	2	1	3	2
Eradicate flies/insects	11	4	11	11
Other	3	4	2	1

*Most important reason

Sample: Weighted occupant survey.

Table 7-20

Neighborhood Improvements for Which Households Express A
Willingness to Pay -- Households in Formal and Informal Housing
(Percent of Total Responses)

	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Formal</u>	<u>Informal</u>	<u>Formal</u>	<u>Informal</u>
Nothing needs to be done	6	3	2	6
Water connections to area	3	10	0	7
Electrical connections to area	2	1	0	2
Sewer connections to area	5	5	0	13
Paved streets	12	16	8	5
Street repair	4	7	15	7
Regular street cleaning	21*	19*	29*	18*
Regular garbage collection	17	10	17	10
Health care center	3	2	2	5
Day care center	1	2	0	1
Public schools	2	4	2	2
Sufficient transport	1	2	2	3
Sufficient shopping	2	2	0	4
Church/mosque	1	2	0	2
Eradicate rats	2	1	2	3
Eradicate flies/insects	13	12	17	8
Other	5	3	0	2

*Most important reason

Sample: Weighted occupant survey.

schools, mosques or churches, and shopping facilities were not often mentioned by any group as requiring improvement (regardless of willingness to pay).

Comparisons of formal and informal households in Cairo indicate that a greater proportion of the former believe that nothing needs to be done in their areas. Formal households emphasize regular street cleaning, regular garbage collection, eradication of flies and insects, and paved streets in that order. Among informal households willingness to pay for improvements was highly similar to that among formal households. Regular street cleaning, paved streets, eradication of flies and insects, and (tied) paved streets and water connections in that order are emphasized by Cairo informal households. In Beni Suef, as is consistent with objective differences in formal and informal neighborhood features, informal households tend more often to cite a willingness to pay for basic infrastructure improvements. As in Cairo, however, both formal and informal households most often cite a willingness to pay for services such as regular street cleaning and garbage collection.

One interesting aspect of these responses is the degree to which households emphasize urban services such as street cleaning and garbage collection relative to provision of basic utilities. While the data have not been disaggregated by geographic area, one has a sense that perceived shortfalls in urban services are geographically widespread, whereas perceived shortfalls in basic infrastructure supply are geographically concentrated. In terms of satisfying the preferences of households, it appears that a considerable amount can be done by upgrading services, especially since many households indicate a willingness to pay for such improvements.

7.6 Preferences For Public Versus Private Housing

Households were asked if they would prefer public or private housing and for their reasons. There was a general preference for public over private housing among all groups with renters in each city more strongly in favor of living in public housing than owners. In Cairo, 60 percent of renters and 51 percent of owners expressed a preference for public housing; in Beni Suef, 75 percent of renters and 47 percent of owners preferred public housing. In each case, the remaining households

were divided between those preferring private housing (from 23 to 80 percent of remaining households) and those who were undecided or gave no response.

Reasons given for preferring public housing were dominated by the perception that public housing is cheaper than private housing rather than by any particular features of public housing per se. Of all households preferring public housing, 63 percent preferred it because of its comparative cost. Other responses were highly diverse.

As in the case of the perceptions and attitudes discussed in the previous sections, perceptions regarding public and private housing accord well with objective differences. Housing costs do indeed appear to be lower in public housing. In Cairo, for example, median rents were LE 5.50 per month in private housing but only LE 1.75 per month in public housing. Moreover, the incidence of key money among public housing tenants was only half that of private tenants (11 percent versus 22 percent); even when key money was paid, median amounts were smaller for public tenants (LE 16 versus LE 200). Also, public housing tenants appear to have been obliged to spend less money on repairs and renovations of their dwellings (21 percent of public tenants in Cairo and 50 percent of private tenants claimed to have spent money on repairs and renovations during the past year).

Despite these unambiguous cost benefits of living in public housing, there are nevertheless tradeoffs involved. For example, public housing dwellings appear to be smaller on average than private dwellings (a median of 2.3 rooms for the former versus 2.6 for the latter). Not only are units smaller, but they are more densely occupied--a median of 2.33 persons per room versus 1.67 for private housing. Garbage collection services appear to be worse on average around public housing units than private units with more than half of sampled public units in areas with "a lot" of garbage within 20 meters of the building.

In other respects, public housing tends to dominate private housing in terms of both dwelling and neighborhood characteristics. Public as compared to private units are more likely to have private toilets, kitchens, private water connections, public sewage, and be located in buildings in "good" condition (despite the fact that sampled public units are, on average, in older buildings than sampled private

units). Public units are also more likely to be in neighborhoods with street lights, paved roads, sidewalks, curbs, and good landscaping. All of these advantages are not lost on public housing tenants, 92 percent of whom claim to be satisfied with their neighborhoods (compared to 80 percent of private tenants) and 80 percent of whom¹ claim to be satisfied with their dwelling units (compared to 65 percent of private tenants).

¹This figure would almost certainly be higher were it not for the degree of crowding present in public housing units.

CHAPTER 8

Housing Costs and Finances

Housing costs in Egypt have been rising rapidly, creating an increasing problem for those who wish to enter the housing market for the first time or who wish to change residences. At the same time, however, costs for the majority of households have remained stable for long periods, the result of a stringent rent control law. This chapter explores major housing cost elements, recent changes in their magnitude, and reasons behind those changes. Income and the ability to pay for housing is analyzed, particularly with reference to homeownership. Rental housing expenditures are analyzed in relation to household income, size, and other variables.

8.1 The Dynamics of Housing Costs

Owners and renters of housing face different types of housing costs. Households that are already established in dwelling units, moreover, face different costs than those who are considering entering the market for the first time or moving from one residence to another.

Those who wish to become owners face a decision to either purchase an existing unit or build. As indicated in Chapter 7, formal sector households are more likely to purchase an existing dwelling, while informal sector households are more likely to build. For the former group, the relevant cost they confront is that of a completed dwelling, which depends considerably on the price level established by the marketplace and may be only tenuously related to current costs of housing inputs such as land, labor, and materials. For the latter group, the price of finished housing is irrelevant; what matters is the prices of inputs to the production process.

For renters who are just entering the market or moving, the relevant costs they confront are those of the contract rent for a unit, which because of rent control may be below both the free-market level and the level necessary to provide landlords with a competitive rate of return, and a lump sum "key money" payment which is required to gain the occupancy right to a unit. Key money, while illegal, is widespread. Key money provides a mechanism for equilibrating rates of return for landlords or

builders considering whether to sell or lease a unit. Because of the widespread usage of key money, housing input costs (land, labor, and materials) may be expected to be of relevance to renters as well as purchasers of housing. That is, as the costs of producing a unit for either rent or sale increase, producers of housing will be expected to raise both the asking price for a sale, and asking amounts for key money for a lease.

Households not considering moving are largely immune from changes in housing input prices. Owners, most of whom own outright their dwellings, confront only utility costs, which are slow in changing, and maintenance costs. Renters confront a fixed rent-controlled payment of contract rent, utilities, and maintenance costs.

Within recent years, movements of housing costs for households that have not moved have lagged well behind general prices. For example, between 1974 and 1979 the CAPMAS "urban housing cost index," which is dominated by rents of existing units, changed at a compound rate of only 1.1 percent per year. During the same period, the CAPMAS "urban cost of living index" changed at a compound rate of 10.7 percent per year and the wholesale price index changed at an annual rate of 9.8 percent.¹ Thus, over the recent several years, the real cost of housing for most of the population has fallen--the result of a far slower rate of increase in costs than of other household goods.

For households just entering the market, however, the situation has been radically different. For example, two construction cost indices (one constructed by the Ministry of Planning and one by the Ministry of Housing) reported in a recent World Bank/GOHBPR study of the construction industry that construction costs increased at annual rates of between 13 and 14 percent between 1965 and 1979 (GOHBPR, Appendix A-13), but at rates of from 19 to 23 percent between 1975 and 1979, well outstripping general rates of inflation.

Table 8-1 indicates how overall construction costs and the costs of major components are "officially" estimated to have changed between 1965 and 1979. As the table indicates, labor and materials costs increased

¹The "rural cost of living index" also changed at a rate of 10.7 percent annually.

Table 8-1

Construction Costs and Cost Components, 1965-1979
(Annual Rates of Increase)

<u>Period</u>	<u>Overall Construction Costs</u>		<u>Building Materials</u>			<u>Labor</u>		
	<u>MOH¹</u>	<u>MOP²</u>	<u>Cement</u>	<u>Steel</u>	<u>Bricks</u>	<u>Skilled</u>	<u>Semi-Skilled</u>	<u>Unskilled</u>
1965-1970	4.2	5.3	3.1	2.7	3.9	9.9	5.6	7.3
1971-1975	16.4	16.5	11.4	13.4	13.4	18.2	18.6	17.0
1975-1979	23.0	19.2	23.7	14.0	14.0	12.9	15.8	18.9
1965-1979	13.7	13.1	11.6	9.6	9.6	13.7	13.0	14.0

Source: General Organization for Housing, Building, and Planning Research, Construction Industry Study, Appendix 13, "Studies on Costs," Cairo, 1981.

Notes: ¹Ministry of Housing.
²Ministry of Planning.

slowly before 1970 resulting in overall rates of increase of from 4 to 5 percent annually. After 1970, and particularly after 1973, costs of both labor and materials began to increase rapidly, causing the rate of increase of overall construction costs to more than triple from pre-1970 levels. Cost increases during the 1970 to 1975 period were led by labor cost increases, which averaged more than 17 percent annually for all types of labor. Between 1975 and 1979 labor cost increases for skilled and semi-skilled workers appear to have begun to moderate slightly, although because labor costs may represent from only 10 to 30 percent of total construction costs, overall construction costs continued to rise even more rapidly than during the previous period.

Reasons advanced for these rapid increases include changes in world materials prices, the high demand for Egyptian construction labor abroad (particularly in Libya, Saudi Arabia, and the Gulf States), and a rapid expansion in demand for construction.

These changes in "official" construction costs were generally supported by in-depth interviews with supply-side participants. In those interviews respondents were asked to recollect changes in building costs since 1971. Typical free-market time series are given in Table 8-2. Interview data indicated recent annual rates of construction cost increase of from 19 to 23 percent--identical to those indicated in "official" series. Interview data also supported the official observation that cement prices have been rising more rapidly than prices of steel reinforcement bars.

Interviews indicated that minor short-term fluctuations in prices occurred, depending on the availability of substitute materials such as cement and re-bars. Thus spot prices in the free market could be higher than the "typical" prices indicated in the table. Legislators, government officials, and some contractors who were interviewed suggested that private sector hoarding of materials was occurring. Interviews and observations of distributors suggested that while some of the larger distributors have small storage facilities which could have been used to hold materials for speculation, almost none of the small-scale distributors operating in the informal sector had any significant storage space.

Land prices are another increasingly important component of housing costs. Interviewers indicated that recent land price increases had been dramatic and ubiquitous. Interviewees suggested that land prices

Table 8-2

Estimated "Free Market" Construction Cost Changes

<u>Year</u>	<u>Construction Cost, Average Housing (LE/m²)</u>	<u>Portland Cement (LE/ton)</u>	<u>Re-Bars (LE/ton)</u>	<u>Wood (LE/m³)</u>
1971	10- 12	13	80	--
1978	40- 60	36	250	145
1981	70-100	70	300-310	250
<u>Compound Rate of Change</u>				
1971-1981	22.7	18.3	14.5	--
1978-1981	19.3	24.8	6.9	19.9

in selected areas of Cairo and Beni Suef had changed as indicated in Table 8-3. As the table suggests, unit prices of land have been changing at rates from 25 to above 40 percent annually--even more rapidly than construction costs, and far more rapidly than general prices. It should be noted that areas for which land price changes are reported in Table 8-2 are primarily informal housing areas; price rises in formal areas have been at least as large.

Price levels for land in Greater Cairo were investigated based on owners' estimates of what land similar to their own would sell for in 1981. Among all owners, the median estimated sales price was LE 70/m² with 50 percent of estimates in the range LE 56.25 to LE 100.¹ Formal owners estimated higher land prices, a median of LE 89/m², than did informal owners, a median of LE 66/m². Estimated land sales prices of individual owners were regressed on the following variables:

1. Lot connected to water (1 if connected; 0, otherwise);
2. Lot connected to public sewer (1 if connected; 0, otherwise);
3. Lot connected to electricity (1 if connected; 0, otherwise);
4. Informal unit (1 if connected; 0 otherwise);
5. Area has access to public transportation (1 if area has access; 0, otherwise);
6. Number of community facilities such as mosques, schools, nurseries, etc. (Index from 0 to 10);
7. Lot designated as a building lot (1 if "building lot"; 0, otherwise);
8. Area density (Index from 1--"very crowded" to 4--"uncrowded");
9. Area classified as "middle" or "upper class" (1 if area so classified; 0, otherwise);
10. Area classified as "popular" or "historic" (1 if area so classified; 0, otherwise);
11. Average street width on main streets (square meters);
12. Area primarily agricultural land (1 if area so classified; 0, otherwise);
13. Area primarily desert land (1 if area so classified; 0, otherwise);
14. Area partitioned by the government (1 if area so classified; 0, otherwise);
15. Area partitioned by private sector or cooperatives (1 if area so classified; 0, otherwise);

¹In Beni Suef, the median was LE 17.5/m² with 50 percent of estimates in the range LE 6 to LE 50. The Beni Suef mean estimate was LE 28/m².

Table 8-3

Recent Changes in Land Prices
(LE/m²)

<u>Year</u>	<u>Cairo</u>			<u>Beni Suef</u>
	<u>Mit Oqba</u>	<u>Dar as-Salaam</u>	<u>Basatin</u>	<u>Beni Suef City</u>
1963	--	1.50	--	2.00
1968	4-5	4-5	1.50	3.50
1975	30-35	25	35-45	15-29
1980	80	60-150	80-150	80-100
<u>Compound Rate of Change (Percent)</u>				
1968-1980	28.4	25.3-32.8	39.3-46.8	29.8-32.2

16. Growth rate, 1976-1981 (Percentage change in housing stock);
17. Lot on graded road (1 if yes; 0, otherwise);
18. Lot on paved road (1 if yes; 0, otherwise);
19. Lot on less than 3 m. road (1 if yes; 0, otherwise);
20. Lot on greater than 8 m. road (1 if yes; 0, otherwise).

Results of the estimated regression equation are given in Table 8-4. Given the small number of observations and intercorrelation of variables, results should be interpreted cautiously.¹ The estimated equation indicates that land value is positively related at high levels of significance to (1) whether or not land was designated as a building lot, (2) location in a middle- to upper-class area, (3) on government partitioned land, (4) on private or cooperatively partitioned land, and (5) with graded road frontage. Land value is negatively related to (1) location in an agricultural area, (2) location in a desert area, (3) growth rate, (4) average road width, and (5) frontage on a road greater than 8 m. in width. Most of these variables negatively related to land value are in some way measures of access and centrality. For example, wide average road widths and presence of 8 m. and larger roads are often associated with locations on the periphery of Greater Cairo. The negative association with an area's growth rate is probably indicative of the reverse causation from that indicated in the estimated equation; e.g., that growth is more rapid in areas with lower land prices. Land values appear to be largely unrelated to whether or not a lot is occupied by an informal sector household, presence of infrastructure connections, public transportation, and community facilities once other variables are accounted for.

The estimated coefficients in the land value equation suggest that land prices are highly variable and are much lower in peripheral agricultural or desert areas. Thus, households which are sensitive to cost will be inclined to seek out land in peripheral, especially agricultural, areas. At the same time, land price increases may be expected to lead to increased density on urban lots. Indeed, it appears that average lot sizes have been getting smaller in Cairo for some time. For example, the average lot size among households in buildings built between 1961 and 1970 was estimated to

¹ Further investigation of such land value relationships is strongly recommended as they can be especially revealing of household willingness to pay for specific utilities and services in land development and sites and services projects.

Table 8-4

Determinants of Land Value in Cairo--Regression Coefficients

<u>Variable</u>	<u>Coefficient</u>	<u>Standard Error</u>
Intercept	35.50	
Water connection	-13.52	16.57
Sewer connection	7.63	31.22
Electricity connection	37.99	30.15
Informal	7.44	15.90
Public transportation	19.57	16.53
Community facilities	6.24	4.47
Building lot	19.29+	10.99
Area density	10.45	9.55
Middle-upper class area	137.29**	35.70
Popular/historic area	-22.52	21.59
Street width (m ²)	- .03**	.01
Agricultural area	-71.56**	24.45
Desert area	-149.55**	37.33
Government partition	70.21**	21.24
Private/coop partition	38.91*	19.68
Growth rate	-26.78+	15.11
Graded road	21.50+	11.48
Paved road	-16.09	24.12
Less than 3 m. road	- .40	18.62
Greater than 8 m road	-30.20+	18.13
R ²	.77	
N	62	

Notes: **Significant at the .01 level.
 *Significant at the .05 level.
 +Significant at the .10 level.

be 120 m²; in buildings built between 1971 and 1976, 100 m²; and in buildings built after 1976, 90 m²--a decrease of 25 percent over a 15-year period.

Notwithstanding the tendency to reduce the amount of land associated with new residential buildings, land costs as a share of total housing costs have almost certainly risen rapidly over time. In 1981, for example, an informal "popular" dwelling of 50 m² was estimated to have a construction cost of about LE 2000. Were that dwelling to be situated on a median size informal lot of 88 m², the cost of the lot evaluated at the median land cost of existing informal housing (LE 66/m²) would be LE 5808--two and one half times the cost of the structure. Based on recent rates of land and construction cost increases, costs of land and the structure would have been on a par in the mid-1970s. Even with a smaller lot on peripheral land, the share of land in total costs for new units could easily be equal to construction costs now.¹

Increases in land prices appear to have been heavily affected by repatriations from Egyptians working abroad. Households interviewed in the occupant survey who built on vacant land were asked whether or not any of the money used to purchase their lot came from someone in the family who worked abroad. In Cairo, 35 percent of all formal owners who built on vacant land and 30 percent of all informal owners who built on vacant land answered affirmatively.² When the incidence of affirmative answers is examined in relation to the year of purchase, it is apparent that expansion in repatriations as a financing source has paralleled expansions in repatriations themselves.

The incidence of repatriations as a source of financing for land purchases was investigated using a logit analysis which regressed the likelihood of utilizing repatriations as a financial source on the length of time since a purchase was made and a number of demographic variables.³

¹In Beni Suef, on the other hand, a great deal of land appears to be available in the range LE 6-LE 17.5, suggesting that typical informal lot costs could be as low as LE 300-LE 400.

²In Beni Suef, only 13 percent of informal owners answered "yes;" no formal owners so answered.

³Variables in the equation included household size; sex, age, education, and occupation of the household head; household income; and whether a household was living in an informal unit.

The estimated relationship indicated that having financed land with repatriations was positively related to age and household size, negatively related to being illiterate, and very strongly negatively related to the time since a purchase was made. For example, the estimated equation suggested that for a typical purchaser of land (age 40, household size 5, not illiterate) that only 4 percent of such households would have used repatriations 20 years ago; 21 percent, 10 years ago; 41 percent 5 years ago; and 64 percent in the current year. Thus, it appears that a majority of all land purchases in Cairo by individuals having built recently or intending to build currently rely in part on repatriations from abroad.

This is not particularly surprising since the estimated rate of increase of repatriations in recent years has been extraordinary--rising from approximately LE 4.5 million per year in 1971, to LE 413.4 in 1977, to more than LE 2500 in 1980.¹ Such windfalls as repatriations are highly unlikely to find their way into banks, if the occupant survey is a guide. Few households in either the formal or informal sectors appeared to rely on banks for either saving or financing purchases of housing. Given the paucity of what are considered to be "safe" investments, it is little wonder that land should be highly prized as an investment and store of value. It seems highly likely that repatriations have been behind much of the rapid expansion in the housing stock discussed in Chapter 2, although unfortunately owner-builders were not specifically asked about the degree to which repatriations were used in financing construction costs.

It should be noted that the rapid rise in land costs is almost certainly related to the rapid increase in vertical rather than horizontal expansion of the housing stock previously noted. Owners of existing properties confronting an investment in real property, are highly rational in opting for vertical expansion rather than land purchase and building; vertical expansion requires only construction costs and provides a return in key money and monthly rent; land purchase and building requires much higher initial capital outlays and runs the risk of finding few takers at prices necessary to cover current land and building costs.

¹Early year figures are based on figures from the National Bank of Egypt reported in J.S. Birks and C.A. Sinclair (1978); the 1980 figure is based on the following quote from the October 31, 1980 Middle East Economic Digest, "Remittances from Egyptian workers abroad totalled LE 1280 million in the first six months of 1980 compared with LE 964 million in the corresponding period of 1979." (p. 19).

8.2 Income and the Ability to Pay for Housing

Household incomes in Cairo and Beni Suef have not kept pace with recent changes in construction and land costs. Table 8-5 indicates estimated household income and expenditure distributions for Cairo and Beni Suef based on occupant survey data. Results of the table are presented graphically in Figure 8-1. Median reported expenditures are always higher than reported incomes;¹ thus the former are a more reliable indicator of "true" income. Median reported total household expenditures in 1981 were LE 86 per month (LE 1032 per year) in Cairo and LE 64 per month (LE 768 per year) in Beni Suef. By comparison national average annual household expenditure in 1974-1975 was LE 451 (Joint Housing and Community Upgrading Team, 1977). This suggests that household incomes (expenditures) have probably increased no more rapidly than the urban cost of living during the past six to seven years.²

This evident parity in income and cost of living increases results in a substantial fraction of households unable to save and feeling in a financially precarious position. For example, in response to a question concerning household income relative to expenses, 29 percent of Cairo households and 53 percent of Beni Suef households responded that they felt "unable to get by (make ends meet) most of the time;" and an additional 60 percent and 37 percent of Cairo and Beni Suef households said that they were "barely able to get by." When asked about approximate savings "in cash, investments, jewelry, etc.," 85 percent of Cairo households and 87 percent of Beni Suef households replied that they had none; an additional 7 and 4

¹This does not mean that expenditures are higher than incomes for every household, nor that expenditures are higher than incomes in every income class; neither of these statements is true. What is indicated is that reported incomes are downward biased from "true incomes," which are approximated by reported expenditures, because of a variety of reporting errors.

²Were the national figure assumed to apply to Cairo (which it likely understates), Cairo incomes would be estimated to have increased by 13.5 percent annually. Were the national figure assumed to apply to Beni Suef (which it likely overstates), a rate of increase of 8.5 percent would be calculated. Were 1981 figures for Cairo and Beni Suef weighted in rough proportion to Cairo's population weight, letting Beni Suef represent the rest of Egypt (e.g., a 30 percent weight for Cairo and a 70 percent weight for Beni Suef), a rate of increase of 10.2 percent would be estimated--roughly equal to cost of living changes in recent years.

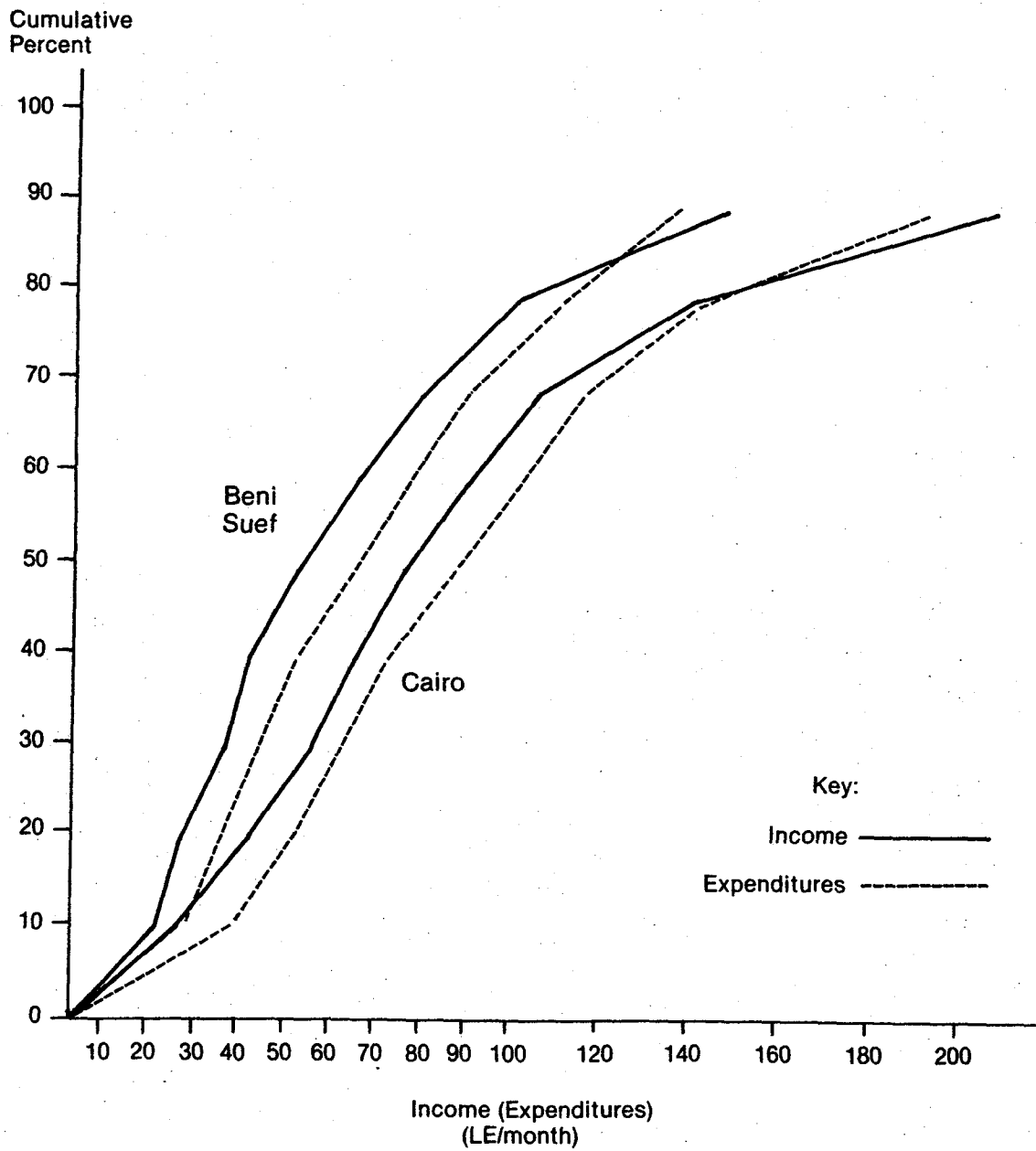
Table 8-5

Household Income and Expenditure Distributions--1981
(LE/mo)

<u>Decile</u>	<u>Cairo</u>		<u>Beni Suef</u>	
	<u>Income</u>	<u>Expenditures</u>	<u>Income</u>	<u>Expenditures</u>
10	24	37	19	26
20	40	50	25	33
30	54	60	34	41
40	64	70	40	50
50	75	86	51	64
60	89	100	64	75
70	105	114	79	89
80	139	140	100	109
90	207	191	146	135
 <u>Median for:</u>				
Renters	77	83	82	86
Owners	69	92	40	50

Source: Weighted occupant survey.

Figure 8-1
Income and Expenditure Distributions in Cairo and Beni Suef



Source: Weighted Occupant Survey

percent respectively claimed to have less than the equivalent of one month's income.

Given the recent level of building activity, it is hard to take these latter interview responses at face value. Households' interpretations of "savings" are likely not to have included savings in the form of land purchased but not yet built on, or partially completed buildings. On the other hand, responses to questions concerning savings are highly consistent with households responses concerning their "ability to get by," and are consistent with the observation that reported expenditures exceed reported incomes in general. These observations tend, therefore, to further reinforce the estimate of the previous section that a large fraction of current land (and probably housing) transactions are financed by comparative windfalls such as repatriations from abroad.

Further insight into sources of finance is gotten from occupant survey questions concerning sources of funds for land or property purchases or for key money payments. Table 8-6 indicates major sources of funds for housing and land transactions; table entries represent the fraction of all responses (first, second, or third fund sources for a given source). The table indicates the highly informal nature of housing finance in both cities. Reliance on banks for either savings or loans is virtually nil. Less than 10 percent of Cairo purchases relied on either bank loans or savings in banks; only 5 percent of households relied on bank savings for key money payments. In Beni Suef, only 2 percent of households used banks for funds for property purchase; none used banks for land purchase. Aside from inheritance, which as previously noted plays a large role in property acquisition of existing properties, the major informal financing sources are sale of property and jewelry (which together are used in from 28 to 45 percent of property transactions by owners and 15 percent of key money payments); "other savings" and "other," which account for a large share of repatriations financed purchases; and, to a modest degree, savings in "gamiya"--informal credit institutions most often used for minor savings for consumer goods, weddings, etc. Gamiya is the most prevalent source of funds for key money payments, being used in 24 percent of cases. Gifts and loans from family or friends play only a very modest role in housing finance.

Table 8-6

Sources of Funds for Housing and Land Purchases
(Percent of Total Responses)

	Owners				Renters ¹
	Property Purchase		Land Purchase		Cairo
	Cairo	Beni Suef	Cairo	Beni Suef	
Paid nothing	5	9	8	5	n/a
Savings in gamiya	4	4	7	6	24
Savings in bank	7	1	7		5
Other savings	12	4	11	7	20
Key money refund	1	1		2	
Sale of property	14	11	17	12	13
Sale of jewelry	14	18	16	33	2
Gift from friend/relative	2	2	1	2	1
Inheritance	17	39	11	10	0
Loan from bank	2	1	1	0	0
Loan from family/friends	4	3	5	0	10
Other (includes remittances from abroad)	19	9	15	23	0

Source: Weighted occupant survey

Notes: ¹ There were too few Beni Suef renters paying key money to tabulate.

When households in Cairo were asked about whether they had ever gotten money from various sources (for any reason), 27 percent had gotten money from the sale of jewelry; 19 percent from gamiya; 15 percent from sale of property; and 13 percent from a bank or credit union. In Beni Suef, the corresponding figures were 21 percent from jewelry sales; 8 percent from gamiya; 10 percent, from property sales; and 8 percent, from banks or credit unions.

Few households claim to be explicitly saving for housing--only 1 percent of owners in Cairo and Beni Suef and 3 percent of renters in Cairo and Beni Suef.¹ Only modestly larger fractions of Cairo households expect to buy either land or a building within the next five years--4 percent.² In Beni Suef only 2 percent expect to buy land or a building within the coming five years.

These gloomy expectations are a reflection of the true housing crisis in Egypt, which is a crisis in the ability of the population to afford to enter the housing market if they are not already in it. Thus despite a significant building boom and widespread expansion of basic utilities, opportunities for entering the housing market as an owner are severely restricted. Even were mortgage financing more widely available, few households would be able to afford even the most minimal units given current construction and land costs. For example, assuming a minimal unit of 35 m² built according to "popular" construction would cost LE 1400. A small plot of 50 m² purchased on the urban periphery of Cairo might cost LE 1000 to LE 2000; in a better serviced or more central area, from LE 3000 to LE 4000. Thus, depending on location a small new "popular" unit might cost from LE 2400 to LE 5400. Were such a unit to be financed with a 25 percent downpayment (LE 600 to LE 1350), the downpayment would amount to from roughly 60 to 130 percent of median annual household expenditures. This, in itself, would be extremely difficult for most households to come by unless recourse could be made to repatriations from family members or significant jewelry or property sales. Were the

¹In a logit regression explaining saving, only education and income in the highest quartile were significantly related (positively) to saving.

²As in the case of saving, the only particularly strong predictor of "expecting to buy" was being in the highest quartile.

remaining amount financed over 20 years at 10 percent (bank rates are currently higher than that), monthly payments would range from LE 15 to LE 39 or from 17 to 45 percent of median household expenditures. Relative to expenditures at the twenty-fifth percentile of the income distribution, payments would represent from 27 to 71 percent of household expenditures. At the twenty-fifth percentile, food expenditures alone comprise roughly 70 percent of household expenditures; thus such units would clearly not be affordable without subsidy by low income households.

Nor is it feasible for most low income households to purchase existing units. Occupant survey owners were asked to estimate the current market value of their dwellings. Among formal sector owners in Greater Cairo, the median estimated market value of existing units was LE 10,000, with 50 percent of all units in the range LE 3000 to LE 20,000. Among informal sector households, the median estimated value was LE 5000, with 50 percent of units in the range LE 1625 to LE 10000. Thus, most existing units are, as well, beyond the range of low income households seeking to become owners.

The alternative for most Cairo households is, as it has been for some time, to remain as renters. Renters, however, face some of the same housing cost and affordability problems as potential owners.

8.3 Housing Costs of Renters

As noted above, 69 percent of Cairo area households and 26 percent of Beni Suef area households are renters. Major elements of housing costs affecting renters include contract rent, utilities, key money, and maintenance and renovation costs.

Gross Rent

A key variable of interest in examining renters' expenditures is gross rent—the sum of contract rent and utilities (electricity, water, and sewer). Median gross rents in Cairo and Beni Suef are LE 8 and LE 8.25 respectively, compared to median contract rents of LE 5 in each city. Thus utilities average about LE 3 per month in each site.¹ Half of all

¹Monthly utility payments for owners are roughly comparable.

Table 8-7

Gross Rent in Relation to Income and Household Size
(Median Monthly Rent)

	<u>Cairo</u>	<u>Beni Suef</u>
<u>Income Quartile</u>		
1 (lowest)	7.1	2.4
2	6.5	3.6
3	7.5	6.5
4 (highest)	11.0	12.1
<u>Household Size</u>		
1 - 2	4.3	3.3
3 - 4	7.2	8.0
5 - 6	8.2	10.5
7 +	8.0	5.6
<u>Overall</u>	8.0	8.25

Source: Weighted occupant survey

renters pay between LE 5 and LE 13 in Cairo and between LE 4 and LE 14 in Beni Suef.

Table 8-7 indicates the relationship between gross rent and income and household size. Rents generally increase with each variable, although it appears that households with seven or more members spend no more, or even less, than somewhat smaller households.

The time when a household moved into its unit is also an important determinant of rent. Because of rent control, households' initial rents at the time they moved into their units persist or even decline. Households claimed, for example, that median initial contract rents were exactly the same as median current contract rents. This does not mean, however, that rents are uniform for different cohorts of households who first leased their units at different times. On the contrary, rent-controlled rents are tied to land and building costs and, as such, have been higher for more recently built units. Figures 8-2 and 8-3 illustrate the way in which rents vary depending on the length of time households have been in their units.

The figures indicate that median rents are considerably higher for recent movers than for established households. In Cairo, for example, households that moved into their unit within the past two years have median rents of LE 14 per month--75 percent above the overall median for Cairo renters. In Beni Suef, the median for movers within the past five years is also LE 14--again about 75 percent higher than the overall median. By contrast, households that entered their units more than 15 years ago have below average rents in each city.

Rent Burden

Rent burden is measured as the percentage of total consumption expenditures allocated to gross rent.¹ Table 8-8 indicates overall rent burdens and variations by income and household size. As the table indicates, overall median rent burdens are 10 percent in Cairo and 9 percent in Beni Suef. For 75 percent of renters, rent burden is between 6 and 16 percent in Cairo and 5 and 13 percent in Beni Suef. By conventional standards, rent burdens in this range are not considered high.

¹As indicated earlier expenditures are a better measure of true income than current reported income.

It should be noted, however, that rent burdens for some groups of households are notably higher than average. Cairo renters in the lowest income quartile, for example, have median rent burdens of 14 percent and a substantial fraction of them have even higher rent burdens (25 percent of lowest quartile households have rent burdens above 28 percent).

In addition, as Figures 8-3 and 8-3 illustrate, recent movers face higher rent burdens than do established households. For example, Cairo households that moved in within the past two years have median rent burdens of 17 percent; Beni Suef movers within the past five years, median rent burdens of 15 percent--in each case, about twice the overall median.

The higher rent burden of recent movers is compounded by the fact that many of them had to pay substantial key money to obtain their units.

Key Money

The level and incidence of key money have been rising over time at very high rates. Overall, about 20 percent of Cairo renter households reported paying key money; only about 4 percent of Beni Suef households reported paying it. Among households moving within the past two years, for example, the reported incidence of key money was 53 percent; among movers five to six years ago, 30 percent; and among movers more than 20 years ago, 9 percent. Not only has the incidence of key money changed, but typical amounts have changed as well. For example, the reported mean payment for movers within the past five years is LE 1387; for movers within a six to fifteen year period, LE 363; and for movers 16 or more years ago, LE 92 (corresponding medians are LE 600, LE 150, and LE 32). Together the increase in both amount and incidence of key money has been at a rate in excess of 30 percent annually--paralleling or even exceeding recent rates of increase in construction and land costs. Thus, it is apparent that the institution of key money provides an equilibrating mechanism which ensures that "true" rents for newly produced units are in line with costs of production. Moreover, the rapid rate of increase in key money makes it profitable for some landlords to hold units off the market in hopes of higher future gains. This provides at least a

Figure 8-2
Gross Rent and Gross Rent Burden in Relation to Duration of Stay: Beni Suef
(Medians)

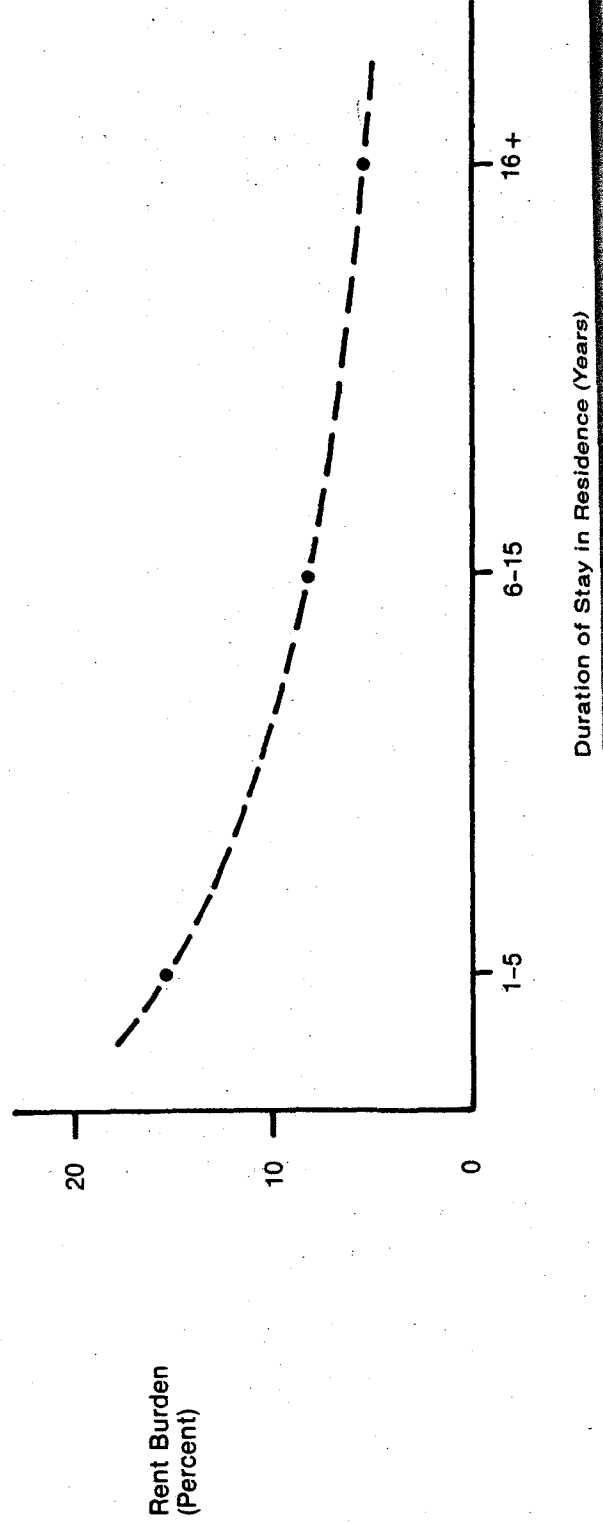
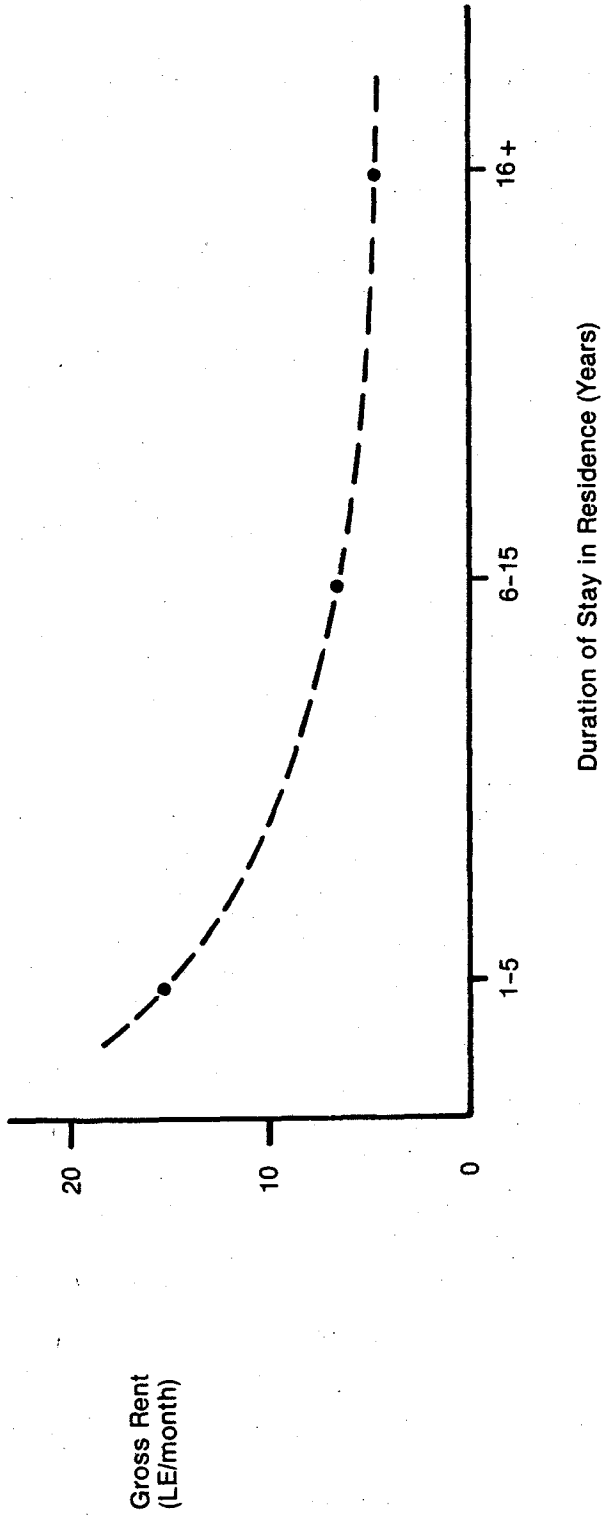


Figure 8-3

Figure 8-3
Gross Rent and Gross Rent Burden in Relation to Duration of Stay: Cairo
(Medians)

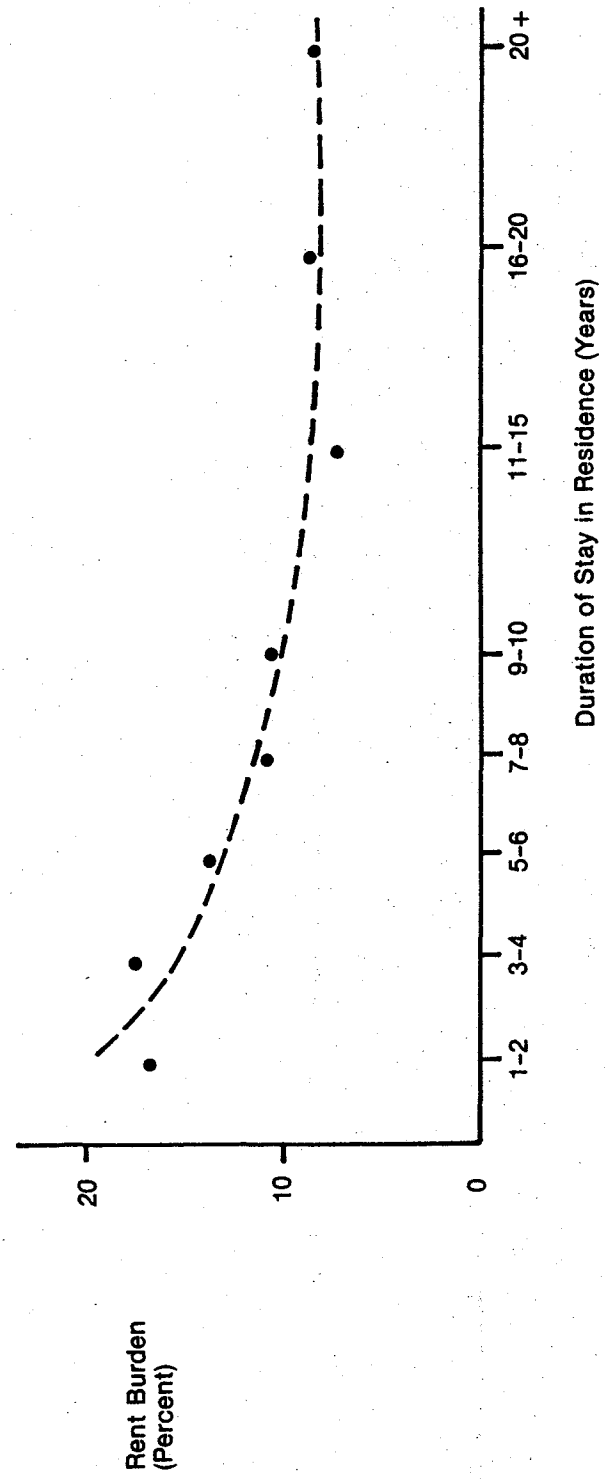
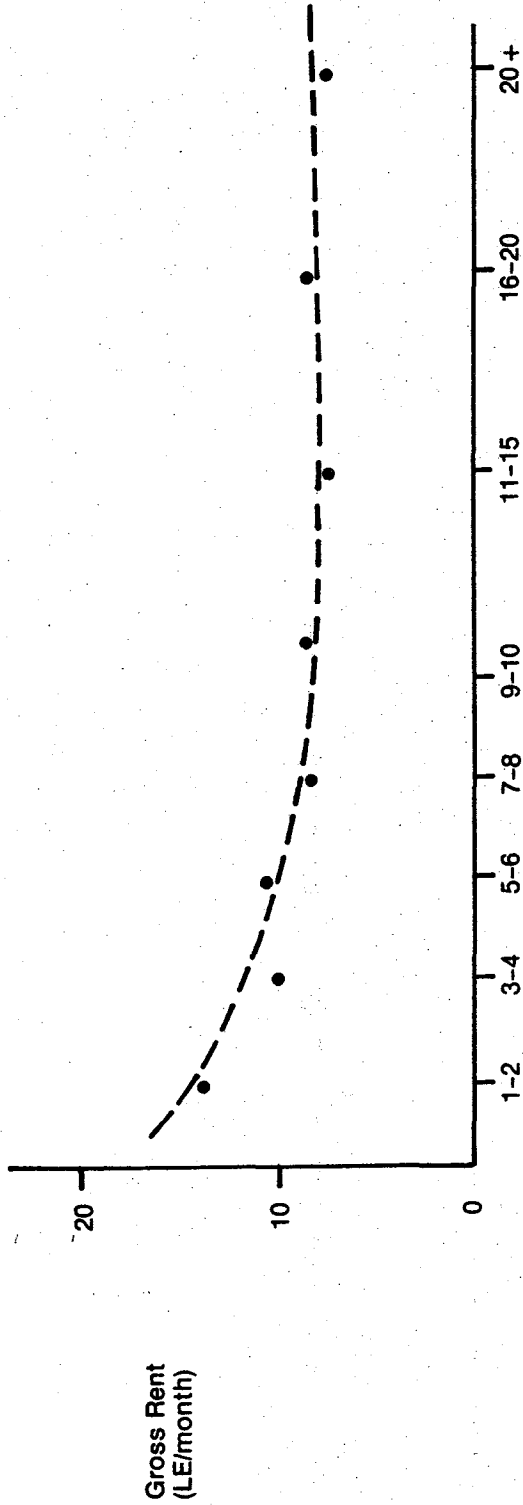


Table 8-8

Gross Rent Burden in Relation to Income and Household Size
(Median Percent)

	<u>Cairo</u>	<u>Beni Suef</u>
<u>Income Quartile</u>		
1 (lowest)	14	15
2	10	10
3	8	10
4 (highest)	8	7
<u>Household Size</u>		
1 - 2	5	5
3 - 4	6	9
5 - 6	9	9
7 +	9	6
<u>Overall</u>	10	9

Source: Weighted occupant survey

partial explanation for the apparently high vacancy rates now prevalent in Cairo.¹

Multivariate Analysis of Rental Expenditures

As noted in the preceding discussion, rental expenditures are influenced by income, household size, and duration of residence. A multivariate regression was used to sort out separate effects of these and other variables on rental expenditures.

Three alternative dependent variables (in logarithmic form) were used in the analysis: contract rent, gross rent, and "full rent," where full rent is defined as the sum of gross rent and the opportunity cost or foregone income that could be earned on key money payments. In imputing income from key money, an interest rate of 10 percent per year was assumed. Independent variables were household income, household size, length of residence in the unit, and education level of the household head. Two different income measures were used--current reported income, and a measure of "permanent" or normal income. Empirical results for all three dependent variables were similar. Only the results for full rent are presented here. Those results are summarized in Tables 8-9 and 8-10. The most important determinant of rental expenditures is household income. In Cairo rental expenditures increase by 2.4 percent for each 10 percent increase in current income and by 3.8 percent for each similar increase in permanent income. In Beni Suef, each of these relative increases is larger--5.3 percent and 8.3 percent respectively. Households headed by holders of university degrees spend 30 percent and 10 percent more respectively than do other renter households in Cairo and Beni Suef. These patterns probably reflect a relatively higher preference for housing among such households.

As indicated above, duration in a unit has a strong impact on rent. Relative to households that have been in their units for six to

¹Once a landlord rents a unit and accepts key money, his rate of return on investment is determined since rents are then fixed by rent control and key money can not be renegotiated. By holding a unit off the market, a landlord can achieve a higher rate of return than by renting now if the expected increase in key money discounted to the current period is greater than the present discounted value of key money possible now and rents during the period a unit is expected to be held off the market.

fifteen years, households of five or less years' duration pay 36 percent more in Cairo and 83 percent more rent in Beni Suef. Compared to the reference group, households of 11 to 20 years duration pay 26 percent less in Cairo and 7 percent less in Beni Suef, while those of more than 20 years duration pay 36 percent less in Cairo and 46 percent less in Beni Suef. These indicated increases in full rent imply that households in the tenth percentile of the income distribution who have moved within the past five years confront expected rent burdens of 31 percent in Cairo and 22 percent in Beni Suef. Similar households who moved more than 20 years ago are estimated to have rent burdens of only 16 and 7 percent respectively. Thus, households just entering the rental market face highly different, and more financially precarious, conditions than do households that entered the market some time ago.¹

After controlling for the effects of income, education, and length of residence, household size is estimated to have no significant impact on expenditures. As noted earlier, household size is not estimated to affect space consumption either.

Maintenance/Renovation Expenditures

Another cost that renters incur is that of maintaining their units and, in some cases, their buildings. Households were asked in the occupant survey to estimate the amount of money they spent in the previous year on repairs and renovations. In Cairo 47 percent of all renter households claimed to have spent money for repairs or renovations, with a median expenditure level of LE 50--a significant portion of household income. In Beni Suef, the incidence of such expenditures was somewhat lower, 39 percent, and the median amount was lower still, LE 6. Renters in each city claim that either they or specialized workers do the required maintenance in their dwelling, reporting overwhelmingly that they rather than the owner pay for such maintenance. As in the case of other elements of rent, expenditures on repairs and renovations are positively related to income levels; households in the upper two income quartiles are about 40 percent

¹Unfortunately it is not known whether or not households just entering the market today face relatively more burdensome housing expenditures than did comparable households in the past. This could only have been ascertained based on data on retrospective incomes which were not collected in the occupant survey.

Table 8-9

Determinants of Rental Expenditure: Cairo
(Dependent Variable Log of Full Rent)

	Regression Coefficients			
	Current income, with house- hold size	Current income, without house- hold size	Permanent income with house- hold size	Permanent income, without house- hold size
Intercept	1.140** (.316)	1.146** (.307)	0.470 (.961)	0.495 (.476)
Log current income	.247** (.069)	.241** (.068)		
Log permanent income			.384** (.106)	.379** (.105)
University degree (1 = yes)	.425** (.135)	.442** (.131)	.254+ (.159)	.263+ (.157)
Household size 1 or 2	-.022 (.178)	--	-.017 (.178)	--
Household size 5 or 6	-.001 (.112)	--	.030 (.133)	--
Household size 7+	-.072 (.123)	--	-.029 (.122)	--
1 to 5 years in unit	.269* (.136)	.273* (.131)	.301* (.135)	.309* (.131)
11 to 20 years in unit	-.277* (.122)	-.284* (.121)	-.295* (.122)	-.296* (.121)
21+ years in unit	-.394** (.129)	-.409** (.126)	-.445** (.129)	-.452** (.126)
R ²	0.26	.26	0.26	.26
N	249	249	249	249

Table 8-10

Determinants of Rental Expenditure: Beni Suef
(Dependent Variable Log of Full Rent)

	Regression Coefficients			
	Current income, with house- hold size	Current income, without house- hold size	Permanent income with house- hold size	Permanent income, without house- hold size
Intercept	-.391 (.514)	-.412 (.471)	-1.543* (.702)	-1.727** (.637)
Log current income	.497** (.115)	.532 (.104)	--	--
Log permanent income	--	--	.767** (.161)	.825** (.142)
University degree (1 = yes)	.296 (.204)	.243 (.194)	.129 (.211)	.093 (.194)
Household size 1 or 2	.103 (.292)	--	-.035 (.275)	--
Household size 5 or 6	.289 (.184)	--	.162 (.184)	--
Household size 7+	.209 (.261)	--	.095 (.259)	--
1 to 5 years in unit	.577** (.211)	.563** (.204)	.623** (.205)	.603** (.196)
11 to 20 years in unit	-.001 (.206)	.024 (.190)	-.070 (.200)	-.077 (.182)
21+ years in unit	-.622* (.324)	-.599* (.301)	-.590* (.315)	-.614* (.288)
R ²	.53	.50	.56	.55
N	61	61	61	61

(20 percentage points) more likely to have incurred such expenses during the previous year.