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HOUSING POLICY CHANGES IN URBAN CHINA: A CASE STUDY OF XI'AN

BY

JING KUNG HOANG

A THESIS
SUBMITTED TO THE
FACULTY OF GRADUATE STUDIES AND RESEARCH
THROUGH THE DEPARTMENT OF
GEOGRAPHY IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF ARTS AT
THE UNIVERSITY OF WINDSOR

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JING NONG HUANG
ABSTRACT

HOUSING POLICY CHANGES IN URBAN CHINA: A CASE STUDY OF XI'AN

BY

JING HONG HUANG

The purpose of this paper is to present a general analysis of the marked changes in urban housing policy and the resulting changes in urban housing construction since 1978 in China. Information is based largely upon field survey and observations in the author's home-city—Xi'an, one of the largest cities of China. Attention was paid to theoretical, economic and social conditions, particularly to the changing system of national economic planning, as they related to housing policy, and the geographical significance of those changes.

It provided a chronological review of post-1949 urban housing policies in Xi'an aimed at analysing the relationship of the urban housing development, especially its spatial pattern, to the changing status of urban planning in China. The changes in the structure of national economic planning in relation to the changes in housing construction in terms of quantity and quality were also examined. In addition, the introduction of a market economy
in urban housing and its geographical implications were assessed. The analysis showed that the urban housing policy and production in China were closely linked to the national socio-political-economic policies. The post-1979 changes were not accidental phenomena, but were an outcome of changing system of national economic planning. Therefore, the allocation of housing in Chinese cities was better explained in terms of supply-based explanations.
ACKNOWLEDGMENTS

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Appreciation is also expressed to my secondary advisors, Dr. G. Romsa and Dr. S. Peter, for their helpful advice and valuable comments.

This study would not have been possible without the enthusiastic assistance of my Chinese colleagues, especially Mr. Gui Zhiyuan, Director of the Planning Office, Xian City Planning Bureau, and Mr. Zeng Yunhe, Vice-Director of Housing Management Office, Xian Real Property Bureau. They assisted me in the field survey and afforded me access to the agencies' housing data.

I have been greatly assisted by the knowledge and experience of Mr. R. Welch who kindly helped me on the cartographic work of this paper. In addition, the ongoing support and encouragement from Dr. I. Stebelsky and other faculty and staff members of the Department of Geography, University of Windsor enabled me to pursue my study smoothly.

Finally, my warmest expression of thanks to my wife, Hulan, whose assistance has been invaluable, and to whom this paper is dedicated.

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Chapter I

INTRODUCTION

1.1 Study Background

Urban housing policies in China have undergone considerable changes since 1976. These changes reflect important developments in the national economy, social objectives and planning approaches at the national, regional, and local level. They have and are producing a profound impact on the pattern of urban housing development.

Because of the continuance of the civil war and the war against the Japanese, cities of socialist China inherited a very poor housing stock from the previous regime. According to Ma (1981), in the eight largest cities of the country, half of the total housing stock was dilapidated in 1949. In Shanghai, the largest city, more than two million people lived in slums with no sanitation, enjoying none of the advantages but suffering all of the hardships of life. In Beijing, two-thirds of the houses were dilapidated (Ma 1981, pp. 228). After the 1949 Revolution and until 1978, the Chinese government had built new housing covering a floor space of 531.5 million square meters for the residents of cities and towns (Beijing Review No. 48 November 30, 1978). This effort, however, had failed to meet the needs of
the growing population, and the situation had been exacerbated by the fact that much of the existing housing had fallen into disrepair. As a result, per capita residential floorspace in urban areas had declined from 4.1 square meters in 1949 to mere 2.5 square meters in 1978. In the same year (1978), 35 percent of municipal families lived in overcrowded conditions, and another 5.6 percent were without homes (Kirkby 1986, pp. 168).

Following the defeat of the Gang of Four in 1976, a historical change has taken place in China's political-economic arena, marked by the Third Plenary Session of the Eleventh Central Committee of the Chinese Communist Party held in December 1978. This Plenary Session shifted the party's focus to socialist modernization from 1979 onward. It also decided on the guiding principles of "enunciating the mind," "seeking truth from facts," and "looking forward to the future," as well as correcting "Left" errors in the past. This was followed by bold and substantial economic reforms led by new leadership under Deng Xiaoping (Zhang Zhucyuan 1982). Accompanying this change is the surge of housing construction in the cities of China. From 1978 to 1984, 470 million square meters of housing space has been built, which equalled the total area for houses built during the previous twenty-seven years. The result was that 8 million families moved into new houses, and the average per capita living space increased to 4.6
square meters; China Daily 27 May, 1985). Such progress in housing construction can be considered unprecedented since the founding of the People's Republic in 1949 (Figure 1).
Figure 1. Average Annual Housing Floor Space Constructed in China 1949-1984

Source: Based on Kirkby 1985 Table 6.2
1.2 Scope and Purpose of the Study

These dramatic changes in housing construction have attracted a good deal of international interest and several studies have appeared recently, providing an overview both of China's urban housing situation and of policies adopted before and after 1978 to solve housing problems. These studies were based largely upon limited information obtained from some government publications, official interviews and brief field observations, and did not involve any detailed and systematic field work. Therefore, some essential questions still remain unanswered, such as, what are the basic characteristics of these changes? what are the underlying mechanisms that generated and accounted for these changes? And what are the geographical implications of these changes? In other words, there is a need to have a further study of the nature and context of these changes by means of a systematic analysis of comprehensive data. To meet this need, this paper intends 1) to present empirical evidence of the changes in major aspects of housing policies; 2) to reveal the inherent relationship between the changes in economic development policies and the changes in urban housing policies; 3) to analyze the manifest and latent affects of those changes on the geographic pattern of housing in urban area. This study is conducted with the data based on a field survey and observations in Xian city, one of the 20 largest cities of China. In this context, consideration will be given to the following aspects:
1. The changes in national economic planning system and their theoretical and ideological basis.

2. The resulting changes in the status of urban planning, including housing planning.

3. The changes in housing investment pattern and its quantitative qualitative and spatial results in housing development, particularly in terms of housing spatial patterns and layout of residential estates.

4. Introduction of a market economy and its influence on the housing supply and allocation system.

1.3 Study Area

The basic field survey for this study was conducted during the summer of 1996 in the urban districts within the Xian metropolis, a major inland city of China (Figure 2). Situated at the heart of the Guanzhong Plain, it is the gateway to the north-west region of China and the capital of the Shaanxi province. The metropolitan Xian is surrounded by Qinling Mountains to the south and the Wei River to the north and by thousands of square kilometers of agriculturally fertile area (Figure 3).

In 1995, Xian had a population of 5.4 million within a total administrative area of 9,963 square kilometers, which included seven urban districts and six adjacent rural counties. This study focuses on the six urban districts, namely, Xincheng, Beilin, Yanta, Weiyang and Baqiao, usually
FIGURE 2. LOCATION: XIAN CITY
Figure 3. Location of Xi'an within Guanzhong Region

Source: Ma Zhenglin (1985) 'Xian The Metropolis of North-West China', p. 150.
called the city proper (Figure 4). Those districts cover an area of 854 square kilometers and contain a population of 2.22 million with a mean density of 2,600 per square kilometer and the highest density of 16,302 per square kilometer in its central area, i.e., the districts of Xincheng, Beilin and Lianhu (Zhang Yuanguang 1986).

The general land use pattern within this area was well established in the 1950s. The old city core surrounded by the city wall is the center for governmental offices, commercial activities, and the old residential area. To the west is the cluster of industries including electrical appliances and precision instruments. This area is known as the "city of electrical industries." To the east is the concentration of textiles and machinery industries, which is called locally as "textile city." The so-called "cultural city" is found immediately south of the old city, where 20 universities and many research institutions are located. The area along the railway lines towards the northern suburb has developed into the area of railway repair workshops, depots, warehouses and residential communities for railway workers. The situation of major land uses in 1984 is shown in Table 1.

Xian is one of the twenty largest cities in China and the largest city in the north-west region. During early 1950s, Xian was selected by the State Council as one of the priority cities in terms of economic and urban development.
Table 1: Major Land Uses of Xian 1984

<table>
<thead>
<tr>
<th>land use</th>
<th>measurement</th>
<th>area</th>
</tr>
</thead>
<tbody>
<tr>
<td>total urban area</td>
<td>sq. km</td>
<td>854.00</td>
</tr>
<tr>
<td>built up area</td>
<td>sq. km</td>
<td>104.30</td>
</tr>
<tr>
<td>industry</td>
<td>sq. km</td>
<td>26.26</td>
</tr>
<tr>
<td>warehouse</td>
<td>sq. km</td>
<td>4.30</td>
</tr>
<tr>
<td>transportation</td>
<td>sq. km</td>
<td>7.00</td>
</tr>
<tr>
<td>housing</td>
<td>sq. km</td>
<td>45.82</td>
</tr>
<tr>
<td>others</td>
<td>sq. km</td>
<td>19.92</td>
</tr>
</tbody>
</table>

Source: from the Xian Statistical Bureau 1985.

It is, thus, the major industrial center of Shaanxi province as well as north-west China. Xian was home to one of the earliest civilizations. Numerous famous historical sites and relics render it China's most treasured historical and cultural city.

Xian housing stock possesses following characteristics:

1) Like other large cities in China, Xian had extremely inadequate housing stock in 1949. According to Shi Zhaoyi (1986), the total housing space of Xian in 1949 was 1.32 million square meters, twenty five per cent of which (305,905 square meters) was slum dwellings housing ten per cent of the city population (38,805 persons). The average per capita living space in the city was only 3.32 square meters (Shi Zhaoyi, 1984).1

1 Slum in urban China is locally called the 'peng hu qu' meaning a residential district consisting of shanties, shacks and other kinds of houses in very poor condition, which were built before the 1949 Revolution mainly by the migrants from rural areas. This kind of settlements is usually located in areas that are topographically or environmentally of low quality, similar to the squatting housing in some Third World countries.
2) After the 1949 Revolution, Xian city continued to face serious housing problems until 1973. During this period, the city had built new houses accounting for a floorspace of 6.4 million square meters. The total housing space had increased from 1.32 million to 4.51 million at the end of 1977. However, this increase had almost been absorbed by the population growth of the city. According to the statistics from the Xian Real Property Bureau, the population of the urban area in 1978 was 1.38 million representing a 350 percent increase over the population of 1949. Whereas, the total floorspace of housing in this period was increased 3.6 times (from 1.3 million square meters to 4.7 million square meters), thus, the per capita living space remained almost at the same level, having improved only by 0.07 square meters (i.e., from 3.32 meters to 3.39 meters) during a period of 27 years. Housing shortage still remained very acute (Xian Real Property Bureau, 1984).

3) Since 1978 Xian has experienced considerable changes in housing development. According to the Xian Statistical Bureau, from 1977 to 1984, a housing floorspace of 2.7 million square meters has been built in the city. This seven-year accomplishment accounted for 84% of the additions during the preceding twenty seven years, and far surpassed the pace of population increase. Therefore, the average per capita living space has increased to 4.41 square meters.
This level, however, is still lower than the average of 4.6 square meters (1984) for the country as a whole. This indicates that the housing development in Xian fell behind several major cities (Table 2).

**Table 2: Nine Largest Cities' Housing Development 1982**

<table>
<thead>
<tr>
<th>City</th>
<th>Urban Population (million)</th>
<th>Total Housing Floor Space (m. sq. m.)</th>
<th>Average Per Capita Living Space (sq. m.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beijing</td>
<td>5.44</td>
<td>29.29</td>
<td>5.4</td>
</tr>
<tr>
<td>Nanjing</td>
<td>1.74</td>
<td>9.39</td>
<td>5.4</td>
</tr>
<tr>
<td>Wuhan</td>
<td>2.72</td>
<td>13.29</td>
<td>4.9</td>
</tr>
<tr>
<td>Chengdu</td>
<td>1.25</td>
<td>6.11</td>
<td>4.9</td>
</tr>
<tr>
<td>Shanghai</td>
<td>6.27</td>
<td>29.63</td>
<td>4.7</td>
</tr>
<tr>
<td>Guangzhou</td>
<td>2.37</td>
<td>10.76</td>
<td>4.5</td>
</tr>
<tr>
<td>Tianjin</td>
<td>3.53</td>
<td>14.64</td>
<td>4.2</td>
</tr>
<tr>
<td>Xian</td>
<td>1.56</td>
<td>6.24</td>
<td>4.1</td>
</tr>
<tr>
<td>Senyan</td>
<td>3.04</td>
<td>11.80</td>
<td>3.9</td>
</tr>
</tbody>
</table>

Source: From Shi Zhaoyi, 1986.

4) The spatial pattern of housing in Xian is similar to other large cities in China (Figure 5). According to the survey of 1994, the total amount of developed urban land is 104.3 square kilometers, of which 46.32 square kilometers are residential (Table 1). The highly concentrated residential area is in the old inner city surrounded by the city wall and in the area skirting this wall. Most of the houses in those areas are court-yard houses and are owner-occupied. They usually are in a poor state of repair and lack modern amenities. Shanty houses or slums are found often in those areas, especially along the north and south sides of the railway where the refugees from Henan and
Shandong provinces settled during the war against the Japanese. New urban housing developed after 1949 has been located in the inner and outer suburbs to the west, east and south of the old city. Usually those houses are attached to the place of work, such as factories, universities and other institutions. Housing in those areas has predominantly taken the form of multi-storey walk-up-blocks of flats (or apartments) usually built in parallel formations.

5) Urban housing in Xian has a variety of tenure types which are officially defined into three categories. First is the municipal housing, financed directly by the state and administered by the Real Property Bureau of the city. It represented 16% of the total housing floor space in the urban area in 1981 (Table 3). This group of housing usually provides shelter for those whose work-units are not able to allocate housing for them. Included in this category of housing are self-help dwellings, and in recent years a part of work-unit-built houses. The second major group of housing is that owned and managed by production units and by other centers of employment, locally called the work unit. In 1981 this group of housing covered a floorspace of 7.96 million square meters representing 71% of the total urban housing stock. Those houses are all allocated to the employees of those units. The third form of tenure is private housing. It is mainly the heritage from pre-1949 society. In 1956, this kind of housing had a floorspace of
2.51 million square meters amounting to 56.5% of the city total housing stock (Xian Real Property Bureau August 1986). After two campaigns of "urban housing socialist transformation" (i.e., nationalization) carried out in 1956 and 1958 and the catastrophe of the Cultural Revolution, the figure sharply declined, most the private houses were owner-occupied. According to the statistics of 1981, a housing floor space of 1.46 million was registered in private houses, which represented 13% of the city total.

Table 3: Housing Floor space of Different Tenure Types in Xian 1981

<table>
<thead>
<tr>
<th>Total</th>
<th>Municipal Sector</th>
<th>Work-unit Sector</th>
<th>Private Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>(m. sq. m.)</td>
<td>(m. sq. m.)</td>
<td>(m. sq. m.)</td>
<td>(m. sq. m.)</td>
</tr>
<tr>
<td>11.67</td>
<td>1.78</td>
<td>1.6</td>
<td>7.96</td>
</tr>
<tr>
<td>71</td>
<td>1.46</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

Source: from Xian Real Property Bureau, 1986.
Chapter II

LITERATURE REVIEW

Literature relevant to the themes of this study can be divided into three groups. First are the works that are concerned with theoretical and methodological basis of the studies of urban housing, particularly in the light of managerialist and structuralist approaches developed by western geographers. For a better understanding of the intellectual context in which housing policies emerged in post-revolution China, the Marxist approaches on socialist housing have also been briefly outlined. Secondly are those studies that focus on urban housing in socialist countries of Eastern Europe, with an emphasis on the changes in their housing policies. Finally are the works that are dealing with the recent urban housing issues in China. These are contributed mostly by foreign researchers.
2.1 Perceptual and Theoretical Studies

2.1.1 Managerialist and structuralist approaches to geography of housing

Kirby (1983), in his analysis of diverse perspectives of housing, identified five approaches and divided them into two categories: One is the demand-based explanations which included traditional ecological, non-classical and behavioural approaches. Another is the supply-based explanations consisting of more recent managerialist and Marxist approaches. Johnston (1990) defined the Marxist approaches as a part of structuralist approaches as applied in geography. Essentially, the demand-based explanations focused on the competition between individual households for land, a location within the city, and a dwelling. Individuals and households are believed to be free to choose where and in what type of housing they want to live. The residential differentiation is seen as a result of difference in choice, aspiration and preference associated with differences in socio-economic status, and culturally determined behaviour and values of households. The supply-based explanations hold that the study of household units from the demand side does not provide the key to understanding the formulation of the urban housing pattern, since the range of choices available has been restricted and sometimes predetermined by the decisions and actions of the agencies responsible for the supply and allocation of resources.
(Kirby 1983 pp. 25). Accordingly, the managerial and structuralist approaches seek to explain the phenomena of urban housing pattern with a focus on the factors affecting the supply of housing resources under certain controls and constraints.

A more detailed account of managerialism in the study of housing are available from Bassett and Short (1990), Manion and Flowerdew (1980), and Kirby (1983). According to Manion and Flowerdew (1990), managerialist approaches are based on the recognition that the controllers of access exert an important influence upon the distribution of housing opportunities. Therefore, it pays attention to the role of various controllers or managers. Those managers, identified by Harvey (1973), are estate agents, property developers, financial institutions, landlords, and government institutions. It studies how these managers impose their goals and values on the individual residents and how their decisions affect the choice of houses in an urban area. This approach "advanced considerably the body of knowledge on how, why and to whom scarce resources are allocated, and has laid a sound empirical foundation for further research" (Kirby 1983, pp. 35). However, Kirby also pointed out that "while the decisions of individual managers can affect the distribution of resources, it is unrealistic to assume that decisions are made in isolation and are independent of political-economic influence" (ibid.).
Structuralist approaches have been explicitly developed in recent years by a number of geographers, such as Harvey, Castells, Bassett and Short, and Johnston. Johnston (1986) argued that the focus of structuralist approaches is not on people and what or how they do, but rather on the structures of the society of which they are a part and which provides the conditions for their activities. Therefore, structuralist approaches seek to bring out the crucial role of the social and economic structure of a society as the determinants of human consciousness and being. Applying it to housing study, Bassett and Short (1980) pointed out that structuralist approaches took the study away from an attempt to understand urban housing pattern in isolation or as a natural phenomenon, and have linked it to a more general concept of political economy of an urban area and to the wider theories of the city in a given society. As to the relation between housing and space, for example, structuralist approaches maintained that the spatial structure of housing is produced neither by its own autonomous laws of construction nor by people's preference and decision. It is thus a part of the general relations of production, relations which are simultaneously social, economic and spatial (Johnston 1986, Bassett and Short 1980). As to the study on the making of housing policy, structuralist approaches emphasized the search for determinants at the different levels in the social
structure. Since the policymakers are the representatives and supporters of the social structure, their ideological level and behaviour criteria are conditioned by this structure (Bassett and Short 1980, Castells 1977).

Managerialist and structuralist approaches form an appropriate basis and meaningful direction for a study of housing in China and Xian city. Accordingly, this study would focus on the relationship between housing patterns and its conditioning factors strongly grounded in the socio-political structure. This is so because China has a centralized political system with a planned economy and the organization of housing supply and allocation directly reflects the working of the managerialist approaches within the socio-political and economic organization of the Chinese society. Government policies and decisions have a determining influence on people's lives. The authorities and institutions at different bureaucratic levels play a dominant role in human resource distribution.

2.1.2 Marxist approaches to socialist housing

Bassett and Short (1980 pp. 1) pointed out that Marxist approach to housing "draws upon historical materialism to focus on, amongst other topics, the position of housing as a commodity in a system of commodity production....". This principal view was initiated by Engels' work "The Housing Question" (1837). According to Engels, housing is not a direct result of the exploitation of the worker as in the
capitalist production system, but rather a relationship between tenant and landlord taking the form of a commodity transaction by obeying the normal rules of the market. This suggests that the housing question is not of central theoretical importance to Marxism as is the question of redistribution of the means of production depending upon a change in the mode of production. Based on this point of view, Engels developed socialist theories on housing, rent, land, and housing ownership. He countered the view that housing should be provided free of cost to workers after the revolution, and pointed out that socialism did not lead to the abolition of rent, because rents just reflected building and maintenance costs, land values, and the state of supply and demand. Rent transaction was a simple commodity transaction. It did not involve the worker/capitalist relationship, so rent could be a form of capital accumulation for the extended reproduction of state-owned housing.

Both Marx and Engels were very concerned about the ownership of land. They thought that land nationalization was essential for socialist countries (Marx and Engels, 1973). Besides, Engels added that the abolition of individual land ownership would take varying courses in accordance with the different conditions, and that land rent should not necessarily be abolished.
Engels' attitude towards the individual owner occupation was quite flexible, although he had encouraged the efforts of conservative enthusiasts for working class owner occupation in order to blunt the rising class consciousness of the proletariat.

Through briefly reviewing the Marxist approaches to socialist housing, one could find that China's housing policies and their implementation before 1978 actually deviated more or less from Marxist theories in certain basic principles. For instance, for a long time housing had not been regarded as a commodity, so that housing market was virtually non-existent, which had led to a series of inappropriate policies hindering the development of urban housing. The post-1978 reforms in housing policy are nothing but a return to Marxist doctrine. This will be further discussed later.

2.2 Housing Policies in East European Countries

Although there are differences among individual countries in East Europe in terms of housing policy experiences, the literature identifies some common aspects.

According to Wall, Harloe (1974) and Bassin (1994), urban land ownership in East Europe consists of two types: countries, such as Soviet Union and Yugoslavia that have all their urban lands nationalized with existing occupants being granted only the right to use the land. In some countries,
for example Poland, the urban land is partially owned by the state and partially by the citizens.

In spite of the socialist redistribution campaign carried out in the early post-revolutionary period, today's housing stock in East Europe has acquired a diversity of tenures. There are three broad types of ownership: state, cooperative and private housing. In the state housing stock, a large proportion is controlled by the enterprises, departments and ministries. In the Soviet Union, for example, this accounted for two-thirds of all the housing in 1971 (Bater, 1990, pp. 105). The latter two types of ownership have made a considerable development in recent years, so that state-owned housing no longer dominates the market in many East European countries. Some of them, such as Yugoslavia and Czechoslovakia, even have higher rates of owner occupation than those in the West (Wyre, 1994, Dimaioc 1973, Bourne 1981).

Rent has been charged for residents living in state housing by all East European socialist governments. But since the state housing is regarded partially as a public service, rents are very affordable representing as low as 3% of the average income in Poland and 3.7% in Eastern Germany (Bassin 1984, Staemmler 1984, Ball and Harlee 1974).

The allocation of state housing in these countries is controlled by governmental housing agencies. Under the conditions of an acute housing shortage, the allocation
policy is designed to determine a rational and just basis for distribution. It, therefore, serves as the major planning instrument of control over population mobility and also as a valuable tool in the reward-incentive system as practiced in the Soviet Union (Emaio 1973, Bourne 1981).

The organization of housing investment and development obviously reflects the nature of the centrally planned economy. The programming and planning of housing construction is undertaken at a series of hierarchical levels of decision-making, firmly reflected in and controlled by the central plan objectives. The designation of construction and improvement projects is very much a part of national economic planning (DiMaio 1973, Staezamler 1994, Ball and Harloe 1974). The financing of housing in East European countries claims only a small percentage of the government's overall budget. Wynn (1984) made an interesting comparison between West and East European countries on the investment in housing as percentage of total fixed capital investment in 1976. He showed that the average figure in 17 West European countries, as well as the United States and Canada, was 23.3, while in eight East European countries this figure was 12.7, only half as much as that of Western countries (Wynn 1994, pp. 4).

Remarkable changes in housing policy have emerged at different times in almost every East European country. Those changes indicated a sharp shift from an emphasis on
expanding industrial production, which was accompanied by neglect and limitation of consumption including housing, to an increasing focus on the production of consumer goods and the promotion of housing to a higher priority. This trend has been reinforced lately by economic reforms introduced during the 1970s. Social emphasis and stimulation have been given to both co-operative housing construction and private housing projects. The co-operatives received extensive aid in East Germany, Poland, Soviet Union, Yugoslavia and Czechoslovakia in the form of long-term or no interest loans. In the Soviet Union, these kinds of loans covered 40 percent of the cost of co-operative housing (Bater 1980, p. 104). As a result, co-operative housing has become an important tenure system in those countries. The system of market function was gradually introduced, together with the decentralization of control away from the centrally planning directives and a shift to a partially regulated market-price mechanism and enterprise profitability. Bassin has discussed such changes in Yugoslavia. He observed that the responsibility for solving the housing problems of their workers was entirely transferred to workers' organizations, and the Communal Housing Authorities were abolished. The commercial banks started to play an important role in the credit system of housing construction and in stimulating the purchasing power of potential buyers. Further changes were introduced in the sphere of housing rents, so that they
become more on a par with the monthly credit repayments of new dwelling unit owners. Special enterprises for housing maintenance and reproduction were created as Communal Enterprises (Bassin 1984, pp. 162). These reforms have made substantial advances in housing supply in the East European countries. In the Soviet Union, for example, fully two-thirds of the population were rehoused between 1960 and 1975. During this period, some 1.55 billion square meters of new housing were constructed, which amounted to half of the housing built during the period of 1918 and 1950 (Bater 1980, pp. 102). But Ball and Harloe (1974) and Bater (1980) became aware of some possible results of these policies such as wider socio-economic inequalities, increased individual wealth accumulation and the resulting residential spatial segregation. The new policies have increased reliance on the ability to pay and have encouraged private ownership, obviously in the direction of a market-based society.

From the overview of changing housing policies in the East European countries, one could discover many similarities to what has and is happening in China. It is not surprising if we realize that China and Eastern Europe are all socialist systems and share some common characteristics of a centrally planned economy. Therefore, the experiences of East European countries in housing development provide a useful reference for comparison with China's housing policy and its current changes.
2.3 Studies of Housing in China

Ma (1981), in his studies of housing in China, highly commended the post-1949 achievements in the construction of new housing and the rehabilitation of the old. He also admitted that the housing conditions in China are still overcrowded, attributing this to the exceedingly high growth of population in relation to expansion of housing stock and, secondly, to the problems inherited from the pre-1949 regime. He examined the urban services in the residential areas in Beijing, Tianjin, Shanghai and 8 other cities and specially complimented the construction of self-contained communities which were built in the 1950s under the norm of "close to work place and easy for daily life". These communities were usually associated with small scale industries, commercial establishments and other services. He noticed, however, that housing construction was poorly regulated in the urban areas due to the absence of the coordination of the city planning department. While mentioning the signs of housing policy change and the expected improvement in housing conditions, Ma maintained that China still had a long way to go to solve its housing problems, mainly because of scarce financial resources and high population density.

McQuillan (1984), in a brief review of China's urban development history since 1949, recognized that the economic reform since 1978 had led to a great change in
urban and housing planning. He pointed out that China recently had made substantial progress in housing investment in comparison with the years of neglect and inadequate funding during Mao's time. In addition, the pattern of investment had changed with a decline in state spending and an increase in individual enterprises and private funds. He appraised the housing rehabilitation projects, especially the "unified comprehensive planning approach" and its results — the planning of a residential district which was similar to the self-contained community commended by Ma, but appeared to be improved and more popular type of renewal project since 1978. McQuillan (1984) also studied the changing role of the construction industry in the national economy. He found that the construction industry was now regarded as a key element in the expansion of the national economy, and the recently introduced contract bonuses and responsibility system to the builders had "greatly increased productivity in the construction industry".

Kirkby (1984), taking a dim view of China's housing situation before 1978, considered it to be a crisis. He summarized three main causes for this: 1) the state policy that severely restricted private housing, neglected housing investment, and the administration and the chaos of the Cultural Revolution; 2) the traditional peasant bias among the policy-makers against the construction of the city; and 3) the historical legacy of the negative attitude towards
the maintenance of buildings. Kirkby (1984) also examined the impact of economic reforms on housing. He suggested that the change in housing policy was a response to the shift of China's spatial-economic strategy which became explicitly in favour of urban agglomerative development. He considered the constraints of land and finance to be the crucial factors confronting the Chinese planners involved in housing development in the future.

Whyte and Parish (1984) studied urban housing in China from the sociological point of view. They focused their study on the housing situation before 1979 and paid little attention to the post-1979 changes. To assess the housing condition, they made an international comparison with other developing countries. They found that Chinese urban housing compared favourably with other developing countries in terms of the number of persons per room, conditions in the squatter settlements and slums, housing amenities and equality of housing opportunity. They also showed some housing problems particular to Chinese cities such as overcrowded conditions, sharing of facilities and the resulting human conflicts. A distinctive analysis was made by them on the structure of urban social control and its relation to urban housing in China. They argued that the structural basis of urban social control in the cities of China was related to the predominantly bureaucratic nature of the urban distribution system, within which housing
ownership was under the control of the government. This had led to a growing share of public housing and decline of private housing in Chinese cities. Another feature of this system was that the job and housing are allocated, not by impersonal market forces but by bureaucratic hands, people could not move around and change their situation at will. People, therefore, tended to remain fixed in their work and residences for long periods of time. This bureaucratic administration of housing gave urban social life in China a distinctive quality: first, the neighborhoods had a high level of stability. With such a cramped housing supply and allocation through slow-moving bureaucratic channels, the rate of residential mobility within cities had remained low. Second, urban neighborhoods tended to be more heterogeneous in social status than they would have been in a society where market forces and personal preferences predominated. This means that with no real market in housing, personal preferences had a very small role, while the bureaucratic criteria emphasized things like the type of work unit, seniority and family size, rather than income, ethnicity or other similar criteria. The resulting pattern did not take on the class-and-ethnic-segregated characteristics and rather remained fairly mixed.

Among the small number of evaluations of housing development in China by Chinese experts is a study by Ji Mingshen (1985), an economist, who studied the economic
attributes of public housing. He argued that public housing in a socialist country was essentially a commodity rather than a welfare facility. Therefore, housing should be allowed to enter the market for exchange according to the role of market economy. He pointed out that housing was still regarded as a public service and housing supply including investment, construction, and allocation were actually based on state monopoly and the " gratuitous-assigned" system. This system violated economic laws, obstructed capital circulation and accumulation, and thus led to financial shortages for housing production. He concluded that the key to the housing problem was to restore the housing market in China.

It is unfortunate that the studies of urban housing in China were virtually non-existent for a long time, the academic discussions in recent years were almost all concerned with the economic aspects of housing. Hence, we have to refer our study mostly to the literature by Western geographers. The studies by Western geographers did provide some valuable insights into the housing situation and its changes in urban areas of China. However, as we have mentioned before, the lack of detailed field work and systematic analysis of the changing nature of the housing policy and its politico-economic-geographical connotations is a common shortcoming in these studies.
Chapter III

METODOLOGY

3.1 Working Hypotheses

Our review of the literature and our observations in the field have shown that the housing policy in China has followed the general trends in economic and social policies since the 1949 revolution. Therefore, for an analysis of the nature of the post-1978 changes, it would be necessary to examine the changes in economic structure of the country and its internal relations with urban housing policies.

Before the economic reforms, China's national economic system was highly centralized and unitary, which ran the economy completely through administrative directives and bureaucratic control. It gave low priority to the production of consumer goods and city development. Following the policy of the Four Modernizations (agriculture, industry, technology and defense) set by the Third Plenum of the Eleventh Central Committee of the Chinese Communist Party in late 1978, substantial economic reforms have been introduced. There are two principles underlying those reforms: firstly, there was an attempt to make the productive and distributive processes more efficient by partial switching towards market-oriented, decentralized
method of control, away from complete reliance on rational command planning. Secondly, there has been a related attempt to increase the output of consumer goods aimed at balancing the social production and social needs. These principles are manifested in the new national planning system by the following characteristics which have a direct impact on the new housing policies:

1) The city is emphasized not only as the center of regional economic development, but also as the dynamic role of technology, finance and administration. Therefore, urban development and urban planning have been given high priority.

2) The economic planning pattern (i.e. the proportional relationship between major economic sectors) has been readjusted to increase the proportion of production of consumer goods in the national economy.

3) The commodity economy has been regarded as an indispensable part of the socialist economy. Therefore, market mechanisms have been receiving greater attention.

4) Adoption of different economic modes (i.e. diverse ownerships of the means of production) and varied ways of management are encouraged, provided that socialist public ownership holds the predominant position.

5) Greater freedom of self-management has been given to the enterprises and other production units or institutions to allow them relative independence.
These new economic planning policies have led to considerable changes in urban housing policy and to the extensive housing programs. Based on this analysis and the field survey in Xian city, the following hypotheses have been formulated.

1. Following the changes in overall economic development approach, housing construction programs and locational patterns have undergone changes with an increased emphasis on housing construction and renewal in the inner city, while during the earlier period higher priority was given to industry-related housing developments on the city periphery and beyond.

2. As urban planning has been reinstated as the major activity since 1979, the planning of residential estates has undergone a change with an increasing shift from small scale and piecemeal design to the comprehensive planning of large scale communities.

3. The change in economic planning pattern has resulted in a sharp increase in state funds devoted to urban housing construction since 1979.

4. The increased recognition for urban planning and the new pattern of housing investment have led to a greatly increased output and availability of urban housing and the improvements in housing quality, namely the improved housing space, forms, design and amenities.
5. The adoption of market economy in housing development and management is also beginning to increase the housing production and to improve housing physical conditions because more funds can be mobilized either from the private sector or through raising rents as well as through sale of public houses to generate more funds for housing development.

6. Market economy in housing is also beginning to change the old bureaucratically-controlled allocation system by increasing people's freedom of choice and mobility, which at the same time has curbed certain tendencies among people in position of power to take undue advantage of this system.

7. The trend towards more decentralized methods in national economic planning by giving greater autonomy to local production units (work units) has resulted in a notable trend towards these work units building more houses for their employees.

3.2 Data Collection

Data collected by field survey can be classified into four categories according to their sources and nature: 1) Data and information from widely scattered published and unpublished documents, reports, seminar papers and news media before and after 1978 with respect to the economic and housing policies and its political theoretical background; 2) Descriptive statistics concerning the demographic and
other socio-economic characteristics of Xian, and the quantitative and qualitative aspects of housing before and after 1978. These data have been obtained from municipal institutions such as the Xian Statistical Bureau, Xian Real Property Bureau and Xian Planning Bureau; 3) Information derived from individual interviews with city planners, housing management officials and other policy makers and practitioners, regarding decision-making process including the principles, objectives and constraints, and the information on policy implementation including its strengths, weakness and problems. A questionnaire survey was also conducted in some selected housing development areas to assess the residents' perception of their housing and facilities. Unfortunately, the data collected from this survey of residents was lost in transit from Hong Kong to Seattle U.S.A. on the way back to Windsor. Hence, our study will not be able to examine housing development from the consumers' point of view; 4) Some data on housing construction, amenities, rent payments have been acquired by a sample investigation of a number of households chosen randomly.

3.3 Data Analysis and Processing

Because of various reasons such as the long neglect and inadequate emphasis on data collection at the official level, housing being a long-neglected concern both for the
government and academic research, and the policy of confidentiality, this study encountered the problem of inadequacy of data. Some data, in this research, were discontinuous in time, especially during the period of the ten-year Cultural Revolution. In order to overcome this gap, effort was made to dig into several scattered, though inadequate sources, although some gaps still remained. Some data were found to be inconsistent, which means that the data collected from different sources were the same in kind but different in quality. So the work of counterchecking, recalculation and justification became necessary. Still some data sources were scattered which required considerable effort to synthesize and classify them. Another difficulty was in obtaining maps showing housing spatial patterns and the structure of residential districts, since no such maps were available, and many residential areas had mixed land uses. The maps used in this study are based on sketches through field survey and written information as well as some information derived from other kinds of maps. The areas where housing land use accounted for over 50% of the total have been picked up as residential areas. The maps showing the structure of the self-contained residential quarters had to be schematic in nature, mostly based on field observations.

The official quantitative data about the public housing focus on the housing owned by the municipality and the
housing owned by the production units or work units. The work-unit housing is again divided into the housing owned by the units under the jurisdiction of city government and the housing owned by the units under the jurisdiction of provincial or central government. In most cases, we have tried to unify these two categories into one category -- public housing. Sometimes when this unification is difficult, special qualifying statements have been made. Similar complications have been found in the definition of urban population. Usually the aggregate population of Xian consists of two portions: agricultural and non-agricultural. Because our study is concentrated on the urban area, we have used the data of the non-agricultural segment as the urban population. The definition of non-agricultural population, however, sometimes refers to the population living in the urban and suburban districts of the city proper, but sometimes includes one suburban rural county called Chang'an County and one district in the outer suburb called Yanliang District. In the same token, this study prefers the use of the former that excludes the rural areas. But in some cases the latter has to be included when the separation is impossible.

To process the data in time dimension, the first problem faced was how to divide the post-1949 history into stages in terms of housing development. As we have already pointed out that housing situation in China is mostly subject to
variations in the policies of national economy, this analysis will basically follow the time spectrum divided by the periods of national economic planning, namely the "Five-Year Plan". But to highlight the post-1978 changes, the analysis will not be restricted to this periodisation for the years after 1978.

The basic standard of urban housing condition that we have used is the per capita 'living space' or sometimes the household living space, by which is meant the living room, dining room, bed room and so forth, exclusive of the area devoted to corridors, closets, stairways as well as kitchen and bathroom etc. The number of housing or the output of housing construction, however, is often indicated by the 'construction space' or 'floor space', a measure which includes all the above-mentioned housing space. Therefore, in order to assess the change of housing condition, this study has transformed the floor space into the living space by using the ratio—1:0.52 which is usually used by Chinese architects (Xian Architectural Design Institution, 1986). Another important measure for housing condition in China and Xian is the height of housing namely the number of stories, because it can reflect the housing density. As to the housing density, we have used the measure of gross construction density, which is the ratio of housing floor space to the housing land area indicated as square meter/hectare.
Generally speaking, the data involved are descriptive in nature. They will be analyzed through simple calculations, tabulations, and diagrams.
Chapter IV

AN ANALYSIS OF THE CASE OF XIAN

4.1 The Changes in Urban Planning and The Changes in Housing Development

Housing planning in Xian since 1949 has been always taking place within the evolving system of urban planning, while the urban planning has followed each change in national policy. Examining chronologically the process of each change will help to understand the abrupt turn in 1978.

4.1.1 Period of Restoration:

The 1949 revolution marked the end of thirty-year civil war and foreign invasion. A rural-based Chinese Communist Party began to direct its attention to the city. Mao Zedong declared in 1949: "the centre of gravity of the Party's work has been shifted from village to the city...only when production in the cities is restored and developed, and when consumer-cities are transformed into producer-cities, may the people's political power be consolidated" (Mao Zedong 1969, pp. 365). The period between 1949-53 was called the restoration period. During this period, the priority was given to the reconstruction of the cities and buildings of their industrial base. This involved revitalizing factories
and rehabilitating city infrastructure. Associated with this were some small scale projects of slum clearance, and some worker-house constructions had been accomplished. In Xi'an, new houses accounting for a floor space of 199,000 square meters were put up during this period. Large parts of these were new residential estates provided for industrial workers, such as the Sheng Chan village for railway workers, Lao Dong village for porters and five other villages for other kinds of urban workers. These houses were all located near the old city area and were all single-storey court-yard houses with good ventilation and natural lighting conditions (Figure 6). Besides, 23,000 square meters of floor space of slums was cleaned up. In this three year period, the net increase of new housing space was 17,100 square meters, an increase of 7.3 per cent from 1949. Since the large recruitment of administrative personnel and the transfer of army-men to the city for urban reconstruction, the population during this period increased by 32.5 per cent, the per capita living space fell down from 3.32 square meters to 2.69 square meters (Xi'an Real Property Bureau 1986).
FIGURE 6 locations of seven worker-housing projects built in Restoration Period (1950-1953)
4.1.2 Period of First Five-Year Plan

1953-7 was the period of the First Five-Year Plan (1st FYP), a very influential stage in the post-1949 urban development in China and Xian. During this period, Mao Zedong's idea of transforming the consumer-cities into producer-cities was the guideline of national economic planning. There were also times when the Soviet model of development was closely followed, resulting in a vigorous program of industrialization. 39 cities were designated as the priority cities in terms of industrial and urban development. Xian was one of them and was defined as a heavy industrial centre (Zhan Xingyi, 1985). At the same time, urban planning at the national level was introduced. The general policy for the planning had been set by the central government, that is, "new Chinese cities must serve socialist industrialization and serve the working people" (the State Construction Commission 1955). Following this principle, 150 cities started working out their Master Plans. Xian also made its first blueprint or an overall plan in 1953. This plan embodied the main municipal policy, that is, the priority was to be given to the development of new and large scale industries. Meanwhile, the old city area was to maintain basically the status quo. The construction of facilities for people's well-being including housing were to be subordinate to the productive construction (Gui Zhiyuan 1986). Based on this principle as well as in line
with the Russian planning theory and methodology, the
general land use pattern of Xian had been planned and
formulated: the eastern suburb was to be the centre of
machinery industries; the western suburb was to be the
concentration of electronic industries. Between the Chai
River and Ba River in the eastern suburb was the centre of
textile industries. Universities and cultural institutions
were concentrated in the south suburb. Correspondingly,
large amounts of residential estates had been built with a
close link to those developments, which formed the basic
locational pattern of housing in Xian (Figure 7).

In an interview, Gui Zhiyuan, Xian's senior planner,
indicated that the main purpose of this locational planning
was to reduce the burden on urban transportation, and two
planning methods were employed: 1) Houses were usually
located within walking distance to the work place; 2)
Residential estates were developed with a broad set of
available local goods and services. These methods were
embodied in the 'Detailed Plan of Residential District'
drawn up by the Xian Planning Bureau in 1954. The siting of
the residential estates was determined by the siting of
factories or institutions. Those two different land uses
were in conjunction with either a road, some green space, or
brick wall as the boundary. The estate was 3 to 12 ha. in
size, and was built on the existing block surrounded by
streets, which was known as the block-based approach. Most
houses were three-storey flats and were put up along the edges of the block to form a courtyard called 'peripheral pattern' (Figure 8). In the centre of the estate usually there was a piece of green space or recreation space. Education services were provided for each estate through an elementary school, a kindergarten or a nursery. Some small stores were established for daily needs, which were accommodated in the first floor of the flats. At that time the building design closely copied the Russian standard. Most apartment units were self-contained for single-family occupancy with the living space of 9 square meters per person (Xian Working Group, February 1954).

![Diagram of Housing Estate Pattern]

**Figure 9:** Block-Based Peripheral Pattern of Housing Estate in 1st FYP
Figure 9: Block-Based Mixed Pattern of Housing Estate in 2nd FYP

In this period urban housing had a substantial development. According to the Xian Statistical Bureau, 3.1 million square meters housing floor space had been built in these five years at speed of 621,000 square meters per year. The per capita living space increased from 2.69 square meters to 3.01 square meters. This average, however, concealed the spatial difference. Since the increase in per capita availability was contributed by higher level of space allocation, e.g. 4-4.5 square meters, in the new developed suburbs, whereas the old inner city still remained below 3 square meters per person, which was due to the pro-suburb
policy in urban planning (the Study Group of Urban Housing Design and Construction 1962). This development had laid a fundamental spatial pattern of urban housing in Xian, which today has resulted to some extent in poor land-use assemblages and the creation of new urban problems. In many industry-related residential areas, the environmental pollution (water, air, noise, etc.) problem has been quite serious, and this problem is very difficult to deal with, because it will involve large scale reconstruction. In addition, this land use pattern has caused some difficulties in today’s comprehensive planning approach in terms of functional division of urban land use. The block-based approach has also given rise to some problems, because the block has limited space to develop sufficient wellness facilities, traffic arteries and green spaces. It was found from the field survey that the peripheral layout of the houses was frequently not found satisfactory by the residents since it violated Chinese tradition since the west-east oriented housing was considered intolerable. The worst result of blindly copying the Russian model was that the single family apartment units designed according to the norm of 9 square meters per person, today are being shared by two or three families. The author visited one such unit in a factory, where three families consisting of 11 people (6 adults and 5 children) live together. It was a three-room apartment (beside the kitchen and washroom) with a total
living space of 50 square meters. One family lived in a living room, another lived in a bedroom, and the third family took one bedroom and one storeroom. The kitchen and washroom were shared by three families. The author was told that the disturbance from each other was unavoidable, resulting in inconveniences and annoyance and conflict.

4.1.3 Period of Second Five-Year Plan

The First FYP was followed by the period of the Second Five-Year Plan (1958-62), which saw a re-evaluation of the Soviet approach to the development of China and the adoption of a new approach emphasizing mass mobilization, collectivization and equalization between industry and agriculture. This led to the national policies during the Great Leap Forward.

The Leap was characterized not only by rural reorganization through the introduction of the Commune system, but also by its emphasis upon small-scale and local units of production. It was also accompanied by a demand on unrealistic targets and arbitrary, uninformed direction of economic activities. In these circumstances, urban planning in Xian had set up an ambitious but unattainable goal which aimed to "modernize Xian city in ten or fifteen years" (Guzhiyuan 1988). At the same time, the policies of integration of both city and country, and both indigenous and foreign methods became a fashion. The scheme of urban communitization was introduced. Urban housing development had been directly
affected by those policies. During this period, many small-scale and local industries were set up in the suburbs and in the inner city as well. Those industries built houses attached to their factories, but the scale of construction was smaller than that in the 1st FYP. The houses were lacking in adequate facilities and amenities. Thus, they failed to develop complete residential estates. The layout of houses became a mix of peripheral type with parallel row type (Figure 9). The average height of houses was raised to 4-5 stories. The amount of over-5-storey buildings had increased from 16.4% in 1st FYP to 42.7% (The Study Group of Urban Housing Design and Construction 1962). The design standard of 9 square meters floor space per capita had been reduced. The cost of housing construction was reduced from 70-80 yuan per square meter in 1st FYP to 50-60 yuan; ibid.). Many apartment buildings had no private but only public toilets. There were no private kitchens in quite a few buildings, because the commune canteens were encouraged at that time.

4.1.4 Period of Three-Year Readjustment:

The failures of the policies of the Great Leap Forward aided by the withdrawal of Soviet aid in 1960 and the three years of harvest failures (1960-63), resulted in a general crisis in China during 1962-1965, the years of serious food shortage and starvation, and the years of reexamination and readjustment of the development policies initiated by the
Chinese Communist Party. This period witnessed a sharp decline in the status of urban planning, which was marked by the statement made by the National Planning Conference in 1960. It announced that "urban planning will be abolished in the next three years" (Zhao Xiqing 1985). Since then, city planning became increasingly neglected. The dominant idea of economic development at that time was to follow the model of Daging, an oil field in north-east China, to create socialist communities which transcended the urban-rural and industry-agriculture dichotomies. In this situation, new industries in Xian were no longer located in the city area, but in the outlying rural towns to integrate with agricultural developments (V. F. S. Sit pp. 11-13). Housing development in the suburban industrial areas shrank considerably. Relatively speaking, it made some progress in the inner city area. This tendency was enhanced by the decision of the central government in 1962 which allowed large cities to use their additional tax from industrial and public facilities as well as the property taxes (locally called the 'three revenues') for their own city and housing development (the Central Committee of the Chinese Communist Party and the State Council 1962). Owing to this policy, 9 million yuan had been taken from the three revenues by the City Real Property Bureau for housing construction during the years of 1963 and 1965. 53 apartment buildings amounting to a total of 16,000 square meters floor space had been
built in 16 places, 14 of them were in old city areas (Figure 10).

Affected by the Daging spirit of 'hard work and thrift', most of those buildings were of low quality. There was no interior running water and private toilets. Instead of providing private balconies, those buildings were all in the form of one-sided long corridor for public traffic. Today, many houses have become dilapidated, and quite a few are in a dangerous condition. A field survey was conducted by the author in one of those areas, called Wenyi Village, built in 1962 (unfortunately, the statistical data have been lost). This residential estate skirts the city wall in the south (Figure 10). Two busy traffic roads lie immediately to its north and west sides, making it a very noisy area. West of it is a hardware factory, smoke from its big chimney blown by the prevailing winds severely pollutes the air in this area. Inside the estate, there are no trees and lawns. Spaces between the apartment buildings are crowded by various small houses and sheds built by residents themselves. Most of those sheds are kitchens since no kitchen was built in the apartments; others are storerooms and bedrooms to relieve the increasingly crowded condition. There are 7 two-storey buildings and 8 three-storey buildings. Each storey had only one toilet and one room with water taps. Most of the time only the toilet and water taps in the first storey are available, because the water
FIGURE 10 locations of 14 housing projects in old city area (1963-1965)

Source: Based On The Map Made By The Surveying Bureau Of Shaanxi Province 1983
pressure is not strong enough. The sewage system was also very poor; sewer pipes were often blocked or leaking. A more serious defect was that the land under most of the buildings was subsiding, resulting in crevices and cracks developing in the walls and ceilings. Most tenants living in this area were factory workers, shop and restaurant attendants and middle or elementary school teachers. The dissatisfaction among them was very strong. The officials of Xian Real Property Bureau told the author that tenants in this area had refused to pay the rents for several months. Many letters had been sent to the municipal government calling for improving the housing conditions in this area, as a result reconstruction projects have eventually been started in two buildings since the summer of 1966.

In the period of three-year readjustment, Xian had built new housing floor space of only 4.3 million square meters. In the same time, the city population had increased by 51,000, thus, the per capita living space had decreased to 3.23 square meters which was lower than that in 1949.

4.1.5 Period of Cultural Revolution:

The three-year readjustment period was followed by the ten-year turbulence of the Cultural Revolution (1966-76) when anti-urban bias became more dominant. City construction was regarded negatively as enlarging the difference between city and country. Previous urban planning was condemned as 'revisionist' (Beijing Review No.45, November 1986, pp.6).
so that urban planning institutions and higher educational institutes were practically eliminated as planners, academics, and students were despatched to rural areas for farm work or were transferred to other professions. Urban construction including housing inevitably fell into anarchy. In Xi'an this chaos could be found everywhere. Factories, warehouses and administrative offices encroached upon the residential areas, streets and the courtyard houses, destroying the city landscape, and leading to the result that the percentage of housing land use among non-productive land use declined from 42% in 1965 to 23% in 1979 (Gui Zhiyuan). The location of new houses followed no planning regulations and followed the idea "stick a pin wherever there is room" (ibid.). Therefore, the density of housing had increased extremely. In 1965 it was 3,667 square meters per ha., while in 1979 this figure climbed up to 26,072 square meters per ha.. This change involved an increased housing height, but it was not the main factor, because the average height of buildings in this period was 4 stories, not much different from the period of 2nd FYP. Housing quality was also poorer than in the preceding period. Apart from the inadequate facilities, the evident indicator was the thickness of the house wall which was reduced from the previous standard of 38 cm to 24 cm (ibid.). People called the houses built in this period the 'pigeon cage'.
4.1.6 Period of Economic Reforms, 1978 Onward:

Following Mao's death in 1976 and removal of the 'Ultra-Leftists', a new leadership was established under Deng Xiaoping in 1978. Reemphasis on the open-door policy and economic development, followed by the subsequent economic reforms have given the cities a favourable status. This was expressed in the Resolution passed by the Third National Urban Construction Conference in March 1978. It stated that cities are the basis of industrialization, and the centre of regional economic development, therefore, adequate attention should be devoted to the city's construction and rehabilitation. The resolution also called for the municipalities to draw up their long-term and short-term Master Plans, in which immediate priority should be given to the renewal of the old city and the development of housing and other urban fabric concerning people's well-being (the Central Committee of the Chinese Communist Party November 13, 1978).

Echoing this policy, Xi'an reinstated its urban planning authority—Xi'an City Planning Bureau in 1979. It started working out, in the same year, the City Overall Plan for the period of 1980 and 2000. This plan was given its final form in 1980 and was approved by the State Council in 1983. In this plan some policies with respect to housing development have been made. These are:
1) Top priority in housing construction should be gradually shifted to the old city area, of which, the imperative task is to transform the slums and shacks.

2) Instead of the traditional block-based approach, the construction of new housing should be carried out on a large scale to build self-contained residential communities.

3) Housing programs should be undertaken within a framework of a comprehensive planning at the municipal level in terms of the organization of finance, architectural design, location, construction, allocation and management.

4) In the inner city areas, while rebuilding new housing, some traditional courtyard houses should be preserved as the symbols of historical and cultural heritage.

Great efforts have been made to implement those policies in recent years, and the achievement appears to be considerable, as in four aspects:

1. **Large-scale Renovations at the Periphery of Old City Area**

Three projects of this kind have been investigated. They are located at Changle Street, Changan Street and Nan Xiaoxiang Street (Figure 11).

These areas were large single-storey housing areas in the past. 6,613 people of 1,503 households lived there. Each area covered 3.66 ha. on the average (Table 4). Because they are far away from the city centre, original housing density was relatively low (4,464 square meters/ha.), and the
FIGURE 11 locations of selected housing developments after 1978

LEGEND
- renovation project
- reconstruction project
■ Slum transformation project
○ Xingqing residential community
existing infrastructure and public facilities could partially be utilized. Therefore, rather than complete demolition and reconstruction, serious efforts have been made to improve the quality of existing housing, partly by rebuilding dilapidated houses, and by adding some new housing and improving the outdoor environment. From Table 4 one can see that after these renovations, those three projects can accommodate twice as many families as before, and the average living space per household has increased by 34%, i.e., from 33.8 square meters to 51.6 square meters. The improvement of the environment can be seen from the increase of green space and road space.

Table 4: Changes in Housing Condition
A comparison of housing conditions before and after the renovation projects completed in three residential areas in 1979.

<table>
<thead>
<tr>
<th>Index</th>
<th>Measurement</th>
<th>Changle St. Before</th>
<th>Changle St. After</th>
<th>Chanaam St. Before</th>
<th>Chanaam St. After</th>
<th>Nan Xiaoxing Before</th>
<th>Nan Xiaoxing After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total land</td>
<td>ha.</td>
<td>4.79</td>
<td>6.36</td>
<td>3.13</td>
<td>3.86</td>
<td>3.06</td>
<td>3.06</td>
</tr>
<tr>
<td>No. household</td>
<td>household</td>
<td>768</td>
<td>1265</td>
<td>352</td>
<td>206</td>
<td>383</td>
<td>724</td>
</tr>
<tr>
<td>Total space</td>
<td>sq.m.</td>
<td>27,410</td>
<td>67,726</td>
<td>115,32</td>
<td>494,46</td>
<td>12,214</td>
<td>34,850</td>
</tr>
<tr>
<td>Ave. space</td>
<td>sq.m.</td>
<td>35.7</td>
<td>53.5</td>
<td>32.8</td>
<td>33.3</td>
<td>31.3</td>
<td>48.1</td>
</tr>
<tr>
<td>Per household</td>
<td>sq.m.</td>
<td>/</td>
<td>1.16</td>
<td>/</td>
<td>0.22</td>
<td>/</td>
<td>0.23</td>
</tr>
<tr>
<td>Road space</td>
<td>ha.</td>
<td>/</td>
<td>0.48</td>
<td>/</td>
<td>1.01</td>
<td>/</td>
<td>0.20</td>
</tr>
<tr>
<td>Green space</td>
<td>ha.</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td>Construction density</td>
<td>sq.m./ha.</td>
<td>5722</td>
<td>17637</td>
<td>3673</td>
<td>12540</td>
<td>3992</td>
<td>41359</td>
</tr>
<tr>
<td>Population density</td>
<td>person/ha.</td>
<td>704</td>
<td>1756</td>
<td>455</td>
<td>1176</td>
<td>562</td>
<td>1106</td>
</tr>
</tbody>
</table>

Source: collected from the Xian Real Property Bureau 1996.

2. Scattered Reconstruction in the Inner-City Areas
These projects took place in the areas where both the building density and population density were already very high and the demolition of old housing was considered necessary. The scale of these projects is relatively small. The examples that we have investigated are No. 5 East Street project and the North Avenue project (Figure 11). The construction area in No. 5 Street was mostly covered by shacks before the development. The housing density was 7,665 square meters per ha. and the population density was 1,013 person per ha. In order to provide enough housing for all the original residents, two seven-storey apartment buildings have been put up which house 246 households with an average floor space 52.7 square meters per household. In the first floor are placed the shops and restaurants for residents' daily needs. North Avenue is one of the main commercial streets of the inner city. The project involved the construction of both housing and shops. The original single-storey houses and shops built before 1949 were torn down and have been replaced by three seven-storey apartment buildings. Shops have been installed in the first two stories and in between the two apartment buildings. These buildings face the main street, and have a very visible position. They have been envisaged by the city planner as a showpiece estate, therefore, their architectural quality is better than the general prevailing standard in the city. This project is very much like the Din Daeng housing project.
in Bang Kok, Hong Kong, which was built by the government as a displacement of dilapidated single-storey public housing and squatter huts. These new houses took the form of high-rise blocks with high qualities to enhance the urban landscape (Drahakis-Smith, E.W. 1980, pp.124-125).

3. Slum Clearance in the Old City

Pre-1949 Xian had a left over of a large area of slum settlements. They were scattered mostly in the low lying lands which are 1-5 meters or 7-8 meters below the surrounding level of the land. On these lands were crowded approximately 305,905 square meters (floor space) of shanty houses sheltering 9,277 families with 38,805 persons in 1949. These squatters mostly came from the rural famine-stricken areas in Henan and Shandong provinces to the east of Xian during the war against the Japanese (Xian Real Property Bureau, 1985). After the founding of the People's Republic of China, those areas had hardly been touched in Xian, because of the bias of planning policy towards suburban development. According to the survey of 1981, only 12 out of the 116 slum settlements have been transformed which account for merely 6% of the total shanty houses. 9,148 families still live there (Xian Real Property Bureau 1985). Since 1978, a high priority has been given to this problem. In June 1979, the Capital Construction Committee of Shaanxi province expressly instructed the Xian municipal government to "devote every effort to speed up the
transformation project of slums" (the Capital Construction Committee of Shaanxi Province, 1979). In 1940, Xian City Planning Bureau had drawn the reconstruction scheme for the two largest and poorest slums: Yuzin Lane and Gansan Pit (Figure 11). By 1954, these two projects had been completed one after another. The once gloomy and dingy shacks now have become six-storied apartment buildings. Each suite in the buildings is equipped with interior running water and toilets as well as individual balcony. In Yuzin Lane the total floor space is 33,000 square meters, which house not only the whole of original 575 households but also 150 new families. In Gansan Pit the new housing accounts for a floor space of 25,000 square meters and accommodates 555 families. Each family in both projects enjoys an average living space of 46 square meters.

4. **Self-contained Residential Quarter in the Inner Suburban Areas**

This idea was initiated in 1960s, but only one project had been built at that time, which now appears quite deteriorated due mainly to the ravages during the Cultural Revolution. This idea actually became more prevalent when the city's Master Plan was released in 1990, which strongly recommended this form of residential estate development. Since then, 29 residential developments of this kind have been put up mostly in the built up area of near suburbs, with a total floor space of 643,000 square meters housing,
12,663 households. Those projects were developed by following the "unified comprehensive planning approach" (McGuillen, 1995, pp. 16), which means a coordinated planning at the municipal level, so-called six units: planning, investment, design, construction, allocation and management. A field survey in one of these projects, named Xingqin residential quarter, was conducted by the author.

It is the earliest large project built by the Xian Real Property Bureau in 1981. It lies on the east inner suburb (Figure 11), and is surrounded by three wide boulevards in the west, north and south, and adjoins the college campus and the bicycle manufactory in the east (Figure 12).

It covers an area of 10.5 ha. and provides a total built floor space of 134,600 square meters, out of which, 119,600 square meters are allocated to housing to accommodate a population of 10,360. Residents are from different work units. Many are municipal administrators, teachers and doctors. Three buildings with a total floor space of 4,107 square meters have been especially allocated to 36 families of leading cadres in municipal government, which accounts for 3.4% of the total floor space in this community. In terms of living space, each family enjoys 60 square meters, which is higher than the average of 53 square meters in this area. In addition, those three buildings were equipped with a central heating arrangement. Seven people are employed to serve these buildings. They are: one janitor, two cleaners,
FIGURE 12. SCHEMATIC MAP OF THE STRUCTURE OF THE XINGQING RESIDENTIAL COMMUNITY

[Diagram showing various elements labeled 1. to 16.]
two maintenance workers and two seasonal workers taking care of the central heating. The entire project comprises four smaller housing units locally called neighbourhoods. They are separated by hedges or brick wall. Each neighbourhood has 500-700 households and 2200-3200 people. Houses are all walk-up block of flats (or apartments). Most of them are six storeys in height (some are three storeys, while some of the highest have eight storeys). Those blocks are laid out in parallel rows and are all face south, catering to the Chinese tradition. 92 percent of the houses have two-room and three-room apartments, 8 percent are one-room apartments for newly married couples. The average living space per household is 53 square meters. Each apartment has its own kitchen, toilet and balcony. Some have bathrooms in addition. The remarkable characteristic of this project is its variety of services. Among the commercial services are a department store, post office, book store, barber shop and banking office which serve the customers living both in and out of the community. Therefore, they are all placed in the buildings facing the streets. Other services including grain store, coal store, restaurant and repairing shop and clinic are installed in the first floor of the apartment buildings inside the community. They only serve the community itself. There are still some third-level services such as the groceries, dairy stories, and bicycle parking huts which provide the daily necessities for each neighborhood.
Education services are provided by one middle school, one elementary school, one kindergarten and one nursery for the families within this community as well as the families in the nearby areas. Recreation facilities are established in four cultural centres in each neighborhood of 500-700 families for reading, playing chess and table tennis and other entertainments. In the center of the community there is a park with trees, lawns, flowerbeds, a fountain and sculpture. In each neighborhood there is a children's playground equipped with sand pits, slides, swings etc. In addition, other auxiliary buildings are also provided to achieve self-sufficiency, in terms of the power transformer, substation, water tower, housing management office, public baths etc.

Field survey in this area shows that this kind of residential estate is quite desirable compared with other housing projects. Residents are generally satisfied with the housing conditions in terms of housing space, facilities and services. Their complaints center on the location of this community. One problem brought out is that this area is surrounded immediately by three boulevards (Figure 12). They facilitate the residents in using the public transportation, but the traffic noise is high. Secondly, a bicycle factory is contiguous to this area, and the pollution problems, especially noise pollution, are quite serious. City planners acknowledged this problem. They expected that this large-
scale self-contained residential quarter would be the major form of urban housing in the future in Xian, except for the renewal of old housing and the housing built by work units. The scale of construction would become even larger on account of the benefits of 'large-scale production' and the concentration of residential land use. Meanwhile, the location would be given careful consideration, tending to be further away from the central city and from industries. Corresponding attention would be also given to the provision of convenient public transportation, since this housing quarter would be no longer work-place-attached, and the major transportation mode would still be the city bus.

4.2 The Reform Of the Economic Structure and the Changes In Urban Housing

China's economy has been basically a centrally-planned economy, only in recent years has the free market economy been introduced as a minor supplement. Through this system the state seeks the development of the national economy by working out its major proportions (between agriculture, light industry and heavy industry, and between consumption and accumulation), ensuring a balanced distribution of the means of production and labor force among those sectors. In other words, the development of the major economic sectors is predetermined by the state-assigned proportional relationship or the investment
pattern. Housing construction, as a production of consumer goods, and its overall levels are closely related to this pattern, which has been convincingly proven by Xian's experiences, especially by the great changes taking place since 1978.

For many years since the founding of the People's Republic, China's economic structure was in a striking imbalance or disproportion. This was marked by undue emphasis on capital accumulation, overlooking consumption, with an over-concentration on heavy industry and inadequate attention paid to light industry and other consumer goods production (Zhen Shulian, 1982, pp. 99-55). This bias was also reflected in the pattern of the capital (fixed assets) construction investment of the state which had two parts: 'productive investment' and 'non-productive investment'. The productive investments are the funds devoted mainly to the factory buildings, warehouses, machinery and equipment, railroads, highways, ports and docks. The non-productive investments are the funds made in the capital construction of facilities related to people's living standards such as housing, schools, hospitals, theaters, cultural centers, public office buildings and so on. Therefore, housing funding is directly influenced by the proportion between those two parts of investment. Unfortunately, before 1978 this proportion was seriously out of balance. During the 1st FYP (1953-57), the 'productive investment' took away 71.7
percent of the national total, while the 'non-productive investment' claimed 28.3 percent. The ratio between the two was 2.5:1 which was deemed basically appropriate by the government planners. (Han Guang, 1980). In late years, 1958-77) the non-productive investment declined significantly. The share was only 13.9 percent on an average; the productive sector took away most of the rungs (ibid.). Such abnormal pattern of economy severely slowed down the pace of raising the people's living standard, especially the housing. According to Xia Zheng (1981), from 1952 to 1980 the total industrial and agricultural output value went up ninefold at an annual progressive rate averaging 8.2 percent, and the national income increased fivefold. The average per capita consumption level in both the city and the country, however, only doubled, while state investment for housing also increased only two-fold from 1952 (Wan Yiqing and Wan Lijie, 1983).

This acute problem has received immediate attention from the new leadership since 1978. The Third Plenary Session of the 11th Party Central Committee, which was held in December 1978, decided to shift the focus of the party's work to socialist modernization. As a first step beginning from 1979, an overall readjustment was carried out and extended to early 1980s. The purpose of the readjustment was to rationalize the economic structure, enabling the various branches of the economy to develop in a proportionate and
steady way. This new way involved many changes. To realize those changes, the production of consumer goods has been given an respectable position. These policies have brought about great changes in urban housing construction through dramatic increase both in non-productive investment generally and in housing investment. We now turn to examine this change by analyzing the case of Xian.

Table 5: The Pattern of The Capital Construction Investment

proportions of all state basic capital construction investment in the productive sector, non-productive sector and state housing in Xian 1950-1975

<table>
<thead>
<tr>
<th>period</th>
<th>total m. yan</th>
<th>productive m. yan</th>
<th>non-productive m. yan</th>
<th>ratio m. yan</th>
<th>housing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>restoration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1950-2</td>
<td>75.76</td>
<td>40.43</td>
<td>35.23</td>
<td>46.6</td>
<td>1:1:1</td>
</tr>
<tr>
<td>1st FYP</td>
<td>1202.00</td>
<td>785.56</td>
<td>416.44</td>
<td>34.6</td>
<td>1.5:1</td>
</tr>
<tr>
<td>2nd FYP</td>
<td>1364.92</td>
<td>1093.02</td>
<td>271.90</td>
<td>19.7</td>
<td>4:1</td>
</tr>
<tr>
<td>readjustment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1963-5</td>
<td>422.56</td>
<td>284.79</td>
<td>137.77</td>
<td>32.0</td>
<td>2:1:1</td>
</tr>
<tr>
<td>3rd FYP</td>
<td>598.62</td>
<td>508.62</td>
<td>90.00</td>
<td>13.3</td>
<td>6:1:1</td>
</tr>
<tr>
<td>1966-70</td>
<td>813.77</td>
<td>616.36</td>
<td>197.41</td>
<td>24.4</td>
<td>3:1:1</td>
</tr>
<tr>
<td>4th FYP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971-5 &amp;</td>
<td>551.27</td>
<td>367.19</td>
<td>184.09</td>
<td>33.4</td>
<td>2:1</td>
</tr>
<tr>
<td>5th FYP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1976-8</td>
<td>369.00</td>
<td>189.00</td>
<td>347.00</td>
<td>64.3</td>
<td>1:1.8</td>
</tr>
<tr>
<td>1979</td>
<td>378.00</td>
<td></td>
<td></td>
<td></td>
<td>1:1.2</td>
</tr>
<tr>
<td>1980</td>
<td>432.05</td>
<td>189.00</td>
<td>347.00</td>
<td>64.3</td>
<td>1:1.8</td>
</tr>
</tbody>
</table>

Note: m. yan means the amount of investment in millions of yuan.

Source: Collected from the Xian Statistical Bureau.
4.2.1 Changes in the Pattern of Investment in Capital Construction

Table 5 shows the changing pattern of investment in capital construction in Xian over past 35 years. Column 2 and 3 demonstrate a clear relationship between the increase in the 'productive investment' and the decline in the 'non-productive investment'. This tendency did not recover to their 1st FYP level until 1978. The post-1978 data are incomplete, but it is still easy to see the remarkable change in these two investment sectors during the last three years from 1982-1985. The proportion of non-productive investment rose from 33.4 percent at the end of 1978 to an unprecedented 74.6 percent in 1985. Correspondingly, the percentage of the productive investment dropped down two third in this period. Column 4 shows more clear relationship between those two sectors, and its variance in relation to the political-economic situation of the country. During the period of restoration and 1st FYP, the ratio between the two was quite proper. The disparity was increased afterwards and became worse in the period of the 2nd FYP (the Great Leap Forward) and 3rd FYP (the Cultural Revolution) when the country moved to the extreme in its political and economic policies. It is interesting to note that after 1978 the proportional relationship became completely reversed with the non-productive sector being twice as large as the productive sector.
4.2.2 Changes In the Pattern of Housing Investment

This incredible change has been closely mirrored in the pattern of housing investment in the city. If we compare the percentages of Column 5 with Column 4, one can find that the level of housing investment varies correspondingly with the varying proportion relationship between the productive and non-productive investment. As the relationship deteriorated, the level of housing funding was lower as happened during the period of the 2nd FYP and the 3rd FYP. In contrast, there is an extremely sharp climb in housing investment in late 1970s. By 1980 and 1981 it accounted for almost one third of all investment which the state granted for capital construction in Xian. Since 1982, the pace has been relatively slowed down for which we have not yet found the explanation. Nevertheless, the absolute amount of investment still keeps increasing. The average percentage of the housing investment in post-1978 period was 1.2 times as high as that in pre-1978 period.

4.2.3 Changes In Housing Production

We shall now examine the relationship between the state investment in housing and the actual housing floor space constructed. Assuming that urban housing in China is supplied predominately by the government, the level of housing development would be expected to closely follow the level of state investment. In the case of Xian, however, we found some departure from what we presupposed. For example,
during the period of 1958 and 1965, the absolute housing investment had declined (Table 5, column 5), while the total housing floor space still kept going up (Table 6 column 1).

Table 6: Changes In Housing Production

changes in urban population, housing floor space and per capita availability in Xian 1949-1985

<table>
<thead>
<tr>
<th>years</th>
<th>total housing floor space</th>
<th>urban population</th>
<th>average living space per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sq. m.</td>
<td></td>
<td>sq. m.</td>
</tr>
<tr>
<td>1949</td>
<td>1,317,617</td>
<td>397,291</td>
<td>3.32</td>
</tr>
<tr>
<td>1952</td>
<td>1,414,040</td>
<td>524,767</td>
<td>3.69</td>
</tr>
<tr>
<td>1957</td>
<td>3,931,031</td>
<td>1,014,726</td>
<td>3.01</td>
</tr>
<tr>
<td>1962</td>
<td>3,729,789</td>
<td>1,090,419</td>
<td>3.51</td>
</tr>
<tr>
<td>1965</td>
<td>3,737,222</td>
<td>1,233,256</td>
<td>3.23</td>
</tr>
<tr>
<td>1977</td>
<td>4,513,600</td>
<td>1,329,000</td>
<td>3.39</td>
</tr>
<tr>
<td>1978</td>
<td>4,737,200</td>
<td>1,377,000</td>
<td>3.44</td>
</tr>
<tr>
<td>1979</td>
<td>5,019,000</td>
<td>1,427,000</td>
<td>3.52</td>
</tr>
<tr>
<td>1980</td>
<td>5,434,000</td>
<td>1,574,000</td>
<td>3.68</td>
</tr>
<tr>
<td>1981</td>
<td>5,817,000</td>
<td>1,524,000</td>
<td>3.92</td>
</tr>
<tr>
<td>1982</td>
<td>6,341,720</td>
<td>1,562,000</td>
<td>4.06</td>
</tr>
<tr>
<td>1983</td>
<td>6,790,440</td>
<td>1,594,000</td>
<td>4.26</td>
</tr>
<tr>
<td>1984</td>
<td>7,216,810</td>
<td>1,641,000</td>
<td>4.41</td>
</tr>
</tbody>
</table>

Note: Total housing floor space includes old housing and new constructed housing; population refers to the non-agricultural population.

Source: based on Statistics by the Xian Real Property Bureau. 1986.

In the period after 1976, although both investment and housing floor space were showing continued growth, their pace was inconsistent. For example, compared with 1982, the housing investment in 1983 had increased by 50 percent, but the housing floor space increased only by 7 percent. Some of the deviations during 1962 and 1965 were due to the fact that more housing was built by the combined 'three revenues'
raised locally. On the contrary during 1982 and 1983 investment was directed towards renewal projects that involved the tearing down of lots of old houses. Nevertheless, these factors have not distorted the general tendency, that is, the influence of economic readjustment on housing development in Xi'an is significant. According to the Column 1 of Table 6, the progressing rate of housing floor space in the period of 1949 and 1977 was 3.6 percent per year, whereas during the period when readjustment policy was carried out (1979 to 1974), it became 14 percent almost 4 times as much as before. This influence can be further demonstrated by Table 7.

Table 7: Changes In the Use of Building Space for Housing

<table>
<thead>
<tr>
<th>period</th>
<th>total floor space constructed sq. m.</th>
<th>floor space for industrial use sq. m.</th>
<th>%</th>
<th>floor space for residential use sq. m.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950-2</td>
<td>500,394</td>
<td>131,633</td>
<td>26.3</td>
<td>114,291</td>
<td>22.8</td>
</tr>
<tr>
<td>1953-7</td>
<td>6,322,147</td>
<td>1,060,046</td>
<td>16.8</td>
<td>3,106,570</td>
<td>49.1</td>
</tr>
<tr>
<td>1958-62</td>
<td>4,875,688</td>
<td>2,025,336</td>
<td>41.5</td>
<td>1,260,054</td>
<td>27.3</td>
</tr>
<tr>
<td>1963-65</td>
<td>1,629,254</td>
<td>575,652</td>
<td>35.3</td>
<td>308,902</td>
<td>18.7</td>
</tr>
<tr>
<td>1977</td>
<td>570,000</td>
<td></td>
<td></td>
<td>350,000</td>
<td>61.4</td>
</tr>
<tr>
<td>1978</td>
<td>935,282</td>
<td></td>
<td></td>
<td>569,407</td>
<td>50.2</td>
</tr>
<tr>
<td>1979</td>
<td>1,000,000</td>
<td></td>
<td></td>
<td>600,000</td>
<td>60.0</td>
</tr>
<tr>
<td>1980</td>
<td>1,430,000</td>
<td></td>
<td></td>
<td>500,000</td>
<td>62.9</td>
</tr>
<tr>
<td>1991</td>
<td>1,469,000</td>
<td></td>
<td></td>
<td>982,000</td>
<td>66.4</td>
</tr>
</tbody>
</table>

Note: There is a datum vacancy during the Cultural Revolution (1966-1967)

Source: Derived from the statistics by Xi'an Real Property Bureau.
The production of housing floor space in Xian during the 1st FYP was impressive, as it accounted for 49.1 percent of all construction. This proportion dropped in the 2nd and 3rd FYP, a greater share being accounted for by industrial buildings. However, some dramatic changes took place in 1977. The share of housing in the following years stood on the average at 60.2 percent of all buildings constructed in the city (Table 7).

4.2.4 Changes In Housing Conditions

To complete our analysis, the last step shall focus on the changes in residents' housing condition. Major measurement of housing condition in China is the per capita living space. This index and its variation in Xian are shown on the last column of Table 6. From this table one can see that the improvement since 1978 is remarkable and sustained. But this index involves the factor of population which has obscured to a certain degree the relationship between the investment pattern and urban housing development level. Therefore, instead of just examining the per capita space as a whole, we have broken it down to compare its two components: the population growth and the changing housing floor space (Figure 13). Because these two components have different measurements, in order to facilitate comparison, we have transformed them into relative values by taking 1949 value as the basic unit. In the Figure 13 the year 1977 marked a obvious turning point. Before 1977, housing
construction lagged behind population growth, whereas in the years after 1977 the housing development has increasingly got ahead of the population growth.

Apart from the aggregate data for the city on housing condition measured by per capita living space, Table 4 presents a more comprehensive assessment on housing conditions.

Data have been obtained from the statistics in two branches of Xian Property Bureau. To represent the general standard of housing in the city as a whole, four residential areas were selected (Figure 14). One is in the inner city where most houses were built before 1949. Two other areas are located in the periphery of the old city. Houses in those areas were built at different periods of time, mainly in the 1950s and 1960s. The fourth area is in a suburb where a majority of houses were built in recent years (i.e., after 1978). In all 400 families, in these four areas, have been investigated which contain a population of 1,657, and represent various occupations and average socio-economic status. Those families occupy a total housing floor space of 10,363 square meters, which are in three types of tenure: 346 households live in state-owned houses, 43 in owner-occupied houses, 9 in private-rented houses and 2 families do not have their own dwellings, one of which is a young married couple; they still live separately in the bachelor dormitories. Another family lives in a warehouse of
FIGURE 13  Index of growth of population and floor space for housing in Xian

(1950-1984)

Source: derived from the statistics by the Xian Real Property Bureau

- housing
- population

Year

1949 50-52 53-57 58-62 63-65 77 78 79 80 81 82 83 84
Table 8: Housing Conditions of 400 Households In Xian 1984

(1) living space

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of household</th>
<th>No. of dweller</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>no house</td>
<td>2</td>
<td>5</td>
<td>0.5</td>
</tr>
<tr>
<td>over-crowded*</td>
<td>62</td>
<td>276</td>
<td>15.5</td>
</tr>
<tr>
<td>inconvenient*</td>
<td>35</td>
<td>159</td>
<td>8.3</td>
</tr>
<tr>
<td>4-6 sq. m./capita</td>
<td>106</td>
<td>470</td>
<td>26.5</td>
</tr>
<tr>
<td>6-8 sq. m./capita</td>
<td>112</td>
<td>464</td>
<td>28.0</td>
</tr>
<tr>
<td>over 8 sq. m./capita</td>
<td>93</td>
<td>293</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Note: The over-crowded household means that its average per capita living space is less than 2 square meters. The inconvenient household refers to the one where male and female children over the age 12 are sharing the sleeping accommodation with each other or with their parents.

(2) water supply

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of household</th>
<th>No. of dweller</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>no running water</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>self-use water</td>
<td>203</td>
<td>863</td>
<td>51</td>
</tr>
<tr>
<td>sharing with others</td>
<td>195</td>
<td>789</td>
<td>49</td>
</tr>
</tbody>
</table>

(3) sanitary facilities

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of household</th>
<th>No. of dweller</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>no bath &amp; WC</td>
<td>53</td>
<td>224</td>
<td>13.3</td>
</tr>
<tr>
<td>have bath &amp; WC</td>
<td>13</td>
<td>51</td>
<td>3.3</td>
</tr>
<tr>
<td>have WC no bath</td>
<td>153</td>
<td>651</td>
<td>40.4</td>
</tr>
<tr>
<td>sharing bath &amp; WC</td>
<td>179</td>
<td>726</td>
<td>45.0</td>
</tr>
</tbody>
</table>

(4) heating facilities

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of household</th>
<th>No. of dweller</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>no heating facility</td>
<td>381</td>
<td>1584</td>
<td>95.7</td>
</tr>
<tr>
<td>have air condition</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>have central heating</td>
<td>17</td>
<td>68</td>
<td>4.3</td>
</tr>
</tbody>
</table>

(5) kitchen condition

<table>
<thead>
<tr>
<th>Type</th>
<th>No. of household</th>
<th>No. of dweller</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>no kitchen</td>
<td>53</td>
<td>205</td>
<td>13.3</td>
</tr>
<tr>
<td>self-use kitchen</td>
<td>333</td>
<td>1404</td>
<td>83.7</td>
</tr>
<tr>
<td>sharing kitchen</td>
<td>12</td>
<td>43</td>
<td>3.0</td>
</tr>
</tbody>
</table>

a factory where the parents work. The proportion between the different tenure types also shows the average tenure pattern of the city (see pp. 14-16). Therefore, Table 8 could be regarded as a general picture of today's housing conditions in Xian.
4.3 The Introduction of Market Force and the Movement of Housing Commodification

In the past thirty-odd years, housing supply in China has been undertaken as a welfare service through a de facto state-monopolized system. This means that the urban housing was built with state-investment alone and then allocated to individual families, who only paid a nominal rent. The government had to appropriate great amounts of funds every year for housing maintenance and management. Private housing construction in the city was forbidden. Housing units had not been allowed to be sold or transferred. The free housing market was virtually non-existent in the cities. In Xian, for example, all new houses covering 6.4 million square meters built before 1978 were financed through the state, and private investment was nil in the official statistics (Xian Real Property Bureau, 1982). Private-owned housing was 2,510,205 square meters in 1956 (Xian Property Bureau, 1958). By 1978, this figure had fallen to 1,476,000 square meters. This decline was caused mainly by the three campaigns of housing nationalization that took place during 1956, 1958 and the ten-year Cultural Revolution (Xian Real Property Bureau, 1983). This shows that the private sector has made no contribution to the expansion of new housing stock in Xian. Rents were extremely low in state houses. Table 9 presents the contrast between housing rents and
average income of residents. It shows that the average monthly rent in the three years was 1.02 yan per person, about 1.9 per cent of his income. It is interesting to note that while the cost of housing construction and the residents' income were raising, the average rent per square meter went down.

**Table 9: Housing Rents and Construction Cost in Xian**

<table>
<thead>
<tr>
<th>Year</th>
<th>Construction Cost</th>
<th>Rent</th>
<th>Monthly Income</th>
<th>Monthly Rent</th>
<th>% Rent/Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956</td>
<td>47.9</td>
<td>0.39</td>
<td>56.7</td>
<td>1.1</td>
<td>2.0</td>
</tr>
<tr>
<td>1965</td>
<td>73.9</td>
<td>0.30</td>
<td>57.9</td>
<td>0.97</td>
<td>1.7</td>
</tr>
<tr>
<td>1979</td>
<td>124.9</td>
<td>0.28</td>
<td>59.4</td>
<td>0.98</td>
<td>1.6</td>
</tr>
</tbody>
</table>

*Source: collected from Xian Real Property Bureau 1986.*

This housing system helped to maintain to a certain degree declared the socialist objective of achieving social-economic equality. It, however, has many inherent disadvantages:

1) **Poor maintenance**: Table 10 provides the data for four years after 1979 about rent revenue and maintenance expenditure from the Xian Real Property Bureau. It shows that because the low rents collected, the Bureau could only spend limited money on housing upkeep and repair, which was always lower than the minimum standard. As a result, the decline in housing physical condition was obvious. Statistics for earlier periods are not available for comparison, but the situation was in general much worse.
during the pre-reform period, particularly during the Cultural Revolution.

Table 10: Revenue From Rents and Expenditure For Maintenance 1978-1981

<table>
<thead>
<tr>
<th>Year</th>
<th>Rent Revenue (yan)</th>
<th>Maintenance Expenditure (yan)</th>
<th>Housing Space Maintained (m. s.)</th>
<th>Maintenance Cost (yan/sq.m.)</th>
<th>Standard Cost (yan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>5,907,856</td>
<td>3,211,968</td>
<td>2,280,000</td>
<td>1.4</td>
<td>66</td>
</tr>
<tr>
<td>1979</td>
<td>5,462,553</td>
<td>3,229,900</td>
<td>2,445,000</td>
<td>1.3</td>
<td>69</td>
</tr>
<tr>
<td>1980</td>
<td>6,060,161</td>
<td>4,613,900</td>
<td>2,773,000</td>
<td>1.7</td>
<td>91</td>
</tr>
<tr>
<td>1981</td>
<td>6,220,407</td>
<td>4,873,800</td>
<td>2,794,000</td>
<td>1.7</td>
<td>81</td>
</tr>
</tbody>
</table>

Note: the minimum standard cost of maintenance set by the state is 2.1 yan per square meter.


Table 11 shows the amount of dilapidated housing in the same periods. The figures are surprisingly large, which amounted to more than ten percent of the newly-built houses. Although it depicted the post-1978 situation, and involved other factors such as renewal, the poor maintenance for long period of time in the past, has been one of the major factors.

Table 11: Deteriorated Condition of Housing in Xian 1978-1981

<table>
<thead>
<tr>
<th>Year</th>
<th>Housing in Disrepair (sq.m.)</th>
<th>Collapsed (sq.m.)</th>
<th>Sum Total New Housing (sq.m.)</th>
<th>% of Deteriorated Housing to New</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>170,000</td>
<td>20,000</td>
<td>190,000</td>
<td>935,000</td>
</tr>
<tr>
<td>1979</td>
<td>65,000</td>
<td>20,000</td>
<td>85,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>1980</td>
<td>139,000</td>
<td>25,000</td>
<td>164,000</td>
<td>1,400,000</td>
</tr>
<tr>
<td>1981</td>
<td>106,000</td>
<td>60,000</td>
<td>166,000</td>
<td>1,469,000</td>
</tr>
</tbody>
</table>
Source: Based on the statistics by Xian Real Property Bureau 1982.

2) **Heavy burden on state revenues:** Apart from the large amounts of funds allocated by the state to construct houses for workers and government employees, large amounts were needed to subsidize their maintenance and management. Table 12 presents a rent survey in five residential areas consisting of 844 households. In the last two columns one can note that the state subsidies covered a large part of the rent payments.

**Table 12: Housing Rents and Government Subsidies 1980**

<table>
<thead>
<tr>
<th>Residential Areas</th>
<th>No. of Families</th>
<th>Total Rent (Yuan)</th>
<th>Family Share</th>
<th>State Share of Income</th>
<th>Subsidy of Rent (Yuan)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiefang St.</td>
<td>95</td>
<td>315.6</td>
<td>129</td>
<td>1.40</td>
<td>1.46</td>
</tr>
<tr>
<td>Xiexi St.</td>
<td>75</td>
<td>306.3</td>
<td>36</td>
<td>0.90</td>
<td>222.8</td>
</tr>
<tr>
<td>No.7 St.</td>
<td>25</td>
<td>95.0</td>
<td>42.4</td>
<td>1.40</td>
<td>1.25</td>
</tr>
<tr>
<td>Cuihua St.</td>
<td>368</td>
<td>4900.7</td>
<td>1336.6</td>
<td>2.30</td>
<td>1.564.1</td>
</tr>
<tr>
<td>Hansen St.</td>
<td>275</td>
<td>793.3</td>
<td>793.3</td>
<td>2.40</td>
<td></td>
</tr>
</tbody>
</table>

Source: Based on 'Annual Report of Housing Rents' by Xian Real Property Bureau, 1980.

Table 13 gives a city-wide view of how much the government has subsidized housing management and maintenance every year during the period of 1978 and 1983. This only adds to the financial difficulties at a time when the state faces an extremely heavy task of economic reconstruction and development, and it adversely affects the development of urban housing construction.
Table 13: State Subsidies for Housing Maintenance and Management of Xian

<table>
<thead>
<tr>
<th>Year</th>
<th>State subsidies</th>
<th>State total investment</th>
<th>Subs./invet.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>7.26</td>
<td>73.30</td>
<td>/</td>
</tr>
<tr>
<td>1979</td>
<td>1.00</td>
<td>113.40</td>
<td>0.4</td>
</tr>
<tr>
<td>1980</td>
<td>0.75</td>
<td>130.78</td>
<td>0.7</td>
</tr>
<tr>
<td>1981</td>
<td>0.99</td>
<td>146.33</td>
<td>0.7</td>
</tr>
<tr>
<td>1982</td>
<td>0.50</td>
<td>220.08</td>
<td>1.7</td>
</tr>
<tr>
<td>1983</td>
<td>3.72</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: m. yan means million Ren yan.

Source: According to an interview with the official of Xian Real Estate Bureau, 1986.

3) Irrational allocation: Under the state-monopolized system, housing allocation in China is carried out through bureaucratic and administrative apparatus rather than impersonal market. There are two channels through which housing is distributed to the people. One is the municipal housing management agencies who control the allocation of houses built by the municipal government. Another is the authorities of work units who are responsible for the allocation of work-unit houses for their employees. Selection and allocation policies varied from city to city and from work unit to work unit, but the general principles are in common. In the face of housing shortage, the relationship between the remaining demand and supply is managed by a system of priority and queues. The major criteria for allocation are the characteristics of families in terms of housing needs, social status, seniority, working
achievements etc.. In general, those families who either do not have a home of their own, or who live in accommodation defined by the authority as over-crowded, and those who live in the dwellings in area under slum clearance schemes, would have the priority. If the housing conditions are the same, the criterion of seniority or working age is important. However, some types of queue-jumping exist, for instance in the case of 'model workers', 'key intellectuals' and the former 'revolutionary veteran'. The administrative or academic position is used as the criteria for housing allocation. In Xian, for example, the family of high-ranking official (e.g. the leading cadre at the provincial or municipal level), or the family of senior professional (e.g. university full professor) is qualified for housing living space of 55-75 square meters. The family of middle-ranking official or professional could get 40-60 square meters, while the family of ordinary staff member or factory worker could have 25-45 square meters. (Office of Shaanxi Provincial Government, May 1992). In addition, the families who observe the 'one-child' policy would be given certain preference. The allocation is usually carried out in such a way that families make the application to join the queue, then the housing management department operates to assess the eligibility of the applicants and their suitability for particular houses. The applications of families who successfully passed through the eligibility filter will be
finally verified by the top authority at the city government or work-unit level. From the households' point of view, the key decision-makers in housing allocation are the officers in the housing management department. Whether the family is offered a house and, if so, what type of house it is depends largely on the family's power to exert influence or pressure on those officers. Because all housing, except that owned by individuals, is subsidized by the state on a per-square-meter basis, therefore, increasing living area for a family requires a relatively small increase in rental payment, since the bulk of the bill is picked up by the state. This motivates some people to make all types of efforts to acquire more and better housing by taking advantage of their official position and power. According to an investigation of 1982, for example, one fourth of the cadres over the rank of 18 in Xian Real Property Bureau has taken more housing than the standard set by the municipal government. Among them, 5 have housing living space over 80 square meters, 4 over 70 square meters and 6 over 60 square meters (Xian Real Property Bureau: July 3, 1982). Another example is the report about 94 leading cadres in the provincial government agencies who grabbed more housing than they are supposed to have. 16 cadres are required to return their extra housing.

2 The definition of the cadre in China is similar to the white-collar worker in Western countries. It stands for the administrator or professional who is engaged in the non-manual work. The rank of cadre ranges from 24th to 1st. Cadres over the rank of 13 are officially defined as the high-ranking cadres.
living space of 1,162 square meters. 5d having an excess space of 1,267 square meters are being charged increased rent (Xian Real Property Bureau December 24, 1982). There are quite a few families who occupied more houses than they need, and leave them unused for a long time. Because these houses do not put a financial burden on them (Xian Real Property Bureau, July 21, 1982).

4) Lack of residents' free choice: Under the state monopolized allocation system in the past, residents' choice for better location or better housing was almost impossible, giving rise to many problems. For instance, an investigation of 1982 showed that there were 40 households in one city district who held unused houses. In fact, it did not mean that they all had more than enough houses, since 10 of them were still crowded together somewhere else. This is because those empty houses allocated to them were too far away from their work places; ibid.). In many families, it the husband and wife worked in different enterprises in different locations, only one of them could be allocated an adequate house. So the other partner had to commute every day. It is very often that many of the newly married couples rent farmers' houses located in the outer suburbs, because their names were usually in the bottom of the waiting list. It is also common that people working in the small or local enterprises have much poorer housing conditions than those working in the central or provincial level enterprises or
institutions, because the centrally and provincially administrated work units get more housing investment from the state budgets (Xie Wenlian, May 26, 1986).

The conventional housing management system has met serious challenge since the nation-wide movement of housing commodification commenced in 1979 when the first national urban housing conference was held in September. It has been accelerated afterwards by Deng Xiaoping in talks with other Chinese leaders in April 2, 1980 (Beijing Daily May 16, 1984). Deng pointed out that housing should become a profit-making industry contributing to the national revenue. He suggested that government should allow the residents to buy or build their own houses. Government-built houses could be sold to the people. Payments could be made in a lump sum or in instalments over a period of two to fifteen years. For the public housing, he indicated that rents should be charged to reflect the locational difference and the construction cost, so that people could feel that it was more rewarding to buy a house than to rent one. He also suggested that housing could be built by co-operation between private builders and the government or by private builders alone with some government subsidies.

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Housing commodification is a literal translation of the Chinese term: 'zhú fáng shāng pīn huà' (D. J. Dwyer 1986, pp. 448). It implicates the process that introduces free market regulations to urban housing policy in China based on the recognition of housing as a commodity rather than a public service.
4.3.1 Public Housing for Sale

As a part of this commodification movement, pilot sales of public apartments was carried out in four major cities in 1979, Xian being one of them. According to the survey in November 1979, the Xian Real Property Bureau provided 36 suites in one seven-storey apartment building for sale. This building was located on the South Street, which is one of the busiest commercial streets in the downtown area. The average floor space per suite was 50 square meters. The average price was 150 yuan per square meter. Buyers paid one-third of the price and the rest was paid by the state and buyers' work units. But the government subsidies had a limitation to a certain amount of floor space. Money could be paid in lump sum or in three-year instalments. The down payment was 40 percent of the total price. The ownership of the such subsidized houses belonged to the buyer, who was not allowed to sell or sublet this house—unless full price was paid. By May 1980, 22 out of 36 suites had been sold to 19 households. 4 of them were the families who had overseas relatives, 6 were leading cadres, 2 were army-men, 4 were professionals and 5 were factory workers. However, those suites had to wait for customers who were not enthusiastic, as these suites were not sold out after 6 months. Four reasons were provided by the officials of Xian Real Property Bureau: 1. In spite of the government subsidies, the housing price was still too high in comparison with the
income level of most families at that time. 2. Most families were not able to pay the full price in lump sum, or in 3-yearly instalments. 3. Housing location was not desirable. The houses for sale were only in one location and on a very busy street in the downtown area. Moreover, these were far away for many people who work in the suburbs. 4. People still preferred to rent public housing, since the rents were very low. However, the officers told the author that the sale of public housing has developed quickly in recent years. In 1986, Xian city sold 720 apartments with a total floor space of 35,971 square meters. This is because the people's income (wages and bonus) had gone up remarkably, and many residents had more bank savings. In Xian, the average annual income for staff and workers had increased from 826 yan in 1980 to 1,152 yan in 1985, a increase of 39%. After corrections for inflation, the actual increase was 28.3%. By the end of 1985, the total bank saving deposits reached 1.73 billion yan, which was more than three times the deposits in 1980. Banks in Xian started plans of housing purchase bank savings for supporting residents to buy houses. The officers held that if one third of the savings are used to buy or construct houses, Xian will have a big housing market. In the same year, the municipal government also started building high-rent houses. For example, a six-storey apartment building has been built in Long Shou Village, in the north suburb. This building
provides 5,500 square meters living space for 190 young couples who were waiting for rooms before getting married. Tenants have to pay a high rent—1 yuan per square meter, which is threefold the ordinary rent.

4.3.2 Housing Exchange Market

Housing exchange markets have played an important role in the commodification movements. Between 1975 and 1985, 12,692 families had exchanged houses through these markets in Xin. Among these 56 percent were commuters who have moved to live nearer their work places, and 30 percent have improved living conditions. It is appreciated by residents as a very good arrangement. This exchange is undertaken through a housing exchange fair held regularly by the Real Property Bureau, where exchange of houses is negotiated by the private parties, and an exchange certificate is issued by the Bureau. The exchanged house may be state-owned or private-owned, and the original ownership still remains intact.

4.3.3 Local Government and Collective Enterprises in Housing

Another important policy to promote housing commodification is to encourage the local governments, enterprises and individuals to build their own houses. In 1978, the central government made several policies to grant autonomy to the local governments, enterprises and
institutions for housing construction. It was decided that the cities with population of over 500,000 would be allowed to allocate five percent of their annual revenues from industrial and commercial profits for their own use in urban and housing development. The revenue raised by municipal governments itself could also be used partially for putting up more houses for citizens. The enterprises could build houses for their employees by using the funds pooled from premiums earned for exceeding the state plan targets and from allowances for housing repairs and renovation of other fixed assets. In addition, the local governments and enterprises have been given authority to requisition land, to collect building materials, to organize laborers and to make their own allocation policy. Those new policies have effectively un fettered people's initiative and revitalized the housing markets. In Xian a number of property companies were developed during the last a few years. They included housing construction cooperatives, collective enterprises that produced building materials, collective businesses run jointly by the local governments and people, and some joint ventures with foreign Chinese enterprises. They did not depend on the state investment and were responsible for their own profits and losses. The total funds collected by those companies for housing construction in 1986 was 44.59 million yuan which accounted for 12.7 percent of the city's total used in housing development, and 269,361 square meters
of housing floor space was put up by those companies (Zeng Yunjie, 1987). Owing to the increased freedom given to the local people to mobilize funds, the long-stagnant housing renewal program has been pushed forward. In 1990, for example, 22 housing renewal projects had been conducted in inner city areas. 6 projects were financed by the state which accounted for 8.27 million yuan, 4 by municipal government from their own revenues, and 12 were funded collectively by local enterprises. The last two cost 13.34 million yuan. The total completed housing floor space of those 22 projects was 131,830 square meters. Of these, 45,196 square meters were constructed by the state investment, 86,634 square meters were by local government and enterprises. The ratio between the two was 1:1.9 (Xian Real Property Bureau, 1987).

4.3.4 Work Unit Housing

The most impressive achievement resulting from the new policies is the extraordinary expansion of the self-built houses by the work units. Table 14 indicates that the houses built by the individual enterprises and institutions accounted for a major proportion in the city's new housing stock as a whole. Although those enterprises have also received funds from the government, it is commonly recognized that the housing commodification movement and the related decentralization policy have made a major contribution to this development.
Table 14: Work-Unit-Built Housing and Their Percentage of The City Total

<table>
<thead>
<tr>
<th>Year</th>
<th>City Total Houses (m. sq. m.)</th>
<th>Work-Unit Houses (m. sq. m.)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>0.47</td>
<td>0.45</td>
<td>95</td>
</tr>
<tr>
<td>1979</td>
<td>0.60</td>
<td>0.44</td>
<td>73</td>
</tr>
<tr>
<td>1980</td>
<td>0.90</td>
<td>0.34</td>
<td>93</td>
</tr>
<tr>
<td>1981</td>
<td>0.98</td>
<td>0.93</td>
<td>94</td>
</tr>
<tr>
<td>1982</td>
<td>1.17</td>
<td>1.02</td>
<td>87</td>
</tr>
<tr>
<td>1983</td>
<td>1.18</td>
<td>1.00</td>
<td>85</td>
</tr>
<tr>
<td>1984</td>
<td>1.25</td>
<td>1.11</td>
<td>97</td>
</tr>
</tbody>
</table>

Source: from Xian Real Property Bureau, 1986.

Work-unit housing construction in recent years has become a major part of the urban landscape all over the city. Wherever one sees a cluster of apartment buildings towering over the walled area, it is, usually the houses that were built for the people who work in this area. Generally, since most of the large work units, such as the large factories and universities, are located in the inner or outer suburbs, the large scale projects of work-unit housing took place in the areas outside the old city, and are usually close or contiguous to the work places. Meanwhile, the small work units (e.g., the administrative institutions, small factories, commercial undertakings) also built houses for themselves in recent years. Those developments are mostly on a small scale and are scattered within the inner city area. Many houses are not attached to the work places because these work units do not have enough space on their premises for housing, but are located in close proximity wherever possible.
The utilization of energies in self-built work-unit houses has also given rise to some problems. On the basis of information derived from interviews with the housing management officers and residents and author's observation, one problem is that the disparity between the enterprises or institutions in their ability to raise funds seems to be leading to the increase in housing inequalities. Generally speaking, the large enterprises and the enterprises run by the central or provincial governments are granted more allowance and they are able to earn higher premiums from their high profit rate. Therefore, more funds can be allocated for housing construction. Workers and office staff who work in those units usually have obviously better housing conditions. While the small and local enterprises find it difficult to appropriate enough money from their profits and allowances to build better houses. Especially, some local institutions, such as the middle and elementary schools, and the community hospitals are hardly able to build houses for themselves. They have to rely on the Real Property Bureau of the city to provide housing or live in the private-rented housing. So the employees in those work units have relatively poor housing conditions. They also live at a greater distance from their work places. These inequalities become increasingly evident. Another problem is of special concern to the city planners. Since work units, apart from locating their houses within their territory, are
also allowed to requisition land outside their premises for housing, they tend to take over more land wherever they can manage to in their vicinity, even though such expansion may not fit within the framework of coordinated planning at the municipal level, leading to a mixed land use and undesirable living environment.

4.3.5 Private Housing

The lifting of the ban on building housing by individuals is an important part of the housing commodification policies. In recent years (except 1981), private-built houses kept increasing steadily in Xian (Table 15). There are two ways in which private housing construction expanded in Xian. A popular one is the housing construction including locating, designing and material collecting undertaken by the Real Property Bureau of the municipality, where 50 percent of funds are pooled by individuals before the construction work started. The rest is paid off by them after the building is completed. Government will subsidize part of the expenses for plumbing, electricity and road installment. Houses are allocated according to the share of each individual in the total investment. Investors are legally recognized as the owners of the houses allocated to them. They enjoy the rights of inheritance, sale and transfer. The property tax is waived for the first three years. Housing maintenance after allocation is done by the Real Property Bureau. The expenses are collected from every
occupant at the standard rate of 0.02 yuan per square meter. This policy is called 'build houses for private use with state assistance'. Another method is completely self-reliant housing. These houses are free of the regulations on housing form and size, but locationally they must follow the regulations of the city comprehensive plan. The government and bank offer financial support for the construction in the form of interest-free loan (Shi Zhaoyi, 1984). But all land in Xian urban area is owned by the state (Real Property Bureau, January 3, 1980). An individual can apply for housing land after obtaining a construction license. After the house is built, the owner will pay rent for the land. Land rent is very low, ranging from 0.02 yuan to 0.002 yuan per square meter per month.

Table 15: Private-Built Housing and Its Percentage of the City Total

<table>
<thead>
<tr>
<th>Year</th>
<th>City Total Housing (m. sq. m.)</th>
<th>Private-Built Housing (m. sq. m.)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978</td>
<td>0.47</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1979</td>
<td>0.60</td>
<td>0.016</td>
<td>2.7</td>
</tr>
<tr>
<td>1980</td>
<td>0.90</td>
<td>0.025</td>
<td>2.4</td>
</tr>
<tr>
<td>1981</td>
<td>0.58</td>
<td>0.007</td>
<td>0.7</td>
</tr>
<tr>
<td>1982</td>
<td>1.17</td>
<td>0.066</td>
<td>5.6</td>
</tr>
<tr>
<td>1983</td>
<td>1.18</td>
<td>0.072</td>
<td>5.9</td>
</tr>
<tr>
<td>1984</td>
<td>1.25</td>
<td>0.074</td>
<td>5.9</td>
</tr>
</tbody>
</table>

Source: from Xian Real Property Bureau, 1986.

Table 15 shows the development of private housing since 1978. In comparison with the total housing space in the city, it still forms a very small portion. In terms of the
rate of absolute increase, however, the change is great, and the tendency for increase is obvious. It was investigated by the author that private housing stock, at present, is developed mostly by factory workers, self-employed workers, and farmers living in the suburbs. Those people have got more freedom from the new economic policy to run small businesses and they also make more money for building housing. These private-built houses can be found either in the old private housing area in the inner city or in farmers' villages in the suburbs. They are in quite widely scattered and have not yet formed one continuous housing area. According to the talk with Zeng Yunric, one of the leading officials in Xian Real Property Bureau, in consideration of the general financial conditions of Chinese families, and the population and urban land situations, private housing construction will be undertaken mainly by the method of collective investment with government assistance (see p. 99), taking the form of high-rise apartment blocks. Since the self-reliant housing will occupy a minor position, and the low-rise detached buildings are not encouraged. Generally speaking, most families in terms of financial ability will prefer to buy public houses, therefore, publically built houses for sale will remain the major trend in the housing commodification movement in Xian.
Chapter V

CONCLUSION

The evolution of housing policy, including the sharp changes since 1978, shows that in socialist China the state plays a decisive role in the process of urban housing development through central planning. Such planning affects the housing quantity, quality and its geographical pattern. The post-1973 changes are not an accidental phenomenon, but are directly the outcome of some vital changes in a socialist planning system, which can be summarized as below:

1) The pattern of urban housing development is bound up closely with the changing role of the city in national economic planning.

During 1950s, the Chinese government followed closely the Russian model of urban and industrial development. The city was regarded as a positive factor in national economic development and its role was officially promoted as a centre of production. The transformation of the function of the city from 'consumptive to productive' and the strong emphasis on industrialization brought about new spatial patterns in Xian: an uniform spread of industries in suburbs with little or no segregation or residential sectors, largely in small-scale rigidly laid-out communities. The
provision of services was relatively poor. The years from late 1950s up until 1976 witnessed a gradual decline in the status of the city in the national economic development. The urban policy guidelines applicable during this period were based on the idea of the eradication of the three major contradictions: the contradictions between city and country, between agriculture and industry, and between mental and manual labor. This principle led to a series of de-urbanization policies and hence to the decline of housing planning and construction in city area. The revival of urban housing development since 1976 owes largely to the change of central planning policy which reinstated the city in a favourable position not only as a productive centre but as a place to live. City and housing planning has received unprecedented attention. As a result, housing development has begun to present a diversified pattern with a spatial tendency towards the development of inner city housing. This was characterized by four aspects: One is the large-scale renovation projects in the old residential areas at the periphery of old city. Second is the reconstruction projects in the dilapidated housing areas in downtown. Third is the large schemes of slum clearance in the old city area. Last, but not the least, is the construction of large-scale self-contained residential communities in the inner suburbs, which are no longer work-place-attached and are becoming the major form of housing development in Xian. A review of
this process suggests that the study of urban housing in China should be conducted within the broad context of urbanization process in a socialist, centrally planned structure. Attention should be directed to the varying status of city and hence the city planning and the changing pattern of urbanization.

2) The changes in housing policy reflected the changes in central planning in its attitude towards the production of consumer goods.

China's national economic planning was characterized for many years by undue emphasis on heavy industrial production and high rate of capital accumulation. The production of consumer goods was neglected. This bias was typically reflected in the investment pattern of national economy which severely limited the resources available for the production related to people's livelihood such as the social services, housing and urban amenities. The post-1978 reforms were initiated first by changing this abnormal pattern of economy and putting a higher premium on the people's consumption needs. This structural reform has promoted tremendously housing development in terms of quantity and quality.

3) The development of commodity economy, a virtual revolution in the system of Chinese economic planning, resulted in the most essential reforms in urban housing policy.
These reforms involve the government property departments and state-owned house construction companies gradually in putting housing construction and management into the orbit of commodity economy, encouragement of collective enterprises and industries to build houses, sale of both public and private houses through transfer or exchange, and adjustment of the rents upwards to reflect a large part of building and maintenance costs. These changes have and are exerting strong influence on conventional housing allocation system in three primary aspects, that is, the state monopoly of housing investment, construction and distribution is being broken down, the administrative and bureaucratic management of housing is being replaced by market mechanisms and the law of market value, and the individual households being given more freedom in housing choice.

Despite the fact that changes in housing policy have significantly improved urban housing supply situation, housing problems are still far from satisfactory. In Xian city, for example, a survey of 57,500 families in 1984 found that 22,000 (39.3%) families (including newly married couples) were still without their own houses, in 17,900 families (30.9%) over-aged male and female children were sharing the same sleeping accommodation despite the cultural preference to the contrary, and 17,700 (30.8%) households had less than 2 square meters per capita living space (Shi Zhaoyi, 1996). According to Ye Mutang, the head of the
Chinese Committee on the International Year of Shelter for the Homeless, the China's goal for housing construction is to provide each urban family with its own home—"with an average of eight square meters of floor space per person—by the year 2000 (Ye Rutang, 1987 pp. 39). It is obvious that this target is very difficult to reach. The Chinese government admits openly that the state could not possibly meet the cost involved, and even maintain the present level of housing investment in the years to come, because China's developing economy has many other more urgent investment needs (ibid., pp. 34). This raises a serious issue, that is, how can China alleviate the urban housing problems in the coming years without an increase of state investment? According to our analysis, with regard to housing policy itself, the only way out for this problem lies in the further expansion of the private housing market. As we have examined in the previous chapter on the case of Xian, housing market in cities of China is just in its infancy. The salable houses and private-built houses account for a very small proportion of the total housing stock. Moreover, rents for public houses have been raised only marginally and still do not cover all costs and the situation of state monopoly has not yet been changed. To deal with the financial deficiency and to achieve the ambitious housing goals, market force should have a full development, so as to bring every economic factor into active play. To realize this, the following measures need to be taken:
a) The system of housing allocation by the government or work units should be gradually replaced by sale of housing units.

b) Most of the state investment should be appropriated for assisting the self-built housing and for subsidizing the residents to buy their own houses or to rent the public houses when the housing rent is raised.

c) Government property departments (such as Xian Real Property Bureau) should change their role from functioning as the administrative organs appended to the municipal government to a relatively independent economic entities or business companies. All existing public housing should be managed by those companies.

d) The role of co-operative construction companies should be given full play in salable housing construction and in the city renewal programs.

e) Banks should fully develop the credit system of housing construction and purchase.

f) The state should make new land allocation policy aimed at giving families freedom and security to build houses for themselves.

g) To get rid of the bias towards the housing experiences of socialist countries in East Europe and learn from some other non-socialist, developing countries who have similar problems of heavy population pressure and scarce urban land, but more successfully solved housing problems such as Singapore and Hong Kong.
To fulfill those goals is by no means a easy task. It needs other supporting policies, such as a rational wage and price system, and population policy, backed by appropriate value system of the people, because it will be quite difficult to alter the conventional concept of housing as a welfare item. Affecting as it does the livelihood of every family and the vital interests of every person, housing has a direct bearing on the stability and order of the society. Therefore, though the reform of the present system has become a pressing issue, the whole process has to proceed very cautiously. Fortunately, in October 1984, the Central Committee of the Chinese Communist Party did decide to promote the development of commodity economy by further reforming China’s planning system. This decision reads:

In the reform of the planning system, it is necessary, first of all, to discard the traditional idea of pitting the planned economy against the commodity economy. We should clearly understand that the socialist planned economy is a planned commodity economy based on public ownership, in which the law of value must be consciously followed and applied. The full development of a commodity economy is an indispensable stage in the economic growth of society and a prerequisite for our economic modernization. It is the only way to invigorate our economy and prompt enterprises to raise their efficiency, carry out flexible operations and promptly adapt themselves to complex and changing social demands. This can not be achieved by relying only on administrative means and mandatory plans (Beijing Review, No. 40, October 29, 1984).

This brave, creative decision for economic reform is an important breakthrough in China’s traditional, ossified economic methods based on some outdated theories and views.
It has opened up a favourable circumstance for developing housing market. We have learnt from the Chinese Press recently that a floor space approximate to 40 million square meters of houses will be put up for sale in the country in 1987, which will account for a half of the total housing built in this year. A national-level cooperative company has been established to be engaged in salable housing construction (People's Daily, April 21, 1987).

To develop housing free market does not imply that the role of the state will be of minor importance. It should be given full play in the control and guidance of housing development at the macro level, especially in terms of spatial development. For instance, when relieved from the burden of universal subsidies for housing construction and maintenance, the state investment in housing could be directed towards:

1) Urban renewal, particularly in the inner city, with increasing investments in providing infrastructure and services within an integrated urban development plan for the whole city.

2) Pollution-control and environmental improvements.

3) Urban housing for the poor sections, non-profit institutions, and new young couples, with little savings or capital accumulation.

4) Providing expert guidance to private builders, large and small or individual, to invest in housing within an
integrated plan, where land for housing is developed in large block by the state or large companies.

It is expected that the urban housing policy will continue to change under the guidance of new planning system characterized by the extended scope of market regulation. This will produce a far-reaching impact on the geographical pattern of urban housing in the foreseeable future. For example: 1) Since the local governments, work units and individual households have obtained greater freedom for housing construction, the spatially balanced pattern of housing development will be developed in all parts of the city where housing development was neglected in the past in terms of need. In addition, the trend towards building large-scale self-contained residential districts will prevail over the work-unit-attached locational approach. All those will strongly affect the existing segmented or patchwork locational pattern of housing in Chinese cities, leading to a tendency towards concentrated development with homogeneous land use. 2) At the same time, increasing freedom being allowed to different work-units and individuals may also lead to greater differences in housing quality reflecting the differences in profitability of different work-units and investment capacities of individuals reflecting differences in socio-economic status. This type of development pattern will also have a spatial dimension. 3) The recognition of individual preference and
the tolerance of resident's free choice will promote the resident's mobility, thus lead to diverse patterns of intra-city migration. 4) The change in housing locational pattern will affect the overall pattern of urban land use, thereby offering a challenge to the conventional approaches to urban comprehensive planning. These expected changes will put many new research issues before geographers and planners, such as to study the characteristics of the new locational pattern of urban housing and the processes of its formulation; to study the residents' behaviour in housing choice and in intra-city migration; to study how urban planning adapts its goals and strategies to the changing pattern of urban land use; and to study how the central control system and the free market system can work together to form the so-called 'Chinese-style socialist housing system' and to assess its strengths and weaknesses. In addition, it is also imperative to study the problems in relation to housing in terms of changes in the age structure of population, such as the housing for the small size nuclear families as a result of widespread acceptance of one-two child family concept, housing for the aged people when they would be forming a much larger proportion of the total population in the next few decades. This paper has not been able to touch upon those topics, but it may offer some general idea of what changes have been occurring in urban China in its housing stock and what is the motivating
force behind such changes. It is our hope that this study will help to stimulate further studies of the situation of urban housing in China, which, we believe, is on the threshold of assuming a more dynamic and varied pattern, deserving scholarly attention.
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VITA AUCTORIS

Date of Birth: 17 October, 1950

Place of Birth: Shaanxi, China

Education: 1957 - 1962 Attended Elementary School in Shaanxi, China

1962 - 1968 Graduated High School in Shaanxi, China

1974 - 1978 Graduated, Diploma, Astronomy, Nanjing University, China

1985 - 1987 Attended University of Windsor (Graduate Studies)

Windsor, Ont., Canada

1987 Graduated, Master of Arts, Geography

University of Windsor

Windsor, Ont., Canada

Work Experiences:

1968 - 1974 Worked as a farmer in the countryside, Shaanxi, China

1978 - 1985 Worked as a teaching assistant in the Department of Geography, Shaanxi Teacher's University, Xian, Shaanxi, China