

REINVESTMENT DECISIONS AND REHABILITATION IN HOUSING

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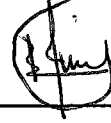
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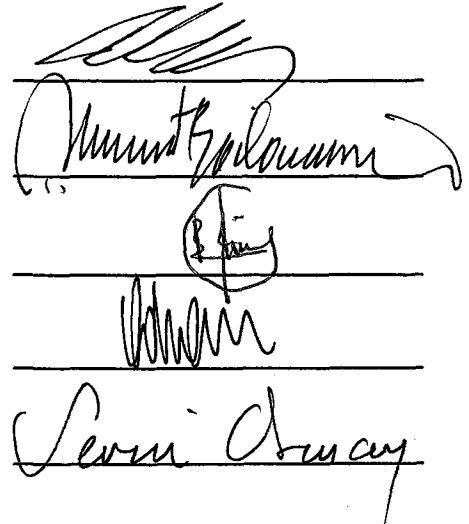
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ABSTRACT

REINVESTMENT DECISIONS AND REHABILITATION IN HOUSING

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Despite the extensive discussions in the world literature, rehabilitation and reinvestment issues are seldom in the agenda in Turkey. A strong excuse could capitalize on the fact that the stock is relatively new. Approximately 77 per cent of the standing buildings have been constructed after 1970s. However, total volume of reinvestments in this stock is estimated to be 24.7 trillion TL in 1994 values, which is equal to the construction of approximately 38 000 new dwelling units in 1994. Yet the stock is of low quality as the recent earthquakes have proved. Therefore, reinvestment and rehabilitation policies are current necessities of Turkey if only because earthquake vulnerabilities make it imperative and at the same time provide opportunities to design and implement reinvestment and rehabilitation policies.

In most market economies, households are the main decision makers for reinvestments rather than some external authority. This study intends to identify the factors underlying households' reinvestment decisions so as to evaluate

policy options. 1994 'Household Income and Consumption Expenditures Survey' by State Institute of Statistics is used for the purposes. Two groups of characteristics as 'household characteristics' and 'characteristics of dwelling and neighbourhood' are examined. Findings reveal that household income, ownership status, household size, age of the building, and neighbourhood characteristics strongly affect households' reinvestment decisions. Moreover, low-income households, rental stock, over-occupied stock, aged stock and declining neighbourhoods may suffer from disinvestments. Disinvestments may result in inefficient resource use, poor housing conditions for households, and creation of problem areas in terms of health, safety and aesthetics.

Thus, reinvestment and rehabilitation issues demand policy solutions to facilitate reinvestments in housing and could involve construction material aid, technical advisory, aids in organization of rehabilitation work and the encouragement of firms, which could specialize in rehabilitation and maintenance work.

Keywords: Housing, Repairs and Maintenance, Reinvestment Decisions, Rehabilitation Policy

ÖZ

KONUTA YENİDEN YATIRIM KARARI VE YENİLEME

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Konut dayanıklı bir maldır, yine de bu dayanıklı mal için belirli bir ekonomik ömürden bahsetmek gerekir. Konutun ekonomik ömrü; bakım, onarım ve iyileştirmeler için yapılacak yatırımlarla uzatılabilir. Dünya literatüründe yeniden yatırım ve iyileştirme tartışmalarının geçmişi oldukça eski olduğu halde, ülkemizde bu konuya önem verilmemiştir. Bunun nedeni stoğun görece yeni olması sayılabilir, mevcut binaların % 77'si 1970 sonrasında yapılmıştır. Buna rağmen, bu stokta 1994 değerleriyle toplam yatırım hacmi 24,7 trilyon TL civarındadır. Ayrıca, yakın zamanda yaşanan depremler stokun düşük kalitede üretilmiş olduğunu da kanıtlamıştır. Bu nedenlerle konuta yeniden yatırım ve iyileştirme politikaları Türkiye'nin güncel gereksinimleri arasındadır. Bununla birlikte, kentlerimizde deprem tehlikesinin varlığı, bu politikaların tasarlanması ve uygulanması için yeterli bir gerekçe yaratmaktadır.

Konut stoğunun bakımından sorumlu olan temel aktör, bu stoğun kullanıcısı olan hanehalklarıdır. Konuta yeniden yatırım ve iyileştirme amacıyla

hanehalklarının yeniden yatırımlarını etkileyen faktörlerin incelenmesi, politika seçeneklerini değerlendirmek olanağı sağlar. Bu amaçla DİE 1994 'Hanehalkı Gelir ve Tüketim Harcamaları Anketi' kullanılmıştır. Hanehalklarının konuta yeniden yatırımlarını etkileyen faktörlerin 'hanehalkı özellikleri' ve 'stok ve mahalle özellikleri' olmak üzere iki ana başlık altında incelenmesi anlamlı görülmektedir. Analiz sonuçları bazı hanehalklarının konuta yeniden yatırım yapmalarında sorunlar olduğunu ortaya koymuştur. Bu hanehalkları çoğunlukla düşük gelir seviyeli, kiracı, stoğun yoğun kullanılan, eski bölümünde ve gelişmemiş alanlarda oturan hanehalklarıdır.

Konut stoğunda yeniden yatırım ve iyileştirme konularında politikalar üretilirken, özellikle yeniden yatırım konusunda problemlili olan hanehalkları göz önünde bulundurulmalı ve bu gruplar için özel politikalar geliştirilmelidir. Bu politikaların daha çok hanehalklarının konuta yeniden yatırımlarını kolaylaştırma amacı taşıyan; malzeme yardımı, işlerin Hh tarafından yürütülebileceği durumlar için teknik bilgi yardımı, işlerin organize edilmesinde yardım ve tamir-bakım işleriyle uğraşacak firmaların teşvik edilmesi konularında olması beklenmektedir.

Anahtar Kelimeler: Konut, Bakım ve Onarım, Yeniden Yatırım Kararı, Rehabilitasyon Politikaları



In Memory of My Father

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TABLE OF CONTENTS

ABSTRACT	iii
ÖZ.....	v
ACKNOWLEDGEMENTS	viii
TABLE OF CONTENTS.....	ix
LIST OF TABLES	xiii
LIST OF FIGURES	xv
LIST OF GRAPHS	xvi
CHAPTER	
1. INTRODUCTION.....	1
1.1. Necessity of Reinvestment and Rehabilitation in Housing	1
1.2. Reinvestment and Rehabilitation Policies as Current Necessities of Turkey	3
1.3. Households as Decision-makers of Reinvestments.....	8
1.4. Method of Research of Reinvestment Decisions	10
2. URBAN HOUSING STOCK IN TURKEY.....	12
2.1. Formation of the Urban Housing Stock.....	12

2.1.1. Growth and Change in Turkish Cities and Emergence of New Property Relations	12
2.1.2. Flat Ownership System and Urban Rehabilitation	15
2.2. Existing Legal Framework related to Reinvestment and Rehabilitation in Housing	18
2.2.1. Development Law (No: 3194)	19
2.2.2. Law of Municipalities (No: 1580).....	20
2.2.3. Building Supervision Law (No: 4708)	20
2.2.4. Flat Ownership Law (No: 634).....	21
3. REINVESTMENT AND REHABILITATION IN HOUSING: A SURVEY OF THEORETICAL APPROACHES AND BUILDING AN INTEGRATED FRAMEWORK	23
3.1. Life of Housing: From Development to Redevelopment	23
3.1.1. Economic Life of Housing	23
3.1.2. Types of Reinvestments in Housing	27
3.1.3. Reinvestment as an Economic Decision	29
3.1.4. Consequences of Process of Reinvestments and Disinvestments	33
3.2. Urban Renewal Policies.....	38
3.2.1. Historical Perspective	38
3.2.2. Public Involvement in Urban Renewal.....	44
3.2.3. Households' Reinvestment Decisions	48
4. EMPIRICAL ANALYSIS OF REINVESTMENT DECISIONS.....	51

4.1. State of Urban Housing Stock	51
4.2. Data and Framework of the Analysis	55
4.3. Repairs and Maintenance Expenditures	59
4.4. Household Characteristics and their Affect on Reinvestment Decisions	60
4.4.1. Hh Income	60
4.4.2. Ownership Status.....	62
4.4.2.1. Length of Stay	65
4.4.3. Age of Household Head.....	66
4.4.4. Hh Size	70
4.4.5. Evaluation of Household Characteristics and their Affect on Reinvestment Decisions.....	72
4.5. Dwelling and Neighbourhood Characteristics and their Affect on Reinvestment Decisions.....	74
4.5.1. Age of the Building	74
4.5.2. Size of the Dwelling.....	76
4.5.3. Type of the Dwelling.....	78
4.5.4. Neighbourhood Characteristics	80
4.5.5. Evaluation of Dwelling and Neighbourhood Characteristics and their Affect on Reinvestment Decisions.....	82
4.6. The Construction Industry; and Material and Components Industry: The Background to Market Changes.....	83
5. CONCLUSION	85

5.1. Definition of the Problems.....	85
5.2. Evaluation of Policy Options.....	87
5.3. Concluding Remarks.....	93
5.4. Avenues for Further Research	94
REFERENCES.....	95
APPENDICES	
A. VALUES AND AMOUNTS OF REPAIR AND MAINTENANCE EXPENDITURES.....	100
B. COMPLEMENTARY CROSS TABULATION TABLES AND GRAPHICS.....	103
C. SPSS OUTPUT OF ASSOCIATION ANALYSIS.....	111
D. SAMPLE SURVEY OF HOUSEHOLDS REINVESTMENT DECISIONS IN HOUSING	120

LIST OF TABLES

TABLE

3.1 The Historical Development of Urban Renewal and Housing Rehabilitation in Western Europe	40
3.2 Assessment of the Extent of Urban Renewal and Housing Rehabilitation Problems After 1980	43
4.1 Building and Housing Production.....	51
4.2 Distribution of Stock According to Year in which Construction is Completed	52
4.3 Distribution of Stock According to Year in which Construction is Completed	53
4.4 Filtering of the Data.....	56
4.5 Hh Income and RM Expenditures According to Income Quintiles	61
4.6 Expenditures and Incomes for each Ownership Status	63
4.7 Expenditures and Incomes for each Age Group	68
4.8 Distribution of Expenditures and Incomes According to Hh Size.....	71
4.9 Comparison of Hhs having RM expenditures and do not have RM expenditures	72

4.10 RM expenditures according to age of the building and income quintiles	75
4.11 Distribution of Expenditures and Incomes According to Size of the Dwelling.....	77
4.12 Distribution of Expenditures and Incomes According to Type of the Dwelling.....	79
4.13 Distribution of Expenditures and Incomes According to Neighbourhood Characteristics	81
4.14 Comparison of Hhs having RM expenditures and do not have RM expenditures	82



LIST OF FIGURES

FIGURE

1.1 Life History of Housing Stock.....	2
1.2 Categorization of Hhs according to their decisions of 'move or stay' and 'reinvest or disinvest'	9
4.1 Framework of the Analysis.....	57

LIST OF GRAPHS

GRAPH

1.1 Housing Production in Urban Areas: 1955-2000.....	5
1.2 Number of Urban Hhs and Dwelling Units: 1955-2000	6
2.1 Annual Production of Buildings in Turkey: 1955-2000	16
3.1 The Rent Gap.....	35
4.1 Physical State of the Buildings According to Age Categories.....	54
4.2 Average RM Expenditures and Incomes and the Ratio of RM Expenditures to Income - E/I	61
4.3 Number of Hhs and Average Incomes According to Ownership Status.....	64
4.4 Average Expenditures and Average Incomes According to Ownership Status.....	65
4.5 Average RM Expenditures for Tenants with Twelve-months or Less Length of Stay	66
4.6 Average RM Expenditures and Incomes for Age Groups	69

CHAPTER 1

INTRODUCTION

1.1. Necessity of Reinvestment and Rehabilitation in Housing

Housing areas are developed under distinct social, economic, political and technological circumstances. Location, technology, materials, and design conceptions of buildings are results of the circumstances of their time of construction. In time, however, social and economic patterns of cities are subject to change, necessitating reinvestments. This necessity may emerge both from the physical and social obsolescence in buildings and also depreciation of a neighbourhood (Keleş, 1976; 2002). Furthermore, progress in construction technology and availability of various construction materials create a demand for adaptation and improvement of urban areas.

Buildings, and housing stock in particular, go through different states of existence during their life period. As Nutt et al. (1976) denote, between the decisions to construct and destruct, building stock undergoes 'states of occupancy and vacancy' and 'episodes of use' identified as modification, maintenance, adaptation and extension. The final stage in the life history of buildings is removal by demolition. In other words, between the decisions of construction and destruction, housing stock experience the process of reinvestments and/or disinvestments. Figure 1.1 summarizes the life history of housing stock and decisions taken in different stages of life due to changing conditions.

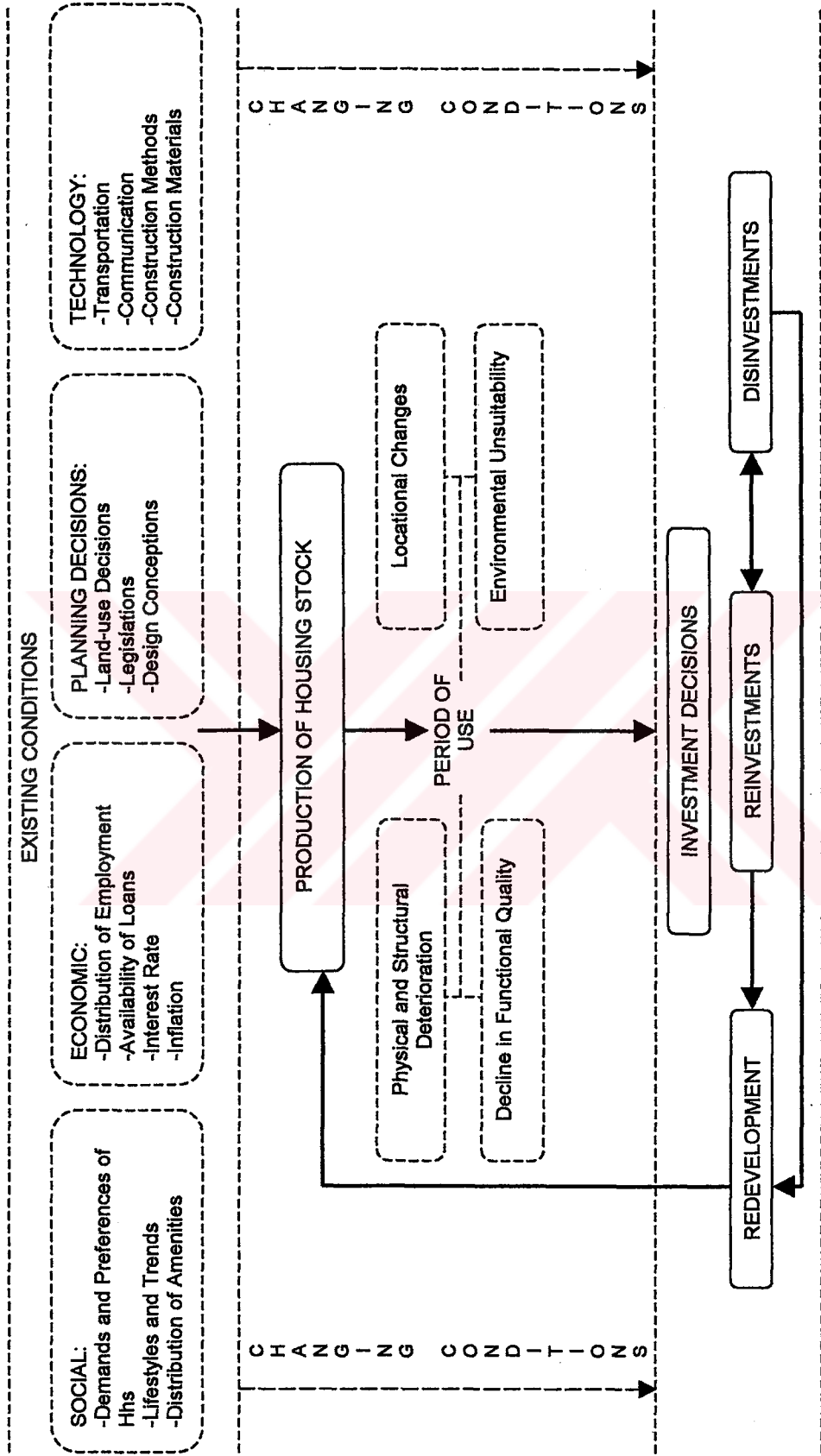


Figure 1.1 Life History of Housing Stock

Housing stock constitutes a major national economic resource for many countries. In case of declining asset values and housing losses from the stock, not only the overall economy but also individual households (Hhs) who reside in this stock are impaired. Housing is a durable consumption good, yet it has an economic life that nevertheless terminates. The physical state of housing, at any point in time, is dependent on the original standards of construction, wear and tear resulting from the age of the building and Hhs' use; and availability of adequate maintenance and rehabilitation. However, physical state is not the only factor that determines the economic life of housing. In addition, economic and environmental changes in the neighbourhood and shifts in demand and preferences of Hhs impinge on the economic life of the stock.

Reinvesting in housing for repairs and rehabilitation, promises a number of benefits for both individual Hhs and the society at large. First of all, useful life of housing can be extended. Investments in regular maintenance and repairs could delay at least deterioration and physical obsolescence. Secondly, reinvestments in the existing housing stock create opportunities to improve the standards and to preserve the asset value of housing. Thus, Hhs can live in higher quality housing and a more effective use of nation's resources could be achieved. Moreover, preservation of asset values will help avoid the creation of problem areas in terms of health, safety and aesthetics. Finally, reinvesting in existing housing is a way of social and physical adjustment for Hhs. Changes in lifecycle and in preferences of Hhs could be met by reinvestments and rehabilitation in housing.

1.2. Reinvestment and Rehabilitation Policies as Current Necessities of Turkey

Rehabilitation and renewal issues are common phenomena for almost all countries. Attempts to renew urban areas in developed countries mainly aim slum clearance, revitalization of central city and increasing the tax base of local authorities in city centres (Keleş, 1976; 2002). Despite extensive discussion in the world literature, reinvestment issues are seldom discussed in the Turkish case. However, reinvestment and rehabilitation policies are current necessities of Turkey and the issue is specifically relevant for the Turkish case. As Balamir

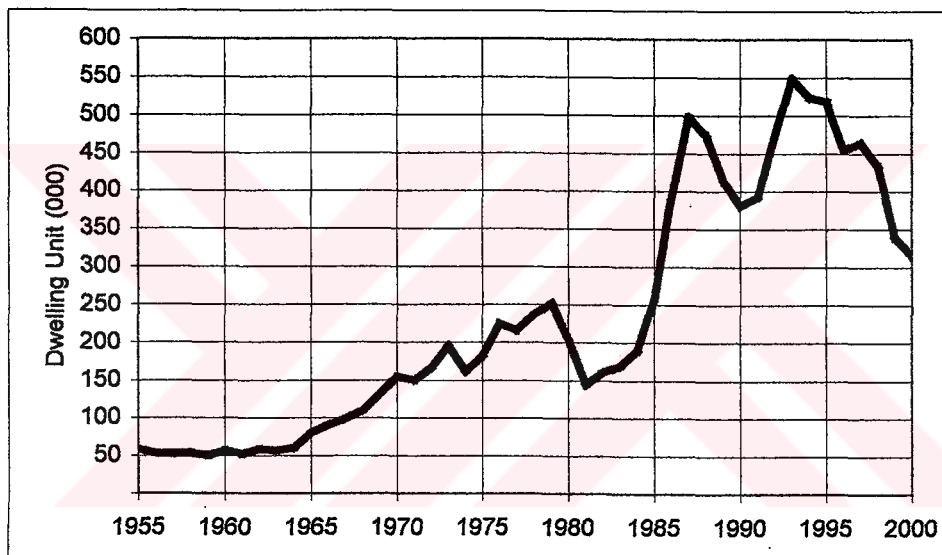
(2002) states, settlement patterns and trends adopted in Turkey for more than half a century necessitate rehabilitation actions in every scale. Accordingly, determination of urban rehabilitation policy, provision of appropriate legislative arrangements, development of implementation tools and creation of funds, definition of organizational models and of processes to bring together the stakeholders are issues of priority for coming decades.

The necessity of urban rehabilitation policies in Turkey can be grouped under three main categories of justifications. The first involves the production process of the urban housing stock itself. In 1950s, rapid population increase has been the major determinant of the formation of the urban housing stock in Turkey. On one hand, migration to cities gave way to squatter houses, which were usually located on the outskirts of the city. On the other hand, inadequate supply of urban sites led to an increase in land values, which as a result, introduced the construction of multi-dwelling buildings on the same lot. As Balamir (1969, 1975, 1996) claims, due to the inadequacy of public resources for infrastructure, supply of urban building plots were constrained, leading to high land values, thus resulting in the construction of high-densities and in multi-unit physical structures on jointly-owned land. In a short span of time, the process began to dominate the housing markets and most of the existing housing stock of that period was demolished in order to rebuild at higher densities, irrespective of the age of the stock. From the 1950s on, Turkey had displayed an extraordinary performance in urbanization, construction and housing production (Balamir, 1975; 1982; 2002) (Graph 1.1).

This performance was realized despite the inadequate capital accumulation and investments in infrastructures and the low average income levels per capita (Balamir, 1982; 2002). However, throughout this period, the public sector was not willful in its duties of guidance and technical supervision. The authorities preferred to deal with legalization of irregularly formed housing stock.

Furthermore, housing environments created during this period were particularly in poor quality due to the ways and conditions in which such development took place. The underpinning force of urban growth and housing production in Turkey was the apartment stock, which was usually produced by small developers

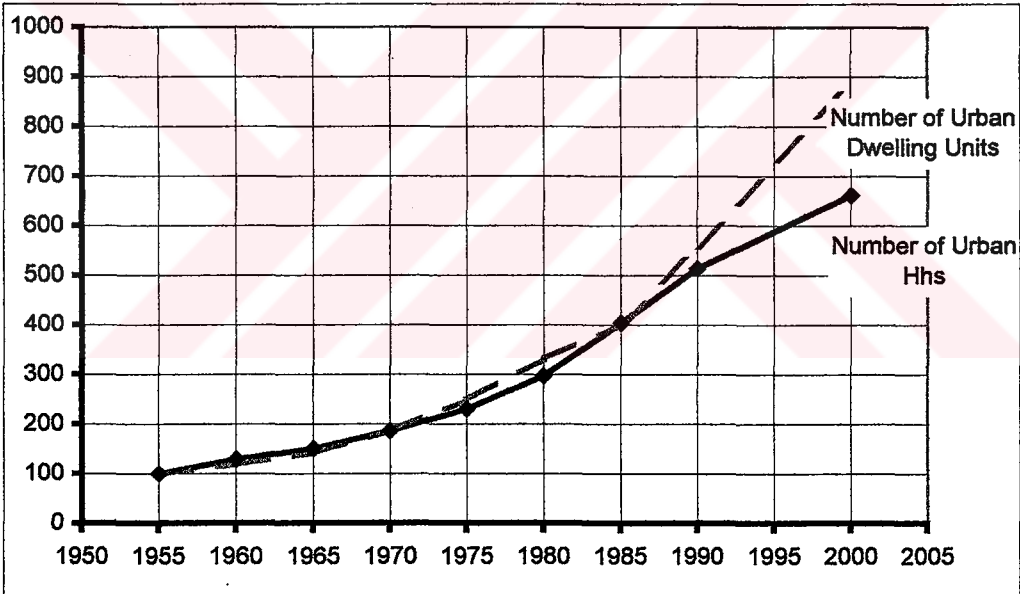
lacking the technical supervision of a public or private body (Balamir, 2002). Housing environments created, are therefore highly substandard and inadequate in terms of urban services and investments, therefore creating risk pools in urban areas. To Tekeli (1995), housing production by small developers (yap-sat) continuously forces an increase in development rights and leads to the demolishing and redevelopment of many housing stock without the exploitation of economic life, resulting in the creation of highly dense, high-cost but poor quality environments.



Graph 1.1 Housing Production in Urban Areas: 1955-2000
(Source: Derived from SIS, Construction Statistics, 2000)

A second justification to develop urban rehabilitation policies in Turkey is based on the state of existing housing stock and recent demographic trends. Despite the arguments of 'housing shortage', in urban areas, total number of dwelling units exceeds the number of urban Hhs (Balamir, 2002). Graph 1.2 displays the relative growth of urban Hhs and dwelling units in Turkey between the years 1955 and 2000.

In the graph, urban dwelling units covers only the authorized part of the housing stock, whereas number of urban Hhs contains population accommodated both in the authorized and unauthorized stock. This implies that an excessive portion of the housing stock is much more than that displayed in the graph. Moreover, Turkey is now facing a decline in the population growth rate and rate of urbanisation. Housing policies have to be restructured to encourage rehabilitation, rather than the production of new dwelling units. Furthermore, problem of housing must be perceived not only as quantities in production, but the achievement of quality, higher standards and safety. Also, rehabilitation of the existing housing stock can be considered as an alternative mechanism of housing production.



Graph 1.2 Number of Urban Hhs and Dwelling Units: 1955-2000
(Source: Balamir 2002)

Third, the necessity of urban rehabilitation policies in Turkey emerges in areas where collective approach options to redevelopment have to take place. Balamir (2002) states that, extensive public investments for infrastructure, transportation and public services are unavoidable and demand and requirements for these

types of investments are excessively in the increase in urban areas. Physical interventions for the realization of these investments and local economies of these projects necessitate change in use, increase in density and planned renewal and rehabilitation actions to be carried.

Moreover, according to Balamir (2002), urban housing stock and environment, most of which lack adequate supervision, forms a large risk pool comprising environmental pollution, fire, natural hazards, and vulnerabilities for sabotage and terrorism. He states that this concentration of risks requires development of special approaches and new policies in urban areas. Furthermore, the recent realization that earthquake vulnerabilities exist in most of the urban settlements in Turkey attracted greater attention in reinvestment and rehabilitation issues. It is considered that comprehensive reinvestments have particular roles to play in efforts of maintaining safety in existing housing stock. Rehabilitating the existing housing stock to reduce seismic risks requires a distinct know-how and expertise in building and urban design. Thus, reinvestment and rehabilitation policies have to cover both the issue of improving standards in living environment, and strengthening the housing stock to reduce seismic risks. Therefore, a comprehensive policy of rehabilitation and reinvestment and a framework for coordinated rehabilitation and renewal in urban housing environments is a current necessity in Turkey. Thus, it is mainly an issue of urban planning. However, urban planning legislation in Turkey lacks the tools and mechanisms necessary for the purpose.

The primary concern of planning has conventionally been issues of new development in Turkey rather than rehabilitation and upgrading of the existing housing environments. No specific policy exists to prevent the declining asset values of existing housing, and possible losses from the stock in addition to the totally ignored legal framework for some form of planned rehabilitation and renewal. Existing laws, on the other hand, often hinder reinvestments and rehabilitation rather than regulate, let alone encourage them. According to Flat Ownership Law (1965), Hhs are responsible for the maintenance of the housing stock. Yet, there are no mechanisms to supervise Hhs and facilitate or even force their investments in order to preserve the asset value of the housing stock and prevent losses from the stock.

It is within the scope of this study to identify the necessary tools and improvements in legislation for the purposes of urban rehabilitation and renewal.

1.3. Households as Decision-makers of Reinvestments

In most economies, reinvestment decisions are made by independent Hhs as main decision-makers rather than some external authority. Yet, housing is a more durable commodity than Hhs life-stage periods, and discrepancies between the two frequently give rise to the need for rehabilitation, even if Hhs were totally free to change residence and location. There are a number of factors that affect Hhs reinvestment behaviour in housing for maintenance and upgrading. Income and cost constraints, the perception of the existing conditions in environment and their prospects, and physical qualifications of the dwelling unit are among these factors. The purpose of this study is to identify these factors that underlie Hhs' reinvestment decisions for repairs and rehabilitation in Turkey, in order to evaluate policy options.

In theory, any reinvestment decision may come out as a result of changes in Hhs characteristics, may directly relate to the characteristics of the dwelling and neighbourhood, or, alternatively, may be the outcome of technological developments like new materials and market conditions. Also existing monetary and development policies could have effects on reinvestment decisions. In some cases Hhs may prefer to move to a new house rather than to stay and reinvest in the existing dwelling unit. If Hhs' decision is neither to move nor to improve then disinvestments are unavoidable. Disinvestments result in the continuous deterioration of the unit itself and declining asset values. Exposing the conditions that give rise to types of investments and disinvestments and the subgroup of Hhs that are likely to avoid repair work are instrumental in developing policy proposals.

At this point, it becomes evident that it is essential not only to identify the factors affecting reinvestment decisions but also to understand the process of reinvestment in housing as a whole. Thus, economic function and life of housing, type and scale of investments need to be examined. In addition, consequences of reinvestment and disinvestment decisions will be reviewed.

This could find a more general context within 'rent-gap' and 'gentrification' arguments. In the Turkish case, current laws and regulations have to be evaluated as a basis of new policy proposals.

Mobility debates can also be seen as part of the reinvestment and rehabilitation discussions. Hhs are faced with decisions to move or stay at different stages of their lifecycles. Figure 1.2 displays subgroups of Hhs categorized according to their decision to move or stay and reinvest or disinvest as well as reasons of mobility.

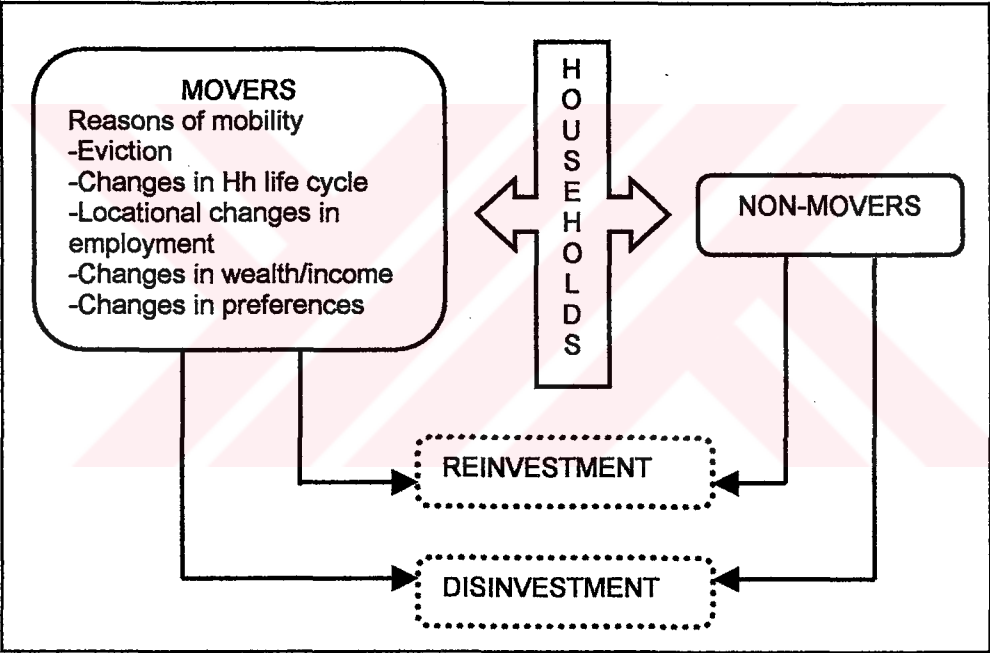


Figure 1.2 Categorization of Hhs according to their decisions of 'move or stay' and 'reinvest or disinvest'

Main emphasis of this study is on the reinvestments aiming to remove the effects of aging of the housing stock. Reinvestments done by the new mover Hhs, however, are usually known as 'adjustment investments'. Studying with a sample of non-mover Hhs may be more reasonable. It is also true that mobility debates are extensive and may form an independent topic of study, thus

decision to move and mobility issues are peripheral to this study.

1.4. Method of Research of Reinvestment Decisions

First, formation of the urban housing stock and problems of the current system in Turkey is going to be examined. Existing policies of reinvestment and rehabilitation issues will then be taken into consideration. In this respect, current laws and regulations will be reviewed.

Second, theoretical discussions in the world literature on reinvestment and rehabilitation issues will be surveyed to clarify the universally significant aspects of housing processes.

Although, reinvestment and rehabilitation policies are current necessities of Turkey for more than one reason, developing policy proposals emerge as an urgent task due to the existence of earthquake vulnerabilities in Turkish cities. This, in fact, creates opportunities to develop and implement such policies and to supervise reinvestments in housing. Since Hhs are the main decision makers of reinvestments rather than some external authority, it is essential to understand their reinvestment behaviour and the existing potential for reinvestments to develop policy proposals.

Analysis of the factors that affect Hhs' reinvestment decisions in Turkey will be examined, based on the 1994 'Hh Income and Consumption Expenditures Survey' of the State Institute of Statistics. The census data on building and construction statistics will act as complementary databases. Descriptive statistics, frequency tables, contingency tables and correlations will be the basic tools for this analysis.

'Hh Income and Consumption Expenditures' has a number of variables that are useful for this analysis. First and the most important variable is 'repairs and maintenance expenditures' to represent reinvestments realised. Variables such as income, Hh size, ownership status of dwelling, age of Hh head etc. are available in relation to 'Hh characteristics'. For the 'dwelling characteristics', age of building, floor area of dwelling, type of dwelling occupied etc. can be used.

However, the survey is not without its limitations. Information on materials used for repairs and the scale of repair work is inadequate.

Two sets of characteristics will form the basis of the analysis. The first part of the analysis is devoted to the 'Hhs characteristics' and their influence on reinvestment decisions, whereas the second part focuses on 'dwelling and neighborhood characteristics' and their effects on reinvestment decisions. In the light of the results derived from analysis, policy options are to be evaluated.



CHAPTER 2

URBAN HOUSING STOCK IN TURKEY

2.1. Formation of the Urban Housing Stock

2.1.1. Growth and Change in Turkish Cities and Emergence of New Property Relations

For a deeper understanding of the current situation of the existing housing stock and the framework for urban rehabilitation policies, it is essential to examine evolution of the urban housing stock briefly. Rapid population increase has been the major determinant of the formation of the urban housing stock, in 1950s. Two main processes can be considered as the driving forces of growth and change in Turkish cities: construction of squatter houses and of multiple dwellings on the same lot.

According to Akçura (1982), there was no or little available housing stock in urban areas, which could filter down to the migrants from rural areas. Therefore, they had to produce their own housing, and this was the driving force of squatter housing production. Moreover, low levels of capital accumulation and production were reflected in the scarcity of urban land and high levels of prices. Access to urban land was impossible for migrants. This led to the invasion of public land or occupation of agricultural land, for example, by means of 'shared title'. According to Akçura (1982), due to these trends determined by urban land prices and the integration problem resulting from economic, social and cultural reasons, squatter areas emerged and stood separately from existing urban

settlements. However, economic activities and social relations created interaction between these marginal groups and the urban population.

According to Tekeli (1995) occupants of squatter housing were migrants, who had no regular jobs, facing fluctuations in their low-income levels. Having no access to legitimate ways of housing production, they located their squatter housing near the labour market of the cities on the areas of difficult terrain. Land was usually publicly owned, and houses could be easily reproduced several times when demolished. Housing production by small developers (yapsatçılık) as a second process developed to meet demand. The response in terms of producing plans and land was slow within the context of rapid urbanization in Turkey. Moreover, lack of rational urban land policy to control the value increases on land by means of taxation resulted in higher ratios of absolute rents. Thus, it was economically impossible for middle classes to build a single house on a single lot. Therefore, many middle income Hhs collectively built housing in forms of apartments consisting of many dwelling units. Such a process was possible by both housing cooperatives and small developers.

Balamir (1975) shows that squatter housing is not the sole agent of rapid growth of Turkish cities. Both the formation of squatters and ownership fragmentation in buildings are self-generated processes in the free market. Ownership fragmentation in buildings accelerated the development and redevelopment activities in cities resulting in the high rates of urbanisation. Contribution of ownership fragmentation to the rate of urbanisation has not been less than the formation of squatters. These two processes are complementary in more than one way.

Squatter development has attracted attention since the beginning of the process and there are many studies in literature related to squatter housing. However, flat ownership and its problems are neglected although it is a significant housing supply mechanism in rapid urbanisation of Turkish cities (Balamir, 1975).

According to Balamir (1982, 1996) attempts to explain the transformation of Turkish cities solely by means of demographic changes such as migration and population growth or "rural push and urban pull" or "modes of supply" would be

an over-simplification of the issue. Physical changes that can be observed are not only results of demographic, but also economic, institutional and cultural aspects of social dynamics.

According to Balamir (1969, 1975, 1996) increasing urban populations led to increasing housing and public building needs and triggered intensified activities in the construction sector. However, supply of urban sites was constrained, and there were scarcity of sufficiently large capital resources to undertake independent construction work under high land values. Moreover, administrative intervention in the market was insufficient as well. In such an environment, a number of innovative methods in the free market emerged to meet a satisfactory level of production. In late 1940s and early 1950s, informal or semi-formal arrangements evolved between households, landowners, developers and other intermediaries. It did not take more than 10-15 years for these processes to become predominant in the country. Balamir (1969, 1975, 1982, 1996, 2002) emphasized that as a result of this process, urban housing stock expanded enormously. It is significant that such a performance was materialized despite the low rates of capital accumulation and investment capacities and also without public guidance. The driving force of this high level of economic performance was the evolution of new forms of property relations, which remove the constraints of resource scarcities on development.

Balamir (1996) identifies three forms of property relations as 'appropriation', 'apportionment' and 'appurtenance'. First process is the direct 'appropriation' of public or private land for squatter housing. It is an entirely illegal form, yet most of which have been legalized by several amnesty laws. Constructing squatter housing did not necessitate high levels of initial investments, and it was the easiest way of meeting the immediate demand of migrants from rural regions. Moreover, in time with the "laws to condone unauthorised forms of development" it became a widespread way of accessing to legitimate ownership of urban property. Squatter settlements emerged mostly in larger cities, at less favourable locations for regular construction or on the outskirts of the cities, out of the formal development boundaries.

Second process is the 'apportionment', which took place usually on agricultural land outside the boundaries of development areas. According to the development regulations, subdividing of land smaller than a specific size was prohibited. The aim of such a constraint was to control spread and to preserve agricultural activities. However, in the 'appropriation' process individuals divided and shared land through informal agreements to carry out development and independent dwellings. Appropriation of land in this process is legal, yet construction activities that took place are unauthorized. Balamir (1996) claims that the process of 'apportionment' is a more organized action in comparison to the process of direct 'appropriation'.

Third is the process of 'appurtenance', which had the major contribution to the physical transformation of Turkish cities. Inadequate public resources for infrastructure constrained the supply of urban building plots, leading to high land values, this resulted in the collaboration of individuals in construction of high-density multi-unit physical structures on jointly-owned land. In this process small savings and capital brought together and formed an investment capacity that can initiate development activities. Thus, landowners, developers and investor Hhs have significant roles in this process. Developers have a role of initiating cooperation. They sell the "independently usable parts" of the building even before construction is completed; so they don't need large-scale capital. Landowner's and Hhs' participation in this process results in their access to flats.

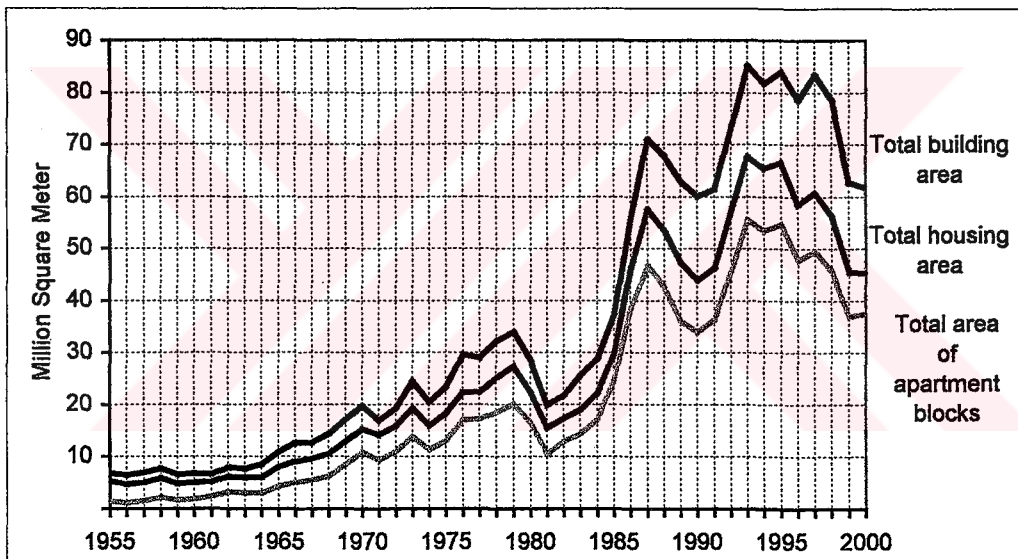
'Flat ownership' system has dominated the country in a short period of time and together with it a new mode of urban life emerged. The process of appurtenance has permanent effects, because property relations occurred in this process are final states, which cannot easily change into another ownership status within free market interactions (Balamir, 1996).

2.1.2. Flat Ownership System and Urban Rehabilitation

According to Balamir (1996) consequences of appurtenance process immediately displayed itself in terms of physical outputs and environmental impacts. With such an innovation, the building stock in the country doubled

every ten years. However, standard building regulations were not revised and modified to respond to the renewed conditions of development. Thus, all settlements became almost identical with new developments of concrete-framed blocks of flats, which took the shapes of identical development plots. Even mass-housing production and cooperatives (supported by the State after the mid-1980s) could not modify the set of relations, methods of production and the appearances of cities established by appurtenance.

Today, most of the regular housing stock in Turkey is formed through 'Flat Ownership' relations as apartment blocks (Graph 2.1).



Graph 2.1 Annual Production of Buildings in Turkey: 1955-2000

(Source: Updated from Balamir 2002)

Institutionalisation of Flat Ownership relations has facilitated the production of a large pool of dwellings in a short span of time. As Balamir (1975) states, this implies the considerable simultaneity in depreciation and deterioration of the urban housing stock. According to him, rehabilitation or renewal decisions in buildings are necessary for more than one reason. Major reason for renewing a building is structural or physical obsolescence. Due to 'fragmented ownership'

buildings undergo a rapid deterioration process and their useful life shortens. Additionally, changes of use occur during time especially in central areas. However, buildings under the Flat Ownership cannot easily respond to these changes resulting in the functional obsolescence. Furthermore, in time, 'highest and best' use of an urban site changes in market conditions, necessitating comprehensive modifications in buildings, which results in economic obsolescence.

However, with the existing laws and mechanisms, collective reinvestments are hardly possible for the redevelopment or rehabilitation of the existing stock. This is due to the ownership structure, where each flat owner has rights both in their dwelling units and in the jointly-owned parts of the building in common use. According to Balamir (1975, 1996) with the process of appurtenance decision-making power on buildings is fragmented unconditionally, minimizing the probability of producing a joint decision, neglecting the comprehensive rehabilitation or redevelopment needs of urban areas at future stages of lifecycle (for the necessity of urban rehabilitation in Turkey refer to section 1.2.). According to article 19 of the Flat Ownership Law, unanimous decisions are required for major reinvestment and repair decisions for the common parts of the building.

On the other hand, individual owners could freely enjoy the control of investments in their own dwelling units and it is the owners' preferences and demand that determine the type and scale of investments. Thus, this ownership structure has led to the individual investments to gain greater impetus. Individual investments may be significant in volume and they may be considered as a potential, which can be organized and oriented in a planned manner. Yet, no effort exists to investigate and orient this potential.

Most of the rehabilitation and renewal literature in Turkey is related to the squatter housing and improving the quality of life in squatter areas. However, reinvestment and rehabilitation in formal housing, most of which is produced under Flat Ownership relations is a significant issue.

2.2. Existing Legal Framework related to Reinvestment and Rehabilitation in Housing

Urban planning legislation in Turkey involves a perspective to facilitate development and growth of urban areas and channelling investments for this purpose. Accordingly, it defines two types of 'zones', cadastral (undeveloped) and urban (developed) zones. Within this framework the major process envisaged is only the transition from the undeveloped state to the developed one. Therefore, major tools of the system are constrained as expropriation and land rearrangement procedures under article 18.

However, one of the priority areas of Turkey in the coming decades seems to be the stock rehabilitation policies. In this respect, existing laws and mechanisms are inadequate to channel investments for rehabilitation and undertaking comprehensive rehabilitation and redevelopment projects. According to Balamir (2002), urban rehabilitation cannot be considered solely as rehabilitation and strengthening activities of individual buildings, a comprehensive rehabilitation and renewal project should perceive the urban environment as an integrated unit consisting of physical environment, private and public ownerships, infrastructures and open spaces. In the urban planning legislation there is not even a clear definition of urban rehabilitation. The processes and legal framework underlying the formation of urban housing stock in fact discarded the issue of reinvestment and rehabilitation necessities. A number of problems can be identified as follows:

- There are no specified policies to preserve asset values of housing and to prevent possible losses from the stock.
- In addition to the absence of legal framework for planned rehabilitation and renewal, existing laws (i.e. Flat Ownership Law) sometimes hinder reinvestment and rehabilitation.
- Hhs are the main actors responsible from the maintenance of the housing stock. Even though no mechanisms to encourage or supervise Hhs in order to ensure survival of the housing stock exists.

2.2.1. Development Law (No: 3194)

The major law that urban planning rests on is the Development Law. The purpose of this law is defined as the establishment of settlements and built up areas according to plans, health and environmental conditions. However, in the case of existing housing stock, Development Law solely considers the necessary legal permission for different types of investments, visual harmony of the stock as a whole, and safety issues in case of a possibility of collapse. In the article 21 it is denoted that:

- Any alteration, in the authorized buildings, is subject to new authorization.
- Alterations such as internal and external coating, painting, whitewash, gutters, flooring and ceiling coat, repairs in the electric and pipe installations, roofing are exceptions of this rule.
- Alterations and repairs, which do not affect the structure of the buildings and other alterations and repairs, which are determined by standard development regulations, are not subject to authorization.
- Local authorities are entitled to decide on the external paintings, coatings, roofing material and its colour according to the characteristics of the neighbourhood and environment to obtain aesthetical harmony among buildings.

In article 21, it is obvious that the viewpoint of Development Law is related to legal necessities (authorization) and aesthetical harmony. However, determination of standards and rules not only for external appearance but also for the purpose of resistance and soundness of the stock are essential for preservation of asset value and to prevent losses from the housing stock.

Moreover, local authorities are equipped with an authority to intervene in the cases of safety violations. In article 39 it is denoted that in case of a public risk of partially or wholly collapse of a building, local authority, depending on the degree of risk, reports to the owner in ten days for removal of risk. If owner does not remove the risk by repairs or demolition, this job is undertaken by local authority. Article 39 in this respect displays the viewpoint of Development Law in terms of safety issues.

In short, the Development Law, major law responsible from construction, development and planning activities, neither perceive reinvestment and rehabilitation as a tool to achieve sustainable urban environments nor equipped with the necessary tools and framework for comprehensive rehabilitation and renewal projects.

2.2.2. Law of Municipalities (No: 1580)

Municipalities acting on the local scale are responsible to supply the local services for local communities. Duties of municipalities are determined in the article 15 of Law of Municipalities. It is denoted in clause 12 that, authorizing repairs and extensions, demolishing faulty buildings, chimneys and walls are among the duties of local authorities. The role of municipalities in this context is again sustaining safety.

Moreover, in clause 37 of article 15th organizing and developing districts wiped off by fires, examining and implementing repairs and extension plans of these areas are duties of local authorities. In this case, municipalities have more active role however, such an authority is not only necessary in vacant areas but also in built up areas in order to implement comprehensive rehabilitation and renewal projects.

Municipalities as local units could and have to undertake many of the duties in case of comprehensive renewal and rehabilitation projects. Duties assigned to municipalities through this law have to be reviewed and reconsidered from this point of view. Accordingly municipalities' financial capabilities have to be improved in this respect.

2.2.3. Building Supervision Law (No: 4708)

Building Supervision Law (2001) is enacted following the 1999 Marmara Earthquakes with the purpose of sustaining safety in built environment. Main aim to be achieved through this Law is to ensure project and building supervision in order to obtain safety.

In the 3rd article of the Building Supervision Law, it is stated that after occupation is permitted in a building, emergence of any damage due to unauthorized repairs is the responsibility of the ones who undertake repairs without permission. This implies that supervision considered in the Law is restricted to the construction process of buildings. However, it is a necessity to supervise the repairs and maintenance activities in the existing housing stock to obtain safety in built environment.

2.2.4. Flat Ownership Law (No: 634)

Flat Ownership Law has a major role in the production of urban housing stock in Turkey. However, as stated above, this system fragments decision-making power on buildings unconditionally, discarding the comprehensive rehabilitation or redevelopment needs of urban areas (Balamir, 1996). Moreover, article 19 and 42 of the Flat Ownership Law requires unanimous decisions for major reinvestment and repair actions for common parts of the building.

In the article 19 of the law, it is said that (valid since 1983 with the modifications of law 2814), none of the flat owners can do repairs, construction, paintings and whitewash in different colours in the jointly-owned parts of the building without the consent of whole flat owners. In their individual flats, flat owners cannot do any repair or alteration, if this is to damage the main structure. However, it is possible to do repairs and alterations in connected individual parts (which are connected to each other from floor, ceiling or wall) depending on the consent of related flat owners with the condition that no damage to the main structure is done.

Also in article 42 of Flat Ownership Law, it is stated that, flat owners cannot do alterations on their own in the jointly-owned parts of the buildings. All alterations and extensions to increase the benefits derived from the common parts of the building depends on the decision of flat owners' majority in terms of numbers and shares in land. Moreover, it is again majority's decision to alter the heating system from central to individual heating in order to consume natural gas

depending on the demand of one of the flat owners (this clause is valid since 1992 with the law 3770).

These statements in the articles 19 and 42 imply that all issues related to jointly-owned parts of the building require decisions of majority irrespective of the scale of the issue. It is usually difficult to obtain consensus among a group of people, even in simple decisions. Thus, it is obvious that rehabilitation and renewal issues may create complex problems in the housing stock under the Flat Ownership Law. Moreover, as Balamir (1996) emphasizes, flat ownership is a state that cannot be easily changed into another ownership status within free market interactions.

According to Flat Ownership Law Hhs are the main actors responsible from the maintenance of the housing stock. Again in the article 19 of the Law, it is denoted that, flat owners are compelled to maintain and preserve the architectural state, aesthetic and soundness of the property. This statement imputes the responsibility of maintaining and preserving the stock to Hhs, however, it neither specifies methods, tools or mechanisms to ensure the maintenance of the stock nor determines policies to encourage Hhs to undertake this responsibility.

Moreover, necessary know-how and specialized labour in the field of rehabilitation and renewal are not available. In existing conditions, market mechanism is incapable of undertaking comprehensive rehabilitation and renewal projects. There are only a few firms specialized in the field.

To conclude, existing legal framework is not equipped with the necessary tools and mechanisms to monitor comprehensive rehabilitation and renewal projects. However, achievement of quality and higher standards in living environments are issues of priority for Turkey, especially when the integration with the European Union is a current issue in the agenda. A focus on housing policies can no longer be the production of new dwelling units alone, but have to be directed to urban rehabilitation policies and tools to undertake comprehensive rehabilitation and renewal projects.

CHAPTER 3

REINVESTMENT AND REHABILITATION IN HOUSING: A SURVEY OF THEORETICAL APPROACHES AND BUILDING AN INTEGRATED FRAMEWORK

3.1. Life of Housing: From Development to Redevelopment

3.1.1. Economic Life of Housing

Housing has some unique characteristics among other consumption goods. First of all, it is place-fixed and has the qualities or constraints of land such as location and linkages with surroundings. Second, housing has a terminable, though lengthy, life when compared to other consumption goods. Third, the services provided by housing, together with the land it is attached, may fluctuate during the life period due to obsolescence. Obsolescence can be prevented in part by the help of reinvestments.

These characteristics of housing reveal the fact that in the absence of reinvestments for adaptation and improvement, housing areas become obsolete and reach the end of their economic life. There are many definitions of the term 'obsolescence', yet, the most popular one in the literature refers to disuse. According to Nutt et al. (1976) 'obsolescence', in case of most consumer products, refers to the reduction in the usefulness of an object over time. The main source of this reduction in usefulness is the physical deterioration of the product. Development of newer and better substitutes in the market accelerates this process. Thus, 'obsolescence' can be perceived as a differential deterioration of one object relative to a group of similar objects. 'Obsolescence'

refers to a process of becoming obsolete. In the final stage objects become totally useless, thus the word 'obsolete' refers to a terminal state.

Nutt et al. (1976) define 'obsolescence' in housing sector as relative degree of uselessness or disutility as evaluated by different actors of the sector (Hhs, landlord or planner). Different viewpoints affect the perception of the scale of obsolescence, Hhs' view of their own housing conditions, perception of poor housing areas by local community and national viewpoint of general housing standards and conditions may not be in the same scale. The degree of obsolescence will vary with time. Actions taken to increase the usefulness of buildings reduce their relative obsolescence. Therefore, obsolescence is not a consequence of 'natural' forces but rather is a function of human decisions.

To determine the state of obsolescence Lichfield (1988) surveys four elements as 'physical or structural deterioration', 'functional quality', 'locational change' and 'environmental unsuitability'. These elements do not include *economic obsolescence* (for definition of economic obsolescence refer to section 3.1.3. Reinvestment as an Economic Decision).

First of all is the 'physical or structural deterioration', buildings are deteriorated through time necessitating repairs and improvements other than normal ongoing maintenance. In the lack of necessary actions physical obsolescence emerges, which is defined by Nutt et al. (1976) as inadequacy of buildings due to the deterioration of their physical conditions.

Second element of obsolescence according to Lichfield (1988) is 'functional quality'. In this case, buildings no longer fit their planned function in accordance with contemporary standards or requirements of the occupier or potential occupiers. This inadequacy and ineffectiveness of buildings in the activities that it contains, can relate to the building itself (lack of central heating, lifts, etc.) or external factors (inadequate car parking, inadaptability to new legislations).

Third element can be given as 'locational change'. Location of the buildings is identified in relation to the links with the surroundings. In time, locational changes emerge in the surroundings, introducing locational obsolescence.

Final element of obsolescence is 'environmental unsuitability'. Changes in human, social, economic or natural environment make buildings less suitable for the needs they serve. For example inner-city areas become unattractive for the dwellings due to air pollution, noise, etc..

Nutt et al. (1976) defines additional types of obsolescence. 'Financial obsolescence' exists when returns and benefits are not sufficient with respect to capital invested. 'Site obsolescence' emerges when the potential value of a site becomes sufficient for redevelopment. There is also 'style obsolescence' related to the assessment of the relative worth of a building or an area by a social group in terms of its visual and stylistic qualities. As Lichfield (1988) denotes, types of obsolescence differ from one building to another. Moreover, the rate of obsolescence over the years will not be uniform.

Factors that contribute to the process of obsolescence can be seen as the determinants of economic life of housing. These factors can be grouped as characteristics of housing stock and Hhs, changes in neighbourhood and national policies.

First of all, it is the physical state of the housing stock, which determines economic life of housing. Physical state of the housing is mainly dependent on the original standards of construction, deterioration resulting from age of the building and Hhs' use, and existence of regular maintenance and repair. Different construction materials and technology adopted in the housing and also different construction standards result in various life expectancies among dwelling units. In time, components of buildings experience physical decay due to aging, in other words they deteriorate.

Deterioration results in the loss of services or at least some part of the services that were provided by the dwelling unit. In the early years of construction there is little or no decline in quality. Minor signs of deterioration or obsolescence can be seen after the first ten to twenty years (Grigsby, 1963). Changing physical conditions of housing are reflected in its market price. Malpezzi et al. (1987) state that the decline in asset price due to aging is called economic depreciation and claim that for a deeper understanding of housing market behaviour and

evaluation of public policies, measuring economic depreciation in residential real estate is necessary.

Second factor determining economic life of housing is the changing Hhs characteristics. For Merrett (1982), at a particular point in time there exists a gap between the existing physical standard of housing and some perceived alternative. Thus, in time, with the deterioration of housing and rise of Hhs' preferred standards due to rising incomes or progress in technology or changes in the Hhs lifecycle, obsolescence of housing is observed. In other words, Hhs' perception of obsolescence in their dwelling unit determines their reinvestment decision, hence determining the economic life of their dwelling unit.

Third factor is the changes in housing environments as a whole, due to changing socio-economic patterns of cities and technological conditions. Housing provides two kinds of resources to the Hhs. The first is the physical resources provided within the dwelling such as, rooms, facilities etc.. Second is the resources available within the locality as a whole, such as employment, services, amenities etc. (Nutt et al. 1976). In time, socio-economic pattern of the city changes, altering the distribution of second type of resources such as distribution of employment, services and amenities. This alteration works in favour of some neighbourhoods whereas affecting others adversely and result in changing housing market situations.

One final factor can be identified as the effects of national policies in the country, which affect the housing market. These policies may be related to the supply of new housing or intervention in the housing markets such as rent control, legislative changes related to housing or credit mechanisms. To Lichfield (1988), causes of obsolescence could be influenced by government action. For example, enforcement of minimum standards in new construction will delay physical obsolescence while imposition of rent control will advance it by reducing the probability of repairs by landlords.

Housing has a terminating, though lengthy, economic life from its initial construction till its eventual redevelopment. Throughout this long physical life span housing is subject to different types of obsolescence. However, it is

possible to reinvest in housing with the purpose of extending the useful life and adapting housing to contemporary changes.

3.1.2. Types of Reinvestments in Housing

To remove the negative effects of obsolescence and to adapt and improve urban areas to accord with the contemporary needs, a number of reinvestment actions are possible. In general terms, these actions can be called urban renewal. Renewal implies a physical action where individual buildings and roads, or urban fabric are subject to either demolition or repair for purposes of new construction or conservation (Özyürük, 1995). In the literature, the term 'renewal' is usually employed as a general term composed of redevelopment, rehabilitation and preservation (Schut, 1958).

There are various perceptions and definitions of the concept of urban renewal. According to Wilson (1966, p. xv-xvi):

In some places, renewal has meant erecting a civic monument in a downtown plaza; in others, rehabilitating sound but decaying homes to improve living conditions for residents; in others, getting "undesirables" out of "desirable" neighbourhoods by spot clearance; in others, stabilizing blighted neighbourhoods and encouraging residents to improve their properties; in others developing land that will attract new businesses into the community or clearing land that will get unpopular businesses out of the community; and in still others, assembling tracts on which subsidized low- or middle-income housing might be built.

Urban renewal is also identified as an intended action with the purpose of changing the urban environment through planned, large-scale adjustment of existing city areas to contemporary requirements for urban living and working (Grebler, 1964). According to him, the process comprises the replanning and comprehensive redevelopment of land or the conservation and rehabilitation of areas in blight or historically and culturally valuable areas.

Redevelopment component of urban renewal means demolishing the existing structures and clearance of sites for the purpose of new construction on the same site. At the onset of the historical progress of urban renewal policies, redevelopment was a popularly adopted method. During time its adverse effects

in social networks and high public costs were recognized by authorities. This led to a modification in renewal policies in favour of rehabilitation actions. However, redevelopment is an essential tool for intervention due to the fact that at a certain point of life history of buildings removal by demolition is unavoidable.

It is a fact that redevelopment is unavoidable. However, rehabilitation creates the opportunity to lengthen the useful life and also to improve the standards of existing housing. Rehabilitation component of urban renewal comprises many sub-headings. Merrett (1982) defines rehabilitation as the productive activity carried out on the existing housing stock. According to him, housing production is divided to two main groups of activity: construction of new dwellings and rehabilitation of the existing stock of dwellings. Construction of new dwellings includes the production of houses by clearance and redevelopment of existing stock and production of new dwellings on totally new sites. Rehabilitation of the existing housing stock is composed of five subgroups as, 'conversion', 'extension', 'maintenance and repair', 'basic improvement' and 'miscellaneous improvement and adaptation'. 'Conversion' means changing the composition of dwellings. 'Extension' is simply the addition of a new living space. 'Maintenance and repair' refers to the actions taken to replace the parts of the house functioning imperfectly or attempts to control the process of physical deterioration. 'Basic improvement' includes the installation of new facilities such as internal toilet, a bath or shower, a sink, a wash-hand basin, and the supply of hot and cold water. Remaining actions, which are not included in the above categories, are denoted as 'miscellaneous improvement and adaptation'.

The problem of housing renewal is multidimensional due to the complex character of housing. As Needleman (1965) shows supply and demand mechanisms in the free market operates in such a way that most durable consumer goods (like cars, televisions etc.) can be easily replaced without facing serious problems but this is not the case with houses. He argues that, with inadequate maintenance and repair, old buildings are left to a continuous deterioration and become unfit for human habitation. Also market processes are inadequate for demolishing and replacing these buildings. Consequently, according to Needleman (1965), in most countries many unfit houses for habitation are still in use. According to Grigsby (1963), existence of substandard

housing is not an inevitable result of physical deterioration but it is the outcome of disinvestments in the existing housing. He views the choice to maintain or improve as an economic one, thus believes the creation of substandard housing to be the result of disinvestments instead of depreciation and physical decay of housing.

3.1.3. Reinvestment as an Economic Decision

Following the conversion of vacant land to development site with the decision on the use, form and intensity of development the first life cycle of the built fabric starts. Over the life period the use and the conditions of the built fabric do not remain constant. By regular maintenance it is possible to lengthen physical life of buildings but after a certain point, components of buildings becomes 'obsolescent'. This phase is followed by renewal in the form of rehabilitation or remodelling. This results in a new stage in the life of the stock. This process will be repeated, once or more, before the degree of obsolescence calls for a different type of renewal, that of redevelopment. Redevelopment means the replacement of buildings by new construction. This is the beginning of second life cycle on the original site (Lichfield, 1988).

During its life the building will show obsolescence of one or more of each of the four types, structural, functional, locational and environmental. To cope with the obsolescence (especially structural and functional obsolescence), the occupier and owner will need to decide the necessary actions. Following the decisions the owner/occupier/investor will be faced with calculations of financial costs and returns for rehabilitation (Lichfield, 1988).

In his 1969 study *The Comparative Economics of Improvement and New Building*, Needleman examines the decision to rehabilitate or redevelop. He covers the issue from the viewpoint of local authorities. Most of the local authorities own areas of substandard housing and to improve the standards of housing areas each local authority have to decide whether to adopt clearance and redevelopment schemes or rehabilitation and modernization of existing stock (Needleman, 1969).

Even in the case of an individual dwelling deciding between rehabilitation and redevelopment can be quite complicated. Rebuilding a dwelling is usually more expensive than modernization, however, new dwellings have a longer life and provide higher quality accommodation compared to the renovated one. Moreover, new dwellings mean lower maintenance costs and opportunity to charge higher rents (Needleman, 1969).

According to Lichfield (1988), renewal decision will be taken if the additional expected returns to be obtained from any use of the building exceed the costs of coping with obsolescence. When decision to renew is not taken, the building may not be obsolete and may still be maintained to support its current use. However, it can be regarded as economically obsolete, having taken into account the variables foreseen at the time of the decision. In such cases, buildings will not be renewed but allowed to deteriorate in anticipation of its next phase in the life cycle.

If the building is not economically obsolete, renewal measures will be taken to retard the obsolescence and extend the remaining life, in both years and quality. If, on the other hand, the potential value of the site is sufficiently higher for redevelopment than the value of the property as it stands, the site could be described as being economically obsolete in the current use. This results in the demolition of buildings, which are not obsolete, and certainly not economically obsolete, for the purpose of replacing them with new stock (Lichfield, 1988).

When the case is rehabilitation, works are carried out with the aim of overcoming the obsolescence, normally structural and functional. Rehabilitation could also introduce additional space to the building, which would facilitate the economics of rehabilitation. To rehabilitate the building the costs of rehabilitation (without land/property costs) need to be compared with the increased value, which will be obtained after rehabilitation work. If the latter is sufficiently more than the cost to show adequate developers' profit rehabilitation will take place (Lichfield, 1988).

When an area is completely rebuilt there emerge opportunity to intervene in the facilities such as shopping and traffic flows in the area. However, as Needleman

(1969) shows, housing areas are not homogenous and composed of housing having different standards. When there is no need to complete clearance and redevelopment of an entire area, there exist complications for redevelopment policies, which will be reflected in the demolishing costs.

According to Needleman (1965), from the purely economic view, decision to rebuild or renovate depends on three factors: the rate of interest, the future length of life of the renovated property and the difference between the running costs of the modernized property and the rebuilt one. Higher interest rates result in the longer life of the improved accommodation and smaller differences between the annual running costs of the two categories of dwelling result in the greater advantage of modernization over building anew.

As Needleman (1965, p. 201) denotes;

Modernization enables the replacement of old dwelling to be postponed for the future length of life of the renovated accommodation, say λ years. Modernization will therefore be worthwhile if the cost of modernization plus the present value of the cost of the rebuilding in λ years' time, plus the present value of the difference in annual running costs for λ years, is less than the present cost of rebuilding.

According to Needleman (1969) when the issue is rehabilitation versus replacement of an individual building decision rule is rehabilitate if:

$$b > M + b(1+i)^{-\lambda} + (r+p)/i \{1-(1+i)^{-\lambda}\}$$

Where,

b = the cost of demolition and rebuilding,

M = the cost of adequate modernisation or rehabilitation,

i = the rate of interest expressed as a proportion, (for a rate of interest of 6 percent, i would be 0.06),

λ = the useful life of the rehabilitated property, in years,

r = the difference in annual repair costs,

p = the difference in rent per dwelling on rehabilitated and newly rebuilt property.

According to Schaaf (1969), urban renewal covers both rehabilitation and replacement of buildings. He examines whether rehabilitation or replacement is the most desirable way to improve the existing housing stock by depending upon the comparative effects of rehabilitation and new construction on the future maintenance costs, economic life, and shelter amenities of the renewed structure.

Schaaf (1969) examines "the feasibility of rehabilitation as a way of providing a specific amount of housing improvement with the least expenditure of human and nonhuman resources". Focus is on the efficient utilization of resources and problems of dislocation, relocation, and rationing units after renewal are excluded. His analysis of the rehabilitation versus redevelopment question depends on the basis of the least-cost criterion. In this case, housing is improved at the lowest possible cost and with the least impact upon rents and prices to minimize the occupant dislocation. However, to rely solely on least-cost as the determinant of the renewal method is insufficient and attention must be given to the nature of improvements and extended life of the housing.

Schaaf (1969) develops his model by adding a number of issues in the basic formulation of comparative cost method. He notes that, in the basic formulation, rehabilitation is preferred if redevelopment costs exceeds the sum of rehabilitation costs plus the present value of the next renewal cost outlay plus the present value of the annual difference in the maintenance costs of a rehabilitated structure compared with a new one. He first considers adding the depreciation rate of the new structure, using straight-line depreciation. According to him, the model also have to include the possibility of successive future rehabilitation investments and determination of best renewal standard.

Schaaf takes different levels of renewal standards in to account. These renewal standards are code compliance, structural repair, modernization, prestige rehabilitation and new construction. He denotes that more standards can be defined other than these and that the possibility that a new structure may provide a higher level of shelter amenities than a rehabilitated one must be considered. Thus, he employs the annual rent differences between a new structure and a rehabilitated structure to reflect the level of shelter amenities. He

also exhibits that rehabilitation is infeasible if major land use changes are indicated for the area. Hence, the optimum standard of rehabilitation is the combination of choices that maximizes the cost difference between rehabilitation and new construction.

As Lichfield (1988) states, rehabilitation and redevelopment are not discrete management options. However, during the life cycle of the building to consider these alternatives will be necessary occasionally. For each case the common question is that, given the conditions as they exist, or as they might be if no action is taken, what will be the difference in the marginal net benefit of rehabilitation versus redevelopment?

Reinvesting in housing is an economic decision, thus in some cases disinvestments emerge as the preferred action. After the 1970s, discussions related to consequences of reinvestments and disinvestments found a general context within 'rent-gap' and 'gentrification' arguments. It is a fact that there is a vast amount of literature on gentrification debates. It is out of the scope of this study to cover all aspects of gentrification, however, it is essential to review a number of points related to reinvestment aspects of gentrification.

3.1.4. Consequences of Process of Reinvestments and Disinvestments

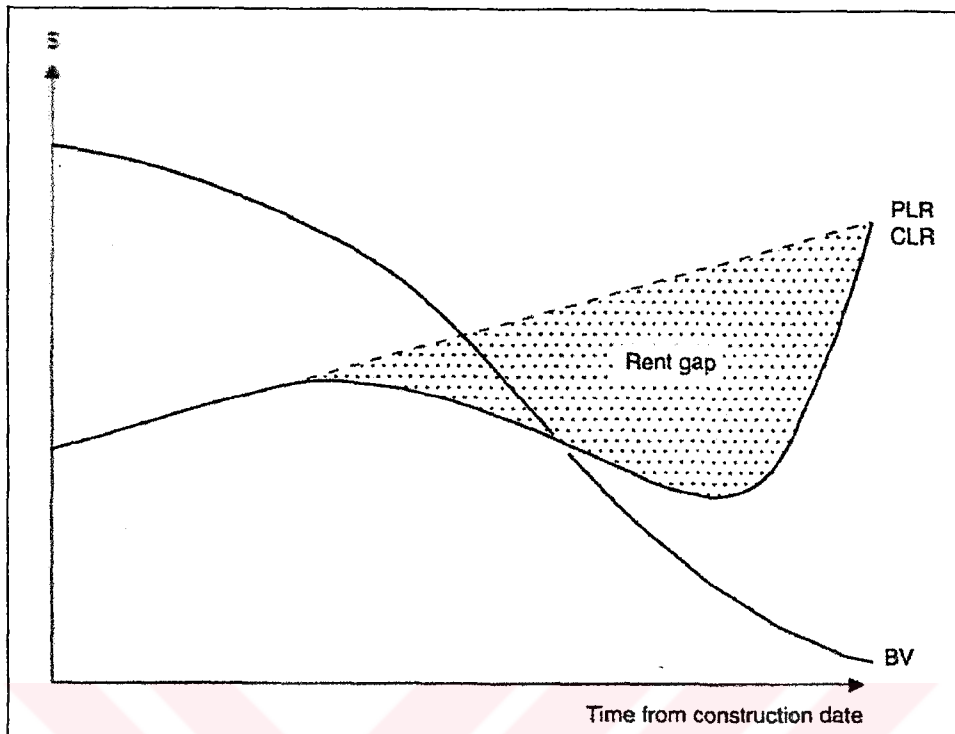
When a neighbourhood is newly built, as Smith (1979) states, the price of housing reflects the value of the structure and improvements plus the enhanced ground rent captured by the previous landowner. During the first cycle of use with the expansion of urban development, ground rent is likely to increase and very small decline may be observed in the house value. This results in the rising sale prices. However, depreciation of house value eventually occurs due to the advances in the productiveness of labor, style obsolescence, and physical wear and tear.

In the case of physical wear and tear Smith (1979) distinguishes between minor repairs that must be performed regularly to retain the value of a house (e.g., painting doors and window frames, interior decorating), major repairs performed less regularly but with greater outlays (e.g., replacing the plumbing or electrical

systems), and structural repairs without which the structure becomes unsound (e.g., replacing a roof, replacing floor boards that have dry rot). Depreciation of a property's value after the first life cycle reflects the future need for regular repairs and for a succession of more major repairs involving a substantial investment. With the depreciation, price of housing will decrease relative to new construction, but changes in ground rent will also act on this value decrease.

Areas, which are well maintained, remain stable. However, undermaintenance is observed usually after the first cycle of use. In owner-occupied areas, homeowners with the knowledge of imminent decline unless repairs are made, have tendency to sell out their properties. In some cases owner-occupiers undermaintain their property not because of the market strategy but due to the financial constraints. In case of landlords, usually there exist lesser incentives to carry out repairs due to the rent regulations. Due to undermaintenance surplus capital will be invested elsewhere. Sustained undermaintenance will make it difficult for the landlords to sell their properties resulting in less incentive to invest in the area. This process is accompanied by a fall in house values and levels of capitalized ground rent drop below the potential ground rent (Graph 3.1; 'potential ground rent' is the rent, which can be capitalized under the 'highest and best' use, 'capitalised ground rent' is the rent obtained from the existing use of land) (Smith, 1979).

Undermaintenance results in more active disinvestments as further capital depreciations and the landlord's interest diminishes, this process is accompanied by falling housing values and capitalized ground rent, producing further decreases in sale price. Landlords' disinvestments are followed by 'rational' disinvestments of financial institutions. Buildings are abandoned when landlords can no longer collect enough rent to cover their costs of utilities and taxes. Main mechanism that results in filtering is the depreciation and devaluation of capital invested in residential inner-city neighbourhoods. This depreciation creates the economic conditions that introduce the capital *revaluation* (gentrification) as a rational market response. This is called the rent gap. The rent gap is defined as the disparity between the potential ground rent level and the actual ground rent capitalized under the present land use (Smith, 1979).



Graph 3.1 The Rent Gap

(PLR = potential land rent, CLR = capitalized land rent, BV = building value;

Source: Clark, 1995, p. 1491)

Smith (1979) advocates rent gap theory as an explanation of gentrification. To summarize, in the case of filtering, the rent gap emerges initially by capital depreciation and also by continued urban development and expansion. The rent gap widens with the continuous filtering and neighbourhood decline. This results in the emergence of a potential for revitalization. If the gap is sufficiently wide for developers, to purchase property cheaply and to pay the builders' costs and profit for rehabilitation, and to pay interest on mortgage and construction loans, and to sell the end product for a sale price that leaves a satisfying return to the developer, gentrification occurs.

As Smith (1979) denotes, the gentrification literature usually concerns the contemporary processes or its effects such as characteristics of immigrants, displacement, the role of state in redevelopment, benefits to the city, and creation and destruction of community. However, little attempt has been made

to study causes of the process rather than its effects. According to Smith (1979) a gentrification theory needs to explain “the detailed historical mechanisms of capital depreciation in the inner city and the precise way in which this depreciation produces the possibility of profitable reinvestment”.

The traditional definition of gentrification is the movement of high-income Hhs to inner city declining residential areas, displacing relatively low-income Hhs and rehabilitating and upgrading these areas. As Ruth Glass described in 1964;

One by one, many of the working-class quarters of London have been invaded by the middle classes - upper and lower. Shabby, modest mews and cottages – two rooms up and two down – have been taken over, when their leases have expired, and have become elegant, expensive residence. Larger Victorian houses, downgraded in an earlier or recent period – which were used as lodging houses or were otherwise in multiple occupation – have been upgraded once again... Once this process of ‘gentrification’ starts in a district it goes on rapidly until all or most of the original working class occupiers are displaced and the whole social character of the district is changed (Glass 1964: xviii, cited in Smith, 2002, p.1).

Ley (1986), in his study of alternative explanations of inner-city gentrification in Canada, states that explanations of gentrification in literature can be grouped in four headings. These are, demographic change, housing market dynamics, the value of urban amenity and the economic base.

Explanations depending on demographic change denote that the postwar baby boom generated fluctuations in housing demand, which may have forced first-time homebuyers into the inner-city housing market. Moreover, there has been a sharp reduction in Hh size, which increased the demand to medium- and high-density central city neighbourhoods. Additionally, as a result of inflating fuel prices in the post-1973 period to remove the adverse effects of high commuting costs demand to inner-city areas increased (Ley, 1986).

According to housing market dynamics, the price inflation of new housing stock in the suburbs through 1970s, and affordability problems due to mortgage interest rates Hhs preferences changed in favour of smaller and cheaper new central city apartments or renovated older single family or row housing in the inner city (Ley, 1986).

Third factor, the value of urban amenity, links gentrification with urban lifestyle and states that Hhs prefer the amenity package of the center city over that of the suburbs. Fourth factor of inner-city gentrification is the presence of a "postindustrial" metropolitan economy, oriented toward advance services and a white-collar employment structure.

According to Smith (1986, p.463);

The crucial point about gentrification is that it involves not only a social change but also, at the neighbourhood scale, a physical change in the housing stock and an economic change in the land and housing markets. It is the combination of social, physical, and economic change that distinguishes gentrification as an identifiable process or set of processes.

Clark (1992) defines gentrification in the housing market as a backward filtering process. Both filtering and gentrification processes involve residential mobility. As Clark (1992) defines "when in-movers are of lower socio-economic status than out-movers they replace" this is called filtering, "when in-movers are of higher socio-economic status than the out-movers they replace" this is called gentrification. Clark (1992) observes these processes not only as simple processes of residential mobility but also processes related to change in the built environment. Usually filtering is related to depreciation of building values whereas gentrification is associated with reinvestment of building capital, through renovation or redevelopment.

Clark (1992) examines two approaches concerning the real estate economic aspects of gentrification. First one is the rent gap explanation of Smith (1979), which focuses on the difference between actual and potential land rent. Second approach is the value gap explanation of Hamnett and Randolph (1984; 1986), which focuses on the difference between property value as rental and as owner-occupied. The rent gap forms a pressure to change the fixed capital on a site, a reinvestment in housing, which encourages gentrification. The value gap forms a pressure to change the tenure of a property this conversion acts as a supporter to gentrification.

According to Bailey and Robertson (1997, p.562),

The term gentrification links changes in inner urban housing markets to wider processes of economic restructuring, notably the deindustrialisation of developed industrialised countries, and the simultaneous increase in white-collar employment, particularly the growth of a new 'professional/managerial' class.

Inner-city neighbourhoods that once lived the process of decline are now facing renovation of the housing stock and displacement of poorer Hhs by the high-income Hhs from this professional/managerial class.

In other words, from one point of view gentrification means rehabilitation and improvement of declining or declined areas by no or little public support, from another view point it displaces poor Hhs and reduce their housing options. Thus, for the final outcome of urban renewal, it is significant to determine macro level approach of renewal policies to existing trends in the areas.

3.2. Urban Renewal Policies

3.2.1. Historical Perspective

Different social and economic conditions in different countries lead to the establishment of different types of renewal and rehabilitation policies however, some general trends can be observed. Carmon (1997) categorizes these trends in three generations and shows that all three are valid for both the U.K. and the U.S. as well as for several other Western Countries, with the different timing of occurrences.

According to Carmon, the first generation can be called 'the bulldozer era', which has 'massive slum clearance' as the main characteristic. This era dates back to early 1930s in Britain and late 1930s in the U.S. with a peak in 1950s. Slum clearance policies of this era were criticized in both countries in terms of the economic and social costs that they brought in the long run. Clearance schemes ignored the effects of relocation on residents and community networks and became a target of critics.

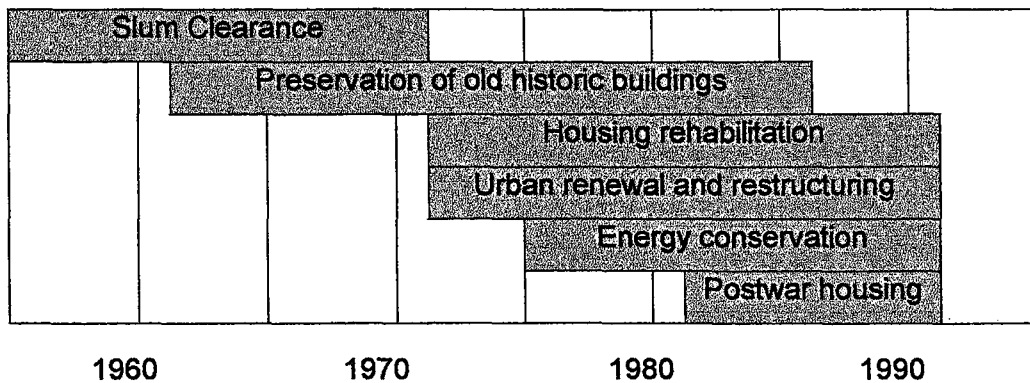
Second generation is called 'neighbourhood rehabilitation era'. With the effects of the critics of the bulldozer era, second generation policies cared much about social problems. In this era, mostly the improvement programs replaced clearance schemes. These kinds of policies appeared in early 1960s in the U.S. and early 1970s in the U.K.

Third generation is the period of 'central city revitalization'. This era can be characterized with the economic slowdown and its effects on public policies. Emphasis was on economic development and this led to the discovery of the opportunities in the city centers. Rehabilitation and renewal were observed in some large city centers with mostly involvement of private investors instead of public involvement. Idea of economic revitalization was dominant in 1980s and 1990s.

Skifter Andersen (1999) notes that public policies for housing rehabilitation differ enormously between European countries. In fact, the meaning and the concept of 'urban renewal' and kind of problems and activities it contains differ among countries. This discrepancy among countries is a result of many factors:

- Urban renewal and housing rehabilitation include many different but connected problems and activities. Thus, every country takes the issue in a most appropriate way to their specific context.
- There is uncertainty among policy makers in Europe on the reasons of urban problems and the possible role and degree of involvement of public sector in overcoming these problems.
- Urban problems are recognized in many countries, yet there is a lack of clear understanding. Thus, to some extent urban renewal and housing rehabilitation policies seem to be ad hoc measures for urban problems.

Table 3.1 The Historical Development of Urban Renewal and Housing Rehabilitation in Western Europe.



(Source: Skifter Andersen, 1999, p. 243.)

Table 3.1 summarizes the historical development of urban renewal and housing rehabilitation in Western Europe. Housing shortage was the major problem in all over Europe after the Second World War. Skifter Andersen (1999) states that this had two results. First, to increase the housing supply, public interest and resources were directed at new construction with minor attention to improvement of the existing housing stock. Second, rent controls in both private and public housing, which had been introduced during the war continued. Maintenance and improvement activities in rented housing have negatively affected by the rent control.

In 1950s and 1960s some countries tried to solve slum problems through establishing legislations on minimum standards for housing, but this effort had a minor importance for housing renewal. Skifter Andersen (1999) claims the first real urban renewal activity to be as the slum clearance of 1950s. This activity involved the demolition of whole areas and construction of new buildings and combined with reorganization of traffic systems. Partly due to these enormous interventions in cities, renewal and preservation of old historic buildings and districts emerged in the 1960s and often accompanied with special programs. In some cases planning regulations restricted to demolish these buildings or conversion of use.

Following the boom in housing investments in 1960s an increase was observed in private investments in housing rehabilitation. Housing improvements first took place in the owner-occupied sector and then followed by the rented sector in low rates. In many countries, starting from the late 1960s, residents of slum areas and general public opposed to slum clearance. As a result, in the 1970s, policies and practices shifted gradually to preservation and renewal of buildings and urban areas with the cooperation of residents. In some countries the need for expenditure cuts was also another factor underlying this shift in policies. The economic depression in the late 1970s affected the economic support of governments for housing rehabilitation. The decline in the construction of new dwellings resulted in unemployment, and in some countries governments increased the subsidies for urban renewal and housing rehabilitation with the purpose of overcoming unemployment. This was accompanied with a shift in the focus of housing policy from quantitative aspects of housing to the quality of the existing housing stock.

With the decline in industries and deindustrialisation, economic conditions and the use of land changed in many cities. Empty buildings and unused areas are left behind the industries and unemployment increased leading to the worsening of many cities. Urban restructuring and revival of city centres became the major concern of policy and brought the public involvement into the process. Moreover, due to the increasing traffic and pollution, local authorities were forced to improve the urban environment.

As Skifter Andersen (1999) denotes, a new field of urban renewal emerged in large postwar social housing estates in the 1980s. Intervention of public authorities became necessary due to the problems caused by technical defects and social unrest in these areas. This consequently led to a change in perception of concept of urban renewal in some countries from a finite task of removing or renewing the existing housing stock to a continuous effort of solving combined social and physical decay problems in vulnerable neighbourhoods. Moreover, social processes have been recognized as the main reasons of urban decay, and integrated approaches between physical and social processes became a significant issue of new policies.

In many countries privatization was the general trend in housing policy in 1980s. This removed the barriers to housing rehabilitation such as rent control and other regulations. Up to 1980s most of the slums were removed, thus meaning of urban renewal policies changed. New tasks such as energy conservation and accessibility for old and disabled people became significant for housing rehabilitation. Direct public involvement became less significant and attracting private investments in urban renewal and housing rehabilitation gained importance. Major tool for attracting private investments was by changing market conditions, by direct cooperation of public and private agents or by giving subsidies.

Skifter Andersen (1999) lists the main physical and social problems in different countries of Europe in the period after 1980.

- Threatened destruction of historic buildings and neighbourhoods, largely in old inner-city areas.
- Lack of improvement of obsolete housing from the last century and the beginning of this.
- Severe problems of social and physical decay in certain older urban areas in pre-1920s housing.
- Less serious problems with social and physical decay in housing from 1920 to 1950.
- The need to restructure economic activity and reorganize the use of land inside cities.
- Special problems in social housing from the 1960s and 1970s built as large, multi-storey housing estates.
- Deterioration of single-family houses in rural fringe areas or those occupied by low-income households (Skifter Andersen, 1999, 249-252).

Table 3.2 Assessment of the Extent of Urban Renewal and Housing Rehabilitation Problems After 1980.

	Austria	Switzerland	Germany	Denmark	France	UK	Norway	Netherlands	Sweden
Destroyed historic building	•	••	••	•	•	•	•	••	
Obsolete dwellings	•••	•	••	•••	•••	•	••	•	•
Decay areas before 1920	•••	•	••	•••	•••	•••	••	•••	•
Decay areas 1920-45		•	•	••	••	••	•	•	•
Needs of urban restructuring	••	••	•••	•	••	•••	•	•••	•
Deterioration in postwar buildings	•	••	••	••	•••	•••	•	•••	••
Deterioration in owner-occupied stock			••	•	•	••	•••	•	••

(Source: Skifter Andersen, 1999, p. 252.)

According to Table 3.2 Sweden, Switzerland and Norway had least problems after 1980, while Austria, Denmark, France, The Netherlands and the UK still had extensive renewal needs. According to Skifter Andersen (1999) to choose among urban renewal policies, the extent to which the problems are connected to single properties or to an entire housing area of urban district with many different properties and owners is significant. If the case is simultaneous deterioration of an entire area or problems with urban restructuring, an urban renewal approach, which deals with several properties at the same time is more appropriate. It can be observed from Table 3.2 that Germany, Switzerland, Denmark and, to some extent, Norway had substantial urban restructuring needs having large older housing areas in decay. On the other hand, Austria, France, The Netherlands and the UK had both kinds of problems. Only Sweden is an exception having less need for an area approach to urban renewal in the older parts of the cities due to the slum clearance programmes, which had been completed once.

3.2.2. Public Involvement in Urban Renewal

According to Leather (2000), it is the poor housing conditions in the private sector, which triggered state intervention in housing policy in England and Wales in the late 19th century. In the succeeding period policies to deal with these conditions have remained an important element in public policy.

There are a variety of justifications for state intervention to deal with poor housing conditions. Skifter Andersen (1999) states these as the provision of decent housing conditions for all Hhs, preservation of the housing stock in the long-term, the prevention of health problems caused by substandard housing, the provision of savings to social care services, and contributing to broader regeneration programmes. These all require different mechanisms to achieve each objective and state involvement in different extent.

As Skifter Andersen (1999) notes, design of policies is assumed to reflect political objectives concerning the purpose of public involvement. Political objectives usually originating from other policy areas affect housing rehabilitation and urban renewal policies in Europe. These are general housing policy, general urban economic and social policies, energy conservation policies, social policies for elderly and handicapped people, general health policy. Skifter Andersen (1999) identifies the objectives that have been central to the design of policies in Europe as:

- Economic revitalisation of cities and districts leading to better opportunities for industries and other commercial activities.
- Improvement of the utilisation of urban infrastructure.
- Better quality of life and environment in the cities.
- Social renewal of districts with a concentration of social problems.
- Preservation and enhancement of historic buildings.
- General improvement of housing standard.
- Maintenance of a supply of cheaper housing.
- Transfer of rented dwellings to owner-occupiers or cooperatives.
- General preservation of older buildings and districts to maintain the character of the cities, instead of demolition and new building.

- Energy conservation.
- Better housing for elderly and handicapped people.
- Guarantee for residents to stay after renewal.
- Influence for residents on the renewal process.
- Decentralisation of power to local government.
- Involvement of the private sector and public-private partnerships.
- Employment in the building sector.

There are different ways for state intervention to achieve these objectives. Skifter Andersen (1999) summarizes three types of public regulation as regulation of tenure, indirect regulation, direct regulation. In the case of 'regulation of tenure' authorities set up a general regulatory framework for the properties and their maintenance and improvement. There is no direct public involvement in the renovation work. The aim of the regulation is to prevent dilapidation and obsolescence and the tools to achieve this aim is seen as tax legislation, rent acts, building codes, finance conditions relating to loans for renovation, rules for the organisation of social housing, owner occupied flats, etc. Any reinvestment decision and the content of renovation in this case depend on the individual property owner. Government subsidies, if any involved, are indirect in the form of general housing allowances or tax deductions.

In the case of indirect regulation, authorities try to attract owners to renovate and preserve instead of demolishing their properties. Usually subsidies are adopted for this purpose, but advisory services of local authorities or special agencies may also take place or improvement of the environment or restrictions on exploitation of the area to prevent demolition may be adopted as a tool. This type of regulation usually has curative purposes. The aim of the regulation is to cure heavy and complex problems of decay, which have become or are going to be urgent. Owners are the decision-makers of renovation. However, content or extent of renovation may be determined by authorities in order to be eligible for a subsidy.

Direct regulation enables authorities to order the renovation of a property or a district. In this case authorities, usually represented by local government, can compel the owners to renovate having the instruments of expropriation, orders,

restrictions on use and preemptions. Direct regulation is usually accompanied by subsidies that make compulsory action more acceptable to the owner. Usually, authorities take the initiative and the regulation is aimed to cure heavy and complex problems of housing deterioration and urban decay.

Most of the European countries have a national strategy for urban renewal and housing rehabilitation. Skifter Andersen (1999) defines 'national strategy' as a set of policies, aiming the prevention of the physical surroundings in cities and dwellings from severe dilapidation and obsolescence. Two types of policies can be denoted for national strategy: preventative and curative. The main aim of preventative policies is to prevent urban decay. Thus, they support private actors' running maintenance, improvement and renewal of dwellings and urban structures. The curative policies, on the other hand, are necessary when the preventative policies have failed and problematic deterioration and obsolescence have occurred in certain dwellings and urban areas.

Comparative study of Skifter Andersen (1999) reveals that none of the nine countries (Denmark, France, Germany, The Netherlands, Norway, Sweden, UK, Austria, Switzerland) seem to have developed a complete national strategy. The policies are focused usually to the curative policies and preventive policies are missing. The aim of the different regulations and programmes are generally towards curing specific cases of deterioration and obsolescence, yet few policies exist aiming to facilitate maintenance and improvement activities without public support in different tenures.

Direct regulation is usually related to an area approach to urban renewal and housing rehabilitation whereas indirect regulation is mostly connected with single properties. According to Skifter Andersen (1999) formulation of comprehensive policy to prevent housing deterioration by a coordination of several measures is not observed in any countries examined. He denotes a number of measures, which governments could take to improve general conditions for maintenance and improvement of housing. These measures are partly included in housing policy, tax policies or general monetary policies. In most situations objectives for improving housing quality are not the central aim

of these policies, for example, rent control. Some of the most important measures are¹:

- Building codes: demanding building quality and powers of public authorities to compel owners to keep their properties in repair.
- Provision of loans for renewal: demanding security for cheaper real estate loans, especially in case of problems in owner-occupied flats or shared ownerships.
- Tax rules: deduction of interest on loans for renewal in owner-occupied housing, deductions for maintenance expenditure, depreciations on investments in improvement.
- Rules to organize owner occupied flats or shared ownership in terms of decisions about maintenance and improvement and the distribution of costs among residents.
- Rules for administration of social housing, related to collection of funds from rents for future rehabilitation, to make decisions on maintenance and renewal and tenants' rights to change their dwelling.
- Regulation of private rented housing, i.e., rent control that impedes or allows rent increases in connection with improvements, gives incentives for maintenance or to secure appropriate savings. This also includes rules for tenants' rights to improve their dwelling.
- Demands on housing quality as a condition for conversion of private rented dwellings into owner-occupied flats.
- *General housing allowances, which reduce the increase in housing costs in connection with improvements.*

Recent changes as Skifter Andersen (1999) denotes are in the role of state in housing rehabilitation, a shift away from a broad and long-term responsibility towards a more residual and selective responsibility with interventions to assist the poorest Hhs with the purpose of cost savings for health and social care programmes.

Whatever the role of state be in urban renewal and housing rehabilitation policies, in most economies, it is the Hhs who are the main decision-makers of

reinvestment. Thus, it is meaningful to examine the underlying factors of Hhs' reinvestment decisions.

3.2.3. Households' Reinvestment Decisions

The users of the housing stock, Hhs, are the main actor in reinvestment. Scale and quality of investments usually depend on the Hhs preferences and constraints. Disinvestments or poorly targeted investments of Hhs may result in declining market values of property and in a reduction in its life span, also it means an increased liability for repair expenditures in the future, and a probable number of losses from the stock (Littlewood and Munro, 1996).

According to Lichfield (1988), the critical agency in the life cycle of buildings is the occupier rather than the owner, because without the occupier the building's potential services are not utilised. The occupier benefits from the qualities of the land and building in his occupation and the qualities of the environment: location in relation to the other occupations and activities, accessibility to and from elements of concern to him (markets, transportation, etc.), availability of utility services (gas, water, electricity, etc.), environmental factors (noise, pollution, etc.). On the other hand the occupier faces operating costs: real costs (heating, water consumption, maintenance, etc.), financial costs in servicing the owner's capital investment, and fiscal costs in his contribution to taxes as a means of contributing for the public services which are offered (access, street lighting, etc.).

According to Littlewood and Munro (1996), repair and maintenance behaviour is a result of the decision making process of rational individual and this process is related to the income and cost constraints, demand and preferences of Hhs. Reinvestment decision depends on the physical state of housing and whether housing is perceived as an investment or consumption good.

Generally, Hhs do some repair and improvement works when they move to a new house. The need for adjustment lies under these types of investments. These kinds of investment decisions may be a result of housing market constraints or may be a voluntary strategy. When there is little market variety of

supply or other problems like affordability, or low vacancy rates, Hhs might not be able to find houses to fit their needs. This process is usually followed then by adjustment investments. Littlewood and Munro (1997) notes that move and improve strategy may be a conscious one. When this is the case, Hhs usually move to a house that does not exactly fits to their needs but probably a cheaper house and invest for adjustment purposes.

With the increasing length of stay, changes occur in the Hhs life cycle, housing may become obsolete and the developments in technology make it necessary to adapt and improve housing or to a decision to move. A third way is the decision of Hhs who neither decide to reinvest nor to move. In this case disinvestments are unavoidable.

In his study of Owner-occupation in Britain, Merrett (1982) states that, the starting point of any rehabilitation decision for an owner-occupier is his perception of obsolescence in his dwelling unit. According to him, this perception depends on the preferred or demanded physical standards by the owner and the actual material standards of the accommodation. Merrett (1982) states that underlying motive of the demand for rehabilitation is the 'amelioration it promises in the Hhs' internal physical world'. Rehabilitation works carried in housing may refer to an extension of living space, external painting to prevent decay, the installation of a bath or central heating or repairs. These transformations, as Merrett (1982) shows, are meaningful if the Hhs will continue to live in that dwelling and in that neighbourhood. Thus, if Hhs are unhappy with the house or its spatial location or if there exist a fear of decline in neighbourhood, then the willingness of Hhs' to rehabilitate is enormously undermined.

If Hhs are willing to undertake rehabilitation work, in this case some other factors become significant such as Hh income, Hh age, etc. As Merrett (1982) notes it is largely the Hh income, which form sources of funds for rehabilitation. Government grants also consider the constraints imposed by low Hh incomes on the effective demand for rehabilitation. Moreover, he states that in British literature it is usually referred to the relation of age and rehabilitation expenditures. According to this, as a general rule, elderly Hhs are said to resist

undertaking substantial rehabilitation. This may be due to their relatively low income levels, being unwilling to disruption and dirt that big jobs create and feeling less able to cope with the managerial role of employing builders etc.

Littlewood and Munro (1996) arrive at some conclusions from their analysis of repairs and maintenance behaviour in Scottish housing in relation to the three groups of factors: Hh characteristics, the physical characteristics of the dwelling and characteristics of neighbourhood. According to this analysis, Hhs who are older, have lived in the house longer, or are poorer, are less likely to undertake works. Moreover, dwelling age have the strongest influence on the condition of the dwelling, also bigger houses are more likely to be in disrepair than smaller houses. Furthermore, houses in rural areas are likely to be in poor repair. There is some evidence that existence of repair and improvement activity in the surrounding neighbourhood encourages the people to do more repairs work.

Consequently, it may be argued that, Hhs' reinvestment decisions are broadly related to the changes in Hhs characteristics, physical state of the dwelling and characteristics of neighbourhood. In the next part of the study factors underlying Hhs' reinvestment decisions will be analysed for Turkey with the 1994 'Hh income and consumption expenditures survey'.

¹ Hansen, K.E., Skifter Andersen, H. (1993) *Strategier for regulering av bolig- og byfornyelsen i Norden – en tvaergående sammenligning* (Strategies for regulation of housing and urban renewal in the Nordic countries – a cross national comparison), SBI – meddelelse 99, Hørsholm: Danish Institute for Building Research. Skifter Andersen, H. (1992) Regulation of the private rented housing market – some Danish experience, *Scandinavian Housing and Planning Research*, no 9, 41-45.

CHAPTER 4

EMPIRICAL ANALYSIS OF REINVESTMENT DECISIONS

4.1. State of Urban Housing Stock

Turkey has produced a large pool of dwellings since 1950s. In Chapter 1 and 2, detailed information on housing and building production in urban areas between years 1955 and 2000 is already given (Graph 1.1, 1.2, 2.1). As displayed before Turkey has produced a sufficiently large pool of dwellings. Major problem on housing is not increasing the quantity of the stock any more but must be perceived as increasing the quality of living environments and rehabilitating the existing stock. To display a broad picture of the state of existing stock, building censuses of SIS can be employed. Building censuses are available in 4 years, 1965, 1970, 1984 and 2000. Evolution of the building and housing stock through these years can be seen in Table 4.1.

Table 4.1 Building and Housing Production.

	1965	1970	1984	2000
Number of Buildings (000)	2 131	2 821	4 388	7 839
Number of Dwelling Units (000)	2 643	3 432	7 096	16 236

(Source: SIS, Building Censuses)

Comparison of the building and housing production in year 2000 and 1965 reveals that number of buildings in year 2000 is approximately 3.7 times whereas number of dwelling units is 6.1 times of the 1965 values. According to Building Census of year 2000 age distribution of this stock is as follows (Table 4.2):

Table 4.2 Distribution of Stock According to Year in which Construction is Completed.

	Year of Construction									Total
	Pre-1929	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-2000	Unknown	
Number of Buildings (000)	172	102	206	426	799	1566	2134	2362	73	7839
Number of Residential Buildings (000)	119	77	155	320	605	1190	1606	1758	42	5873
% of Total Residential Buildings	2%	1%	3%	5%	10%	20%	27%	30%	1%	100%

(Source: SIS, Building Census, 2000)

77 per cent of the standing buildings and residential buildings in Turkey had been constructed after the 1970s. In Building Census 2000, information is available on the physical state of the building. It is a fact that this type of information is dependent solely on observations, however it may be meaningful to examine this data to draw a broad picture of the stock (Table 4.3).

This data is available in Building Census (2000) in four categories. First category is the buildings, which are not necessitating alteration and repair. Second category is the buildings necessitating basic alterations and repairs. This category necessitates operations such as joint, inner and external plaster,

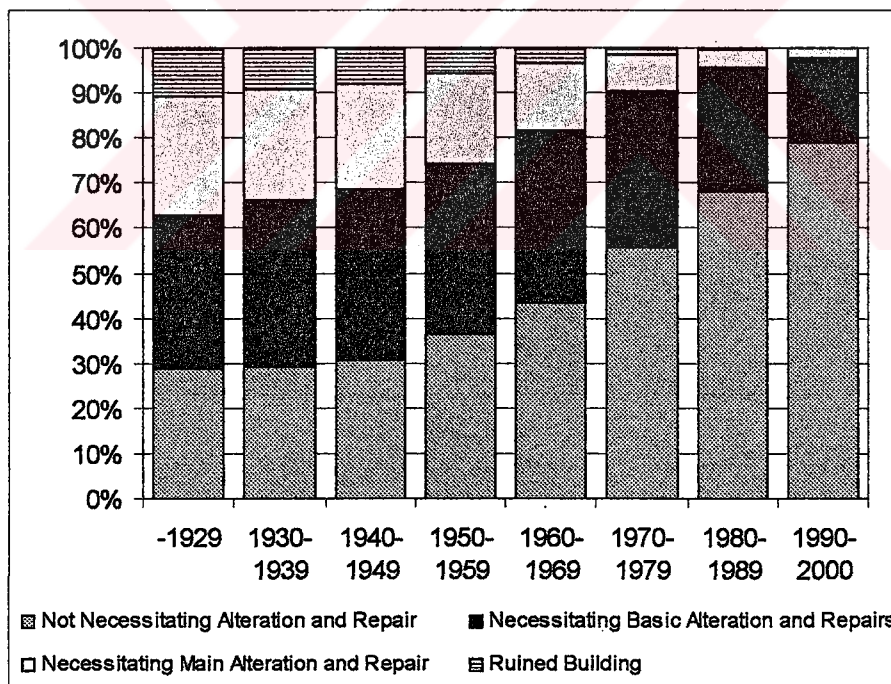
Table 4.3 Distribution of Stock According to Year in which Construction is Completed and Physical State.

	Year of Construction										Total
	Pre-1929	1930-1939	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-2000	Unknown		
Not Necessitating Alteration and Repair	28%	29%	30%	36%	43%	55%	67%	78%	59%	61%	
Necessitating Basic Alteration and Repairs	34%	37%	37%	38%	38%	34%	27%	18%	27%	28%	
Necessitating Main Alteration and Repair	26%	24%	23%	20%	15%	8%	4%	2%	7%	7%	
Ruined Building	11%	9%	8%	6%	3%	1%	0%	0%	2%	2%	
Unknown	1%	1%	1%	1%	1%	1%	1%	1%	5%	1%	
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

(Source: SIS, Building Census, 2000)

paint, whitewash, grooving, wainscot, floor and ceiling covering, maintenance of electrical and sanitary installations and repairing of roof and tile. Third category is the buildings necessitating main alteration and repairs. Necessary actions in this category defined by SIS as the operations, which affect structural factors or change construction area. Final category is the ruined buildings. These are the buildings, which are not occupied anymore and planned to be demolished.

Table 4.3 displays percentage distributions within each age group of buildings. Accordingly, 61 per cent of the total buildings do not require alteration and repairs. Whereas 28 per cent of the buildings require basic alteration and repairs and 7 per cent necessitating main alteration and repair. 2 per cent of the total stock has to be demolished. Graph 4.1 displays the distribution of different physical states in each age group.



Graph 4.1: Physical State of the Buildings According to Age Categories (Source: SIS, Building Census, 2000)

According to Graph 4.1, necessity for basic or main alteration and repairs are increasing parallel to the increasing age of the buildings. Survival of the stock is dependent on the existence of the reinvestments. In Turkey, like most other countries, Hhs are the main decision makers of reinvestment. In this part of the study Hhs' reinvestment decisions is going to be analysed.

4.2. Data and Framework of the Analysis¹

In Turkey, it is not easy to obtain data providing insight to processes of reinvestment decisions. The database employed in this study is 1994 'Hh Income and Consumption Expenditures Survey' (HhICES) as surveyed by the State Institute of Statistics (SIS), even though this survey was not designed specifically for these purposes.

This survey was carried out in two parts as 'consumption expenditures' and 'income distribution'. First, 'Hh consumption expenditures survey' was applied to 2 188 sample Hhs changing in each month from 1 January to 31 December 1994. The survey was implemented at 62 urban and 174 rural areas (SIS, 1997). At the second stage, 'Hh income distribution survey' was applied to the same sample Hhs of the 'Hh consumption expenditures survey' from 8 February to 31 May 1995 (SIS, 1999).

This survey has been carried out with a sample of 26 186 Hhs which represents the entire population, 18 219 of these Hhs live in urban areas. According to the definition of SIS settlements having at least 20 000 population are urban areas. In this database, details of consumption expenditures are available such as food, clothing, housing and rent, health, transportation, entertainment, education, etc. as well as information related to Hh characteristics. Housing expenditures include rent, repairs and maintenance, electricity and gas, and other expenditures.

In this analysis, 'repairs and maintenance expenditures' (RM expenditures) are used to represent reinvestments in the existing housing. 18 per cent of urban Hhs (3 327 Hhs) have this type of expenditures. After the data is refined from the missing values and outliers, remaining Hhs who live in urban areas are

18 132. 18 per cent (3 298) of these Hhs have RM expenditures and constitute the database of this analysis (Table 4.4).

Table 4.4: Filtering of the Data

26 186	Hhs representing the whole of Turkey
- 7967	Hhs living in rural areas
18 219	Hhs living in urban areas
- 19	Missing values
- 68	Outliers for Hh income
18 132	Urban Hhs in the analysis
- 14 834	Hhs whose RM expenditures are zero
3 298	Hhs with RM expenditures

Analysis is divided into two main parts. The first part is devoted to the Hhs characteristics and their affect on reinvestment decisions, whereas the second part focuses on dwelling and neighborhood characteristics and their affect on reinvestment decisions. To represent Hh characteristics Hh income, ownership status, age of Hh head and Hh size variables are employed. Age of the building, size and type of the dwelling and neighbourhood characteristics are the variables employed to represent dwelling and neighbourhood characteristics. Figure 4.1 displays the framework of the analysis and the relations investigated.

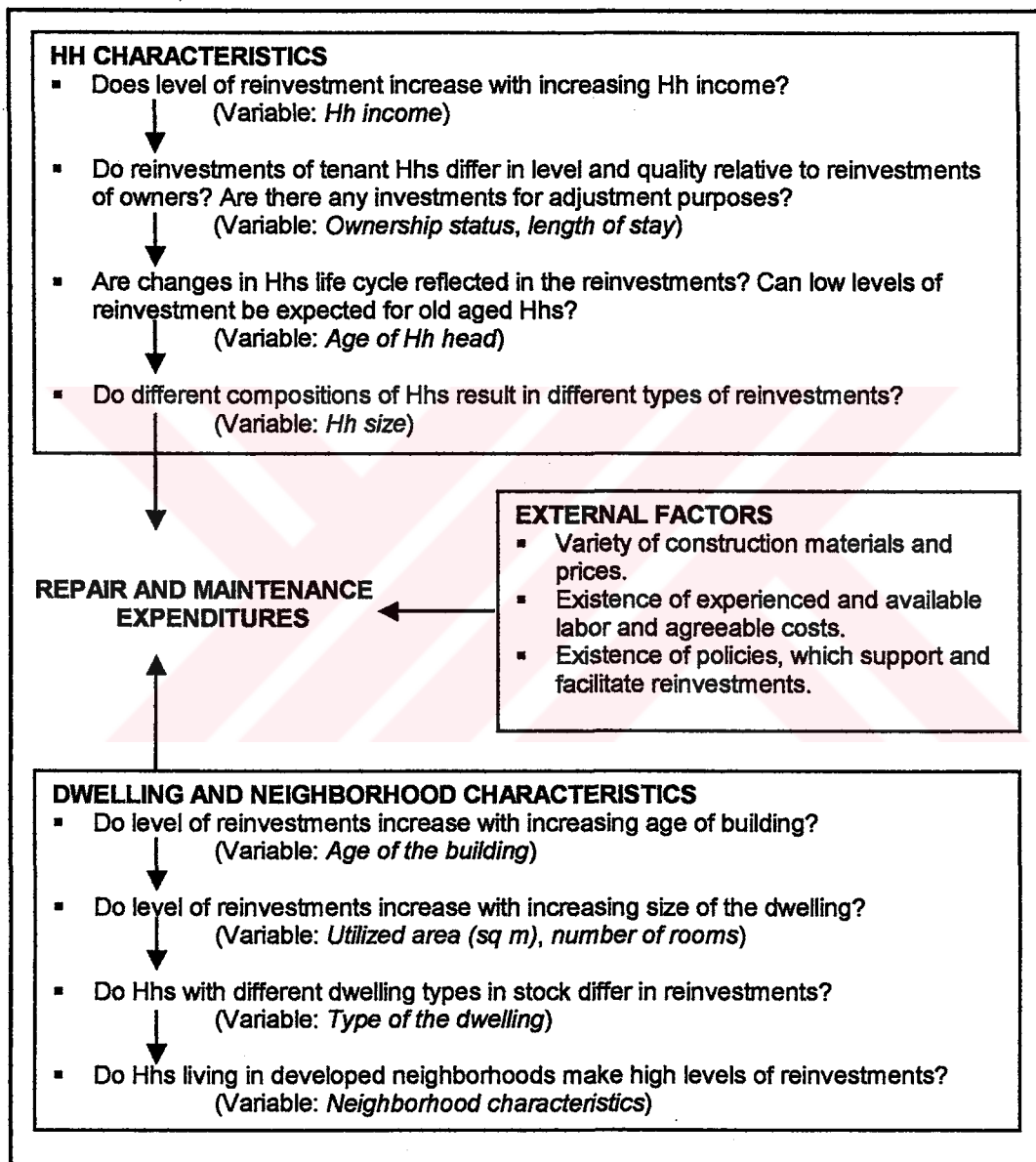


Figure 4.1: Framework of the Analysis

Main variables and the expectations are as follows:

1. Hhs Characteristics

- **Hh income:** Hh income is the main variable that determines the living standards of the Hhs. Usually, low-income levels are expected to accompany low reinvestment levels.
- **Ownership status:** Ownership status of the dwelling affect both the reinvestment decisions to materialize and the scale and quality of investments. Tenant Hhs are expected to have lower reinvestment levels in housing.
- **Length of stay:** Following the Hhs move is the expenditure usually associated with adjustment purposes. In time, changes occur in the Hhs life cycle and also physical deterioration will settle with the aging of the building. In both cases, reinvestments in housing are expected to materialize.
- **Age of Hh head:** Different age groups have varied approaches to the reinvestment in housing. This usually depends on the levels of income earned at the different stages of life commanding distinct necessities. In addition, older Hhs are usually reluctant to repairs work due to higher vulnerability to disorder.
- **Hh size:** Hhs, of different compositions, are expected to differ in the use of housing space.

2. Dwelling and Neighbourhood characteristics

- **Age of Building:** The physical state of housing is dependent on the original standards of construction, wear and tear resulting from age of the building and Hhs' use, existence of adequate maintenance and rehabilitation. Age of the dwelling reflects both the construction technology of the period, and gives a broad information on depreciation due to aging. Thus, necessity of reinvestment is higher with age as well as the need to improve and adapt buildings for new technologies.

- **Size of dwelling:** Size of dwelling has an effect on both the scale and the intensity of reinvestments. More investments can be expected in larger dwelling units.
- **Type of dwelling:** Dwelling categories affect the costs and type of investments. Rehabilitation work undertaken in a single-family house will not be identical to an apartment flat in terms of type and the cost of the investments.
- **Neighbourhood characteristics:** Hhs' perception of their neighbourhood is another factor that impinge on reinvestment decisions. If the neighbourhood is believed to be declining in values or to have an insecure future, Hhs may choose to move rather than to stay and reinvest.

4.3. Repairs and Maintenance Expenditures

RM expenditures exist in the database in monetary units (TL). SIS gathers information on the Hhs' expenditures as monthly expenditures. These expenditures include materials for repair and maintenance and regular maintenance services. In this survey details of materials and services for repair and maintenance activities are not available for each Hh. However, these materials and services include large-scale expenditures on painting and whitewash materials and services, floor and wall covering materials and services and small-scale expenditures on repair of plumbing, replacement of windowpane, etc. Monetary values and material amounts of RM expenditures are available for overall Turkey, urban and rural areas (See Appendix A).

As 'Hh Income and Consumption Expenditures Survey' (1994) reveals, Hhs expenditure on repair and maintenance has a share of 7 per cent (24 trillion 695 billion TL in 1994 values) in the total housing expenditures for overall Turkey. 77 per cent (18 trillion 899 billion TL in 1994 values) of the total RM expenditure is estimated to materialize in urban areas. Approximately 32 per cent of this amount in urban areas is for new materials whereas 68 per cent of it is spent for regular repair and maintenance services. Inadequacy of data is the lack of details of RM activities for each Hh. Thus, it is not possible to examine the types of investments done.

4.4. Household Characteristics and their Affect on Reinvestment Decisions

It is the Hhs responsibility to undertake the repair and maintenance activities in housing stock. Hhs' reinvestment decisions for these purposes are determined according to the changes in Hh characteristics, needs and preferences. These changes in Hh characteristics result in the decision to move to a new house or improve the existing one. To observe the effects of different Hh characteristics on reinvestment decisions 'Hh income', 'ownership status', 'length of stay', 'age of Hh head', 'Hh size' variables are examined.

Main questions investigated are:

- Does level of reinvestment increase with increasing Hh income?
- Do reinvestments of tenant Hhs differ in level and quality relative to reinvestments of owners? Are there any investments for adjustment purposes?
- Are changes in Hhs life cycle reflected in the reinvestments? Can low levels of reinvestment be expected for old aged Hhs?
- Do different compositions of Hhs result in different types of reinvestments?

4.4.1. Hh Income

Hh income is the main variable that determines the living standards of Hhs. Usually low-income levels are expected to accompany low reinvestment levels. To observe the distribution of incomes and RM expenditures Table 4.5 and Graph 4.2 are prepared. The values in the 8th column of the table (the ratio of RM expenditures to income - E/I) are obtained from the values in the 5th and 3rd columns.

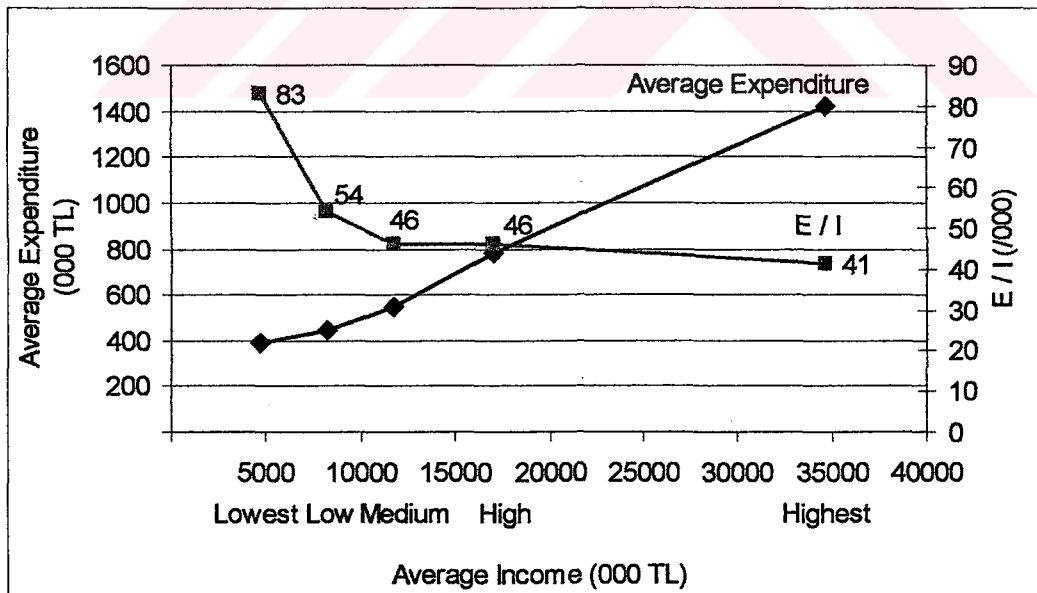
Both Hh income and RM expenditures are expressed monthly in the database in monetary units (TL). When Hhs are ordered with respect to their incomes, the average RM expenditure of the highest quintile is approximately 3.5 times of the Hhs at the lowest quintile (from 390 to 1 423 thousand TL). Where as the average income of the former is 7.5 times of latter (from 4 697 to 34 656

thousand TL). Hhs' RM expenditures are observed to be less variable with respect to incomes (See Appendix B, Table B.1 for average income and expenditures of Hhs in 10 % income quintiles).

Table 4.5: Hh Income and RM Expenditures According to Income Quintiles.

Income Quintiles	Number of Hhs	Average Income (000 TL) (3)	Share in Income %	Average Expenditure (000 TL) (5)	Total Expenditure (Million TL)	Share in Expenditure %	E / I (/000) (5 / 3)
Lowest	659	4 697	6.1	390	257	10.9	83
Low	660	8 244	10.8	445	293	12.4	54
Medium	660	11 789	15.5	545	360	15.2	46
High	660	16 953	22.2	778	514	21.8	46
Highest	659	34 656	45.4	1 423	938	39.7	41
Total	3 298	15 265	100.0	716	2 362	100.0	47

(Source: Derived from SIS, 1994, HhICES)



Graph 4.2: Average RM Expenditures and Incomes and the Ratio of RM Expenditures to Income - E/I (Source: Derived from SIS, 1994, HhICES).

In Graph 4.2, moving from the lowest quintile to highest quintile on the income scale, the average expenditures of Hhs are steadily increasing. However, E/I is higher in the lowest quintile and steadily decreasing. This means that when low-income Hhs decide to reinvest in housing with repairs and maintenance purposes they have to allocate a larger share from their budget with respect to high-income Hhs. It is a fact that RM expenditures differ from vital expenditures such as food and clothing. Thus, low-income Hhs may tend to avoid RM expenditures as much as possible. Discussions in the literature reveals that usually there is a match between low-income Hhs and poor housing conditions. Thus, disinvestments in the lower end of the housing stock mean worsening of living conditions for low-income Hhs, and owing to higher losses from this end of the stock, their housing options will be reduced.

4.4.2. Ownership Status

Ownership status of the dwelling affects reinvestment decisions to materialize and scale and quality of investments. Tenant Hhs are expected to have lower reinvestment levels in housing.

Table 4.6 displays the distribution of Hhs, RM expenditures and incomes for each ownership status. In Turkey, State housing policies promote homeownership. Almost all of the rental housing stock in Turkey is supplied by private sector and owned by Hhs. According to 'Hh Income and Consumption Expenditures Survey' in 1994 approximately 58 per cent of all Hhs living in urban areas are owner-occupiers, and only 32 per cent are tenants. 63 per cent of the investing Hhs are owner-occupiers and 27 per cent are tenants.

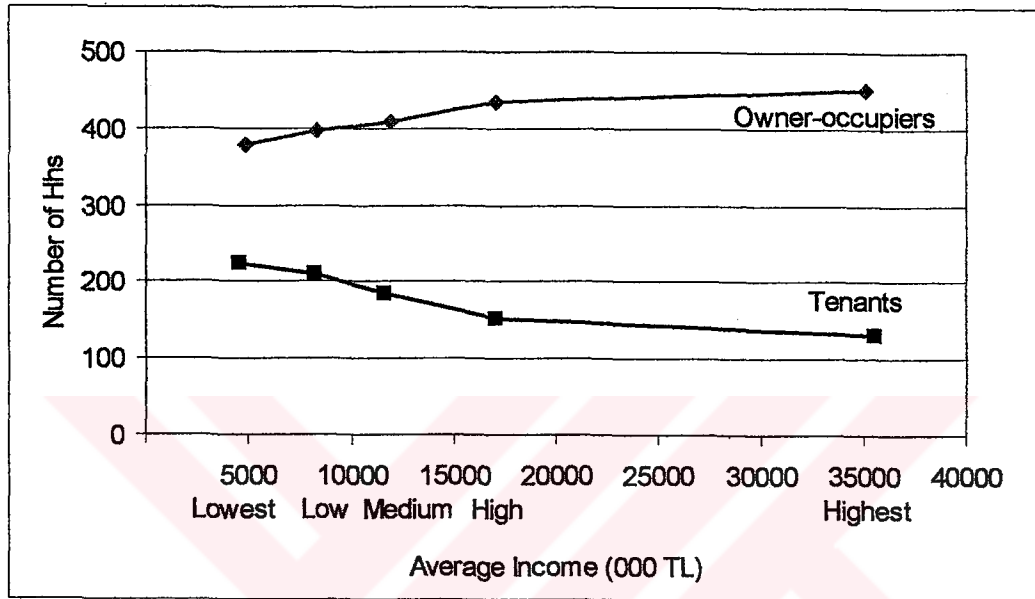
According to Table 4.6 owner-occupiers' total and average RM expenditures, share in expenditure and income are higher than tenants'. Even though the average income levels do not differ much, owners' average expenditure is 2.5 times greater than tenants'.

Table 4.6: Expenditures and Incomes for each Ownership Status.

Ownership Status	Number of Hhs	Share in Number of Hhs (%)	Total Expenditure (Million TL)	Average Expenditure (000 TL)	Share in Expenditure (%)	Total Income (Million TL)	Average Income (000 TL)	Share in Income (%)	% of Reinvesting Hhs	E/I (/000)
Owner-occupiers	2 071	62.8	1 854	895	78.5	33 186	16 024	65.9	20	56
Tenants	902	27.3	318	353	13.5	12 102	13 417	24.0	16	26
Public Accom. & Other	325	9.9	190	584	8.0	5 057	15 560	10.0	16	38
Total	3 298	100	2 362	716	100.0	50 344	15 265	100.0	18	47

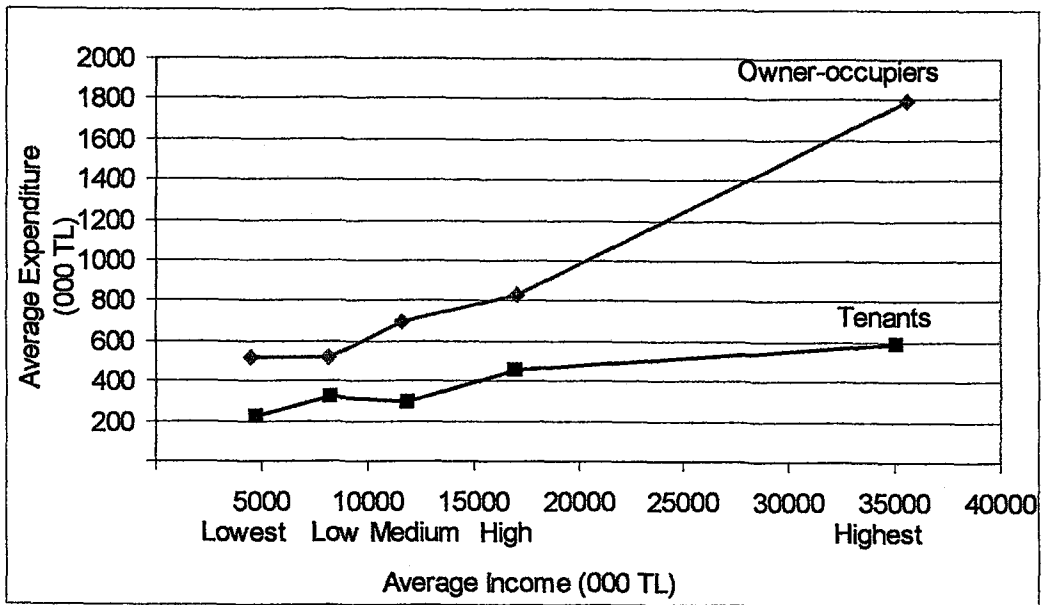
(Source: Derived from SIS, 1994, Household Income and Consumption Expenditures Survey)

To observe the Hh distributions and distribution of expenditures of owner-occupiers and tenants in different income categories Graph 4.3 and 4.4 are prepared.



Graph 4.3: Number of Hhs and Average Incomes According to Ownership Status (Derived from SIS, 1994, HhICES).

Graph 4.3 displays that moving from the lowest quintile to highest quintile on the income scale number of owner-occupiers is steadily increasing, reverse is true for tenants in similar ratios. Such a distribution may be a reflection of the real distribution in overall country. Analysis of all urban Hhs in the database displays that rate of owner-occupation increases while moving from the lowest quintile to highest quintile, ratio of tenants is observed to decline in the same direction (Sarioğlu, 2001).

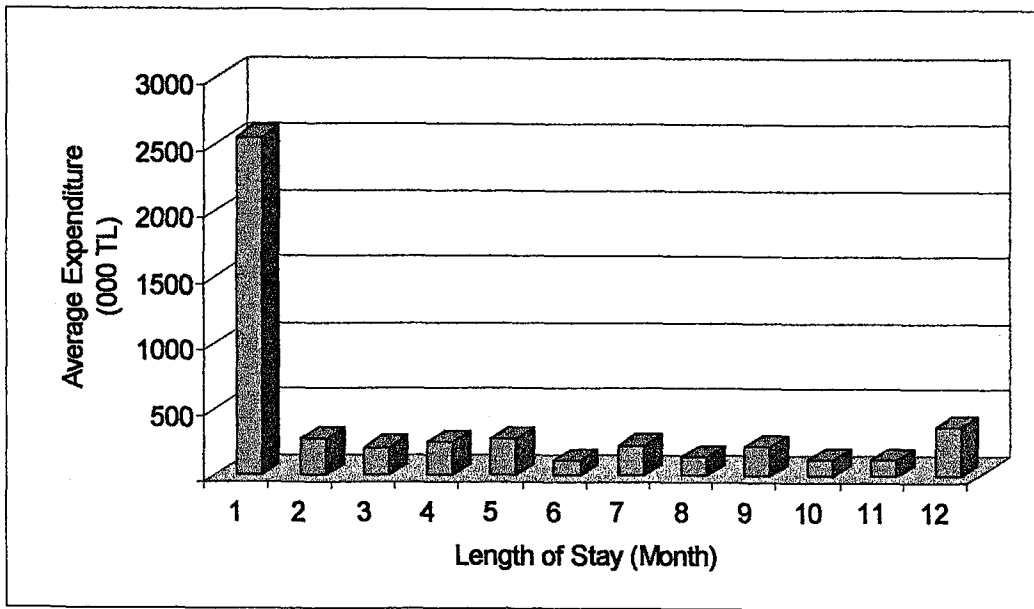


Graph 4.4: Average Expenditures and Average Incomes According to Ownership Status (Derived from SIS, 1994, HhICES).

Graph 4.4 reveals that, owner-occupiers' average repair and maintenance expenditures are higher than tenants' in all income categories and much sensitive to income changes (See also Appendix B, Table B.2 for distributions in 10% income quintiles). Tenant Hhs usually perceive their dwellings as temporary and avoid large-scale investments. Instead, they only undertake the necessary repairs. This implies a danger of disinvestments in rental stock, which could result in poor housing conditions for tenants.

4.4.2.1. Length of Stay

When Hhs move to a new house RM expenditure following the move is usually associated with adjustment purposes. In time, changes occur in the Hhs life cycle and also physical deterioration settles with the aging of the building. In both cases, reinvestments in housing are expected to materialize. In the database, length of stay is available only for tenant Hhs. Since the data on expenditures is given monthly, support for adjustment investments may be obtained by examining the tenant Hhs who reside in the housing for one year or less (Graph 4.5).



Graph 4.5: Average RM Expenditures for Tenants with Twelve-months or Less Length of Stay (Derived from SIS, 1994, HhICES).

Highest average expenditures are observed during the first month of stay, where expenditures are 7 times greater than the next highest expenditure group (Hhs with twelve-months of stay). This result supports the existence of adjustment investments.

Analysis reveals that first months' expenditures of tenants have a 7 per cent share in total RM expenditures. This ratio is 26 per cent in first year. When tenant Hhs rent a house, besides the expenditures pertaining to move, deposits and advance payments, they are also expending for adjustment purposes. Generally, tenants have shorter length of stay in comparison to owner-occupiers, which means, in fact, adjustment investments are disadvantageous for tenants.

4.4.3. Age of Household Head

Different age groups have varying approaches to reinvestment in housing. This usually depends on the levels of income earned at the different stages of life

commanding distinct necessities. In addition, older Hhs are usually reluctant to repairs work due to higher vulnerability to disorder.

To represent different age groups, age of Hh head variable is employed. In the analysis, Hhs are grouped into eight cohorts starting from 15-24 age group to 85 years and more. Table 4.7 displays the distribution of Hhs, RM expenditures and incomes in age cohorts.

When the ratio of reinvesting Hhs for each age group is investigated (Table 4.7, column 10), the first two and last two cohorts (youngest and oldest Hh heads) are observed to have the lowest ratios. Only 12 per cent of the youngest group and 14 per cent of the oldest group whereas 20 per cent of 45-54 and 55-64 age groups have RM expenditures.

Even though the percentage of the investing Hhs within these groups are low, the two outliers (first and last cohorts) with respect to average expenditures reveal the highest reinvestment levels. 43 per cent of 15-24 age group is owner-occupiers. High levels of investments may be an outcome of ownership in young age. When the RM expenditures of owner-occupiers is examined with respect to income quintiles and age groups, highest investment levels for 15-24 age group is observed in the highest income quintiles affecting the average RM expenditures for 15-24 age category (See Appendix B Table B.6).

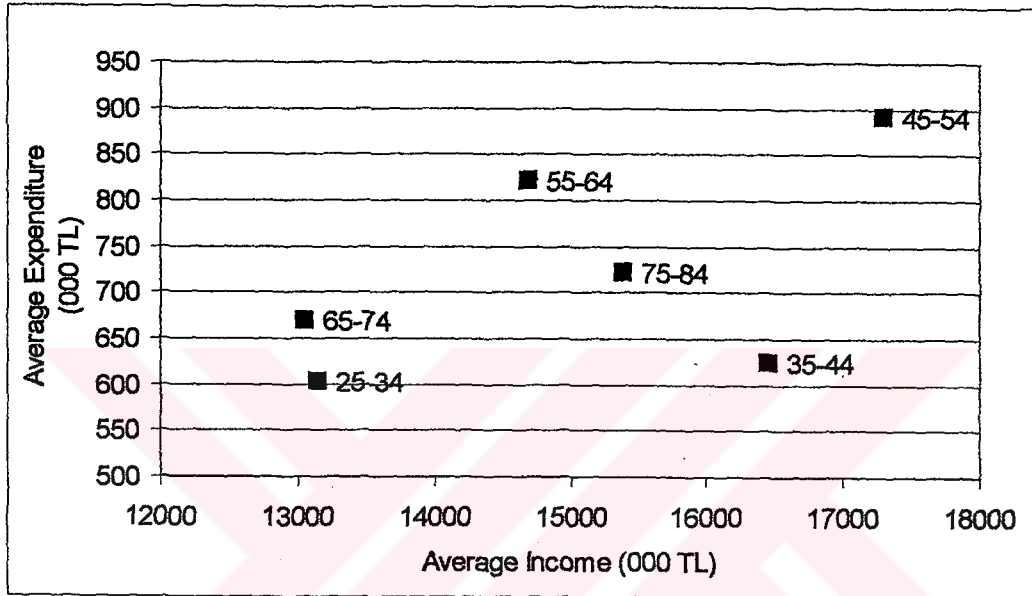
Hh heads who are 85 or more have the highest average income among other age groups. All of these Hhs are owner-occupiers. High levels of investments can be explained with respect to their income and ownership status. In most cases such investments could be based on long-term ownership and availability of new material and comfort rising installations. In addition, analysis reveals that these Hhs are composed of at least 3 people, which implies a possibility of a younger person living with parents who could deal with the repair and maintenance work (See Appendix B, Table B.8).

Table 4.7: Expenditures and Incomes for each Age Group.

Age of Hh Head	Number of Hhs	Total Expenditure (Million TL)	Average Expenditure (000 TL)	Share in Expenditure (%)	Total Income (Million TL)	Average Income (000 TL)	Share in Income (%)	Owner-occupiers (%)	% of Reinvesting Hhs	E/I (0000)
15-24	75	73	969	3.1	835	11 133	1.7	43	12	87
25-34	758	457	603	19.3	9 970	13 153	19.8	39	16	46
35-44	1 036	647	625	27.4	17 051	16 458	33.9	55	19	38
45-54	666	594	892	25.1	11 525	17 305	22.9	77	20	52
55-64	501	412	822	17.4	7 360	14 691	14.6	86	20	56
65-74	220	147	669	6.2	2 873	13 061	5.7	89	19	51
75-84	36	26	723	1.1	554	15 387	1.1	83	16	47
85 +	6	7	1 118	0.3	177	29 472	0.4	100	14	38
Total	3 298	2 362	716	100.0	50 344	15 265	100.0	63	18	47

(Source: Derived from SIS, 1994, Household Income and Consumption Expenditures Survey)

When the marginal cohorts (youngest and oldest Hh heads) are excluded, the highest investment levels are observed in the 44-54 and 55-64 age groups. Graph 4.6 displays the average expenditures and incomes for 25-84 age groups.



Graph 4.6: Average RM Expenditures and Incomes for Age Groups (Derived from SIS, 1994, HhICES).

Changes in Hh characteristics may be most probably observed in 45-54 and 55-64 age groups. Mean Hh size of 45-54 and 55-64 age groups are 4.4 and 3.75 person respectively. These groups have high owner-occupation ratios (77% and 86% respectively). Moreover, when all urban Hhs are examined, average age of owner-occupiers is observed to be 47.31 (Sarioğlu, 2001). Thus, entry to homeownership and changes in Hh compositions may result in different needs and preferences of Hhs and therefore RM expenditures.

4.4.4. Hh size

Hhs, of different compositions, are expected to differ in the use of housing space. Table 4.8 is prepared to examine the distribution of expenditures and incomes.

The ratio of reinvesting Hhs is higher within Hhs composed of 4 or less people. When per capita expenditures and incomes are examined, it is observed that both value tend to decrease with increases in Hh size. Average expenditures of different Hh size categories do not vary much, however when Hh size is odd (i.e. 1,3) average expenditures are observed to be relatively higher. However, owner-occupiers' ratio and distribution of expenditures according to income quintiles do not display a significant distribution to explain these variations (See Appendix B, Table B.9, B.10). When RM expenditures are examined according to Hh size and ownership status it is observed that relatively high RM expenditures are emerged in Hh groups with ownership status is either public accommodation and other category or owner-occupation.

Table 4.8: Distribution of Expenditures and Incomes According to Hh Size.

Hh Size	Number of Hhs	Total Expenditure (Million TL)	Average Expenditure (000 TL)	Share in Expenditure (%)	Total Income (Million TL)	Average Income (000 TL)	Share in Income (%)	Per capita Expenditure (000 TL) (column 10)	Per capita Income (000 TL) (column 11)	% of Reinvesting Hhs
1	89	66	740	2.8	1 003	11 272	2.0	740	11 272	21
2	414	226	547	9.6	5 708	13 788	11.3	273	6 894	20
3	690	580	841	24.6	11 201	16 233	22.2	280	5 411	21
4	956	554	579	23.4	15 721	16 445	31.2	145	4 111	20
5	577	528	916	22.4	8 595	14 895	17.1	183	2 979	17
6	287	199	694	8.4	4 028	14 035	8.0	116	2 339	14
7	122	98	800	4.1	1 747	14 322	3.5	114	2 046	12
8 +	163	111	678	4.7	2 341	14 364	4.7	71	1 509	13
Total	3 298	2 362	716	100.0	50 344	15 265	100.0	171	3 642	18

(Source: Derived from SIS, 1994, Household Income and Consumption Expenditures Survey)

4.4.5. Evaluation of Household Characteristics and their Affect on Reinvestment Decisions

Table 4.9 Comparison of Hhs having RM expenditures and do not have RM expenditures

Hh Characteristics	Hhs with RM expenditures	Hhs without RM expenditures
Average Hh Income (000 TL)	15 265	10 558
Rate of Owner-occupiers	%63	%57
Average Length of Stay	41 months	40 months
Average Hh Age	44.3	42.7
Average Hh Size	4.2	4.5

- Table 4.9 displays that average income of the Hhs having RM expenditures is 1.5 times the average income of the Hhs who don't have RM expenditures. Moreover, analysis reveals that level of reinvestments is significantly increasing with increasing Hh incomes. This implies a relationship between income and RM expenditures. Association analysis between Hh income and RM expenditures variables reveals that there is a significant relationship in the positive direction between RM expenditures and Hh income with a coefficient of 0.21 (See Appendix C for association analysis). RM expenditures constitute high shares in low-income Hhs budget in absolute values. RM expenditures may be seen usually not very vital such as expenditures on food or clothing. Thus, if investment does not emerge as a necessity, low-income Hhs may tend to delay this type of expenditures. This means emergence of higher repair outlays for future. It is a fact that usually there is a match between poor housing conditions and low-income Hhs. This implies the danger of disinvestments and losses from this end of the stock.
- According to Table 4.9 rate of owner-occupiers is higher in the first group, that of, Hhs having RM expenditures. Association analysis reveals that there

is a significant relationship between ownership status and RM expenditures with a coefficient of 0.20 (See Appendix C for association analysis). Owner-occupiers' and tenants' perception of their dwellings are different. This difference in their viewpoints may be reflected in their reinvestment decisions. Analysis reveals that tenants' irrespective of their income groups have low levels of reinvestments. This may imply the fact that they are undertaking only minor repairs and leaving the large-scale works to owner, probably resulting in poor housing conditions in rental housing stock. Tenants' high level of expenditures in the first month reveals the existence of adjustment investments. When the short length of stays for tenants' with respect to owners are considered adjustment investments are in fact disadvantageous to tenant Hhs.

- Comparison of average Hh age from Table 4.9 displays that there is no significant difference between Hhs having RM expenditures and who don't have RM expenditures. However, within reinvesting Hhs different age groups are observed to have distinct reinvestment expenditures. This is usually related to the different ownership and income patterns emerging in each life cycle. When reinvestment patterns of age groups are examined for owner-occupiers, general reinvestment patterns are observed to be similar to owner-occupiers' investments (Appendix A Table B.5, B.6). Association analysis reveals that age of Hh head is significantly associated with RM expenditures, however association coefficients are very small indicating a fairly weak relationship (See Appendix C for association analysis).
- Table 4.9 displays similar average Hh size for both groups. Analysis reveals that there is not a significant variation in average expenditures among different size categories. Per capita incomes and expenditures are decreasing with increasing Hh size. Crowded houses may be considered to experience high rates of deterioration, thus housing occupied by larger Hhs may be argued more likely to be in poorer conditions. Association analysis reveals that there is a significant association between Hh size and RM expenditures in negative direction, however association coefficients are very small (See Appendix C for association analysis).

4.5. Dwelling and Neighbourhood Characteristics and their Affect on Reinvestment Decisions

Besides Hhs characteristics, factors affecting Hhs' reinvestment decisions may also be related to dwelling and neighbourhood characteristics. Physical obsolescence due to aging may result in Hhs' reinvestments in housing whereas size and type of their dwelling unit may determine the type and scale of necessary investments. Any negative perception about neighbourhood may prevent reinvestments in housing. To observe the effects of dwelling and neighbourhood characteristics on reinvestment decisions 'age of the building', 'size of the building', 'type of the dwelling', 'neighbourhood characteristics' variables are examined.

Main questions investigated are:

- Do level of reinvestments increase with increasing age of building?
- Do level of reinvestments increase with increasing size of the dwelling?
- Do Hhs with different dwelling types in stock differ in reinvestments?
- Do Hhs living in developed neighborhoods make high levels of reinvestments?

4.5.1. Age of the building

The physical state of housing is dependent on the original standards of construction, wear and tear resulting from age of the building and Hhs' use, existence of adequate maintenance and rehabilitation. Age of the dwelling reflects both the construction technology of the period, and gives broad information on deterioration due to aging. Thus, necessity of reinvestment is higher with age as well as the need to improve and adapt buildings for new technologies.

In the database used, age of the dwelling unit is given in four categories: pre-1950 stock, 1951-1974, 1975-1984, post-1985 stock.

Table 4.10: Distribution of Expenditures and Incomes According to Age of the Building

Age of the Building	Number of Hhs	Total Expenditure (Million TL)	Average Expenditure (000 TL)	Share in Expenditure (%)	Average Income (000 TL)	Share in Income (%)	Owner-occupiers (%)	Average Utilized Space (sq m)	Average Expenditure per sq m (TL)	% of Reinvested Units
Pre-1950	77	45	590	1.9	12 930	2.0	57	93.91	7 635	12
1951-1974	739	539	729	22.8	15 160	22.3	64	91.95	8 417	17
1975-1984	1 334	890	667	37.7	14 090	37.3	61	96.62	6 907	17
Post-1985	1 148	887	773	37.6	16 856	38.4	64	105.48	7 223	21
Total	3 298	2 362	716	100.0	15 265	100.0	63	98.59	7 372	18

(Source: Derived from SIS, 1994, Household Income and Consumption Expenditures Survey)

In Table 4.10 it is observed that both the average income and expenditures of Hhs living in the newly built stock is 1.3 times of the Hhs living in the older stock. Reinvestments do not differ much in terms of average expenditures in different age groups of buildings, this may be due to a number of reasons, distributions of similar rates of owner-occupiers, similar income levels of Hhs, similar average utilized space of dwellings are among them. However, post-1985 stock has the highest ratio of reinvested units, and highest average expenditures, on the contrary to the expected outcomes. This implies a danger of disinvestments in the aged stock.

Most significant outcome of the analysis is that, the lowest levels of reinvestments usually take place where there is a match between aged stock and low-income Hhs (Appendix B, Table B.12). This points to the danger of disinvestments and possible losses in this type of stock and could imply locational problems.

4.5.2. Size of the dwelling

Size of the dwelling has an effect on both the scale and the intensity of reinvestments. More investments can be expected in larger dwelling units. Table 4.11 displays the distributions of expenditures and incomes for different size categories.

Table 4.11: Distribution of Expenditures and Incomes According to Size of the Dwelling.

Size of the Dwelling	Number of Hhs	Total Expenditure (Million TL)	Average Expenditure (000 TL)	Share in Expenditure (%)	Average Income (000 TL)	Share in Income (%)	Owner-occupiers (%)	% of Reinvested Units
Smaller than 60 sq m	103	40	389	1.7	7 387	1.5	53	10
60-79 sq m	461	313	680	13.3	10 183	9.3	56	15
80-99 sq m	1 174	747	637	31.6	13 693	31.9	65	18
100-119 sq m	906	567	626	24.0	16 097	29.0	65	20
120-149 sq m	514	458	892	19.4	20 014	20.4	60	22
Larger than 150 sq m	140	236	1 684	10.0	28 160	7.8	73	24
Total	3 298	2 362	716	100.0	15 265	100.0	63	18

(Source: Derived from SIS, 1994, Household Income and Consumption Expenditures Survey)

Average income of Hhs living in the largest stock is approximately 3.8 times the average income of Hhs living in the smallest units where average expenditure of former is 4.3 times of the latter. Ratio of owner-occupiers is 73 per cent in the largest stock whereas it falls down to 53 per cent in the stock of smallest units. The ratio of reinvested units displays that the stock of smallest units (smaller than 60 sq m, 60-79 sq m or 1-2 roomed dwellings) have the lowest ratios. With the increasing size of the dwelling, ratio of reinvested units is also slightly increasing. This may be a result of the parallel increase in the rate of owner-occupiers and average incomes. Moreover, increasing size of the dwelling is accompanied by decreasing age of the building (See Appendix B, Graph B.1) and increasing levels of reinvestments. This again implies a danger of disinvestments in aged stock especially in smaller dwellings.

4.5.3. Type of the dwelling

Dwelling categories affect the costs and type of investments. Rehabilitation work undertaken in a single-family house will not be identical to an apartment flat in terms of type and the cost of the investments.

For all urban areas, detached houses and flats in apartment blocks form 49 and 46 per cent of stock respectively. Houses are defined by SIS as buildings containing one or two dwelling units for residence. Whereas apartment buildings contain three or more dwelling units (SIS, 1999). Among the Hhs with RM expenditures, Hhs living in apartment blocks forms 64% of the database.

In Table 4.12 in addition to the major types of dwellings (squatter, houses, apartment blocks), apartment blocks are available in detail from basement to roof floors. As Table 4.12 reveals squatter housing, houses and apartment blocks reveal the highest average expenditures. For this set of Hhs owner-occupiers ratios are 72 per cent for squatters, 70 per cent for houses and 59 per cent for apartments. When % of reinvested units are considered, apartment stock have the highest ratios. Among the apartment stock it is the roof floors, which displays highest ratios of reinvested units however, average expenditures of this group is not high relative to other groups.

Table 4.12: Distribution of Expenditures and Incomes According to Type of the Dwelling.

Type of the Dwelling	Number of Hhs	Total Expenditure (Million TL)	Average Expenditure (000 TL)	Share in Expenditure (%)	Average Income (000 TL)	Share in Income (%)	Owner-occupiers (%)	% of Reinvested Units
Luxury Building	3	1	210	0.0	19 318	0.1	67	12
House	1 072	783	730	33.1	10 590	22.5	70	12
Apartment	2 126	1 493	702	63.2	17 811	75.2	59	25
Apartment Flat-Basement Floor	27	11	424	0.5	14 826	0.8	52	20
Apartment Flat-Ground Floor	202	91	452	3.9	13 847	5.6	48	23
Apartment Flat-Middle Floor	1 827	1 360	744	57.6	18 298	66.4	60	25
Apartment Flat-Roof Floor	70	30	434	1.3	17 673	2.5	70	34
Squatter	92	82	895	3.5	10 294	1.9	72	12
Other	5	3	550	0.1	24 320	0.2	40	42
Total	3 298	2 362	716	100.0	15 265	100.0	63	18

(Source: Derived from SIS, 1994, Household Income and Consumption Expenditures Survey)

4.5.4. Neighbourhood characteristics

Hhs' perception of their neighborhood is another factor that have effects on reinvestment decisions. If the neighborhood is believed to be declining in values or to have an insecure future, Hhs may choose to move rather than to stay and reinvest.

In the database, districts are categorized into three as 'developed', 'undeveloped' and 'squatter' neighborhoods. This classification is made by SIS for 'developed' and 'undeveloped' areas depending on the criteria such as distance to shopping, trade or tourism centers, transportation facilities and rent levels of housing. An area is identified as a 'squatter' district when buildings are constructed without permit on public or private land (SIS, 1997).

Table 4.13 reveals that highest average investment levels are observed in 'squatter' areas although the Hhs living in these areas have the lowest average income among other groups. Rate of owner-occupiers for Hhs in 'squatter' areas is 76 per cent, for 'undeveloped' areas 68 per cent, for 'developed' areas 59 per cent. About 1/3 of tenancy is common in developed areas mostly occupied by blocks of flats developed by means of the 'appurtenance' process (Balamir, 1996). Average income of Hhs' living in 'developed' areas is 1.5 times that of Hhs' in 'undeveloped' areas. These differences in ownership status and income levels are not necessarily reflected in the average expenditure levels of Hhs.

Hhs' in 'squatter' areas are special cases, which have to be considered as a distinct study area. Usually, lower expenditures in housing are expected in areas, which have no secure future. But in Turkey, high expectations of tenure security prevail in 'squatter' areas, and expenditures in these units are probably for additional rooms, interior toilets, improvement of kitchens etc., which are relatively high-cost undertakings compared to initial outlays. Moreover, high levels of RM expenditures materialize in the highest income groups for squatter areas (See Appendix B, Table B.13).

Table 4.13: Distribution of Expenditures and Incomes According to Neighbourhood Characteristics.

Neighbourhood characteristics	Number of Hhs	Total Expenditure (Million TL)	Average Expenditure (000 TL)	Share in Expenditure (%)	Average Income (000 TL)	Share in Income (%)	Owner-occupiers (%)	% of Reinvested Units
Developed	1 985	1 402	706	59.5	17 801	70.5	59	25
Undeveloped	1 191	839	704	35.6	11 403	27.1	68	13
Squatter	112	114	1 021	4.9	10 834	2.4	76	13
Total	3 288	2 355	716	100.0	15 246	100.0	63	18

(Source: Derived from SIS, 1994, Household Income and Consumption Expenditures Survey)

4.5.5. Evaluation of Dwelling and Neighbourhood Characteristics and their Affect on Reinvestment Decisions

Table 4.14 Comparison of Hhs having RM expenditures and do not have RM expenditures

Dwelling and Neighbourhood Characteristics	Hhs with RM expenditures		Hhs without RM expenditures	
	Oldest Stock %2.3	Newly Built %35	Oldest Stock %4	Newly Built %30
Average Size of Building	98.6		92.3	
Type of Building	Houses %31	Apartments %64	Houses %53	Apartments %42
Neighbourhood Characteristics	Developed %60	Undeveloped %36	Developed %41	Undeveloped %54

- As displayed in Table 4.3 and Graph 4.1 with increasing age of the building necessity of reinvestments increase in terms of types and scale. However, analysis reveals that contrary to the expectations it is the newly built stock, which attracts reinvestments. Moreover, comparison in Table 4.14 between the Hhs with and without RM expenditures supports this fact. This implies a danger of disinvestments in aged stock especially where there is a match between low-income Hhs and aged stock. This could also imply locational problems. Analysis of association reveals that there is a significant relationship between the age of the building and RM expenditures, however having a relatively small coefficient of 0.12 (See Appendix C for association analysis).
- As Table 4.14 displays, average size of reinvested units are greater than the disinvested units. Association analysis reveals that there is a significant positive relationship between size of the dwelling and RM expenditures (0.11). Moreover, disinvestments are usually observed to emerge in the old aged smallest units. This implies locational problems in the case of concentrations of this type of stock.

- With respect to average expenditures squatter houses reveals the highest levels of reinvestments, however percentage of reinvested units displays that apartment blocks attracts more investments in terms of numbers. Association analysis reveals that there is a significant relationship between type of the dwelling and RM expenditures (0.18).
- Table 4.14 displays that undeveloped areas may suffer from disinvestments. In terms of average expenditures squatter areas reveals the highest investments, however it is the developed areas, which attract the higher number of reinvestments. Association analysis reveals that there is a significant relationship between neighbourhood characteristics and RM expenditures with a coefficient of 0.13 (See Appendix C for association analysis).

4.6. The Construction Industry; and Material and Components Industry: The Background to Market Changes

At the beginning, in 1950s, construction sector tried to meet the housing and infrastructure demand of internal market. Small entrepreneurs were active in housing sector whereas relatively large ones took place in infrastructure field. After the first petroleum crises in 1974, with a narrower internal market, medium and large-scale entrepreneurs directed to petroleum rich countries and developed their construction technologies, made their field of work varied and became competitive in international markets (National Report and Action Plan, 1996).

After the 1980s with the removal of constraints on imports and foreign currency, various types of construction materials become abundant in the market. Construction sector bought patents of many new technologies or know-how and started to accelerate its production and quality (Sey; 1998).

Parallel to the developments in construction sector, construction materials industry displayed a significant development. According to Organization of Construction Materials Industry (National Report and Action Plan, 1996), approximately 5 000 institutions participating in this sector are producing 350 types of construction materials in compatible standards in global markets.

As Keleş (2002) states, investments in construction industry have a share of 60% among all investments in overall country. 70 % of these investments are for the construction materials. According to Istanbul Chambers of Industry, among the largest 500 industrial organizations in year 2000 there are 78 construction material firms (<http://www.imsad.org>).

Progress in construction technology and availability of various construction materials create a demand for the adaptation and improvement of urban areas. Moreover, existence of various materials and components and experienced labor at agreeable costs affect Hhs' reinvestment decisions in housing.



¹ The database employed here is accessed only with special permission of SIS. This database was first employed in the CP 501-502 City Planning Master's Studio Project in 2000-2001, and in May 2002 a paper on this subject was presented in the Housing Congress of Chambers of City Planners in Istanbul, later on in September 2002 another paper was presented in Coimbra, Portugal and published in the conference proceedings of XXX IAHS World Congress on Housing by International Association for Housing Science.

CHAPTER 5

CONCLUSION

5.1. Definition of the Problems

In most economies Hhs are the main decision makers of reinvestments and Turkey is no exception in this respect. However, analysis of the 1994 'Hh Income and Consumption Expenditures' reveals that some Hh groups and housing stock may be denoted as problematic when the case is reinvestments in housing.

- **Low-Income Hhs**

Repairs and maintenance expenditures constitute high shares in low-income Hhs' budget relative to other Hhs. Low-income Hhs may not perceive these expenditures as vital compared to expenditures on food or could not give priority to the issue even they recognize the necessity. Hhs' tendency to delay this type of expenditures may result in higher repair outlays for future. Moreover, this could result in poorer living conditions for those Hhs and losses from this end of the stock. Concentrations of low-income Hhs in poor quality housing in a neighbourhood imply locational problems and a probability of decline in the whole area.

- **Rental stock**

Analysis reveals that reinvestments in the rental stock are minor relative to owners' investment volumes. Tenants perceive their dwellings temporary and avoid doing large-scale investments. Tenants are more mobile relative to

owners thus, moving to a new house may be preferred by tenants rather than improving the existing housing. Disinvestments in rental stock may result in poor housing conditions for tenants and losses from this type of stock will reduce tenants' housing options.

- **Over-occupied stock**

Another problematic group can be identified as over-occupied stock. There is an inverse relationship between Hh size and RM expenditures. Moreover, per capita income is decreasing with increasing Hh size constraining the expenditures of Hhs. It is a fact that crowded houses experience higher rates of deterioration, thus housing occupied by larger Hhs may be considered as problematic for reinvestments.

- **Aged stock**

Necessity for reinvestments is intensified with the age of the buildings. However, analyses reveal that it is the newly built stock, which attracts reinvestments. Moreover, lower levels of reinvestments are observed in the higher rates of aged dwellings occupied by low-income Hhs. Thus, concentrations of this type of stock in neighbourhoods may result in the decline of whole neighbourhoods.

- **Declining Neighbourhoods**

Finally it is the neighbourhoods in poorer conditions, which may suffer from disinvestments. Perception of the environment affect expectations of Hhs, the decision of reinvestments and the level of expenditures. This may result in declining neighbourhoods to become continuously in poorer conditions.

In addition to the problems that arise from Hhs' conditions, there are also problems that result due to the absence of necessary laws and legal mechanisms to ensure the repair and maintenance of the existing housing stock.

In Turkey no policy exists to encourage and facilitate reinvestment decisions and to channel the existing investment tendencies to ensure the survival of the housing stock. According to SIS, in 1994 estimated expenditures on reinvestments in Turkey is approximately 24 trillion 695 billion TL. This amounts to 7 per cent of total value of new housing constructions in 1994. Moreover, with these reinvestment levels it was possible to construct approximately 38 400 new dwelling units in 1994 (SIS, Construction Statistics, 1995). This reveals that there is a potential for reinvestments in housing. However, lack of policies to channel and guide reinvestments constitute a significant problem.

Moreover, urban planning legislation totally ignored the concept of comprehensive rehabilitation and preservation of asset value of the existing housing stock. New development rather than reinvestments and rehabilitation have been the primary concern of planning. Furthermore, there is no defined role for local authorities in the issues of rehabilitation and renewal. However, it is the local authorities that could accurately determine problems and necessities and implement projects in the local scale. In addition to the discarded framework for planned rehabilitation and renewal, existing laws are sometimes obstacles to reinvestment and rehabilitation.

5.2. Evaluation of Policy Options

There are a number of reasons and contexts to implement encouraging and promoting policies for reinvestments in housing. The first is the collective renewal projects. Collective renewal projects have some advantages in terms of scale economies, opportunity to intervene in residential and non residential functions and problems like traffic, infrastructure etc. In this respect collective renewal projects may be adopted to remove locational problems and to benefit from local opportunities.

Second one is the reinvestment related to gentrification process. Declined or declining areas, which are hardly possible to renew or rehabilitate with the existing mechanisms, can be rehabilitated by the help of policies to attract high income Hhs to these areas, in other words by promoting gentrification. In this

case displacement of original population, especially low-income Hhs, is faced and new possibilities for settlement have to be considered.

Third one can be defined as the suitable market conditions. From the supply point of view, changing technology, variety of construction materials and prices are the factors that support reinvestments. On the demand side, changing fashions, trends, and necessities have effects on reinvestments. Market conditions can be adopted as a tool to encourage reinvestments especially in the inferior stock that lacks amenities and comforts.

In Turkey, reinvestment and rehabilitation issues become a primary concern of planning in the context of 1999 earthquakes in Marmara Region. However, many other contexts and justifications of reinvestment and rehabilitation needs are mentioned in Chapter 1. Existence of earthquake vulnerabilities in most of the urban settlements in Turkey, in fact, creates opportunities to develop and implement reinvestment and rehabilitation policies. In addition to the reinvestment and rehabilitation policies for strengthening the existing housing stock to reduce seismic risks other aspects of policy for improving standards in living environments could be developed.

A comprehensive policy of reinvestment and rehabilitation in urban housing environments is a current necessity in Turkey. Objectives of policies are expected to cover the following issues:

1. Objectives of the housing policies can no longer be solely providing accommodation by new construction. The policies have to consider the reinvestments and rehabilitation to improve the standards in the existing housing stock and to provide safer living environments.
2. Determination of Hhs having problems of reinvesting in housing and to develop mechanisms to cope with these situations.
3. To facilitate reinvestments and rehabilitation in housing to ensure the survival of the existing housing stock.

4. To attract the interests of private sector investments in rehabilitation projects.
5. To encourage private firms, which can be specialized in the reinvestment and rehabilitation work.

The significant point for policies has to be prevention of the problems in the existing housing stock, rather than attempts to cure. It is a fact that both preventive and curative policies are necessary to achieve quality of life and safety in living environments. Preventive policies could cover the issue from the beginning of housing production. There must be some determined standards both for housing and its environments to obtain quality and safety. Once being produced housing areas could not be left to continuous deterioration and decline. There should be regulations to ensure repair and maintenance activities and to determine the types of activities. Municipalities could be involved in the process as the controllers of the state of housing and could intervene when necessary. Curative policies could facilitate reinvestments for problematic Hhs. These may cover construction material aid, technical advisory, aid in organization of rehabilitation work, tax exemptions, improvement of open spaces, implementation of pilot projects etc.

In this respect policy options for problematic Hhs and the stock may be as follows:

- **Low-Income Hhs**

Policies could aim to facilitate reinvestments of low-income Hhs. This aim may be achieved by construction material aid, technical advisory to help these groups to detect and undertake the necessary work on their own, aid in organization of rehabilitation work (project preparation for large-scale work) and in some cases direct monetary aid. However, direct monetary aid may encourage Hhs to disinvest in their housing, rising their expectations from publicly supplied aids. Thus, monetary aids have to be paid back and not be given as donations.

On the other hand, it may be argued that facilitating reinvestments may not be sufficient to guarantee the sustainability of repairs and maintenance of areas where concentrations of low-income Hhs in poor housing conditions exist. In this case a policy option may be ensuring reinvestments by attracting high-income Hhs' interests in the area, in other words supporting gentrification to some extent. In this process gentrification have to be controlled to avoid invasion of whole neighbourhood and totally displacement of local community.

- **Rental stock**

To ensure reinvestments in rental housing stock, policies could target both tenants and homeowners. If reinvestments are done by homeowners repairs and maintenance expenditures may be exempted from income tax of homeowners. In this case some measures have to be taken to protect tenants from speculative rent increases. On the other hand, if tenants undertake reinvestments, there may be some legal guarantee to ensure these Hhs to stay in that dwelling unit for a specified time period depending on the scale of their investments in the existing housing.

- **Over-occupied stock**

Problem of disinvestments in the over-occupied stock mainly depends on two issues. The first is the decreasing income level with increasing Hh size, thus one of the policy options in such cases may again to facilitate reinvestments by aids similar to low-income Hhs. The second is the higher rates of deterioration in crowded houses. In such cases to prevent or to slow down deterioration, a policy option may be to ensure more efficient utilisation of the housing stock. If the match of small houses with large Hhs and large houses with small Hhs may be prevented to some extent this may slow down the effects of deterioration.

- **Aged stock**

In case of concentrations of aged stock in neighbourhoods, a policy option could be intervention in neighbourhood scale within collective rehabilitation and/or renewal projects. Local authorities may improve open spaces and amenities in

such neighbourhood to encourage Hhs' reinvestments. Moreover, local authorities may specify types of investments to be undertaken to improve the standards of the existing housing areas. Reinvestments in the aged stock may be encouraged by the interventions in construction materials and component markets. Availability of comfort rising amenities in agreeable prices may encourage Hhs reinvestments.

- **Declining Neighbourhoods**

Local authorities may attract private investments in the area by implementing pilot projects. Again partial gentrification may be another policy option. Attracting investments in the area may change expectations of Hhs from that neighbourhood.

To achieve the objectives and to design policies a number of arrangements in legislations are required for a comprehensive policy and a framework for coordinated rehabilitation and renewal in urban environments. These arrangements can be summarized as follows:

- The concept of comprehensive reinvestment and rehabilitation has to be defined in the Development Law. As Balamir (2002) denotes, comprehensive rehabilitation and renewal projects must perceive the urban environment as an integrated unit consisting of physical environment, private and public ownerships, infrastructures and open spaces. Thus, Development Law's existing parcel based approach has to be modified first.
- Viewpoint of Development Law considering solely the external appearances and aesthetical harmony of the existing housing stock have to be modified (article 21). Determination of standards and rules with the purpose of sustaining resistance and soundness of the stock and improving environmental quality and safety in housing areas have to be adopted. A regulation concerning repairs and maintenance of the existing housing could be developed.

- Local authorities, especially municipalities are the most appropriate units to supervise the comprehensive reinvestment and rehabilitation projects. Thus, their role has to be defined in the Law of Municipalities. Municipalities can be the controllers of the physical state of the stock and could have the power for intervention to obtain structural soundness of the stock (modifications in the article 39 of Development Law).
- Municipalities could implement pilot projects to encourage Hhs' reinvestments and to form some encouraging examples for private sector investments (additions to the article 15 of Law of Municipalities). However, public sector should not undertake all of the responsibilities and financial liabilities, rather they should supervise and facilitate the process.
- Reinvestment and rehabilitation issues demand policy solutions, which must especially be sensitive to Hh groups who are most likely to suffer from disinvestments. To facilitate Hhs' reinvestments local authorities could offer construction material aid, technical advisory and aid in organization of rehabilitation work and encouragement of firms, which could specialize in rehabilitation and maintenance work (additions to the article 15 of Law of Municipalities).
- Comprehensive rehabilitation projects require partnerships between public and private bodies. Municipalities must be equipped with necessary authority to be involved in such partnerships with the purpose of implementing projects.
- Flat Ownership Law requires full consent in the article 19 and decision of majority in the article 42 for some types of repairs and modifications in the jointly-owned parts of the buildings. It is a fact that even in the case of small scale work, to obtain full consent or majority on decisions are difficult. Thus, to avoid the emergence of problems in the issues of collective reinvestment and rehabilitation, some special conditions have to be defined in the case of these types of projects.

5.3. Concluding Remarks

Since 1950s, Turkey has produced a sufficiently large pool of dwellings in a short span of time. However, production processes of urban housing stock took place without adequate supervision and guidance, thus usually resulted in the high-density poor quality environments. Moreover, contrary to the 'housing shortage' discourses there is an excess supply of housing accompanied by a decline in population growth rate. Thus, major problem of the coming decades is no longer solely increasing the quantities in housing production, but increasing the quality and safety of urban environments. Seismic safety of urban environments emerged as a necessity with the recent realization of earthquake vulnerabilities in Turkish cities. Thus, reinvestment and rehabilitation policies are current necessities of Turkey.

However, necessary tools for comprehensive reinvestment and rehabilitation policies are absent in Turkey. No specified policies exist to preserve the asset values of the existing housing and to prevent possible losses from the stock. Additionally existing laws are sometimes acting as obstacles for reinvestment and rehabilitation. Although the Hhs are the main actors of reinvestment, no mechanisms exists to encourage or supervise Hhs and to channel existing reinvestments in order to ensure the survival of the housing stock.

Understanding the factors affecting Hhs reinvestment decisions may create opportunities to direct the processes of reinvestments. Moreover, awareness of disinvestments emerging from Hh characteristics and characteristics of the dwelling and neighbourhood could be useful for developing preventive policies.

In order to develop and implement comprehensive reinvestment and rehabilitation projects, legal framework has to be reviewed and equipped with the necessary powers. Existence of the earthquake vulnerabilities may be considered as an opportunity to update planning legislations and other related legislations to accord with the objectives of comprehensive rehabilitation projects.

5.4. Avenues for Further Research

Rehabilitation and reinvestment issues are seldom discussed in the Turkish case. However, in near future the need for rehabilitation will increase. Housing supply policies are focused in the production of new dwelling units. However, rehabilitation of the existing housing stock can be considered as an alternative mechanism of housing production. From this point of view examination of types of rehabilitation work and the feasibility to undertake this work in Turkey's conditions could provide a contribution to the field.

With the knowledge of significance of Hhs' reinvestment decisions on the future of housing environments it is essential to obtain detailed information about the underlying factors of this process. Analysis developed in this study is limited with the inadequacy of the data, thus collection of information related to Hhs' reinvestment decision could be useful for planners and anyone dealing with housing policies. A sample survey is developed covering some specific points that are considered necessary for these types of analysis (See Appendix D). Significant points for such a survey may be the information on the level of investments, the method of finance, type and scale of the investments, Hhs perception of the inadequacies in their dwelling units, Hhs satisfaction from their dwelling units and neighbourhood.

To implement collective renewal and rehabilitation projects and to ensure the sustainability of quality and safety of urban environments new management models should be developed other than that defined in the Flat Ownership Law as apartment management.

Housing rehabilitation in distinct housing environments requires distinct types of tools and mechanisms. Perception of the problem as a local one with its own constraints and potentials is necessary to develop flexible frameworks and adaptable mechanisms. This could have great contributions to obtain safety and to increase the quality of life in Turkish cities.

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APPENDIX A

VALUES AND AMOUNTS OF REPAIR AND MAINTENANCE EXPENDITURES

Hanehalku tüketim harcaması değerleri, 1994

MADDE KODU	MADDE TANIMI	TÜRKİYE (TL)	KIR (TL)	KENT (TL)
03- KONUT		338 362 680 265 712	95 000 594 533 231	243 362 085 732 481
03.2 - KONUTUN TAMİR VE BAKIMI		24 696 289 933 768	6 795 480 866 520	18 899 809 267 238
03.2.1 - KONUT İÇİN TAMİR VE BAKIM MALZEMELERİ		10 696 366 422 448	4 668 824 404 020	6 026 542 018 428
0321000100	Cam	309 613 638 600	140 773 346 000	168 840 292 600
	<i>Her Türü Badana ve Boya Malzemeleri</i>	<i>2 622 926 327 578</i>	<i>663 674 444 500</i>	<i>1 659 250 883 078</i>
0321000201	H.T.B.veB.M.Yağlı Boya	627 738 108 000	124 979 448 000	402 768 660 000
0321000202	H.T.B.veB.M.Plastik Boya	1 338 446 968 790	316 609 047 000	1 021 937 921 790
0321000203	H.T.B.veB.M.Saten Boya	81 812 340 000	0	81 812 340 000
0321000204	H.T.B.veB.M.SentetikBo.	56 639 189 788	20 301 598 000	36 337 591 788
0321000206	H.T.B.veB.M.Kıraç	257 424 968 600	141 675 260 500	116 749 688 000
0321000206	H.T.B.veB.M.Soba Boya.	10 698 243 000	5 073 908 000	6 614 335 000
0321000207	H.T.B.veB.M.Toz Boya	19 238 621 500	9 902 827 000	9 336 194 500
0321000208	H.T.B.veB.M.Firngalar	67 536 791 600	18 320 066 000	49 216 736 600
0321000208	H.T.B.veB.M.Tiner	34 178 779 500	7 016 284 000	27 162 495 500
0321000210	H.T.B.veB.M.DüzÇapheB.	18 456 000 000	0	18 456 000 000
0321000211	H.T.B.veB.M.Astar Boya	14 213 680 000	0	14 213 680 000
0321000212	H.T.B.veB.M.Anti Pas Bo.	866 410 000	236 700 000	627 710 000
0321000213	H.T.B.veB.M.Tutkal	3 776 612 000	2 166 200 000	1 621 412 000
0321000239	H.T.B.veB.M.Diğer	112 908 415 000	17 500 297 000	95 408 118 000
	<i>Yer ve Duvar Döğemeleri</i>	<i>2 396 834 636 600</i>	<i>619 626 595 000</i>	<i>1 676 108 041 600</i>
0321000301	Yer ve Duv.Döğ. Parke	349 868 650 000	0	349 868 650 000
0321000302	Yer ve Duv.Döğ.K.bodur	466 242 429 000	139 701 660 000	328 540 869 000
0321000303	Yer ve Duv.Döğ.Seramik	48 721 956 000	41 517 955 000	6 904 000 000
0321000304	Yer ve Duv.Döğ.Fayans	267 168 232 600	192 054 060 000	85 114 182 600
0321000306	Duvar Döğemeleri Kağıt	247 186 626 000	2 839 800 000	244 346 826 000
0321000306	Yer ve D.Döğ.Karo Moz.	10 132 260 000	0	10 132 260 000
0321000307	Yer ve D.Döğ.Karo Fay.	73 166 260 000	18 966 760 000	54 199 500 000
0321000308	Yer ve D.Döğ. Mermer	223 412 666 000	98 624 400 000	124 788 266 000
0321000309	Yer ve Duvar Döğ.Marley	20 772 920 000	0	20 772 920 000
0321000399	Yer ve Duvar Döğ. Diğer	696 963 420 000	26 423 070 000	671 540 350 000
0321000400	Alafranga Ücreti	87 039 360 000	46 016 210 000	41 021 170 000
0321000500	Lavabo Ücreti	100 527 430 000	30 906 720 000	69 620 710 000
0321000600	Küvet Ücreti	46 466 400 000	24 463 000 000	24 012 400 000
0321000700	Sihhi Tes.Bor.Alım Ücreti	293 392 168 620	215 616 510 620	67 776 648 000
0321000800	Saman Al.Ü. (Karşıç Ev.)	86 468 000	0	86 468 000
0321000900	Karosta Alım Ücreti	276 622 396 000	231 671 400 000	43 960 996 000
0321001000	Kum Alım Ücreti	440 684 969 000	358 776 760 000	62 105 639 000
0321001100	Çakıl Alım Ücreti	86 449 192 000	80 664 662 000	4 564 340 000
0321001200	Tağ Alım Ücreti	93 321 990 000	69 703 000 000	3 618 990 000
0321001300	Çimento Alım Ücreti	1 393 688 490 100	1 040 740 221 500	362 948 268 600
0321001400	Tuğla Alım Ücreti	167 319 711 260	92 661 790 000	74 667 921 260
0321001500	Alçı Alım Ücreti	22 128 752 500	7 794 533 000	14 334 219 500
0321001600	Balkon Panjuru	14 683 600 000	0	14 683 600 000
0321001700	Musluk (Tek)	349 198 498 000	123 778 924 000	225 419 574 000
0321001800	Kilit	63 311 063 000	26 266 072 000	36 944 991 000
0321001900	Tuvalat Taşı	12 091 970 000	3 633 260 000	8 258 770 000
0321002000	Silikon Çatı İçin İzolit	2 869 300 000	2 869 300 000	0
0321002100	Birliket	93 732 676 000	66 469 400 000	28 273 276 000
0321002200	Gönel Ener.için Gün Isısı	43 402 980 000	0	43 402 980 000
0321002300	Mutfak İç.Mermer Tezgahı	16 811 200 000	0	16 811 200 000
0321002400	Kapı Zili	5 248 330 000	2 328 800 000	2 919 530 000
0321002500	Macun	12 662 392 500	4 037 760 000	8 624 642 500
0321002600	Kapı Tokmağı	1 267 666 000	961 660 000	306 016 000
0321002700	Pen.iz.Ban.M.Su Vana.ve	1 449 949 686 000	669 176 411 500	790 773 173 500
0321002800	Duğ (Her Çeşit)	3 284 614 000	1 648 014 000	1 636 600 000
	<i>Kapı Satın Alma</i>	<i>144 701 600 000</i>	<i>92 820 300 000</i>	<i>51 881 300 000</i>
0321002901	Kapı Satın Alma Ahşap	128 943 600 000	92 820 300 000	36 123 300 000
0321002902	Kapı Satın Alma Çelik	15 758 000 000	0	15 758 000 000
0321003000	Kapı, Pencere Montajı	14 749 941 000	4 601 900 000	10 148 041 000
0321003100	Pencere Ahşap	52 126 990 000	37 189 900 000	14 943 490 000
0321003200	Pencere Korkuluğu	83 200 628 000	26 416 000 000	56 786 628 000
0321003300	Su Saati	86 994 940 000	75 261 810 000	11 743 130 000

Hanehalkı tüketim harcaması değerleri, 1994

MADDE KODU	MADDE TANIMI	TÜRKİYE (TL)	KIR (TL)	KENT (TL)
03.2.2-KONUT İÇİN DÜZENLİ TAMİR VE BAKIM HİZMETLERİ		13 999 923 511 310	1 126 656 262 500	12 873 267 248 810
	Badanacı ve Boyacı Ücreti	3 524 559 126 120	151 240 280 000	3 373 318 846 120
0322000101	Ba.ve Bo.Ücreti Yağlı Bo.	2 792 290 940 000	14 856 240 000	2 777 434 700 000
0322000102	Ba.ve Bo.Üc.Plastik Bo.	257 894 494 120	67 608 750 000	190 285 744 120
0322000103	Ba.ve Bo.Üc.Kireç Bada.	103 802 560 000	22 124 840 000	81 677 720 000
0322000104	Ba.ve Bo.Üc.Sentetik Bo.	6 424 000 000	0	6 424 000 000
0322000199	Ba. ve Bo. Ücreti Diğer	364 147 132 000	46 650 450 000	317 496 682 000
0322000200	Kapıcı Ücreti	920 862 497 000	132 328 000	920 730 169 000
0322000300	Dam Aktarma Ücreti	87 584 385 000	33 686 260 000	53 898 125 000
0322000400	Musluk Tamiri	73 394 379 000	13 264 790 000	60 129 589 000
0322000500	Elektrik Tamiri	156 284 498 000	14 214 169 000	142 070 329 000
0322000600	Kalorifer Tamiri	2 837 527 875 000	4 488 600 000	2 833 039 275 000
0322000700	Bahçe Kazdırma	62 698 400 000	30 780 700 000	31 917 700 000
0322000800	Müt.M.(O.mat ,Bak.İş.Ma.)	3 047 409 026 470	23 649 880 500	3 023 759 145 970
0322000900	Cam Taktırma Ücreti	106 813 011 000	31 968 960 000	74 844 031 000
0322001400	Su Saati Tamir Ücreti	45 167 714 000	32 123 140 000	13 044 574 000
0322001500	Anahtar Yaptırma Ücreti	12 213 759 000	5 289 960 000	6 923 799 000
0322001600	Kapı Taktırma Ücreti .	4 067 400 000	0	4 067 400 000
0322001700	Duv.Çatı vb.Tam.İç.İş.Ücr	538 614 220 000	88 804 970 000	449 809 250 000
0322001800	El.ve Su Tes.Döşe.Ücreti	144 203 950 000	28 459 570 000	115 744 380 000
0322001900	Kapı Kilidi Actırma Ücreti	2 438 523 270 720	668 552 635 000	1 769 970 635 720

Hanehalkı tüketim harcaması miktarları, 1994

MADDE KODU	MADDE TANIMI	ÖLÇÜ BİRİM KODU	ÖLÇÜ BİRİMİ	TÜRKİYE	KIR	KENT
03- KONUT						
03.2 - KONUTUN TAMİR VE BAKIMI						
03.2.1 - KONUT İÇİN TAMİR VE BAKIM MALZEMELERİ						
0321000100	Cam	22	Metrekare	4 161 966	2 795 884	1 366 083
Her Türü Badana ve Boya Malzemeleri						
0321000201	H.T.B.veB.M.Yağlı Boya	15	Kilogram	5 429 591	1 134 960	4 294 631
0321000202	H.T.B.veB.M.Plastik Boya	15	Kilogram	17 211 811	3 864 280	13 347 531
0321000203	H.T.B.veB.M.Satan Boya	15	Kilogram	478 759	0	478 759
0321000204	H.T.B.veB.M.SentetikBo.	15	Kilogram	868 602	245 197	413 405
0321000205	H.T.B.veB.M.Kireç	15	Kilogram	78 212 683	46 652 529	29 560 155
0321000206	H.T.B.veB.M.Soba Boya.	15	Kilogram	103 856	62 698	41 258
0321000207	H.T.B.veB.M.Toz Boya	16	Kilogram	498 814	285 812	213 002
0321000208	H.T.B.veB.M.Fırgalar	1	Adet	1 783 550	443 404	1 340 146
0321000209	H.T.B.veB.M.Tiner	15	Kilogram	941 844	162 659	779 186
0321000210	H.T.B.veB.M.DüzCepheB.	15	Kilogram	179 762	0	179 762
0321000211	H.T.B.veB.M.Astar Boya	15	Kilogram	164 521	0	164 521
0321000212	H.T.B.veB.M.Anti Pas Bo.	15	Kilogram	9 816	3 410	6 406
0321000213	H.T.B.veB.M.Tutkal	15	Kilogram	38 028	14 368	21 660
0321000299	H.T.B.veB.M.Diğer	1	Adet	150 274	15 604	134 770
		16	Kilogram	1 749 143	488 424	1 260 719
Yer ve Duvar Döşemeleri						
0321000301	Yer ve Duv.Döğ. Parke	22	Metrekare	1 319 928	0	1 319 928
0321000302	Yer ve Duv.Döğ.K.bodur	22	Metrekare	1 979 124	812 708	1 166 416
0321000303	Yer ve Duv.Döğ.Seramik	22	Metrekare	501 045	462 489	38 556
0321000304	Yer ve Duv.Döğ. Fayana	1	Adet	479 986	0	479 986
		22	Metrekare	1 335 194	965 081	370 113
0321000305	Duvar Döşemeleri Kağıt	22	Metrekare	11 157 204	397 572	10 759 632
0321000306	Yer ve D.Döğ.Kara Moz.	22	Metrekare	199 693	0	199 693
0321000307	Yer ve D.Döğ.Kara Fay.	22	Metrekare	2 867 987	43 104	2 824 783
0321000308	Yer ve D.Döğ. Mermer	22	Metrekare	4 357 839	110 984	4 246 855
0321000309	Yer ve Duvar Döğ.Marfey	22	Metrekare	787 526	0	787 526
0321000399	Yer ve Duvar Döğ. Diğer	7	Defa	17 447	16 007	1 440
		22	Metrekare	3 886 850	412 491	3 474 370
0321000400	Alefranga Ücreti	1	Adet	65 520	35 947	29 573
0321000500	Lavabo Ücreti .	1	Adet	183 260	83 851	99 409
0321000600	Követ Ücreti .	1	Adet	41 730	8 151	33 579
0321000700	Sihhi Tes. Bor. Alım Ücreti	21	Metre	8 736 571	7 044 886	1 691 705
0321000800	Saman Al.Üc.(Kerpiç Ev.)	16	Kilogram	47 022	0	47 022
0321000900	Keresite Alım Ücreti	22	Metrekare	1 876 044	670 079	1 205 965
		23	Metreküp	607	0	607
0321001000	Kum Alım Ücreti	30	Ton	1 033 263	810 484	222 789
0321001100	Çakıl Alım Ücreti	30	Ton	191 532	154 252	37 279
0321001200	Tağ Alım Ücreti	30	Ton	320 734	313 817	6 916
0321001300	Çimento Alım Ücreti	30	Ton	60 166 722	56 881 098	3 285 624
0321001400	Tuğla Alım Ücreti	1	Adet	61 600 352	30 245 842	31 354 510
0321001500	Alçı Alım Ücreti	15	Kilogram	952 881	85 917	866 964
		32	Tarba	519 090	300 532	318 558
0321001600	Balkon Panjuru	1	Adet	2 259	0	2 259
0321001700	Musluk (Tek)	1	Adet	2 981 147	1 302 046	1 679 101
0321001800	İçli	1	Adet	1 052 401	367 360	685 051
0321001900	Tuvalet Tağı	1	Adet	25 032	5 476	22 556
0321002000	Silikon Çatı İçin İzolit	21	Metre	381 240	381 240	0
0321002100	Biriket	1	Adet	16 045 990	11 303 680	4 742 310
0321002200	Güneş Ener. için Gün Isısı	1	Adet	13 721	0	13 721
0321002300	Mutfak İç. Mermer Tezgahı	21	Metre	14 566	0	14 566
0321002400	Kapı Zili	1	Adet	48 886	18 597	30 288
0321002500	Mecun	15	Kilogram	320 786	148 456	172 330
0321002600	Kapı Tokmağı	1	Adet	34 860	19 039	15 821
0321002700	Pen.iz. Ban.M.Su Vana.ve	1	Adet	34 963 037	23 858 301	11 104 736
		15	Kilogram	21 171 158	15 686 690	5 484 468
		21	Metre	2 865 059	1 478 995	1 386 064
		30	Ton	59 694	57 210	2 484
0321002800	Duş (Her Çeşit)	1	Adet	17 454	10 050	7 404
Kapı Satın Alma						
0321002901	Kapı Satın Alma Ahşap	1	Adet	98 612	65 906	32 706
0321002902	Kapı Satın Alma Çelik	1	Adet	7 165	0	7 165
0321003000	Kapı, Pencere Montajı	1	Adet	484 426	185 934	298 491
0321003100	Pencere Ahşap	1	Adet	47 781	8 263	39 518
0321003200	Pencere Korkuluğu	21	Metre	137 664	7 044	130 620
0321003300	Su Seati	1	Adet	186 046	155 796	30 260
03.2.2-KONUT İÇİN DÜZENLİ TAMİR VE BAKIM HİZMETLERİ						
Badanacı ve Boyacı Ücreti						
0322000101	Ba.ve Bo.Ücreti Yağlı Bo.	22	Metrekare	22 444 996	723 816	21 721 180
0322000102	Ba.ve Bo.Üc.Plastik Bo.	22	Metrekare	18 856 421	5 918 180	12 938 241
0322000103	Ba.ve Bo.Üc.Kireç Bada.	22	Metrekare	8 115 684	2 466 414	5 650 270
0322000104	Ba.ve Bo.Üc.Sentetik Bo.	22	Metrekare	87 896	0	87 896
0322000199	Ba. ve Bo. Ücreti Diğer	22	Metrekare	6 487 163	1 047 280	5 439 883
0322000200	Kapıcı Ücreti	2	Aylık	5 918 866	4 726	5 914 139
0322000300	Dam Akıtma Ücreti	7	Defa	183 851	92 643	91 208
0322000400	Musluk Tamiri	7	Defa	591 740	128 869	462 871
0322000500	Elektrik Tamiri	7	Defa	556 856	137 037	419 819
0322000600	Kalenfer Tamiri	7	Defa	261 259	7 481	253 778
0322000700	Bahçe Kazdırma	7	Defa	61 777	19 660	41 927
0322000800	Müt.M.(O.mat. Bak.İg.Ma.)	2	Aylık	8 876 034	119 362	8 756 672
0322000900	Cam Taktırma Ücreti	7	Defa	591 996	100 734	491 261
0322001400	Su Saati Tamir Ücreti	7	Defa	208 088	153 128	54 960
0322001600	Anahtar Yapıtırma Ücreti	1	Adet	414 243	63 709	350 534
0322001600	Kapı Taktırma Ücreti	7	Defa	14 159	0	14 159
0322001700	Duv.Çati vb.Tam.İç.İg.Ücr	7	Defa	842 284	179 866	462 328
0322001800	El.ve Su Tes. Döğ. Ücreti	7	Defa	71 506	52 051	19 455
0322001900	Kapı Kilitli Açıtırma Ücreti	1	Adet	697 895	267 267	430 628
		7	Defa	3 329 627	1 417 884	1 911 743
		99	Diğer	207 394	32 380	175 014
		99	Diğer	1 614 830	660 300	1 054 530
		99	Diğer	324	324	0

APPENDIX B

COMPLEMENTARY CROSS TABULATION TABLES AND GRAPHICS

Table B.1 Hh Income and RM Expenditures According to 10% Income Quintiles

Income Quintiles	Number of Hhs	Average Income (000 TL) (1)	Average Expenditure (000 TL) (2)	E/I (000) (2/1)
1. 10 %	329	3 606	310	86
2. 10 %	330	5 784	469	81
3. 10 %	330	7 416	494	67
4. 10 %	330	9 072	395	43
5. 10 %	330	10 822	592	55
6. 10 %	330	12 757	499	39
7. 10 %	330	15 206	626	41
8. 10 %	330	18 699	931	50
9. 10 %	330	24 640	1 310	53
10. 10 %	329	44 702	1 537	34
Total	3 298	15 265	716	47

Table B.2 Average RM Expenditures According to 10% Income Quintiles and Ownership Status

Average RM Expenditures (000 TL)	Income Quintiles										Total
	1. 10 %	2. 10 %	3. 10 %	4. 10 %	5. 10 %	6. 10 %	7. 10 %	8. 10 %	9. 10 %	10. 10 %	
Owner-occupiers	412	606	529	504	787	608	572	1077	1703	1887	895
Tenants	177	277	427	198	340	237	400	501	296	845	353
Public Accommod. & Other	238	221	549	242	205	452	1224	1021	721	566	584
Total	310	469	494	395	592	499	626	931	1310	1537	716

Table B.3 Average Income and RM Expenditures for Owneroccupiers' 10% Income Quintiles

Income Quintiles for Owneroccupiers	Number of Hhs	Average Income (000 TL)	Average Expenditure (000 TL)
1. 10 %	207	3889	391
2. 10 %	207	5996	680
3. 10 %	207	7767	440
4. 10 %	207	9556	578
5. 10 %	207	11370	766
6. 10 %	207	13392	585
7. 10 %	207	15982	798
8. 10 %	207	19580	951
9. 10 %	207	25832	1840
10. 10 %	208	46728	1916
Total	2071	16024	895

Table B.4 Average Income and RM Expenditures for Tenants' 10% Income Quintiles

Income Quintiles for Tenants	Number of Hhs	Average Income (000 TL)	Average Expenditure (000 TL)
1. 10 %	90	3063	206
2. 10 %	90	5096	214
3. 10 %	90	6654	237
4. 10 %	91	7943	491
5. 10 %	90	9354	189
6. 10 %	90	10912	356
7. 10 %	91	12976	247
8. 10 %	90	16089	401
9. 10 %	90	21056	433
10. 10 %	90	41089	753
Total	902	13417	353

Table B.5 Average RM Expenditures According to 10% Income Quintiles and Age of Hh Head

Average RM Expenditures (000 TL)	Income Quintiles										Total
	1. 10 %	2. 10 %	3. 10 %	4. 10 %	5. 10 %	6. 10 %	7. 10 %	8. 10 %	9. 10 %	10. 10 %	
15-24	216	386	101	97	175	820	203	392	6584	3403	969
25-34	383	425	849	315	514	301	1067	1412	459	641	603
35-44	308	534	305	464	526	308	654	663	765	1517	625
45-54	197	461	577	269	907	712	363	861	2567	1288	892
55-64	257	446	458	391	452	1072	525	635	1248	3151	822
65-74	399	550	217	513	734	234	367	2187	556	1231	669
75-84	284	218	317	1536	350	445	125	164	496	1610	723
85 +		500		5						1550	1118
Total	310	469	494	395	592	499	626	931	1310	1537	716

Table B.6 Average RM Expenditures for Owner-occupiers According to 10% Income Quintiles and Age of Hh Head

Average RM Expenditures (000 TL)	Income Quintiles										Total
	1. 10 %	2. 10 %	3. 10 %	4. 10 %	5. 10 %	6. 10 %	7. 10 %	8. 10 %	9. 10 %	10. 10 %	
15-24	378	811	68	105	359	2800	275	392	11365	8180	2046
25-34	735	764	1100	436	1049	402	339	1515	715	689	791
35-44	530	655	200	635	685	304	881	945	1042	1759	823
45-54	222	575	754	327	1128	792	393	943	3038	1534	1034
55-64	234	468	506	413	418	1050	532	687	1292	3967	886
65-74	465	574	237	552	751	255	406	2433	589	1231	731
75-84	409	335	317	2118	350	445	125	207	496	1610	855
85 +		500		5						1550	1118
Total	412	606	529	504	787	608	572	1077	1703	1887	895

Table B.7 Average RM Expenditures for Tenants According to 10% Income Quintiles and Age of Hh Head

Average RM Expenditures (000 TL)	Income Quintiles										Total
	1. 10 %	2. 10 %	3. 10 %	4. 10 %	5. 10 %	6. 10 %	7. 10 %	8. 10 %	9. 10 %	10. 10 %	
15-24	120	158	134	84	124	25	60		25	1050	143
25-34	219	212	807	202	225	253	715	795	146	621	390
35-44	144	444	253	238	441	283	248	240	395	1398	375
45-54	115	104	178	57	355	110	168	710	195	589	299
55-64	254	93	187	343	1210	156	444	128	878	382	320
65-74	43	446	150	100		55	20	80			172
75-84	35	100		60				35			53
Total	177	277	427	198	340	237	400	501	296	845	353

Table B.8 Percentage Distribution of Age of Hh Head According to Hh Size

% Distribution of Hhs	Hh Size								Total
	1	2	3	4	5	6	7	8 +	
15-24	1.3	18.7	30.7	21.3	12.0	5.3	2.7	8.0	100.0
25-34	1.8	8.0	29.8	32.6	15.2	5.7	2.5	4.4	100.0
35-44	.6	3.2	13.4	37.1	24.9	12.0	4.2	4.6	100.0
45-54	2.1	9.3	20.4	27.8	19.2	9.8	5.3	6.2	100.0
55-64	5.2	25.7	22.8	19.6	9.2	8.4	3.8	5.4	100.0
65-74	10.5	43.2	18.6	11.4	7.7	4.1	1.4	3.2	100.0
75-84	13.9	55.6	25.0		5.6				100.0
85 +			33.3	16.7	33.3			16.7	100.0
Total	2.7	12.6	20.9	29.0	17.5	8.7	3.7	4.9	100.0

Table B.9 Percentage Distribution of Ownership Status According to Hh Size

Hh Size	Owner-occupiers (%)	Tenants (%)	Public Accom. & Other (%)	Total (%)
1	67	26	7	100
2	73	21	7	100
3	57	32	11	100
4	54	31	14	100
5	65	28	7	100
6	69	22	9	100
7	76	16	7	100
8 +	80	18	2	100
Total	63	27	10	100

Table B.10 Average RM Expenditures According to 10% Income Quintiles and Hh Size

Average RM Expenditures (000 TL)	Income Quintiles										Total
	1. 10 %	2. 10 %	3. 10 %	4. 10 %	5. 10 %	6. 10 %	7. 10 %	8. 10 %	9. 10 %	10. 10 %	
Hh Size											
1	637	284	198	491	568	212	1140	193	3174	1453	740
2	241	424	651	683	247	512	403	691	607	1183	547
3	177	734	430	205	637	863	928	867	928	2214	841
4	235	303	586	311	374	355	593	1111	599	985	579
5	285	402	532	365	773	490	441	1065	3751	1617	916
6	784	723	370	320	517	378	795	480	2035	1012	694
7	162	192	331	986	314	306	288	635	1227	4314	800
8+	349	91	258	290	1776	457	386	999	311	1758	678
Total	310	469	494	395	592	499	626	931	1310	1537	716

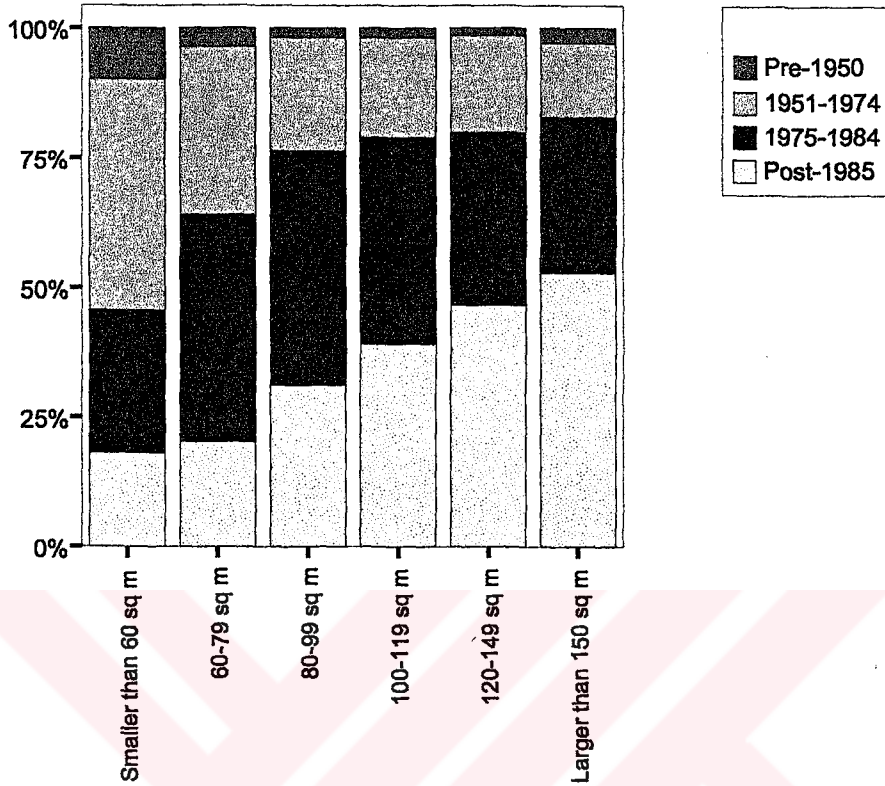
Table B.11 Average RM Expenditures According to Hh Size and Ownership Status

Average RM Expenditures (000 TL)	Owner-occupiers	Tenants	Public Accom. & Other	Total
1	551	501	3550	740
2	651	252	312	547
3	1114	310	968	841
4	745	395	350	579
5	1198	365	499	916
6	808	379	600	694
7	963	220	408	800
8+	762	392	37	678
Total	895	353	584	716

Table B.12 Average RM Expenditures According to 10% Income Quintiles and Age of the Building

Average RM Expenditures (000 TL)	Income Quintiles										Total
	1. 10 %	2. 10 %	3. 10 %	4. 10 %	5. 10 %	6. 10 %	7. 10 %	8. 10 %	9. 10 %	10. 10 %	
Age of the Building											
Pre-1950	306	128	463	54	516	127	328	203	4627	1054	590
1951-1974	288	572	515	486	477	704	983	1016	893	1442	729
1975-1984	211	466	550	368	737	481	549	998	912	1692	667
Post-1985	522	408	407	405	485	431	479	839	1793	1491	773
Total	310	469	494	395	592	499	626	931	1310	1537	716

Age of the Building * Size of the Dwelling Crosstabulation



Graph B.1: Percentage Distribution of Size of Dwelling According to Age of the Building

Table B.13 Average RM Expenditures According to 10% Income Quintiles and Neighbourhood Characteristics

Average RM Expenditures (000 TL)	Income Quintiles										Total
	1. 10 %	2. 10 %	3. 10 %	4. 10 %	5. 10 %	6. 10 %	7. 10 %	8. 10 %	9. 10 %	10. 10 %	
Developed	333	405	584	388	537	395	382	816	1074	1499	706
Undeveloped	271	423	418	396	713	697	1170	1217	1927	1447	704
Squatter	620	1235	352	448	49	413	354	734	5133	5148	1021
Total	311	470	497	395	592	500	626	931	1314	1535	716

Table B.14 Average Dwelling Size According to Hh Size

Hh Size	Average Dwelling Size (sq m)
1	94.62
2	98.24
3	101.38
4	98.71
5	95.81
6	98.18
7	98.48
8 +	99.79
Total	98.59

APPENDIX C

SPSS OUTPUT OF ASSOCIATION ANALYSIS

Table C.1 Hh Income and RM Expenditures -Directional Measures

Ordinal by Ordinal		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
	Somers' d	Symmetric	.185	.012	14.944
	10% RM Dependent	.185	.012	14.944	.000
	10% income Dependent	.185	.012	14.944	.000

a Not assuming the null hypothesis.

b Using the asymptotic standard error assuming the null hypothesis.

Table C.2 Hh Income and RM Expenditures -Symmetric Measures

(10% income and 10% expenditure)		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	.185	.012	14.944	.000
	Kendall's tau-c	.185	.012	14.944	.000
	Gamma	.205	.014	14.944	.000
N of Valid Cases		3298			

a Not assuming the null hypothesis.

b Using the asymptotic standard error assuming the null hypothesis.

Table C.3 Ownership Status and RM Expenditures -Directional Measures

Nominal by Nominal			Value	Asymp. Std. Error	Approx. T	Approx. Sig.
	Lambda	Symmetric	.025	.007	3.771	.000
		10% RM Dependent	.035	.009	3.771	.000
		Ownership Status Dependent	.000	.000	.	.
	Goodman and Kruskal tau	10% RM Dependent	.005	.001		.000
		Ownership Status Dependent	.028	.005		.000
	Uncertainty Coefficient	Symmetric	.014	.002	6.180	.000
		10% RM Dependent	.010	.002	6.180	.000
		Ownership Status Dependent	.025	.004	6.180	.000

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.
- c Cannot be computed because the asymptotic standard error equals zero.
- d Based on chi-square approximation
- e Likelihood ratio chi-square probability.

Table C.4 Ownership Status and RM Expenditures -Symmetric Measures

(Ownership status and 10% RM expenditur)		Value	Approx. Sig.
Nominal by Nominal	Cramer's V	.147	.000
	Contingency Coefficient	.203	.000
N of Valid Cases		3298	

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.

Table C.5 Age of Hh Head and RM Expenditures -Directional Measures

			Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Somers' d	Symmetric	.061	.013	4.535	.000
		Age of Hh Head Dependent	.057	.013	4.535	.000
		10% RM Dependent	.066	.014	4.535	.000
Nominal by Interval	Eta	Age of Hh Head Dependent	.084			
		10% RM Dependent	.084			

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.

Table C.6 Age of Hh Head and RM Expenditures - Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	.061	.013	4.535	.000
	Kendall's tau-c	.058	.013	4.535	.000
	Gamma	.073	.016	4.535	.000
N of Valid Cases		3298			

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.

Table C.7 Hh Size and RM Expenditures - Directional Measures

			Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Somers' d	Symmetric	-.034	.013	-2.534	.011
		Hh Size Dependent	-.032	.013	-2.534	.011
		10% RM Dependent	-.035	.014	-2.534	.011

a Not assuming the null hypothesis.

b Using the asymptotic standard error assuming the null hypothesis.

Table C.8 Hh Size and RM Expenditures - Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	-.034	.013	-2.534	.011
	Kendall's tau-c	-.033	.013	-2.534	.011
	Gamma	-.039	.016	-2.534	.011
N of Valid Cases		3298			

a Not assuming the null hypothesis.

b Using the asymptotic standard error assuming the null hypothesis.

Table C.9 Age of the Building and RM Expenditures – Directional Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.	
Nominal by Nominal	Lambda	Symmetric	.017	.007	2.439	.015
		Age of Building Dependent	.011	.008	1.392	.164
		10% RM Dependent	.022	.009	2.381	.017
	Goodman and Kruskal tau	Age of Building Dependent	.005	.002		.002
		10% RM Dependent	.002	.000		.006
	Uncertainty Coefficient	Symmetric	.004	.001	3.540	.005
		Age of Building Dependent	.006	.002	3.540	.005
		10% RM Dependent	.003	.001	3.540	.005

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.
- c Based on chi-square approximation
- d Likelihood ratio chi-square probability.

Table C.10 Age of the Building and RM Expenditures – Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal			
	Cramer's V	.071	.006
	Contingency Coefficient	.121	.006
N of Valid Cases		3298	

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.

Table C.11 Size of the Building and RM Expenditures – Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	.093	.013	6.885	.000
	Kendall's tau-c	.092	.013	6.885	.000
	Gamma	.113	.016	6.885	.000
	Spearman Correlation	.119	.017	6.888	.000
Interval by Interval	Pearson's R	.126	.017	7.308	.000
N of Valid Cases		3298			

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.
- c Based on normal approximation.

Table C.12 Type of the Dwelling and RM Expenditures – Directional Measures

Nominal by Nominal			Value	Asymp. Std. Error	Approx. T	Approx. Sig.
	Lambda	Symmetric	.019	.006	3.258	.001
		Type of Dwelling Dependent	.000	.000	.	.
		10% RM Dependent	.028	.008	3.258	.001
	Goodman and Kruskal tau	Type of Dwelling Dependent	.012	.003		.000
		10% RM Dependent	.004	.001		.000
	Uncertainty Coefficient	Symmetric	.010	.002	5.528	.000
		Type of Dwelling Dependent	.016	.003	5.528	.000
		10% RM Dependent	.007	.001	5.528	.000

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.
- c Cannot be computed because the asymptotic standard error equals zero.
- d Based on chi-square approximation
- e Likelihood ratio chi-square probability.

Table C.13 Type of the Dwelling and RM Expenditures – Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.185	.000
	Cramer's V	.070	.000
	Contingency Coefficient	.181	.000
N of Valid Cases		3298	

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.

Table C.14 Neighbourhood Characteristics and RM Expenditures – Directional Measures

			Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.016	.006	2.487	.013
		Neighbour. Chr. Dependent	.000	.000	.	.
		10% RM Dependent	.023	.009	2.487	.013
	Goodman and Kruskal tau	Neighbour. Chr. Dependent	.011	.003		.000
		10% RM Dependent	.002	.001		.000
	Uncertainty Coefficient	Symmetric	.006	.001	3.803	.000
		Neighbour. Chr. Dependent	.011	.003	3.803	.000
		10% RM Dependent	.004	.001	3.803	.000

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.
- c Cannot be computed because the asymptotic standard error equals zero.
- d Based on chi-square approximation
- e Likelihood ratio chi-square probability.

Table C.15 Neighbourhood Characteristics and RM Expenditures – Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.133	.000
	Cramer's V	.094	.000
	Contingency Coefficient	.132	.000
N of Valid Cases		3288	

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.

Table C.16 Size of the Dwelling and Hh Income – Directional Measures

			Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	.040	.005	7.386	.000
		Size of Dwelling Dependent	.010	.006	1.579	.114
		10% income Dependent	.062	.007	9.226	.000
	Goodman and Kruskal tau	Size of Dwelling Dependent	.022	.002		.000
		10% income Dependent	.016	.002		.000
	Uncertainty Coefficient	Symmetric	.036	.003	10.895	.000
		Size of Dwelling Dependent	.045	.004	10.895	.000
		10% income Dependent	.030	.003	10.895	.000
Ordinal by Ordinal	Somers' d	Symmetric	.252	.013	19.306	.000
		Size of Dwelling Dependent	.231	.012	19.306	.000
		10% income Dependent	.277	.014	19.306	.000
Nominal by Interval	Eta	Size of Dwelling Dependent	.336			
		10% income Dependent	.333			

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.
- c Based on chi-square approximation
- d Likelihood ratio chi-square probability.

Table C.17 Size of the Dwelling and Hh Income – Symmetric Measures

		Value	Asymp. Std. Error	Approx. T	Approx. Sig.
Nominal by Nominal	Phi	.385			.000
	Cramer's V	.172			.000
	Contingency Coefficient	.359			.000
Ordinal by Ordinal	Kendall's tau-b	.253	.013	19.306	.000
	Kendall's tau-c	.249	.013	19.306	.000
	Gamma	.306	.015	19.306	.000
N of Valid Cases		3298			

- a Not assuming the null hypothesis.
- b Using the asymptotic standard error assuming the null hypothesis.



APPENDIX D

SAMPLE SURVEY OF HOUSEHOLDS' REINVESTMENT DECISIONS IN HOUSING

1. Son bir yıl içerisinde konutun tamir ve bakımı için harcama yaptıysanız;

(a) Yapılan harcamanın yaklaşık toplamı aşağıdaki dilimlerden hangisine girmektedir?

500 milyon TL'den az 1	500 milyon – 1 milyar TL 2	1-5 milyar TL 3	5-10 milyar TL 4	10 milyar TL'den fazla 5
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(b) Tamir ve bakım harcamasının finansmanı nasıl sağlandı?

Birikimlerimizi kullandık 1	Yakın arkadaş / akrabalarından borç aldık 2	Kredi aldık 3	Aylık kazancımızdan karşıladık 4	Diğer 5
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(c) Yapılan harcamanın ödeme koşulları aşağıdaki kategorilerden hangisine dahildir?

Nakit /visa ile peşin 1	Kredi kartına taksit 2	Ön ödeme ve taksit 3	Taksit 4	Diğer 5
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(d) Yapılan harcamanın ödeme süresi aşağıdaki aralıklardan hangisine girmektedir?

4 aydan az 1	4-6 ay 2	6-8 ay 3	8-12 ay 4	12 aydan fazla 5
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2. Konutun tamir ve bakımı için harcama yaptıysanız;

(a) Yapılan işi ağırlıklı olarak nasıl tanımlarsınız?

Dekorasyon amaçlı 1	Alt yapı / tesisata yönelik 2	Mekan genişletme amaçlı 3	Plan değişikliği 4	Güvenlik amaçlı 5	Diğer 6
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(b) Yapılan işin türü aşağıdaki kategorilerden hangisine girmektedir?
(Birden fazla kutu işaretlenebilir.)

Olağan bakım onarım 1	Tesisat yenileme (su veya elektrik) 2	Daireye ait ısıtma sisteminde yenileme 3	Duvar yıkımı / eklenmesi 4
Mutfak yenilemesi 5	Banyo yenilemesi 6	Boya / badana / duvar kaplama 7	Kartonpiyer 8
Depreme karşı sağlamlaştırma 9	Zemin kaplamasında yenileme (halı, parke, seramik vb.) 10	Kapı / pencere yenilemesi (doğrama değişikliği) 11	Güvenlik önlemleri (çelik kapı, hırsız / yangın alarmı, pencere demirleri) 12
Balkon kapama 13	Yalıtım 14	Asma tavan 15	Diğer 16

(c) Yapılan işle ilgili herhangi bir proje veya onay gerekti mi?

- Hayır
- Evet (hangi kurumdan.....)

(d) Yapılan işin amacı ve niteliğini nasıl tanımlarsınız?

- Sadece elzem ihtiyacı gidermek amacıyla, uygun fiyatlı malzeme kullanarak.
- Kullanım kolaylığı sağlamak amacıyla / plan değişikliği, ortalama kalitede malzemeyle.
- Konforu arttırmak için, nitelikli malzeme kullanarak.
- Tasarım amaçlı, yüksek nitelikli malzeme kullanarak.
- Diğer

3. Konutunuzda yapmayı planladığınız ancak henüz yapamadığınız tamir veya tadilat işi varsa;

(a) Yapılmak istenen işin türü nedir?

Olağan bakım onarım 1	Tesisat yenileme (su veya elektrik) 2	Daireye ait ısıtma sisteminde yenileme 3	Duvar yıkımı / eklenmesi 4
Mutfak yenilemesi 5	Banyo yenilemesi 6	Boya / badana / duvar kaplama 7	Kartonpiyer 8
Depreme karşı sağlamlaştırma 9	Zemin kaplamasında yenileme (halı, parke, seramik vb.) 10	Kapı / pencere yenilemesi (doğrama değişikliği) 11	Güvenlik önlemleri (çelik kapı, hırsız / yangın alarmı, pencere demirleri) 12
Balkon kapama 13	Yalıtım 14	Asma tavan 15	Diğer 16

(b) Şimdiye kadar yapılamamasının sebebi nedir?

Çok pahalı olması nedeniyle 1	Uygun zamanın bulunamaması 2	Acil görülmediği için 3	Uygun ustanın/işgücünün bulunamaması 4
Teknik zorluklar sebebiyle 5	Yasal zorluklar sebebiyle 6	Ev sahibi izin vermediği için 7	Diğer 8

4. Yaşadığınız konuttan ne ölçüde memnunsunuz?
 1. Konut çok eski / bakımsız
 2. Komşularımın memnun değilim
 3. Çok sık hırsızlık olayları oluyor
 4. Konut küçük
 5. Konut büyük
 6. Kira çok yüksek
 7. Evimle ilgili herhangi bir problemim yok
 8. Diğer

5. Yaşadığınız mahalleden ne ölçüde memnunsunuz?
 1. Bu mahale eskisi kadar nezih değil.
 2. Yeterli ölçüde belediye hizmeti gelmiyor
 3. Çok sık hırsızlık olayları oluyor.
 4. Bu mahallede oturmayı seviyorum.
 5. Buradan işe, okula gitmek zor
 6. Buradan işe, okula gitmek kolay
 7. Dost ve akrabalara yakın
 8. Dost ve akrabalara uzak
 9. Mahalleye ilgili herhangi bir problemim yok.
 10. Diğer

