

Rental Housing in India: An Overview, 1989

Research Study No. 31

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PREFACE

At the instance of the Planning Commission, the National Institute of Urban Affairs undertook in September 1987 a pioneering research project on **Rental Housing in Urban Areas**. The primary reason for undertaking this project was the virtual lack of information on the organisation and functioning of the rental housing markets in the country. No systematic studies were available on the factors that determined the supply of and demand for rental housing; even less was known about the forces that led to the segmentation of the rental housing market into submarkets. In the view of the Institute the gap in information was substantial particularly in light of the evidence that approximately 47 per cent of the households in urban areas lived in rented houses, and this proportion was much higher in metropolitan and other large cities. Also, there were few, if any, references to rental housing issues in the plan documents which too, considering that such a high proportion of households lived in them, appeared to be a serious omission in the urban housing policies.

It was against this background that this research project was taken up. It laid down three broad objectives to guide the investigations and field work :

- i. To assess the need and demand for rental housing in urban areas;
- ii. to examine the existing supply system of rental housing and identify the major shortcomings of the system; and
- iii. to suggest a policy framework to satisfy the need for rental housing of diverse groups of the population in urban areas.

Three Research Studies have been prepared as a part of this project. **Rental Housing in India : An Overview** (No 31) provides an overview of rental housing in urban areas. It serves as a background to the entire project and gives data derived from the National Sample Survey Organisation and the Censuses of India, on the supply for rental housing in cities of different sizes.

In research study No 36, **Modelling Rental Housing Market : A Conceptual Framework**, an attempt has been made to construct a model that defines the demand for and supply of rental housing in urban areas. **Rental Housing in a Metropolitan City** (No 37) is a case study of Delhi which reviews the size, organisation and functioning of the different sets and subsets of the rental housing market. Data for the Delhi case study have been obtained from the Municipal Corporation of Delhi, the courts regarding the court cases, from property dealers, and through limited surveys of the various colonies.

This research project has been co-ordinated and carried out by Kiran Wadhva, until recently, an Associate Professor at the Institute. Kiran Wadhva conceptualised and designed the study, and carried out the field work with a team of four researchers, S.P. Tyagi, Rajan Pal, Harparminder Jit Singh and Navin Mathur. The project involved an intensive search for and collection of data from sources that are not known to respond to such studies and investigations. The data were processed in the Institute's computer unit headed by R.K. Dahiya and his team consisting of

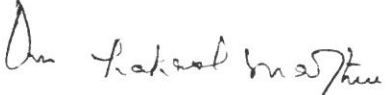
Sangeeta Vihh, Indu Senan, Tek Chand Sharma and Aradhana Singhal. I would like to compliment all of them for the hard work that they have put into this project.

This research project is one of the first of its kind which has attempted to bring out the importance of rental housing in the country. What it has underlined is that even though ownership housing may take precedence in terms of social status, rental housing accounts for and will continue to account for a substantial proportion of urban households. Also, a proportion of households will invariably prefer rental housing in view of the zero initial investment involved and the flexibility in movement that rental housing provides. Furthermore, ownership housing will remain outside the financial means of a very significant number of urban households at least in the foreseeable future.

Rental housing as a subsector of urban housing will thus need a policy aimed at its expansion to levels that should reduce housing shortages in the urban areas. The study has indicated that there may be conflicts between the goals of municipal bodies and those responsible for expansion of the supply of rental housing. The provision of the rent control acts may also work against rental housing. It will be necessary to remove such conflicts and irritants in order that rental housing can expand to meet the gap between the demand for and supply of housing.

I would like to thank the Planning Commission for entrusting this pioneering study to us. We hope that it will help the Planning Commission to at least initiate a process by which rental housing can be given a place in the future planning frameworks.

March 1989


Om Prakash Mathur
Director

ABSTRACT

Rental housing is predominantly an urban phenomenon. The percentage of households living in rental houses in urban areas far exceeds that in rural areas. Further, the percentage of tenant households has been much higher in larger cities than in the smaller sized cities. The single most common feature of the rental housing situation in most class I cities during 1961-81 is the decline in the percentage of households living in rental housing. Out of a total of 140 class I cities for which data on percentage of households residing in rental housing is available for the years 1961, 1971 and 1981, only 28 showed an increase in the proportion of such households. A majority (80 per cent) showed a decline. Despite the decline, rental housing continues to be a significant part of the total housing in urban India.

The demand for rental housing emanates mainly from the transient population and from groups who cannot afford ownership housing. In India, rental housing is largely supplied by the private sector. The role of government in this respect is minimal.

In government's housing policy, rental housing has been relegated to the background. Not only have there not been many schemes providing rental housing, some government policies have actively and explicitly discouraged rental housing. In view of the need for rental housing — especially by the low and middle income groups — in urban areas, government's existing policies relating to rental housing need to be reviewed.

RENTAL HOUSING IN INDIA : AN OVERVIEW

Rental housing is predominantly an urban phenomenon. The percentage of households living in rental housing in urban areas far exceeds that in rural areas. This is true for the country as a whole (Table 1) as well as for all the states and union territories in the country (Table 2). This is also true for all the three points of time for which data are available, namely, for the years 1961, 1971 and 1981.

Table 1

Households Living in Rental Housing in India (1961, 1971, 1981)

	(percent)		
	1961	1971	1981
Rural	6.39	6.24	6.97
Urban	53.73	52.88	46.39
Total	14.80	15.43	16.48

Source : Census of India, 1961, 1971, 1981.

During the period 1961-81 the percentage of urban households living in rented houses has shown a decline. During the same period the percentage of tenant households in rural areas showed a slight increase from 6.39 in 1961 to 6.97 in 1981. The percentage of such households however continued to be almost seven times as much in urban areas as compared to those in rural. This note confines itself to an analysis of the role of rental housing in urban India.

Table 2

Percentage of Households Living in Rented Houses
in Different States of India

States/ Union Territories	1961		1971		1981	
	Rural	Urban	Rural	Urban	Rural	Urban
Andhra Pradesh	4.05	39.45	5.96	45.78	9.54	48.03
Assam	16.97	54.89	17.20	53.22	-	-
Bihar	2.46	43.50	2.14	46.22	2.65	44.93
Gujarat	9.42	60.69	9.47	58.01	-	-
Haryana	-	-	4.37	37.37	4.72	36.51
Himachal Pradesh	5.45	46.72	8.12	70.96	9.26	65.06
Jammu & Kashmir	5.51	28.67	3.64	25.91	-	-
Kerala	9.42	28.25	7.91	26.35	6.20	18.91
Karnataka	13.94	52.84	13.29	55.28	13.24	53.31
Madhya Pradesh	6.83	55.92	5.84	53.14	7.72	48.89
Maharashtra	11.90	69.70	10.48	68.40	14.26	56.74
Orissa	1.90	38.31	3.59	48.10	5.53	48.57
Punjab	4.21	46.54	4.64	39.80	5.10	34.04
Rajasthan	3.79	40.29	4.41	41.09	5.31	35.86
Tamil Nadu	9.32	51.57	9.52	53.14	10.76	52.62
Uttar Pradesh	1.80	47.43	2.04	45.98	1.15	29.27
West Bengal	9.73	66.10	6.76	59.87	6.89	53.84
Tripura	8.25	38.39	9.54	40.10	11.38	39.69
Arunachal Pradesh	-	-	12.08	73.65	22.42	79.17
Nagaland	2.16	52.89	7.01	73.50	-	-
Delhi	7.15	69.50	10.78	58.46	-	-
Chandigarh	-	-	40.82	77.78	53.91	74.60

Source : Census of India, 1961, 1971 and 1981.

The size of rental housing in the country varies from state to state (Table 2). In 1981 Kerala had the smallest (18.19) percentage of households living in rental housing. The highest percentage (79.2) was recorded by the small state of Arunachal Pradesh. The other states with levels of rental housing above the average in 1981 were — Andhra Pradesh, Madhya Pradesh, Tamil Nadu, Maharashtra, Karnataka, Orissa, West Bengal, Andaman & Nicobar Islands, Chandigarh, Himachal Pradesh, Pondicherry and Meghalaya. A majority of the states showed a decline in the proportion of tenant households in their urban areas over the period 1961-81. Significant increases were seen only in Andhra Pradesh, Orissa and Himachal Pradesh.¹

The relatively large percentage of tenant households in some states can be explained - apart from cultural and economic factors - in terms of the number of large sized cities. It has been noted that rental housing is not only an urban phenomenon but also a phenomenon associated with large urban areas. The

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1. Out of 18 states and 5 union territories for which data are available all areas except Andhra Pradesh, Tamil Nadu, Karnataka, Orissa, Himachal Pradesh and Pondicherry have shown a continuous decline in the proportion of (urban) tenant households over the period 1961-81. The increase was quite small and discontinuous for Bihar, Tamil Nadu and Karnataka.

Table 3
Percent of Tenant Households for Different Sized
Groups of Cities

Size Category	(percent)		
	1961	1971	1981
> 1 million	80.69	70.26	60.93
5-10 lakhs	75.66	56.78	47.21
3-5 lakhs	60.57	54.27	49.43
1-3 lakhs	56.50	52.41	48.08
50,000-1 lakhs	56.63	65.23	44.87
20,000 - 50,000	51.41	68.15	39.22
10,000 - 20,000	7.79	-	-
5000 - 10,000	26.65	-	32.07

Source : Calculated from data obtained from Census of India 1961, 1971 and 1981.

proportion of tenant households has been much higher in large cities than in smaller sized cities (see Table 3). This is true not only in the case of the overall housing market but also for the informal housing markets.²

Table 3 gives the percentage of tenant households in different sized cities. As can be seen from the table, not only

2. The statement is based on the assumption that most of the slums are in the informal sector. The thirty-first round of NSS (July 1976 - June 1977) concluded that 48.65 percent of slum households resided in rented houses in the million plus cities. This percentage was 37.37 and 43.06 for cities with populations between 1-3 lakhs and between 3-10 lakhs respectively. NSSO, Sarvekshna, op. cit.

is the percentage of such households much higher in the largest cities as compared to other size groups, the distance (difference) in the size of rental housing between the million plus and other cities has become sharper since 1961. More than 60 percent of the population of metropolitan areas continues to live in rental housing. There are however wide variations within the metropolitan areas. Table 4 gives the percentage of households residing in rental houses in the twelve metropolitan cities of India. In 1981, this percentage varied from 30.1 per cent (Lucknow) to 76.20 (Calcutta). In 1961 this percentage had ranged between 69 (in the case of Hyderabad) and 90 (for Bombay). A common feature of the rental housing situation in all metropolitan cities during the period 1961-81 is the continuous decline in the percentage of households living in rental housing. The decline has been much sharper during the decade 1971-81 as compared to the case for the period 1961-71. The cities which experienced a sharper decline than others during 1971-81 were Lucknow (by 27 percent points), Bombay (24 percent), Pune (22 percent), Ahmedabad (19 percent) and Kanpur (14 percent). The smallest decline was seen in the cases of Calcutta, and Hyderabad (5 percent). For other cities the decline ranged from 6 percent to 10 percent.

A similar kind of diversity is seen in the rental housing situation within smaller size classes of cities. The diversity can be judged from the coefficient of variation of the size of rental housing for different sized cities.

Table 4

Households Residing in Rented Accommodation
in Million Plus Cities*

(percent)

City	Households		
	1961	1971	1981
Calcutta	82.71	81.27	76.20
Bombay	90.00	85.55	61.47
Delhi	66.48	55.53	46.88
Madras	73.94	73.23	67.97
Bangalore	74.37	74.16	64.66
Ahmedabad	82.38	76.33	57.52
Hyderabad	68.60	60.00	55.20
Pune	85.65	84.32	65.51
Kanpur	87.13	83.27	69.03
Nagpur	61.31	55.34	48.79
Jaipur	54.11	49.33	41.76
Lucknow	61.72	57.24	30.06

Source: Calculated from data in Census of India, 1961, 1971 and 1981.

* The classification is according to the population of cities in 1981. Many of these cities had populations below 1 million in 1961 and 1971.

Table 5

Coefficient of Variation of Size of Rental Housing
in Different Sized Cities

Category	1961	1971	1981
> 1 million	10.78	13.71	14.32
5-10 lakhs	15.04	22.77	31.28
3-5 lakhs	16.95	28.23	33.09
1-3 lakhs	30.36	27.03	33.31
50,000 -1 lakh	34.73	-	39.99
20,000 - 50,000	-	-	49.45

Source : Calculated from data in Census of India, 1961, 1971 and 1981.

The variation was found to be the highest for small rather than for large cities. Further, over the period 1961-81 the variation has increased for all size classes.

Out of a total of 140 class I cities for which data on percentage of households residing in rental housing are available for the years 1961, 1971 and 1981, only 28 showed an increase in the proportion of such households. The majority (80 percent) showed a decline.

Despite the decline, rental housing continues to be a significant part of total housing in urban India. The total number of households residing in rental houses increased by 732 per cent over the period 1961-81. The decadal growth rate during the period 1971-81 was 31.23 per cent.

Size of Rental Housing : An Explanation

The size of rental housing or the percentage of households residing in rented houses in an urban area would be a function of three kinds of factors, (i) characteristics relating to households; (ii) market conditions; and (iii) institutional factors. The first one includes both economic and demographic factors associated with a household. The important variables would be income of the household, size of the household, age of the head of household, and stage in life cycle. Occupation, stability and literacy could be the other important variables [Carliner: 1971; Lim, Follain and Renaud: 1980; Kent: 1984; and Henderson and Ioannides: 1986]. Market conditions refer to variables such as relative price of rental vs ownership housing, prices of other goods and services and availability of different types of housing. The institutional factors include variables such as availability of credit, the existence or otherwise of government schemes for providing ownership or rental housing to people, subsidies available for any of these programmes and other government policies relating to taxation or rent control acts which directly and indirectly affect the demand or supply of rental housing in the city.

The size of rental housing is a function of forces on both the demand and supply sides. The size of the rental housing sector in any city, given the supply of rental housing, is a function of the aggregation of individual households' tenure choice decisions. In so far as the tenure choice decision is dependent upon the characteristics relating to a household and

other market and institutional variables, the (aggregate) demand for rental housing depends upon the composition of households in the city and the market and institutional environments which the various subgroups of households face in the city.

Demand for Rental Housing : A Micro View

Rental housing has certain advantages which ownership housing does not possess. From the individual's point of view, the low (or zero) initial investment and greater flexibility are two of them. The housing requirements of a household, in terms of size, location and type, keep on changing over its lifetime. These are related not only with the life-cycle of the household but also with shifts in jobs, income and preference patterns. Rental housing offers greater flexibility in adjusting to these changing requirements. In doing so it also assures more efficient use of society's scarce resources. Ownership housing is not amenable to this type of flexibility. It is not easy to shift the house (especially in India where both sale and purchase of a house are tedious jobs), nor is it easy to make changes in the size, structure and design of the existing house according to changing requirements. Once one has built a house, one is stuck with it. Further, ownership housing tends to curb mobility and restricts job opportunities. This is a disadvantage from the society's point of view also. Ownership housing curbs not only intercity mobility but intracity mobility as well. In large, spread out cities with inefficient transport systems, the cost of such fixedness of residential location can be quite high.

These advantages of rental housing make it a preferred alternative for more mobile younger households. In a study conducted in USA in 1968 it was estimated that renting was cheaper than ownership if a household planned to stay in the same dwelling for a short period only (Shelton: 1968). The threshold period in this case was found to be three-and-a-half years. Even though the precise period for which this conclusion holds will vary depending upon the specific factors in each case, the general conclusion about the superiority of rental housing as a short term solution will probably be valid for most of the cases. This would make rental housing as the rational tenurial choice for the 'floating population'. Further, new migrants, with uncertainty attached to their period of stay in the urban area, will also opt for rental housing.³

The greatest advantage which rental housing enjoys over owner-occupied housing is in the periodicity and quantum of payments. Expenditure for owning a house is to be incurred in a lump sum at the beginning of the residence. The costs in later years of residence are much smaller. The cost of houses being high in almost all the societies precludes a large segment of the population from the prospect of owning a house. The 'invention' of mortgage finance which made it possible to make payments for ownership housing in instalments opened the option of ownership

3. There might be exceptions. Inability to rent any housing due to racial or caste discrimination can force an individual or a household into the ownership housing market. Similarly legislative measures such as the Rent Control Act may distort the market and make rental housing the preferred alternative even from a long term point of view for tenants living in controlled rental housing.

to a larger number of households. The payments stream still cannot be equated with that for rental housing. Even if mortgage credit is available the consumer is expected to make a heavy down payment in the initial stage itself. ⁴ In contrast, the cash flow for a tenant involves, apart from the initial cost of looking for a house and of moving, regular monthly payments.

Thus, even if the present value of total cost ⁵ to be incurred in owning is lower than that for renting, the household may have to opt for renting since it cannot afford to make the required payment for ownership housing at one go.

In the earlier studies on informal housing markets renting was viewed as a preliminary stage in the residential and occupational careers of low income households (Turner: 1968; 1976). Later research showed that this assumption did not coincide with the situation in most large cities of the developing world (Gilbert and Ward: 1983; Amis: 1982). Most of the literature on informal markets has ascribed the revealed dominance of rental housing to the 'constraints on ownership'. This factor could be important even in the case of formal markets.

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4. In India, mortgage credit is heavily rationed and is available to a very small percentage of the population.
 5. It is recognised that the costs on housing are not incurred only at one point of time but continue to occur throughout the period of residence of a household in the city. Further, the costs occur irregularly over a period of time. The tenure choice decision of a household, apart from considerations of social status and so on, would be based on financial considerations. Other things remaining the same, the household would opt for ownership housing if the present value of the stream of costs incurred on ownership housing over the period of residence is lower than what is incurred in the case of rental housing and vice versa.

Thus, the advantages of rental housing make it a preferred alternative for certain groups of population in urban areas. These are (i) the new migrants, (ii) the floating population, and (iii) the population segments which find any type of ownership housing unaffordable. There would be others who live in rental housing out of preference or those who have been provided such housing by their employers (some of these might also be owning houses in the city).

Ownership housing in almost all societies including India, enjoys a superior status. In India, the high expected rate of inflation of house prices, uncertainty relating to future levels of rents and to frequency of movement, the prevalence of practices such as pugree or key money would probably make ownership housing an even more attractive proposition. The high price of housing, low levels of income, the low availability of credit and the consequent unaffordability of ownership housing will however push the households to the rental sector. This gives rise to a belief that a very small percentage of the population (migrants etc.) will go in for rental housing out of choice.

The situation will vary from city to city. In terms of composition of households the large metropolitan areas are likely to have a larger proportion of mobile households, new migrants and floating population. In these cities increasing land prices and the consequent high cost of housing will also lead to a

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6. A detailed study of determinants of rental housing in different cities is under way and when completed should be able to throw more light on these issues.

greater proportion of households being pushed to the rental housing market. On the other hand, greater availability of credit in these areas would make ownership housing more accessible to a larger proportion of households.⁷

The large size of ownership housing in small cities can probably be explained in terms of (i) low proportion of migrants and other such households; (ii) the relatively lower cost of housing. The factor of low cost of housing might be offset by the low levels of incomes in these cities making ownership housing as unaffordable in these cities as in the large ones. The most important factors explaining the large percentage of owner households in these cities is the historical factor.⁸ At times the low level of supply of rental housing in these cities might push people to the ownership housing market.

Supply of Rental Housing

The composition of the supply of rental housing will vary from city to city. In small cities with a small or nonexistent

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7. Metropolitan cities always figure prominently in the various 'Own Your Home' schemes of various agencies. Many of the smaller cities remain out of the purview of various such schemes by government and other agencies. Thus during the first ten years of its operation (1971-81) HUDCO made available a total loan of Rs. 28502 lakhs (35.68 percent of the total) to the twelve metropolitan cities as compared to Rs. 51369 lakhs for the rest of the cities. In the first four years of its operation the percentage of loan dispersed to the metropolitan cities ranged between 52 percent and 72 percent of the total disbursements. However, this percentage has been steadily declining over time and the share of the non-metropolitan cities has been increasing.
 8. The percentage of renter/owner households in a city reflects decisions made by these households at various points of time in the past and obviously these decisions have been influenced by the historical rather than the current value of the variables.

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organised sector, private sectors would be the major suppliers of rental housing. In large cities, the public sector may also be a significant supplier of such housing. Informal channels of supply may, in addition, spring up in cities with segments of population which cannot afford housing in the formal sector.

The Private Sector

The operation of the private sector - whether formal or informal - is conducted mainly on a small scale. The major supplier of housing is the household which provides a whole or part of a house for rent. Prior to the imposition of the Rent Control Act large scale renting was a profitable business proposition. No more so.

In fact, rental housing per se has not remained a remunerative investment any more. Apart from RCA, the other act which might have had a negative impact on the supply of rental housing in the private sector is the Property Tax Act (PTA). This act discriminates against rental housing in relation to owner-occupied housing. There is however no firm empirical evidence of the negative impact of these policies on the supply of rental housing.

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9. The reference is to the sector (public or private) which provides rental housing or other forms of rental assistance to its employees as an integral part of its pay packet.
 10. The few studies on the Rent Control Act in various cities of India have analysed the impact of this Act on the production or supply of housing rather than on the supply of rental housing. There is however, some evidence from U.K. and U.S.A. of RCA affecting supply of rental housing negatively. See Cullingworth (1979) and Leo Grebler (1952). In this context it might be interesting to note that in England, the partial decontrol of rental housing made very little impact on the level of rents, on the maintenance and repair of rented houses or on the supply of such housing. See J.B. Cullingworth (1979).

Theoretically, however, one can see that if RCA and PTA are strictly adhered to, renting out will become quite unremunerative for the landlord and the impact on the supply of rental housing will be negative. In practice the impact is minimised since a significant amount of renting is done in violation of one or both of the acts.¹¹ There is, so to speak a 'black' market in rental housing in the country. The acts have also led to the prevalence of practices such as pugree or key money.

The informal market does not fall within the purview of the RCA or the PTA. The renting practices in this market are however influenced by those in the formal sector.

The Institutional Sector

The institutional sector normally provides rental housing on a large scale. There are institutions in both the public and private sectors which provide rental accommodation to its employees or to the public in general. Prominent among the public sector institutions are educational institutions funded by the government (ISI, IITs, IIMs, Universities, Colleges) and public enterprises in manufacturing (BHEL) and services (trading, banking, insurance etc.) which provide housing to their own employees. At times government run organisations provide hostel accommodation on a rental basis to specified groups such as women

11. According to a study conducted in 1968 on the Rent Control Act in Delhi, the researchers found that the Act affected only 10-12 per cent of tenants in Delhi. See, Abhijit Datta, 1968.

and students. Large private sector organisations (e.g. Tatas) also provide rental housing for their employees. Other examples of institutional housing in the private sector are dharamashalas, hostels and lodging houses run by Trusts. In the Indian context the public sector plays a more significant role in the provision of institutional housing.

Rental Housing : Role of the Government

The government's direct participation in the supply of rental housing is minimal. Most of the government programmes relating to housing are directed towards providing the beneficiaries with ownership housing or to assist them to acquire such housing on "softer" terms. There are no equivalent programmes for rental housing. There are however, some schemes for providing rental housing to some sections of the population.

These are :

- i. Rental Housing Scheme for State Government Employees : Government's Rental Housing Programme is limited to the provision of rental houses to its own (centre, state and local government) employees. In the absence of this provision a rent allowance is provided. The gap between the required and actual supply in almost all the cases is quite high.
- ii. Integrated Subsidised Housing Scheme : Until around 1980, under the Integrated Subsidised Housing Scheme for Workers and Economically Weaker Sections in the Community, government was assisting the employers in the construction of rental housing for their employees. The assistance was in the form of loans and subsidies. In 1980, however, this scheme was discontinued.¹²

12. Various problems relating to management of the rental houses were responsible for this decision. The major problems were collection of rent and the workers' refusal to vacate the houses after retirement. Litigation had to be resorted to for getting the houses vacated. The response in terms of discontinuation of the scheme was rather hasty and amounted to throwing away the baby with the bath water.

iii. Others : There was provision for renting out houses under some other schemes also. Two such schemes were : (a) the Slum Clearance and Improvement Schemes, and (b) the Middle Income Group Housing Scheme. Under the former the slum dwellers were provided dwelling units of various kinds on subsidised rentals and under the latter, financial assistance was given for construction of houses for renting out to eligible persons. Financial assistance was given only to a government or a semi-government agency.¹³

A similar scheme is also operative under the Housing and Urban Development Corporation (HUDCO). The loans sanctioned under this however make for a very insignificant part (about 6-7 percent) of the total loans sanctioned by this agency. From January 1986, another scheme for assistance for providing rental housing has been initiated by HUDCO. Under this scheme all eligible agencies are entitled to get assistance from HUDCO not only for ownership but also for rental housing. Table 6 gives the expenditure incurred on various Rental Housing Schemes by the government and HUDCO. Apart from expenditure on the Integrated Subsidised Housing Scheme, the share of other schemes in the total expenditure is quite low. As noted above, this scheme too was discontinued in 1980. There is no information at the moment on the rental component of other housing schemes. According to the information obtained from the Ministry of Urban Development, this component would not be very large.

13. For details of various housing schemes see Government of India, Social Housing Schemes (mimeo).

Table 6

Expenditure Incurred or Loans Sanctioned on Selected Rental Housing Schemes Over the Period (1950 - 1982)

Category	Five Year Plans			Annual plans (1966-67 to 1968-69)	4th* Five Year Plan
	1st	2nd	3rd		
I. 1. Integrated Subsidised Housing Scheme for Industrial Workers and Economically Weaker Sections of the Community	13.29 (55.1)	22.25 (22.76)	22.31 (14.86)	8.76 (13.93)	21.00 (14.23)
2. Rental Housing Scheme for State Government Employees	-	6.96 (7.12)	10.24 (6.8)	5.68 (9.03)	9.60 (6.5)
Total Expenditure on Social Housing Schemes	24.12 (100.00)	97.75 (100.00)	150.05 (100.00)	62.85 (100.00)	147.51 (100.00)
II.	1979-80	1980-81	1981-82	1982-83	
Loan Sanctioned by HUDCO on Rental Schemes for Staff Housing	17.80 (12.79)	14.69 (9.08)	10.85 (5.60)	16.92 (7.65)	
Total Loans sanctioned	139.20	161.68	193.62	221.33	

Source : Calculated from document made available by Ministry of Urban Development and HUDCO.

* Schemewise data are not available for later plans.

Even though government's direct participation in the supply of rental housing is very small, not an insignificant part of housing supplied by it (on rental or on ownership basis) finds its way into the private sector rental housing market. There is widespread letting and subletting of government houses (provided under scheme (i) listed above), as well as of houses provided under various Own Your Home schemes. Quite a bit of this renting out is illegal.

Critical Issues in Rental Housing

The share of institutional and public sectors in the supply of rental housing does not seem to be very high.¹⁴ The major 'responsibility' for supplying this housing thus falls on the shoulders of the private sector. As noted above, the low returns from renting out do not make this an attractive proposition even for the private sector.

Based upon limited available information and observation it appears reasonable to hypothesise that the supply of rental housing falls far short of the demand for it. Indicators of this deficiency are high level of rents, smaller sized and substandard rented units, inharmonious landlord-tenant relationship, high search costs and prevalence of practices such as the advance payment of three to six months' rent and/or payment of pugree or key money. The high rate of increase in rentals would also induce a quick turnover of tenants since a higher rent can be

14. There is no evidence except an impressionistic one.

charged from a new tenant. This leads to greater uncertainty
as to the period of stay on the part of the tenant. ¹⁵

The level and rate of growth of rents in institutional and
government housing has not been high. ¹⁶ Its supply, has been
extremely limited. The rents in these sectors are not determined
by the market forces. High market rents have however resulted in
the subdivision of accommodation provided by the government, for
subletting. There are no data about the magnitude of this
subletting nor of the rents charged. There is however a general
impression based on some information in Delhi that the rents
charged for such sublet accommodation are lower than the market
rents for similar accommodation though much higher than those
paid by the 'legal' tenant to the government.

15. The Rent Control Act - an act enacted to protect the tenant has also (paradoxically) had a similar impact on the rental housing market. The difficulties encountered by landlords in evicting tenants owing to the operation of RCA have given rise to various practices to avoid the impact of RCA. In Delhi and other parts of North India leasing has become increasingly popular. The lease agreement between the landlord and tenant is signed normally for a period of eleven months on the expiry of which either the lease is renewed at a much higher rate or the tenant is asked to leave.
16. The rents charged by the employer for housing provided to its staff, in India, have been a function of income rather than the cost of providing such services. The quality of housing provided varies with the size of income. Normally, a fixed percentage of income is deducted from the employee's salary. The beneficiary has also to forego the house rent allowance which is provided to non-beneficiaries of staff housing.

The increase in rentals of private sector housing seems to be a feature of all types of cities. In this sense the increasing rents appear to be a national phenomenon rather than a local one. There is no firm empirical evidence about the increase in rents in various cities. Some information is available for Delhi. Evidence from a study conducted on the rental structure in Delhi suggested an increase in rents of three to four times over the period 1958-73. The increase was reported to be much faster than that in prices and incomes (D.B. Gupta: 1976; p.55). A distressing feature noted by the study was the higher rate of increase in rents for low-income-housing and a deterioration in the quality of rental housing catering to tenants belonging to low income groups (D.B. Gupta: 1976, p.17).

In fact, from the limited evidence available with the present study, it would seem that the problem of rental housing concerns the lower income groups more than it does the upper income groups. It is the middle and upper income groups who have benefitted more from the government's Own Your Home schemes (Paul : 1972). Most of the lower income groups have limited access to ownership housing of any type and therefore resort to rental housing. This is corroborated by a recent survey conducted in Ahmedabad. It was found that 86.43 per cent of households with incomes above Rs. 2500 had their own houses whereas only 54-56

per cent of households with incomes lower than Rs. 700 owned any
17
house in the city.

The major objective of the government housing policy has been to provide housing to the lower income groups. It would be a major travesty of circumstances if the government policy is found to be biased against the type of tenure preferred or found affordable by these groups.

In government's housing policy, rental housing has been relegated to the background. Not only have there not been many schemes providing rental housing, some of the government policies have even actively and explicitly discouraged rental housing. In this genre there are policies banning renting (part or whole) of houses provided on an ownership basis under various government housing schemes. A similar tenorial bias is also seen in housing policies of many other developing countries (Urban Edge: 1984 and Okpale; 1981). In most of these countries the rent control acts comprise the only policy instrument relating to rental housing.

18
In the absence of housing subsidies and massive public housing construction, rent control legislation has had - at least in theory - the advantage of being an inexpensive instrument

17. Metropolitan Housing Market, School of Planning, Ahmedabad 1987 (A study sponsored by Planning Commission). The survey also brought out the fact that it is the constraints on ownership which push most of the low income group to rental housing markets. Similar the findings were made in a study conducted in Latin America. See Michael Edwards (1982).

18. The rental subsidy programmes make for a part of housing programmes in U.S.A. Further in U.K., government directly provides state (known as Council) housing at reasonable rents to its citizens.

for subsidising the rents tenants pay' (UN 1979). The legislation, however, has failed to achieve even the minimum objective it has set out for itself (UN : 1979, Krishna Kumar: 1986). The impact in many cases has been just the opposite. The negative effect on the supply of rental housing has further increased the rents in the market. The only beneficiaries are old tenants.

The National Housing Policy Document presented to Parliament in May 1988 explicitly recognises the role of rental housing and proposes to encourage investment in rental housing through

- i. facilitating access to land, institutional finance and building materials;
- ii. fiscal incentives; and
- iii. modifications in the rent control laws.

The detailed policy is still to be spelt out. The document however reflects government's awareness of the problem as well as its desire to tackle it. The major role of providing rental housing is entrusted to the private sector. A conducive environment is proposed to be created for encouraging larger supply of rental housing by this sector. An important variable in this respect will be the rate of return on rental housing. Government seems to be aware of it and the suggested policy of modifying the rent control acts is probably directed towards ensuring a reasonable rate of return to the landlord. A high rate of return by itself may not increase supplies significantly. Further, under the given cost conditions, a reasonable rate of

return may imply rent levels which are beyond the affordability limits of a majority of the population in the country. Policies to reduce the cost of production of housing will have to become as integral a part of the strategy for rental housing as they do for ownership housing.

At the time of detailing out policies government will do well to examine the proposals very carefully and study their direct and indirect impact on the demand, supply and price of rental housing in different submarkets. It is also very important to examine the proposals from the point of view of their political feasibility. In fact, it is a moot point as to how far government can succeed in devising measures which are both politically feasible and which hold some promise of ameliorating the rental housing problem of the various groups of people.

ANNEXURE 1

DETERMINANTS OF RENTAL HOUSING IN INDIA

The choice of tenure is basically a decision made at the household level. The factors which determine the choice of tenure for a household can be classified into three categories:

1. Characteristics relating to a household

These would include both economic and demographic factors associated with a household. The important variables would be present and expected future income/wealth of the household, size of the household, and the stage in the life cycle. Occupation stability and literacy could be the other important variables.

2. Market conditions

The variables under this category relate to the relative price (current and expected) of rental versus ownership housing prices of other goods and services, and the availability of different types of housing. Similarly situated households will react differently when faced with different market conditions.

3. Institutional factors

The choice of tenure would be influenced greatly by factors such as availability of credit for purchase of a house, the existence of government schemes to provide housing (ownership or rental), government policies relating to taxation subsidies and applicability of rent control acts

and so on. In some cities, biases against households belonging to certain castes, regions or communities will also have their own impact on the size of rental housing in the area.

The size of the rental housing market in any city would be a function of aggregation of the individual households' tenure choice decision. This would depend upon the composition of households in a city as well as market and institutional environment in the city. At the city level, these variables would include size of city, level of income in the city (or average income), age structure of the city's population, average size of household, the average rent and value of housing in the city, the amount of immigration, percentage of literate population, occupational structure availability of credit, number of dwellings, vacancy rate and so forth. The varying sizes of the rental housing market in different cities in this analysis is sought to be explained in terms of these variables.

The empirical study of the determinants of rental housing in India was conducted at the city level. The cities included all class I cities for which relevant data were available. Most of the data were obtained from the Census of India 1981. Other sources of data were TCPO and HUDCO. The data for the dependent variable (percentage of households living in rented houses) was available for all class I cities at the municipal level. The data on all independent variables chosen were not available at the same spatial level. Since values of most of the independent variables selected were not to be the absolute amounts but were

in relative terms, the implicit assumption was that the proportion of such population of households was the same in the agglomeration area as it was in the municipal area. Below the theoretical relationship of various independent variables with the dependent variable is explained.

Size of the City

A large sized city is expected to have a large proportion of rental households and would therefore be positively related to the dependent variable. Two alternative variables have been selected to measure the size of the city. These are population and number of households in the city.

Level of Income in the City

A large percentage of high income population in the city would lead to, other things remaining constant, a larger percentage of households living in owned houses. The median income is normally taken to represent the income of households in the city since above normal and below normal incomes have a good chance of cancelling each other out.

The data on city income are not available in India. The city domestic product for each city was estimated and used as the dependent variable to represent the income variable.

Age Structure of the City's Population

In India, people tend to become house owners at a rather late age. The age of the head of the household would therefore be an important dependent variable. This information is not

available from secondary sources. The percentage of population in the city above a certain age was taken as the dependent variable. The threshold age for house ownership was chosen alternatively as 39 years and 50 years. The selection of 39 and 50 as the thresholds ages was determined by findings of some of the studies as well as by the data on the age-structure available in the census.

Size of the Household

A larger size of household would imply that the household would go in for ownership housing. Single persons or newly married couples are more likely to go in for rental housing. The percentage of different sized households to the total number of households in the city was taken as the explanatory variable in this respect. The alternative sizes which were tested were: 1 person, 2 persons, 3 persons and more than 6 persons.

Composition of Household

Apart from the size of household, the composition of households is equally important. A few studies [Gill Chin Lim et al.] have found the number of young children in the household to be positively related to the housing status of the household. In the case of India, a larger number of children may mean an even lesser amount of money available for purchase of a house. Since data on household level on age structure were not available the percentage of population below the age of 14 years was taken as a proxy variable.

Another important variable in this respect might be the number of married couples in the household. More than one married couple in a household was expected to lead to greater ownership. Households having more than one and two married couples was taken as the independent variable.

Occupational structure

It has been hypothesised that the workers in the secondary and tertiary sectors are more mobile and would therefore choose rental housing. The percentage of such workers to the total work force was selected as one of the explanatory variables.

Immigration

A high proportion of the migrant population in the urban area was hypothesised to lead to a higher proportion of rented households. The migrant population was classified according to year of residence in the city.

The variables selected were: percentage of migrants to total population with a residence of (i.) < 1 year; (ii.) 1 - 9 years; (iii.) 0 - 9 years; and the (iv.) percentage of migrants from outside the state to the total population.

Number of Dwellings and Vacancy Rate

The number of dwellings and vacancy rate were taken to represent the supply situation in the housing market. The data on vacancy rate were not available for most of the cities. The number of dwellings was included as an independent variable.

Type of Housing

A large percentage of the population living in slum and squatter settlements own their houses. Thus a large proportion of such households in the urban area would inflate the number of owner occupants. The percentage of households to total number of households was hypothesised as negatively related to the dependent variable in this exercise.

Availability of Credit

The availability of credit would make ownership housing more accessible and would be negatively related to the size of rented housing in the city. The data on total amount of credit made available to the city were not available. Loans dispersed by the Housing and Urban Development Corporation (HUDCO) in different cities were taken as the independent variable.

Literacy

The percentage of male literates to the total male population was hypothesised as having a negative impact on the size of rental housing in the city.

Other Variables

Other important variables for which adequate and reliable data were not available and which consequently had to be excluded were the applicability of the Rent Control Act, average rents in the city and the average value of houses in the city, property tax rates for owner-occupied and rental housing and the size of government programmes for the provision of ownership vs rental housing.

Results of the Analysis

The relationship between the percentage of households living in rental housing in class I cities as the dependent variable and several independent variables listed above have been empirically estimated. These are also reproduced in Annexure II. The functional form of the relationship tested is linear. In all, 154 relationships were tested. Out of these, 33 equations based on the value and significance of R^2 and of the coefficient of independent variables have been selected. The number of observations varied depending upon the data availability for different variables. Various combinations of the above mentioned variables were tested. Four sets of relationships were tested. The following pattern of behaviour of coefficients of selected independent variables has been hypothesised.

Set I

Set I comprises single variable equations using the following independent variables one at a time :

$$Y = F (X_1^+, X_3^+, X_{18}^-, X_{23}^-, X_{25}^-, X_{34}^+)$$

where

Y is the dependent variable and denotes the percentage of households living in rental housing in cities. The independent variables denoted by X with a subscript are listed in Annexure II.

The signs of coefficients to show a pattern described in the above functional form is hypothesised. The rationale for these expectations has been spelt out earlier in this Annexure.

Set II

In the second exercise the following functional form of the relationship to be tested is hypothesised.

$$Y = F (X_1, X_{11}, X_{15}, X_{18}, X_{21}, X_{26}, X_{30}, X_{38})$$

$\begin{matrix} + & + & - & - & - & + & + & + \\ 1 & 11 & 15 & 18 & 21 & 26 & 30 & 38 \end{matrix}$

The behaviour pattern of the coefficients of independent variables is indicated in the above functional form.

Set III

This set uses the various combinations of selected variables as given in the following functional form.

$$Y = F (X_3, X_{11}, X_{12}, X_{15}, X_{18}, X_{21}, X_{23}, X_{25}, X_{26}, X_{30}, X_{34}, X_{38})$$

$\begin{matrix} + & + & + & - & - & - & - & - & + & + & + & + \\ 3 & 11 & 12 & 15 & 18 & 21 & 23 & 25 & 26 & 30 & 34 & 38 \end{matrix}$

The expected behaviour pattern of the various coefficients of these variables is shown by the signs indicated on top of the variables in the functional form.

Set IV

In the final exercise, the following independent variables have been regressed on the dependent variable :

$$Y = F (X_5, X_6, X_7, X_9, X_{10}, X_{11}, X_{16}, X_{17}, X_{18}, X_{21}, X_{23}, X_{25}, X_{26}, X_{32}, X_{34}, X_{36})$$

$\begin{matrix} - & - & - & - & + & + & - & - & - & - & - & - \\ 5 & 6 & 7 & 9 & 10 & 11 & 16 & 17 & 18 & 21 & 23 & 25 \\ + & + & + & + \\ 26 & 32 & 34 & 36 \end{matrix}$

The expected sign of the coefficient of the above variables above each of them is indicated.

The results of these four sets of exercise are prescribed in Table A I to A IV.

Table A I presents the impact of one variable at a time on the dependent variable. The variables considered are as shown in Set I. X_1 and X_3 which are used as proxy variables to represent size of the city turn out to be highly significant variables in explaining the list of the relationship being tested. This may be seen from value of R^2 in Table A I. X_3 is the more important of the two variables. It may be noted that the value of R^2 even at the level of 0.0716 in case of X_3 (number of households) and at 0.0648 in the case of X_1 (population size) as the independent variables are statistically significant — the number of observations being 83 in each of these cases. The 't' values of the coefficients of both the variables are also highly significant (at 1 per cent level of significance). The coefficients of these variables have the correct sign showing positive relationship between the dependent and the independent variables as hypothesised earlier.

X_{25} (City Domestic Product) and X_{34} (migrants with residence between 1-9 years) taken singly as determinants are also significant variables and show positive relationship with the dependent variable. X_{18} (percentage of population living in slums) and X_{23} (percentage of population in age group above 50 years) are seen to be exerting negative influence on the dependent variable. This is in line with the hypothesis stated earlier. In both these cases, the R^2 values for 158 observations are also statistically significant. Despite the fact that all the independent variables considered in Table A I are statistically significant the values of their coefficient are

fairly small. This indicates that changes in the values of selected independent variables do not substantially affect the value of the dependent variable.

The framework of fitting the empirical relationship between the dependent and the selected independent variables has been extended by using multiple regressions. Various combinations keeping in mind the theoretical rationale as well as the results obtained from the first exercise using single variable were tried. These are reported in Table A II to A IV.

Table A II presents the results of the multiple regression exercise using various combinations of variables referred to in Set II. X_1 (population size) turns out to be the most significant independent variable in all the cases reported in Table A II. The sign of this coefficient in every case is positive and is in line with the hypothesis. The other significant variables in this set can be seen to be X_{18} (in all combinations) X_{21} (two out of six cases) and X_{38} (in two out of five cases). The signs are as expected. X_{11} is seen to be significant only in association with X_1 . The introduction of other variables reduces its (X_1) significance. Variables X_{11} and X_{21} are not significant in most of the cases. X_{38} is significant at 5 per cent level only in one exercise where it gives the wrong sign.

The highest value of R^2 in this set is reported in equation 6 of Table A II. The number of observations for this exercise was 83 which makes the value of R^2 at 0.2065 statistically

significant. The combination of variables involved in this exercise comprised X_1 , X_{15} , X_{18} , X_{21} , X_{26} , and X_{38} .

Set III (results reported in Table A III) includes estimation of thirteen combinations of independent variables on the size of rental housing in urban areas of India. The single most important determinant in this set of exercises has been X_3 (number of households). The coefficient of X_3 is statistically significant in all the 13 cases. The other significant variables have been found to be X_{18} (in all the combinations where it is included); X_{23} , X_{25} , and X_{26} (though level of significance is low at 10 per cent). The signs of all these independent variable X_2 , X_3 , X_{15} , X_{18} , X_{21} , X_{26} and X_{38} . The value of R^2 remains the same when the independent variable X_{15} is dropped and three other variables namely X_{10} , X_{11} and X_{12} are introduced.

Set V

The final set of regression exercises comprises various combinations of 16 independent variables. Table A IV shows the results of these exercises. The number of observations is highest in Equation 1. The equation is based on estimating the impact of 2 independent variables namely X_{18} (size of slum population) and X_{26} (percentage of workers in secondary sector). Coefficients of both the variables are significant. The value of R^2 at 0.055 is statistically significant with 158 observations. As more than two independent variables are introduced, the value of R^2 naturally increases. The highest value of R^2 has been found at 0.2464 in Equation No. 4. The relevant independent

variables used in this exercise are $X_5, X_6, X_7, X_9, X_{12}, X_{17}, X_{18}, X_{23}, X_{25}, X_{27}, X_{32}$. The coefficients of four independent variables (namely X_6, X_9, X_{18}, X_{26}) are statistically significant. These also happen to be significant variables in all the exercises reported in Table A IV. The introduction of X_{26} (workers in secondary sector) tends to reduce the significance of X_{18} (percentage of households in slum areas).

The signs of X_{18} and X_{26} are according to the hypothesis. The signs of X_9 and X_6 run contrary to expectations. There is a certain ambiguity about the effect of X_9 since this proxy variable may also indicate easiness in availability of rentable houses.

The loan availability (X_6) was hypothesised as having a positive relationship with the acquisition of ownership housing and by implication a negative relationship with the relative size of rental housing in a city. From that point of view the estimated sign in Equation 4 (as also in other combinations used in Table A IV) turns out to be contrary to the above hypothesised behaviour. However, it is possible that a larger percentage of the houses constructed with the help of loans may be rented out than used for owner occupation. This requires further research on the basis of a much wider set of variables relating to housing finance.

Summing Up

To sum up, the empirical investigation of the determinants the percentage of households living in rented houses shows that

the important independent variables in this connection are :
number of households (X_3); size of population in the city (X_1);
percentage of slum population in the city (X_2); loans disbursed
for ownership housing schemes (by HUDCO) (X_{18}); percentage of
population above 50 years (X_6); and the percentage of workers in
the secondary sector (X_{23}).
 X_{26}

Table - A 1.1
Determinants of Rental Housing in Indian Cities

Eq. No.	Independent Variable	Coefficient of Independent Variables	R2	F	No. of Observations
1	X 1	0.330E-5 (2.3571**)	0.0648	** 5.616	83
2	X 3	0.180E-4 (15***)	0.0716	** 6.246	83
3.	X 18	-0.1613	0.0225	** 3.587	158
4.	X 23	-0.5083 (1.95**)	0.0238	** 3.806	158
5.	X 25	0.1743 (1.91**)	0.0228	** 3.638	158
6.	X 34	0.695E-11 (1.52*)	0.0170	* 2.691	158

* denotes significance at 10 per cent level
 ** denotes significance at 5 per cent level
 *** denotes significance at 1 per cent level

Table - A 1.2

Determinants of Rental Housing in Indian Cities

Eq. No.	Coefficient & Independent Variables											No. of Observations
	X1	X11	X15	X18	X21	X26	X30	X38	R^2			
1	2	3	4	5	6	7	8	9	10	11		
1	0.320E-5 **	0.2532 *							0.0877	83		
	(2.2857)	(1.4176)										
2	0.370E-5 ***	0.2086		-0.2088 **	0.6571 *		-0.1338 *		0.1604	83		
	(2.6429)	(1.1805)		(1.8710)	(1.3828)		(0.8643)					
3	0.390E-5 ***	0.2262		-0.2314 **					0.1360	83		
	(2.7857)	(1.2874)		(2.1017)								
4	0.330E-5 **	0.2088		-0.1824 *	-0.0939	0.2586 **			0.1768	83		
	(2.3571)	(1.1993)		(1.6213)	(0.2562)	(1.5167)						

Contd.....

1	2	3	4	5	6	7	8	9	10	11
5	0.680E-5 ***	0.1537 (0.878)	-0.1824 * (1.6344)	-0.0274 (0.0748)	0.2709 ** (1.6011)	-0.7694 * (1.5324)	0.2015	83		
6	0.820E-5 ***	-0.0751 (1.1192)	-0.1805 * (1.6232)	0.0291 (0.0788)	0.2452 ** (1.4306)	0.0498 (0.0960)	0.2066	83		
7	0.690E-5 ***	0.1610 (0.8994)	-0.2125 ** (1.9144)	0.6961 * (1.4710)	-0.1186 (0.7686)	-0.7034 * (1.3814)	0.1809	83		
8	0.850E-5 ***	-0.0953 * (1.4352)	-0.2004 ** (1.8119)	0.7674 * (1.6433)	-0.1391 (0.9133)	-1.0367 ** (1.9773)	0.1941	83		

* denotes significance at 10 per cent level
 ** denotes significance at 5 per cent level
 *** denotes significance at 1 per cent level

Table - A 1.3

Determinants of Rental Housing in Indian Cities

		Coefficient & Independent Variables											
Eq. No.	X3	X11	X12	X15	X18	X21	X23	X25	X30	R ²	No. of Observations		
1	2	3	4	5	6	7	8	9	10	11	12		
1	0.2450E-4 *** (3.27)				-0.2201 *** (2.60)					0.0858	158		
2.	0.2120E-4 *** (2.94)			-0.1439 *** (3.35)						0.1101	158		
3	0.5590E-4 *** (2.66)							-0.4596 ** (1.80)		0.0654	158		
4	0.2100E-4 *** (2.9167)	0.2252 (1.2869)			-0.2318 ** (2.1169)					0.1429	83		

Contd.....

1	2	3	4	5	6	7	8	9	10	11	12
5	0.2460E-4 *** (3.31)				-0.1987 ** (2.34)	0.2972	-0.4501 ** (1.77)		0.1040		158
6	0.6350E-4 *** (3.05)				-0.2304 *** (2.75)	0.2873		-0.5016 ** (2.01)	0.1091		158
7	0.2100E-4 *** (2.9577)	0.2257 (1.2927)			-0.2249 ** (2.0558)	0.2873			0.1578		83
8	0.2100E-4 *** (2.9167)			-0.0466 (0.7316)	-0.2271 ** (2.0552)	0.2873			0.1457		83
9	0.2000E-4 *** (2.7397)		-0.0506 (0.7931)		-0.2064 ** (1.8396)	0.7026 *			-0.1601 (1.0376)	0.1575	83

* denotes significance at 10 per cent level
 ** denotes significance at 5 per cent level
 *** denotes significance at 1 per cent level

Table - A 1.3 (Contd..)

Determinants of Rental Housing in Indian Cities

Coefficient & Independent Variables

Eq. No.	X3	X10	X11	X12	X15	X18	X21	X26	X30	X34	X38	R2	No. of Observations
1	0.180E-4 ** (2.1951)		0.2118 (1.9159)			-0.2053 ** (1.8347)	0.6265 * (1.3137)		-0.1314 (0.8477)	0.1333 (0.5468)		0.1690	83
2	0.460E-4 *** (3.2857)				-0.0758 (1.1450)	-0.1788 * (1.6240)	0.0167 (0.0460)	0.2429 * (1.4313)				0.2204	83
3	0.180E-4 *** (2.4657)		0.2083 (1.1999)			-0.1836 * (1.6393)	-0.0991 (0.2719)	0.2549 * (1.5003)				0.1818	83
4	0.370E-4 *** (2.4667)	-0.4245 (0.7618)	0.0973 (0.4530)	0.3188 (0.7715)		-0.1582 * (1.3697)	-0.0826 * (0.2237)	0.2393 * (1.3659)				0.2204	83

* denotes significance at 10 per cent level
 ** denotes significance at 5 per cent level
 *** denotes significance at 1 per cent level

Table - A 1.4
Determinants of Rental Housing in Indian Cities

		Coefficient & Independent Variables														No. of Observations			
Eq. No.		X7	X9	X21	X23	X25	X26	X32	X34	X36	X5	X6	X10	X11	X16		X18	X17	R2
1						0.2117 (2.31) *										-0.1963 (2.30)		0.0550	58
2	0.0694 (0.55)	0.579 (1.46) *	-0.7503 (1.16)	0.0955 (0.38)	0.3717 (2.20) **	0.1181 (0.54)					-0.890E-3 (1.22)	0.0105 (1.91) **	0.1359 (0.37)		0.0065 (0.11)	-0.2022 (1.74) **		0.2345	82
3	0.0787 (0.63)	0.0554 (1.41) *	-0.1902 (0.51)	0.0741 (0.29)	0.2889 (1.61) *	0.1138 (0.52)					-0.800E-3 (1.10)	0.0100 (1.79) **	0.2332 (1.09)			-0.1997 (1.73) **	-0.1089 (0.60)	0.2341	82
4	0.0828 (0.67)	0.0593 (1.51) *	-0.7668 (1.19)	0.0865 (0.35)	0.3520 (2.13) **	0.1215 (0.56)					-0.850E-3 (1.18)	0.0099 (1.80) **	0.2372 (1.12)			-0.1994 (1.75) **	-0.01199 (0.07)	0.2464	82
5	0.0827 (0.67)	0.0564 (1.46) *	-0.7413 (1.15)	0.1201 (0.51)	0.3528 (2.13) **		0.0929 (0.37)				-0.840E-3 (1.14) *	0.0102 (1.85)	0.2353 (1.11)			-0.1907 (1.68) **	-0.1162 (0.54)	0.2446	82
6	0.0826 (0.67)	0.0565 (1.46) *	-0.7413 (1.15)	0.1196 (0.50)	0.3527 (2.13) **		0.0831 (0.37)				-0.840E-3 (1.14)	0.0102 (1.85) **	0.2352 (1.11)			-0.1908 (1.68) **	-0.1162 (0.64)	0.2446	82

* denotes significance at 10 per cent level
 ** denotes significance at 5 per cent level
 *** denotes significance at 1 per cent level

ANNEXURE II

LIST OF INDEPENDENT VARIABLES USED IN THE STUDY

- X1. POPULATION
- X2. NO. OF HHS.
- X3. PROJECT COST
- X4. DWELLING UNIT
- X5. LOAN AMOUNTS

LITERACY

- X6. % OF MALE LITERATE POPULATION TO TOTAL MALE POPULATION
- X7. % OF (M+F) LITERATES TO TOTAL POPULATION

SIZE OF HOUSEHOLDS

- X8. % OF RESIDENTIAL HOUSES TO TOTAL NO. OF HHS
- X9. % OF 1 - PERSON HOUSEHOLD POPULATION TO TOTAL NO. OF HHS
- X10. % OF 2 - PERSONS HOUSEHOLD POPULATION TO TOTAL NO. OF HHS
- X11. % OF 3 - PERSONS HOUSEHOLD POPULATION TO TOTAL NO. OF HHS
- X12. % OF 4 - PERSONS HOUSEHOLD POPULATION TO TOTAL NO. OF HHS
- X13. % OF 5 - PERSONS HOUSEHOLD POPULATION TO TOTAL NO. OF HHS
- X14. % OF 6 - PERSONS HOUSEHOLD POPULATION TO TOTAL NO. OF HHS

MARITAL STATUS

- X15. % OF HHS HAVING MORE THAN 1 MARRIED COUPLES TO TOTAL NO. OF HHS

X16. % OF HHS HAVING MORE THAN 2 MARRIED COUPLES
TO TOTAL NO. OF HHS

SLUM

X17. % OF SLUM POPULATION TO TOTAL POPULATION

AGE STRUCTURE

X18. % OF POPULATION IN AGE GROUP 0-14 TO
TOTAL POPULATION

X19. % OF MALE POPULATION IN AGE GROUP 25-49 TO
TOTAL MALE POPULATION

X20. % OF MALE POPULATION IN AGE GROUP >39 TO
TOTAL MALE POPULATION

X21. % OF MALE POPULATION IN AGE GROUP 30-39 TO
TOTAL MALE POPULATION

X22. % OF POPULATION IN AGE GROUP >50 TO
TOTAL POPULATION

X23. % OF POPULATION IN AGE GROUP >25 TO
TOTAL POPULATION

WORKERS' ACTIVITIES

X24. CITY DOMESTIC PRODUCT

X25. % OF MALE WORKERS IN SECONDARY SECTOR TO
TOTAL MALE WORKERS

X26. % OF TOTAL WORKERS IN SECONDARY SECTOR TO
TOTAL WORKERS

X27. % OF MALE WORKERS IN MANUFACTURING TO
TOTAL MALE WORKERS

X28. % OF TOTAL WORKERS IN MANUFACTURING TO
TOTAL WORKERS

X29. % OF MALE WORKERS IN TERTIARY SECTOR TO
TOTAL MALE WORKERS

X30. % OF TOTAL WORKERS IN TERTIARY SECTOR TO
TOTAL WORKERS

MIGRATION

- X31. % OF MALE MIGRANTS (WITH RESIDENCE <1YEAR)
TO TOTAL MALE POPULATION
- X32. % OF MALE MIGRANTS (WITH RESIDENCE <1YEAR)
TO TOTAL POPULATION
- X33. % OF MALE MIGRANTS (WITH RESIDENCE 1-9 YEARS)
TO TOTAL MALE POPULATION
- X34. % OF MALE MIGRANTS (WITH RESIDENCE 1-9 YEARS)
TO TOTAL POPULATION
- X35. % OF MALE MIGRANTS (WITH DURATION OF RESIDENCE
0-9 YEARS) TO TOTAL MALE POPULATION
- X36. % OF MALE MIGRANTS (WITH DURATION OF RESIDENCE
0-9 YEARS) TO TOTAL POPULATION
- X37. % OF MALE MIGRANTS FROM OUTSIDE THE STATE TO
TOTAL MALE POPULATION
- X38. % OF MALE MIGRANTS FROM OUTSIDE THE STATE TO
TOTAL POPULATION

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