THE DYNAMICS OF THE DIFFERENTIATION OF HOUSING PRODUCTION IN METROPOLITAN AREAS: THE CASE OF ESKİŞEHİR

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF NATURAL AND APPLIED SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

ARZU ASLANER

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR
THE DEGREE OF MASTER OF SCIENCE
IN
CITY PLANNING
IN
CITY AND REGIONAL PLANNING

DECEMBER 2019

Approval of the thesis:

THE DYNAMICS OF THE DIFFERENTIATION OF HOUSING PRODUCTION IN METROPOLITAN AREAS: THE CASE OF ESKİŞEHİR

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ABSTRACT

THE DYNAMICS OF THE DIFFERENTIATION OF HOUSING PRODUCTION IN METROPOLITAN AREAS: THE CASE OF ESKİŞEHİR

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December 2019, 186 pages

The aim of this study is to determine the factors affecting the housing production processes in Eskişehir and the effects of these processes on the existing urban development dynamics. Similar to the growth trend across the country, there has been a growth in construction investments, especially in new housing production in Eskişehir after 2000. In addition, metropolitan districts, namely Tepebaşı and Odunpazarı, dominate the total new housing production in the city. In this regard, focusing on the period after 2000, housing production was analysed in various aspects in the metropolitan districts of Eskişehir and the factors triggering housing development were discussed within the context of supply and demand situation. The general condition of the housing market in Eskişehir was examined and it was investigated whether there is a difference in housing supply and demand between the districts. Furthermore, the reasons of the differences in housing production between Tepebaşı and Odunpazarı were revealed. To sum up, this study is intended to be a source to be used in making urban development decisions and to guide the future planning processes of Eskişehir city with regard to housing provision.

Keywords: Urban Development, Housing Supply, Housing Demand, Housing Provision Methods, Eskişehir, Tepebaşı, Odunpazarı.

ÖZ

METROPOLİTEN ALANLARDA KONUT ÜRETİMİNİ FARKLILAŞTIRAN DİNAMİKLER: ESKİŞEHİR BÜYÜKŞEHİR ÖRNEĞİ

Aslaner, Arzu
Yüksek Lisans, Şehir Planlama
Tez Danışmanı: Prof. Dr. Osman Balaban

Aralık 2019, 186 sayfa

Bu çalışmanın amacı, Eskişehir ilinde konut üretim süreçlerini, bu süreçleri etkileyen faktörleri ve bu süreçlerin mevcut kentsel gelişme dinamikleri üzerine etkilerini ortaya koymaktır. 2000 yılı sonrasında ülke genelindeki büyüme eğilimine benzer şekilde, Eskişehir ilinde de inşaat yatırımlarında, özellikle yeni konut üretiminde büyüme gerçekleşmiştir. Ayrıca, il geneli toplam yeni konut üretiminde metropoliten ilçeler olan Tepebaşı ve Odunpazarı ilçelerinin hâkimiyeti söz konusudur. Bu bağlamda, 2000 sonrası döneme odaklanılarak, Eskişehir metropol ilçelerinde konut üretimi çeşitli açılardan analiz edilmiş ve bu dönemde konut gelişimini tetikleyen faktörler arz ve talep durumu çerçevesinde tartışılmıştır. Eskişehir kent genelinde konut piyasasının genel durumu incelenmiş ve ilçeler arasında konut arz ve talebi açısından bir farklılık olup olmadığı araştırılmıştır. Ayrıca, konut üretimi bakımından Tepebaşı ile Odunpazarı ilçeleri arasındaki farklılıkların nedenleri açıklanmıştır. Özetle, bu çalışmanın kentsel gelişim kararları alınırken başvurulacak bir kaynak olması ve Eskişehir kentinin gelecekteki planlama süreçlerine konut sunumu konusunda rehberlik etmesi hedeflenmektedir.

Anahtar Kelimeler: Kentsel Gelişim, Konut Arzı, Konut Talebi, Konut Sunum Biçimleri, Eskişehir, Tepebaşı, Odunpazarı.

To my beloved family...

ACKNOWLEDGEMENTS

First of all, I would like to express my deepest gratitude to my supervisor Prof. Dr. Osman Balaban who has the greatest contribution in completing of this study in a short time. Without his guidance, criticism and encouragement, this study could not be completed. He motivated me with his positive energy and support even in the most challenging times and enabled me to continue working. I would like to thank my advisor for his all contributions in this process.

I would also like to offer my special thanks to the examining jury members, Prof. Dr. H. Çağatay Keskinok, Prof. Dr. Emine Yetişkul Şenbil, Prof. Dr. Tanyel Özelçi Eceral and Assoc. Prof. Dr. Ö. Burcu Özdemir Sarı for their valuable comments and criticisms, and the time they patiently devoted to this study.

I would like to thank Prof. Dr. Serap Kayasü ve Assist. Prof. Dr. A. Burak Büyükcivelek for sharing their valuable experiences and knowledge since the beginning of my master journey. I am grateful for their motivating approach.

I should also thank to my friends Busen Özgür and Esra Gürel for their continuous support and encouragements. I also want to express my thanks to Aybike Şahin, Eda Ata, Şahika Gündü, Şener Yılmaz and "My Fabulous Five" for their moral support at all times. Moreover, I should thank to Okan Çalışkan and Merve Özkiremitçi, for their psychological and technical support. Finally, I owe special thanks to my dear friends Deniz Can and Burak Ogün Yavuz, who were in the same thesis period as me, for not making me feel alone and sharing their experiences in this process.

Last but not least, I would like to express my deepest thanks my precious family. I am indebted to my father Zafer, my mother Şükran, my grandmother Sultan for their endless encouragement and love; and to my beloved brother Uğur for his invaluable supports and eternal faith in me. Thank you for standing beside me in every step I took.

TABLE OF CONTENTS

ABSTRACT v

ÖZ vii

ACKNOWLEDGEMENTS x

TABLE OF CONTENTS xi

LIST OF TABLES xv

LIST OF FIGURES xvi

LIST OF ABBREVIATIONS xxi

CHAPTERS

1. INTRODUCTION 1

1.1. Problem Definition and Scope 1

1.2. Aim of the Study, Hypotheses and Research Questions 4

1.3. Method and Structure of the Research 6

2. THEORITICAL FRAMEWORK 9

2.1. Housing and Urban Development 9

2.2. The Factors Influencing Housing Development 11

2.2.1. Physical and Geomorphological Factors 12

2.2.1.1. Topography 14

2.2.1.2. Soil 17

2.2.1.3. Geology 18

2.2.1.4. Hydrology 19

2.2.1.5. Climate 20
2.2.2. Political and Administrative Factors 22
2.2.3. Location and Land Use Related Factors 24
2.2.3.1. Accessibility 26
2.2.3.2. Availability of Amenities 29
2.2.3.3. Neighborhood Factors 30
2.2.4. Social and Economic Factors 31
2.2.4.1. Population Growth and Density 31
2.2.4.2. Family Type and Household Size 32
2.2.4.3. Education and Income Level 33
2.2.4.4. Age Distribution 34
3. URBAN DEVELOPMENT and HOUSING IN TURKEY 37
3.1. Brief History of Urbanization and Urban Policies in Turkey 37
3.1.1. Slow Urbanization Post-Republic, 1923-1950 Period 39
3.1.2. Rapid and Unplanned Urbanization after Migration (1950-1980) 42
3.1.3. Post-Liberalization, Partial Urbanization and Mass Housing Period (1980-2000 46
3.1.4. Post-Earthquake, Capitalization and Transformation Period on Urban Area (After 2000) 49
4. HISTORY OF URBANIZATION IN ESKİŞEHİR 55
4.1. Overview of the Study Area and Its Location within the City 55
4.2. Historical Development Process of Eskişehir City Centre 60
4.2.1. Pre-Republic Period 61
4.2.2. 1923-1950 Period 67

4.2.3. 1950-1980 Period....74
4.2.4. 1980-2000 Period....82
4.2.5. 2000-2019 Period....85
5. THE CASE STUDY ANALYSIS: HOUSING PRODUCTION IN ESKİŞEHİR 99
5.1. Comparison of Housing Production Level in Eskişehir with Country and Other Metropolitan Cities....99
5.2. The Share of Tepebaşı and Odunpazarı Districts in New Housing Production 115
5.2.1. Average Floor Area 121
5.2.2. Annual Housing Supply....123
5.2.3. Housing Production According to Type of Investor....125
5.2.4. Housing Production According to Number of Storey 129
5.2.5. Vacancy Rate 132
5.2.6. Results....133
5.3. Reasons for The Differentiation of Housing Production Between Odunpazarı and Tepebaşı Districts 135
5.3.1. Physical and Geomorphological Reasons....135
5.3.2. Location and Land-Use Related Reasons 142
5.3.3. Social and Economic Factors....150
5.3.3.1. Population Size and Growth Trends 151
5.3.3.2. Total Number and Size of Households 155
5.3.3.3. Age Distribution of Population 157
5.3.3.4. Education Level of The Population....160
6. CONCLUSION....163

6.1. Summary of the Researh 163

6.2. Discussion of the Research Findings 164

6.3. The Importance of Thesis for The Further Studies 171

REFERENCES 173

APPENDICES..... 185

A. Spatial Development of Eskişehir City Center after 2000 185

B. New Residential Areas Developed in The City After 2002 186

LIST OF TABLES

TABLES

Table 2.1. Classification of slope in terms of suitability for use 16
Table 4.1. Important Changes in the City during the Pre-Republic Period and Differences between the Districts 65
Table 4.2. Important Changes in the City during the 1923-1950 Period and Differences between the Districts 73
Table 4.3. Important Changes in the City during the 1950-1980 Period and Differences between the Districts 81
Table 4.4. Important Changes in the City during the 1980-2000 Period and Differences between the Districts 84
Table 4.5. Distribution of Residential Development Areas in 1/25.000 Scale Master Plan.....94
Table 4.6. Important Changes in the City during the 2000-2019 Period and Differences between the Districts 96
Table 5.1. Total Dwelling Units and Total Households in Metropolitan Cities 105
Table 5.2. Housing Production for Per Household and Housing Oversupply in Metropolitan Cities 105
Table 5.3. Summary of Housing Production in Main Period.....125
Table 5.4. Tepebaşı and Odunpazarı Districts Housing Vacancy Rates in 2018.....133
Table 5.5. The Population of Eskisehir, Odunpazarı and Tepebaşı in 2019.....151
Table 5.6. Proportional Distribution of Odunpazarı District Population (2018) 159
Table 5.7. Proportional Distribution of Tepebaşı District Population (2018) 159
Table 6.1. The Summary of Factors for the Differentiations of Housing Production Between Tepebaşı and Odunpazarı Districts 168

LIST OF FIGURES

FIGURES

Figure 4.1. Location of Eskişehir and its Central Districts..... 56
Figure 4.2. Physical Features of Eskişehir..... 57
Figure 4.3. Porsuk River and the Locations of Tepebaşı and Odunpazarı Districts.. 59
Figure 4.4. Borders of Tepebaşı and Odunpazarı Districts 59
Figure 4.5. First Map of Existing Settlements in Eskişehir (1896) 62
Figure 4.6. Urban Development in the Pre-Republic Period in Eskişehir..... 64
Figure 4.7. Old Train Station Building..... 64
Figure 4.8. Railway Retail Ateliers..... 64
Figure 4.9. Spatial Development of Eskişehir City Center in the Pre-Republic Period 65
Figure 4.10. Spatial Development of Eskişehir City Center between 1923-1950..... 67
Figure 4.11. Old Factories Zone Protection Area and Changing Boundaries 68
Figure 4.12. A Flour Plant in The Old Factories Zone..... 69
Figure 4.13. A Brick and Tile Factory in The Old Factories Zone 69
Figure 4.14. TÜLOMSAŞ and Buildings around the Railway Area..... 70
Figure 4.15. Sugar Factory and Buildings around the Factory Site..... 70
Figure 4.16. İstasyon Avenue and Development of Different Urban Functions around this Road 71
Figure 4.17. Old View of İstasyon Avenue..... 71
Figure 4.18. Current View of İstasyon Avenue 71
Figure 4.19. 1956 Master Plan (1/5.000) 74
Figure 4.20. The Neighborhoods Where The First Cooperative Dwellings Emerged in The City between 1950-1980..... 76
Figure 4.21. Sample of Civil Servant Cooperative Houses (left) 76
Figure 4.22. Sample of SSK Cooperative Houses (right)..... 76

Figure 4.23. Presentation of Slum and Cooperative Areas between 1950-1980 78
Figure 4.24. Spatial Development of Eskişehir City Center between 1950-1980 78
Figure 4.25. Figure 25. 1/5.000 Scale Master Plan, 1978.....80
Figure 4.26. 1/5.000 Scale Master Plan (1986).....83
Figure 4.27. Tramway Lines Existing in the City at the Present Time.....85
Figure 4.28. Köprübaşı Region in the 1990s (left).....86
Figure 4.29. Köprübaşı Region at the Present Time and the Tramway Line (right)..86
Figure 4.30. Sides of Porsuk River at the Present Time (left) 86
Figure 4.31. Porsuk River (right).....86
Figure 4.32. Overview of Eskişehir Kentpark (left) 87
Figure 4.33. Eskişehir Kentpark (right up) 87
Figure 4.34. Eskişehir Sazova Park (right down) 87
Figure 4.35. Old Wholesale Fruit-Vegetable Hall of Eskişehir (left).....88
Figure 4.36. Haller Youth Center of Eskişehir (right) 88
Figure 4.37. Eskişehir Kanatlı Shopping Center (left).....89
Figure 4.38. Eskişehir Espark Shopping Mall (right) 89
Figure 4.39. Post-Restoration Examples of Historical Odunpazarı Houses (left) 89
Figure 4.40. Post-Restoration Examples of Historical Odunpazarı Houses (right) ...89
Figure 4.41. Spatial Development of Eskişehir City Center after 2000.....90
Figure 4.42. TOKİ Kentpark Residences in Neighborhood of Şeker (left) 91
Figure 4.43. TOKİ Odunpazarı Residences (right).....91
Figure 4.44. Mustafa Kemal Paşa, İhsaniye, Hacıalibey, Yeni, Işıklar, Mamure, Deliklitaş ve Kurtuluş Neighborhoods Risky Areas Zone (left).....92
Figure 4.45. Karapınar, Erenköy, Huzur ve Alanönü Neighborhoods Squatter Prevention Zone (right).....92
Figure 4.46. 1/5000 Scale Revision Master Plan of 2002.....93
Figure 4.47. Important Urban Use and Industrial Areas in City at the Present Time 93
Figure 4.48. Eskişehir 1/100000 Environmental Master Plan, City Center and Surrounding Area.....95
Figure 4.49. Eskişehir 1/25000 Scale Master Plan, City Center and Nearby Area....95

Figure 5.1. New Dwelling Unit Production and Floor Area in Turkey, 2002-2018 100
Figure 5.2. Building and Dwelling Unit Production in Eskişehir, 2002-2018 101
Figure 5.3. New Dwelling Unit and New Floor Area in Eskişehir, 2002-2018 102
Figure 5.4. Building Production in Metropolitan Cities, 2002-2018..... 103
Figure 5.5. Dwelling Unit Production in Metropolitan Cities, 2002-2018..... 103
Figure 5.6. Floor Area in Metropolitan Cities, 2002-2018..... 104
Figure 5.7. Dwelling Unit Production for Per Household, 2000-2018..... 106
Figure 5.8. Average Housing Unit Production and Average New Population in Metropolitan Areas, 2002-2018..... 107
Figure 5.9. Average Size of Households by Provinces, 2008-2018 108
Figure 5.10. Housing Oversupply, New Dwelling Unit and New Household, 2000-2018 109
Figure 5.11. Total Housing Oversupply, Total Dwelling Unit and Total Household in 2018 109
Figure 5.12. New Floor Area Production for Per New Household, 2013-2018 110
Figure 5.13. Relationship Between Floor Area and Population in Metropolitan Cities, 2002-2018..... 111
Figure 5.14. New Housing and New Household Accumulation in Eskişehir Between 2013-2018..... 112
Figure 5.15. New Housing Construction in Odunpazarı 116
Figure 5.16. New Housing Construction in Tepebaşı..... 117
Figure 5.17. Share of Central Districts in Housing Production - Number of Units in a Year..... 117
Figure 5.18. Share of Central Districts in Housing Production - Ratio of Building and Dwelling Units..... 118
Figure 5.19. Share of Central Districts in Total Housing Production - Floor Area Ratios 119
Figure 5.20 Share of Central Districts in Dwelling Unit Production - Dwelling Unit Ratios 120
Figure 5.21. Change of Average Floor Area by Years 122

Figure 5.22. Change in Housing Provision for Years-Number of Housing Units x Household Size 123
Figure 5.23. Housing Production According to Type of Investor and Number of Housing Units Between 2003-2017 126
Figure 5.24. Housing Production Rates According to Type of Investor and Number of Housing Units Between 2003-2017 127
Figure 5.25. Housing Production According to Type of Investor and Floor Area (m²) 127
Figure 5.26. Floor Area According to Type of Investor Between 2003-2017.....128
Figure 5.27. Housing Production According to Number of Storey Between 2003 and 2017 - Eskişehir 130
Figure 5.28. Housing Production According to Number of Storey Between 2003-2017, Odunpazarı 130
Figure 5.29. Housing Production According to Number of Storey Between 2003 and 2017 - Tepebaşı 131
Figure 5.30. Housing Production According to Number of Storey Between 2003-2017, Central Districts Comparison 131
Figure 5.31. Housing Production Between 2003-2017 - Average Floor Area According to Number of Storey 132
Figure 5.32. Elevation Map of Tepebaşı and Odunpazarı Districts 137
Figure 5.33. Fault Lines In Eskişehir 139
Figure 5.34. Land Suitability Map for The Settlement of Eskişehir 140
Figure 5.35. Distribution of University Areas and Apartments by Rental Values (1+1 studio flats).....143
Figure 5.36. Military and Civil Airports and Mania Plans in the City Center.....145
Figure 5.37. New Residential Areas Developed in The City After 2002 146
Figure 5.38. Natural and Artificial Thresholds of Eskişehir City Center 148
Figure 5.39. Population Change Analysis by Neighborhood.....150
Figure 5.40. Annual Increase In The Population of Odunpazarı and Tepebaşı Districts, 2008-2018 152

Figure 5.41. Annual Rate of Population Growth in Odunpazarı and Tepebaşı, 2008-2018 152
Figure 5.42. Changes in Population Growth Before and After 2008 154
Figure 5.43. Average Annual Population Increase Before and After 2008 154
Figure 5.44. Average Household Size by Districts Between 2009-2018 155
Figure 5.45. Number of Households by Household Size In 2018 156
Figure 5.46. Population Pyramid of Odunpazarı in 2018 157
Figure 5.47. Population Pyramid of Tepebaşı in 2018 157
Figure 5.48. Population in Odunpazarı by Educational Attainment, 2018 (Population 6 years of age and over) 160
Figure 5.49. Population in Tepebaşı by Educational Attainment, 2018 (Population 6 years of age and over) 160

LIST OF ABBREVIATIONS

ABBREVIATIONS

ADNKS	Address Based Population Registration System
AKP	Justice and Development Party
CHP	Republican People's Party
ESTRAM	Eskişehir Light Rail System Management
İTÜ	İstanbul Technical University
OECD	Organisation for Economic Cooperation and Development
OIZ	Organized Industrial Zone
OSCE	Organization for Security and Cooperation in Europe
SSK	Social Security Institution
TEI	TUSAŞ Engine Industries Inc.
TMO	Turkish Grain Board
TOKİ	Housing Development Administration of Turkey
TUSAŞ	Turkish Aircraft Industries Corporation
TÜİK	Turkish Statistical Institute = TurkStat
TÜLOMSAŞ	Turkish Locomotive and Engine Company Inc.

CHAPTER 1

INTRODUCTION

1.1. Problem Definition and Scope

Housing is one of the most basic needs of human beings during the history of civilization. Therefore, housing is always taken as a basic requirement by individuals and countries. Today, housing production is a phenomenon of urban development because it draws attention from various fields. Housing is one of the primary instruments of urban planning and includes various social, economic, political and structural elements. Therefore, it is extremely sensitive to fluctuations in socio-economic and political structures and it also changes according to local characteristics. Similar to Turkey, cities of developing countries continue to grow and they need new housing units in addition to the existing housing stock in the near future.

Real estate investments and construction activities are among the most important factors that play a role in formation of urban built environment and shaping of urban spaces. In addition to its impact on development of urban settlements, the construction sector has significant impacts on urban economies. According to Balaban (2011), the construction industry is considered as the engine of economy as a result of fostering economic growth through backward and forward connections with other industries. In other words, inputs for housing production processes affect different sectors more than other consumer goods in the market. In this context, there is a systematic connection between urbanization and economic forces. Urban areas are extremely influenced by economic processes in shaping the built environment. In Turkey, one of the important events affecting the development of the country's economy in the new millenium is the economic crisis in 2001. The crisis of 2001 had critical impacts on all sectors and issues related to the country's economic life. As a result of the structural reforms that

followed the economic crisis, the effects of the crisis were reduced and the country's economy has entered into a growth trend. In this time, a significant growth was realized in construction of new building and housing in Turkey. This made the construction sector one of the pioneer sectors that triggered growth in the national economy (Balaban, 2011).

However, having an important economic dimension sometimes makes housing production a political tool. This situation sometimes causes imbalances in supply and demand and leads to the shaping of urban space in accordance with the requirements of the free market and the global economy. Thus, it prepares the ground for ignoring local factors and current trends in the process of developing an urban built environment. Within the framework of this problem, the main issues to be focused on are the understanding of how housing supply is shaped and the dynamics behind the housing production processes for the residential areas that occupy a large area in urban space and have great significance in planning discipline. These issues are also important in making healthy urban development decisions in the future.

The increase in the number of housing units produced after the crisis of 2001 is not periodic or partial but shows a steady growth trend. The growth in new buildings and housing production across the country is observed in almost all cities, especially in metropolitan areas. Eskisehir city, which has an important place in Turkey's industrialization and urbanization process has shown a rapid urban development in recent years. With the investments made in the city, urban population has increased and the housing production activities have been accelerated to meet the housing needs of this population. However, tendency of single-centered development and concentration of the population and economic activities in the metropolitan (also known as central) districts led to the realization of the majority of housing production in Odunpazarı and Tepebaşı districts. In other words, the dominance of central districts is observed in the total new housing production in the province.

Tekeli clarified in 1982 the factors that could be related to housing provision. According to him, in a country, housing provision is based on such variables as land ownership, rise in land values, urbanization speed, trends in the construction sector and government interventions in the housing industry. These factors can change through time. Inevitably, housing provision methods are also evolving to adapt to these new conditions and social needs. Likewise, significant transformations have been experienced in the housing history of Turkey. New kinds of housing supply have been created since the 1930s on the basis of new circumstances (Tekeli, 1982). Similar to Turkey, housing pattern in Eskişehir has been undergoing significant changes since the 1950's, with the effects of industrialization and migration.

Central District of Eskişehir Metropolitan Area has been rapidly urbanizing with the phenomenon of industrialization and migration since the 1950s and has been faced with a high demand for residential area. In order to meet this demand, there has been a heavy construction activity in the city. It is noted in the report of 1/25000 scale Urban Development Plan of Eskişehir that housing construction was mainly carried out by individual and small entrepreneurs lately, but mass housing production has become widespread in recent times (İTÜ, 2015, p.33). Residential areas have been quite determinant and influential over urban development. Housing provision types affect spatial development dynamics in the city. Therefore, a study for Central Districts of Eskişehir Metropolitan Area is important in terms of contributing to the development of more sustainable conditions in the near future and addressing urban growth with certain spatial growth strategies. For this purpose, it will be investigated whether there are differences between the central districts of Tepebaşı and Odunpazarı in terms of housing provision types and processes. Moreover, the factors that cause these differences will be analyzed and revealed in the light of a case study and the data in the literature. Lastly, the presence of existing residential areas with various different characteristics in Eskişehir's central district offers the opportunity to disclose the determinants behind the housing supply and demands. Therefore, this situation makes Eskişehir a good working area.

1.2. Aim of the Study, Hypotheses and Research Questions

Housing research has difficulties due to its multidisciplinary structure. A large number of different disciplines including economics, political science, history, planning, sociology, geography and law contribute to housing studies. This situation makes housing a complicated research topic. There is big amount of data, and it is hard to select the information correctly and fix it in a proper format.

In the literature on housing production and urban development, many studies are focusing on the economic dimensions of housing. Most studies have addressed the following topics: fiscal policies in housing development, determinants of housing prices, social housing and housing affordability, linkages between real estate market and financial market, residential mobility and housing tenure choice. However, there is not enough research on the factors affecting housing development patterns in a city. The relation between housing provision and urban development is underestimated in the literature.

In this context, this study is designed to investigate and analyze the main driving forces of the differentiation of housing provision in metropolitan areas. The housing provision in Eskişehir's different areas with different forms of production to meet the demand of housing will be analyzed. Especially in the last 17 years, the housing market in the city, the development trends in existing residential areas and the spatial growth characteristics will be evaluated in a comprehensive manner. In this context, the thesis examines the processes of differention on housing supply by focusing on physical, locational, political, demographic and economic factors. In this way, the thesis aims to clarify the key drives that cause to the differentiation between the forms of housing provision in Eskişehir metropolitan area.

This study addresses two main assumptions by considering the growing construction activities across Turkey and also in Eskişehir.

- Although the most important factor affecting the housing supply in the city is the amount of land allocated for housing construction with planning

permission, there are many different factors directing the housing production and housing market.

- The differences in socio-economic and cultural structure of households, the existence of numerous natural and artificial thresholds, the diversity of economic-administrative activities and urban uses are among the causes of diversification of housing provision methods. As a reflection of this situation in the space, different housing size and types occur in Eskişehir.

In line with these assumptions and aims, the thesis will answer the following main research questions:

- What are the effects of residential areas on the development of the urban macroform?
- Which factors are most critical in production of housing and urban built environment?
- What are the main determinants of housing supply?

These questions are formed for Eskişehir case as follows;

- What is the volume of housing production in Eskişehir? Is there a balance between housing production and housing need?
- What are the dominant forms of housing provision in Eskişehir?
- How do the existing forms of housing production affect the spatial development dynamics of the city?
- What are the reasons for the differences in housing provision types and production levels throughout the city?

1.3. Method and Structure of the Research

The thesis has six chapters. After the introduction**,** *the second chapter* summarizes the literature survey under two main headings. The first heading focuses on the relationship between housing production and urban development. The second one is about the factors influencing housing development patterns. The influencing factors are divided into four parts, including; physical-geomorphological, political, locational-landuse related, social and economic factors. Each category has its own sub-categories. In general, in this section, the factors that affect and direct the formation of housing areas within the urban development process will be put forward. The importance of residential areas for urban development will also be discussed.

The third chapter provides information about the development process of housing policies in Turkey in the Post Republican Period. It is a brief summary on urbanization and housing sector in Turkey by taking into account the historical developments in housing provision. The changes observed in the production of housing in Turkey after 2000, new actors in the production process, new forms of housing provision are intended to reveal under the chapter. Setting the basic framework of post-2000 housing production may be possible by examining the process from the declaration of the republic to the present day. Therefore, the housing development process in Turkey until the 2000s, new actors involved in housing production process after 2000 and the new forms of housing provision will be discussed with in chronological order. The main aim of this chapter is to describe the historical process of housing production in Turkey and trying to understand the current conditions in this direction.

In the fourth chapter, the reflections of the housing development processes, which are examined in the previous chapter, will be summarized in the context of Eskişehir. The development processes of Eskişehir city macroform and housing areas will be examined closely. The history of housing development and distribution of different forms of housing provision in the city will be investigated.

In the fifth chapter, the current situation of the Eskişehir housing market after 2000 is analyzed in accordance with the statistical data. For this purpose, firstly, the level of housing production in Eskişehir is compared with countrywide and other metropolitan cities. In the next section, production details are given on the basis of central districts by focusing on Tepebaşı and Odunpazarı. In the last part, analyses and evaluations are made to reveal the factors that lead to the differentiation of housing production between Odunpazarı and Tepebaşı districts.

The last chapter concludes the thesis which provides a summary of the general findings of the analyses in the study. Also, this chapter aims to provide discussions for future research areas about housing system in Turkey.

In this study, the data on the construction and building permits obtained from Municipalities and TÜİK have been evaluated and with the help of these data, the development of housing production in Eskişehir is examined especially in the context of supply and demand situation after 2000.

CHAPTER 2

THEORITICAL FRAMEWORK

2.1. Housing and Urban Development

Under this heading, the relationship between housing and urban development will be discussed and the role of housing production on the spatial development of the city will be focused. In the next section, the factors affecting the production of housing will be examined.

Urban space is in a process of constant transformation. This process is shaped under the influence of economic, political, social dynamics and actors such as citizens, local governments and investors. Housing, which is the most dominant architectural product in the process of urbanization, constantly reorganizes the forms of relations that people establish with the rest of the city as the basic unit of daily life with the effect of all these dynamics. In other words, housing as the private space of the individual is the first step of the relationship established with the city. The numerical superiority of the housing makes it the urban use that affects the city the most. In this sense, residential areas should be considered as the most influential urban usage on the development, form and character of a city. For this reason, the development experienced in housing areas is a process that feeds on urbanization and determines the direction of urbanization. In summary, there is a two-way interaction between housing and urbanization. In this case, it is necessary to understand housing in order to understand urbanization (Arıkan and Gökmen, 2016).

The relationship between housing and urbanization can be examined through urban economy and urban planning. Urbanization refers to the change in the population balance between urban and rural areas (Jenkins, Smith, Wang, 2007, p.10). The increasing housing problem with industrialization is still important. In the

determination of social and economic relations, housing has become multifaceted. An effective housing policy needs to be established because housing has a decisive and transforming effect on the city, economy and social area (Önver, 2016, p. 137). The emergence of cities and the differentiation of urbanization processes result from the differences in the mode of production in each period and geography. Housing, which is the most basic component of the built environment, has an important role on the spatial development processes of cities depending on the different forms of provision in the historical process. The addition of functions and meanings such as security, comfort, aesthetics and status to the housing leads to development of different forms in housing provision. Ultimately, housing production, spatial distribution and its regulation form the basis of urban planning.

According to Yüksel, housing is not only a shelter, it is a dynamic that can shape economic, social and political processes throughout the country (Yüksel, 2014, p.18). In terms of urban economy, housing is a property of consumption, investment and production. In addition to having a direct contribution to the urban economy, it also indirectly has social effects. It is traded as an important economic value in terms of employment, finance and construction sector. An economic growth style has been established around the housing sector because it contributes to the growth of the economy, reduction of unemployment and revitalization of financial markets. Similarly, built environment production is a more preferred method in terms of capital accumulation with the effect of globalization in recent years (Önver, 2016, p. 33).

As a result, housing provides built environment production, urban expansion and urban growth. Factors affecting housing production will be explained in detail in the following section.

2.2. The Factors Influencing Housing Development

In times when today's technical possibilities are not available, human beings have settled in around of water resources, in areas close to agricultural lands and pastures and where they can be protected from the negative effects of climate. However, with the development of technical facilities and overcoming of security problem, differences in the choice of settlement have emerged. Before the industrial revolution, most of the world's population lived in rural areas. However, with the industrial revolution, the improvement of socio-economic conditions in the cities caused to attract a large amount of population and the creation of urban areas with great speed. Rapid urbanization has increased the demand for housing. This high demand for land has led to the increase in land prices and building pressure on urban empty areas. Over time, congestion and saturation in residential areas led construction companies to look for new development sites. Steep slopes, valley bases, fault lines, agricultural and forest areas, wetlands and sea coasts have begun to be preferred to create new settlements. Interventions such as displacement of river beds, drying of lakes, deforming of natural slope of sides have been brought to the agenda to get extra space. In this manner, the use of unsuitable areas for construction activities allows rise of many problems in cities. When all these things are taken into consideration, the problem of determining suitable areas for new development becomes a significant issue (Değerliyurt, 2014, p.167).

According to Hall, cities are influenced by a variety of factors and they emerge as the product of an evolutionary phase. Their landscapes, economies, cultures, and societies are very different. That is why urban development is based on specific processes unique to each city (Hall, 2006, p.5). In other words, on the one hand, the settlement areas have an integrity with physical properties such as location, topography, geological structure, climate, soil, vegetation, hydrology. On the other hand, socio-political characteristics such as settlement history, population, socio-economic structure, administrative arrangements are other influential factors that integrate with the city. In this respect, land development planning requires a holistic approach. In

this section, the factors affecting the use of space and the development of residential areas in urban settlements will be summarized. Within the scope of the study, these factors; It will be presented in five titles as physical-geomorphological, political-administrative, location-land use related, social and economic factors.

2.2.1. Physical and Geomorphological Factors

Studies from the beginning of the twentieth century concerned that the main determining factor in the choice and growth of settlement locations was physical characteristics. Park, Burgess, Mckenzie and Sjoberg support that the main factors affecting the existence and development of cities are primarily the advantages of favorable environmental conditions and this advantage brings urban growth and differentiation of urban identity by promoting technology and social organization over time (Karadağ and Koçman, 2007, p.4; Pacione, 2005, p.140).

Many cities established on earth have a long history and have taken their present form as a combination of physical and social environment in the historical process. Historically, the existence and development of the city depends more on the resources provided by the natural environment. More specifically, location, geomorphology, convenient climatic conditions, productive soils, water supply are the main bases of urban existence and development processes. Efforts to increase and diversify production, industrialization, development and dissemination of transport and trade, meeting social and economic needs, and cultural formation depend entirely on the structural organization of natural environmental factors and their balanced functioning. In addition, the role of socio-economic and cultural factors in urban development and urban growth cannot be denied (Koçman,1991, p.102, Karadağ and Koçman 2007, p.5).

According to Tümertekin and Özgüç, although environmental determinists support the view that physical geographical conditions are dominant in shaping the size and distribution of cities on earth, it cannot be said that these elements affect the settlements on earth at the same level and shape (Tümertekin and Özgüç, 2010, p.324).

Therefore, it is possible to state that physical factors have different effects according to regions.

In a study conducted in 2017, Aydın, Erdin and Kahraman emphasized that physical factors are the primary factor affecting the vulnerability of cities against possible natural disasters. Accordingly, the physical characteristics of the areas where urban settlements are geographically located also affect the degree of exposure of the area to disasters. In other words, if an urban area is very sensitive in terms of its physical characteristics, it becomes one of the first and most severely affected areas in the face of natural disasters. Therefore, even if the urbanization is very safe, spatially resistant, with developed infrastructure and non-socially vulnerable populations, if the region is located in a sensitive area due to the natural and physical characteristics of its location, damages will be unavoidable in case of disaster (Aydın, Erdin and Kahraman, 2017, p.279). At this point, Pralong noted that some geomorphological factors are not always regarded as devastating variables in urban development and growth. If the city planners have sufficient knowledge about geomorphological phenomenon, they can convert the negative sides into the optimal conditions (Pralong, 2005). When all these are taken into consideration, it is important that the physical environment dynamics are included in the assessment when making site selection decisions for residential areas.

Today, socio-economic and demographic factors are mostly evaluated in the planning of new settlements. However, the components of the natural environment, which are the basic elements of urban existence, are not considered adequately in the evaluation. Researches show that physical and geomorphological factors have impacts on location selection, positioning, physical expansion, development direction, spatial distribution and size of cities. Additionally, type of architecture, structures, buildings, servicing conditions and economic activities are influenced by these factors (Darvishi, Doolabi and Sekhavati, 2015, p.1748). For this purpose, this part will focus on physical factors and natural environment components that guide the spatial organization of cities.

These components and factors will be presented under the headings of topography, soil, geology, hydrology and climate.

2.2.1.1. Topography

Topographic elements such as elevation, slope, aspect and curvature slope have a decisive role in the development of settlements. For example, mountains are natural barrier to the development of residential areas, while flat areas are more suitable for growth. Sloping land is not suitable for agriculture and settlement. While agricultural activities in sloping areas are mostly based on manpower and labor, machine farming is possible in flat areas. These types of reasons have caused the population to concentrate more on the plains, whereas mountainous and hilly areas are less preferred because they are not suitable for settlement, agriculture and transportation (Tümertekin and Özgüç, 2010, p.324).

According to Russ, the topography of a region may heavily influence the aims for which the site can be used and ultimately the design of the suggested uses. Topography frequently affects the location of houses and highways, pedestrian mobility, and the arrangement of infrastructure functioning. On this basis, the developers should evaluate how the suggested use is affected by the topography (Russ, 2009, p.49).

One of the basic topographic elements affecting the spatial development of settlements is ***elevation.*** Urban areas below 10 meters above sea level are in danger of flooding. Despite high flood exposure, high-intensity financial activities are concentrated in low elevation urban regions (Kocornik-Mina, Michaels, McDermott, Rauch, 2015) If the elevation increases, the temperature and humidity decreases and the climate becomes harsh. This causes changes in the types of economic activity and restricts social life. For this reason, most of the world's population lives in temperate climate and it is seen that settlements decrease in areas where elevation increases. There are situations in the world that are the opposite of this situation. Some of the settlements in tropical regions are between 2000-4000 meters due to extreme temperatures and humidity (Keleş et al., 2012, p.103). Elevations above 1.500 meters start to create physical

changes on people. When the elevation is high, the air pressure is low, which implies less oxygen is accessible for breathing. In sipte of the lack of oxygen and potential health threat, most high-altitude sites are developed due to costly land. Bolivia's El Alto and Lhasa in Tibet can be example to these settlements (Nicholas Gill, 2016). In addition, Russ expressed the following. In general, settling in urban areas with significant elevation changes is more costly and difficult (Russ, 2009, p.48).

Slope, one of the main elements of topography, influences many important sides of land use and site planning. Excessive slope values cause some restrictions in the establishment and development stages of the residential areas. Where the slope is high, the urbanization rate slows down and even approaches the stopping point (McBride, 1999). Large plains are more suitable for the construction of settlements, highways and other human structures. Similarly, Russ also asserts the following. Slopes can generate insecure circumstances needing extra building and engineering expenses. Many regulations on land development and zoning contain constraints on steep slopes growth (Russ, 2009, p.49). The construction of buildings on sloping areas always faces with structural and architectural problems. Most of the slopes which have development potential in terms of sufficient sunlight and desirable sights also have landslide risk. When the sliding layer is very close to the settled land, the sliding section can be locally returned to normal by the classic backfill and retaining walls method. In such a solution, the expense of these additional interventions may eventually considerably boost the building's total cost (Ilies and Moldovan, 2014) Slope analysis is conducted generally to specify possible residential sites, traffic routes and drainage patterns. Commonly, this analysis is a graphical slope representation displayed in categories and ranges. It is mostly used in the assessment and regulation of landuse proposals in terms of environmental suitability (Russ, 2009, p.49). McBride evaluated the slope values in terms of settlement suitability. Accordingly, 0-2% is the most suitable range for development. In the case of increase in the slope, 2-8% is suitable for many types of development, 8-16% range limits some developments and also it is the upper limit for roads and walking paths. McBride also clasified the slope

of 16-24% is not suitable for development, these slope values impose important restrictions for many developments and that a slope more than 24% is not suitable for the development of many urban uses (McBride, 1999). The following table provides guidance in interpreting the definition and categories of slope.

Table 2.1. *Classification of slope in terms of suitability for use*

Slope (%)		**Description**
0-2	Flat	Most suitable for development
2-8	Moderate slope	Easily accomodates many types of development
8-16	Steep	Some development restrictions, upper limits for roads and walks.
16-24	Very Steep	It imposes significant restrictions on many developments.
>24	Extremely steep	Generally not suitable for development.

The ***aspect*** of the site may also be an important topographical factor on residential areas. Orientation to the sun can affect building efficiency in terms of energy consumption. The slopes in the north can be cooler in summer than in the southern slopes. In winter, the opposite situation may occur. Because of increase in global climate changes and energy saving issues, the orientation of buildings seems to be a more significant factor (Russ, 2009, p.50) Additionally, the aspect factor differs in terms of sun and sea. The sun-relative aspect is considered to be more climatic. However, in addition to climatic characteristics, the sea-relative aspect is also important in terms of the landscape it offers. The sea-facing factor plays a role in the preference of housing overlooking the sea, especially in large cities and holiday destinations. The increase in demand for energy puts emphasis on saving energy and protecting the environment at every stage of life. It is known that people prefer places where there is more sunbathing in the selection of residential places in recent years (Şahin and Kaya, 2011, p.380). In this respect, the aspect is an important parameter in the planning studies and the choice of location for residential areas.

Curvature slope is another effective factor in terms of land suitability for settlements. It is known that the entire surface of the earth does not consist of plains, but also irregular concave and convex sides. The concave and convex properties of the slopes affect both microclimatic conditions and soil properties. For example, the slope on the convex slopes is higher than the concave slopes. This causes the water to move quickly. Therefore, on convex slopes, the soil and the soil moisture is relatively low. Based on this, arable soil is more common in concave areas. In addition, concave areas are richer in groundwater. However, the high soil and soil moisture after rainfall causes the risk of mass movements in concave areas to be greater than in convex areas (Ekinci, 2011, p.92). These factors are important in terms of planning studies for development areas. In addition to all these, development on a hilly or steep site is generally more costly because of grading expenses. Despite the higher costs of construction process, the long views from a hillside are seen wortful and this situation invites buyers (Russ, 2009, p.232). In addition to the underlines issuesi according to A American Planning Association, subdividing hilly areas is a problematic issue. The hills, which were previously passed by landowners and builders due to high construction costs, later became attractive areas of development. This is because they are closer than the nearest flat land to the city center (APA, 1956).

2.2.1.2. Soil

In 1997, Omoto mentioned that soil is a valuable factor driving urban development. Soil forms the basis for buildings, roads and other urban structures. Ignoring the potentials and constraints of the soil during the planning studies will lead to health and safety problems, such as instability in construction foundation, soil erosion, cracking roads, and groundwater pollution. Depending on the depth of the soil and the presence of rocks on the soil surface, construction and land preparation costs will increase. This will also adversely affect the establishment of underground drinking water and sewerage network. Morever, growth in unstable soils will result in additional costs to overcome soil constraints such as removing unnecessary soils and replacing them with stable fabric (Omoto, 1997, p.16)

According to Demirtaş and Erkmen, no matter how far human beings progress in urbanization, their devotion to the land will continue in order to meet the food needs. Therefore, when determining the development direction of cities, attention should be paid to the protection of fertile agricultural areas. On the other side, not all soil types are suitable for settlement. For example, while alluvial soils are very suitable for agriculture, they are not suitable for settlement due to their loose structure, groundwater and risk of liquefaction in a possible earthquake. In addition, soil characteristics in a place can affect the infiltration of rain and snow waters and cause underground water to be fed, and in cases where infiltration is low, it can be transferred to surface runoff and cause erosion in areas devoid of vegetation. Soils susceptible to erosion will also limit suitability. In addition, the presence of clay soils on slopes causes mass movements to be seen (Demirtaş ve Erkmen, 2000, p.248). In this context, soil-based planning can guide urban growth to prevent soil-related issues. Information related with different soil types, their characteristics, potential and limitations should be handled to promote urban land uses.

2.2.1.3. Geology

In urban planning, criticism of geological environments is extremely important. There are many potential sites which are perfectly suited for housing development. However, they also have substantial geotechnical challenges (Ilies and Moldovan, 2014). The geological conditions of the area where a city will be established are important for the future of that city. This issue should be taken into consideration in determining the development direction of the city from the first stage of establishment. Aliağaoğlu and Uğur listed the characteristics of good soil class as follows; massive volcanic rocks, undifferentiated metamorphic rocks, hard cemented sedimentary rocks, hard sand, gravel, hard clay and clayey silt (Aliağaoğlu and Uğur, 2010, p. 98). However, tuffaceous, clayey and alluvial soils consisting of loose material are not suitable for settlement. In the past, disregarding this issue has resulted in disasters and from time to time some settlements have had to be relocated. Erzincan, Bingöl, Gediz, Halfeti,

Erciş, Köyceğiz and Erbaa, Gördes, Samsat, Doğubayazıt are the settlements that have to be relocated as a result of natural disasters (Yılmaz et al., 2013, p.415).

According to Omoto (1997), urbanization initially occurs on the most advantageous soil. However, it is subsequently pressured to grow on less desirable geological environments such as active faults. The distance of a residential area to the fault lines affects the damage that may occur in an earthquake. In order to reduce the earthquake-related destruction, faults should be identified in advance and precautions should be taken and and the static calculations of the buildings should be made accordingly. The magnitude of the earthquake is the highest around the fault lines and the severity of earthquake-related shock decreases as move away from fault lines (Erinç, 2002, p.233). In this respect, it should be taken into consideration in urban planning studies that the destructive effect of the earthquake and the risk decrease as it moves away from the fault line.

2.2.1.4. Hydrology

The first settlements developed around rivers. People have used rivers to provide drinking and potable water, irrigation and transport facilities. Therefore, rivers had significant effects on the development of cities (Keleş et al., 2012, p.103). Flood areas, wetlands, rivers, lakes and main drainage channels are physical systems that provide hydrological balance in a basin. As a result of improper zoning practices and land uses, narrowing of stream beds or taking them into canals cause to floods (Karakuyu, 2002, p.101). Urban development in any area always affects the present circumstances of hydrology. The effects of urban development on natural hydrological systems are emphasized by Omoto. Development of urban uses in areas where rain water enters the soil, can cause increasing surface flow and reducing groundwater discharge. This may give rise to the emergence of the sudden floods (Omoto, 1997). Due to floods in cities, residential areas and industrial facilities are damaged, vital activities are interrupted, life and property losses occur. Additionally, water pollution problems can be critically increased by new urban development areas. In this point, the hydrological

conditions should be considered in urban development planning. Urban development in these areas should be avoided. During the planning process, the occupation of river flood areas by public buildings and industrial facilities should be prevented (Omoto, 1997, p.18). Another important factor for settlement areas is groundwater level. High groundwater level can cause damage to the foundations of buildings and liquefaction on the ground (Al Sefry and Sen, 2006, p.93). This situation causes an increase in earthquake-related damage in urban areas.

2.2.1.5. Climate

Climatic conditions are one of the physical factors that affect the distribution of cities and the formation of settlement patterns. In extremely hot and humid areas of the equatorial region and in cold regions close to the poles, the population is sparse and the number of cities in these areas is quite low. Very high and very low temperature values make difficult the establishment of settlements in the world. As a result of this, most of the world cities concentrated in temperate zones (Özey, 2012, p.63). Places or microclimate areas where climate conditions are more favorable than their environment are more suitable to settle. The existence of suitable areas for agriculture and fattening and the high biological diversity play a major role in the preference of the settlements' locations (Keleş et al., 2012, p.103).

Temperature, air pressure, humidity and rainfall are the main climate elements. Temperature is one of the most important climatic factors affecting urban settlements. When the temperature in a city is high and the number of cold days is low, people's efforts to warm up are reduced. Consequently, economic expenses and air pollution will be reduced. Cooling efforts in extremely hot residential areas increase the demand for air conditioners and thus economic costs. The temperature factor has a formative effect on the texture of the settlements. For example, extreme temperatures caused changes in the structure of the old city settlements. In these places, the streets are narrow and houses are built close together in order to protect from the sun and to benefit from natural shading (Kışlalıoğlu ve Berkes, 2012, p.138). Another climatic

element that affects the distribution and development of settlements is air pressure. Air pressure causes the air to become overwhelming in summer and can be determinative on air pollution in winter. High pressure, for example, has uncomfortable consequences, such as the collapse of polluted air over the city during winter days. Windy days are cooler and more relaxing in the summer and clean and breathable in winter. Therefore, it is more suitable to live in places with constant wind. The windless areas where the air is stagnant areas have sweltering and polluted air. The amount of humidity in the atmosphere is another factor affecting urban settlements. Especially in coastal cities, when the amount of humidity in the air increases, it becomes suffocating. One of the climatic factors that affect life in cities is rainfall. The effect of rainfall varies depending on the duration and characteristics of the place where it falls. Excessive rainfall causes serious problems, especially floods in cities. Floods as a result of excessive rainfall creates a suitable environment for the contamination of surface and underground water resources and the spread of infectious diseases. On the other hand, low rainfall causes drinking and drinking water problems in cities. Low temperature in long-term snowfall increases the heating costs in cities and causes air pollution when fuels such as low quality coal are used. In cities where the snow does not melt for a long time, living conditions become difficult and socio-economic life is interrupted (Değerliyurt, 2014, p.184-187).

Disasters due to climate change are important factors to be taken into consideration when taking decisions about the development of cities and the location choice of residential areas. Spatial development patterns constitute an important factor in the interaction between urbanization and climate-related risks. In this respect, it is important to develop adaptation-oriented urban planning processes in order to produce urban spaces resistant to climate change. One of the prerequisites for producing adaptation-targeted urban planning decisions is identifying the areas that are spatially at risk. The studies to be carried out within this scope will play an important role in determining the spatial risk levels of urban settlements. It will also contribute to

identifying priority intervention areas within existing urban settlements and making healthy site selection decisions (Aydin, Erdin and Kahraman, 2017).

2.2.2. Political and Administrative Factors

As emphasized in the previous title, geomorphological conditions such as physical constraints on land can limit housing provision in certain areas. However, public policies also play a role through legislation on land-use and planning (OECD, 2011, p.9). McLeay expressed that housing has many unique characteristics as a political issue. The housing phenomenon is neither a purely social service nor a commodity resulting from a free market. Countries differ according to their preferred housing policies and production types (McLeay, 1984, p. 85). According to Tümertekin, in most of the cities, the physical environment has moved away from nature, has gained social characteristics and become a human-made environment. For this reason, the development of cities should be examined in terms of the functioning of economic and political forces. In fact, as put forward by some geographers, the landscape of the urban space is the physical form of the social and political ideologies of the country (Tümertekin, 1997, p.12). In this context, this part of the thesis investigates how political and administrative factors on housing influences urban built environment. Harrison reports that planning decisions are the outcome of legal and political processes involving central government, elected representatives, members of local authorities and personal interests. The process of local decision-making occurs within a framework of legal and administrative restrictions (Harrison, 1972, p.254). Political elements are the primary means for government to regulate urban development. Additionally, first development of land ownership is owned by the government on the basis of land allocations (Zhou and Zhao, 2017, p.6).

A lot of publication provides a financial perspective about the effect of government involvement on housing markets. As expected, government preferences and administrative arrangements can ultimately impact the housing market. According to many studies in the academic literature, countries with distinct land use systems have

government intervention on the land market. These interventions are often on the agenda in two ways. The first includes different land use regulations (zoning, boundaries of urban growth, master planning, etc.) implementing authority over uses. Governments around the world utilize land-use regulation to manage land development and avoid disputes over land-use. The second form of intervention includes direct state authority over the provision of land. At this point, the state either acts as a market participant or directly supplies land to land users.

The presence of state intervention on land has significant impacts on the real estate market. One of the impacts that may arise is the reduction of the amount of land devoted to housing development, which can put down new housing construction and increase housing prices when demand is high (As cited in Yan and Ge, 2014).

The objectives of public policy interventions on housing markets are listed in a report published by the OECD in 2009 as follows. One goal is to eliminate market failures, often caused by unequal market power between householder and tenants. Another objective is to achieve greater economic performance by facilitating the release of land for productive uses. In addition, the aim of equality and social concerns are the source of setting socially acceptable housing standards and creating market interventions based on these standards. One of the ways governments can meet these standards is to provide social housing to disadvantaged households. Finally, it can be said that the most common aim of government interventions in most countries is increasing home ownership. Increased home ownership is thought to have positive effects on neighborhood relations and increase social capital (OECD, 2011, p.15).

Land arrangements generally deal with externalities and aim to correct market failures. The arrangements can be summarized as follows according to their type and purpose.

- Land use planning that divide land uses to guarantee the separation of inconsistent operations.

- Regulations on density and open space (including minimum lot size, height limitations etc.) focus at ensuring adequate open space and regulating how structures obstruct the perspective and access to sunlight of each other.
- Developer regulations to guarantee that developers cannot be free from public services.
- Building regulations to establish minimum norms of quality and security to assist with unbalanced data issues.
- Regulations for the environment and health.

When all these objectives and authorities are considered together, government interventions have significant driving and changing effects on the costs and functioning of the housing market (Hammam, 2013, p.22) According to the OECD report, the provision of housing can be improved by facilitating complex and time-consuming construction licensing processes and planning constraints and creating efficient land use regulations. In addition, provision of infrastructure and other public services will have a positive impact on the increase of housing supply. In addition, successful functioning taxes on unused properties and vacant land will encourage both the rapid development and the efficient use of these areas (OECD, 2011, p.9).

2.2.3. Location and Land Use Related Factors

Many academic studies on housing have not focused on the impact of location factors on urban development or housing production but on the decisive role of this factor on housing prices and people's housing preferences. The hypothesis underlying these studies is that the location is the most determining factor in a house's market value. According to Fitzgerald, the condition, value and size of a home may change over time. However, the only thing that cannot be changed is the location. The location brings desirability, desirability causes demand and demand increases the price of real estate (Fitzgerald, 2016). Therefore, the location has a great impact on the determination of land use and value (Karagöl, 2007, p.22).

Location is a serious factor when designing and building a house (Aluko, 2011, p.70). Apart from this, the impact of location in the housing market is very significant. A number of researchers have systematically studied the impacts of location variables on the value of property. Romkaew stated that location is the time-distance relationships or connections between a property and any other possible destinations of people. In other words, location is the property's connection with its environment (Romkaew, 2001, p.6). Housing units vary in terms of their environment, the type of society they are situated in, and their proximity to working and shopping areas.

Although the scope of most of the studies in the literature is mentioned above, this study will focus on the factors related to the location and land use that affect urban spatial growth, not the factors that affect housing prices or house selection. In a study conducted in 2016, location-oriented factors affecting urban spatial growth are listed as follows.

1. Distance from workplace

2. Distance from city center

3. Cheap housing price

4. Density of population or neighborhood

5. Distance from health center

6. Distance from public facilities

7. Distance from main road or highway

8. Distance from commercial or industrial area

9. Proximity to parks and natural features

10. Proximity to area that supports new and growing business (Mahamud, Samat, Noor, 2016)

In this context, this study chooses *accessibility, availability of public and environmental amenities and neighborhood factors* as the specific variables of location and land-use related factors.

2.2.3.1. Accessibility

Accessibility can be described as the ability of people to reach and participate in activities at various locations. The concept of accessibility takes into account the cost of distance and time to reach specific landuses, such as school, transportation facilities, business and shopping center and so on. However, closeness to a transport infrastructure can have a negative effect because of noise, vibration, pollution, visual effects and safety problems. After all, accessibility can be regarded as a point of attraction or closeness to opportunities (Xiao, 2012, p.43).

The theory of location and land use indicates that accessibility is an important variable in urban land value and fluctuations in that value. Three strategic lines have been followed by studies describing the role of accessibility in the housing market. The first group of studies examines how advancements in accessibility arising from investment in transportation are capitalized into residential property's value. These studies indicate how local financial circumstances, land-use policies, land and real estate markets react to increased accessibility. The second group of studies analyzes the connection between accessibility improvements and house prices using hedonic price models. Finally, a third research group focuses on analyzing accessibility as an important factor influencing residential site selection decisions (Duran, Valero, Llorca, Botti, 2011).

Distance to CBD

Accessibility is defined in terms of proximity to the Central Business District from the traditional perspective of a location. Despite the development of information technologies, face-to-face communication in CBD is still demanded. Furthermore, the CBD remains the most attractive location due to its proximity to major transport infrastructure networks, bus and metro stations and main shopping areas. Therefore,

accessibility to the city center has a significant impact on housing development (Karagöl, 2007, p.22).

Many theories have been produced that try to explain the interrelations between urban settlements and transportation. The classic land-use model of Von Thunen is the first to officially associate the land value on the basis of its location. The effect of accessibility on the value of an urban property is based on the model of Von Thunen (1826) and focuses on the effect of accessibility on housing prices. The tradition of neoclassical microeconomics developed the model of Von Thunen that relates land rent to transportation costs. In this context, studies have been conducted on how accessibility in terms of transportation costs affects residential property values. According to Alonso, households living far from the city center pay higher costs than those close to the city center due to transportation costs. This situation leads to low property prices in areas that are far from the city center. In other words, these areas will need to be offered at lower prices to offset the high transport cost resulting from low accessibility (Duran, Valero, Llorca, Botti, 2011).

According to Marın and Altıntaş, this model assumes that all factors except transportation costs are stable and that all job opportunities are located in the city center. For this reason, households and economic activities are in a competition to choose a place in the city center in order to reduce transportation costs. At the same time, landowners tend to offer their land to urban uses that will bring more rent. In other words, each plot is allocated to the best use which will bring the highest rent. As a result, individuals agree to pay high rent in order to be closer to the city center. Therefore, single-centered city theory suggests that there is a negative relationship between distance to the center and rent arising from land use. More clearly, as moving away from the city center, the unit price of land and the amount of rent obtained on this land decreases. Such a relationship leads to the emergence of high rents in and around the city center. Because of this situation, a "capital intensive uses" occur in these areas. Therefore, when coming close to the city center, there is an increase in building heights. One of the results that can be obtained from the Single-Centered City

Theory is that the decrease in land prices and zoning costs as it moves away from the city center accelerates the growth of the city towards the periphery. However, the single-centered urban model has been seriously criticized for its simple assumptions which are mentioned above. It is found highly restrictive to accept that all business opportunities are concentrated in the center. In addition, economic and technological transformations may weaken the acceptance that urban employment opportunities can only be concentrated in the city center (Marın, Altıntaş,2004).

Distance to Transportation Facilities

Transport accessibility is often associated with ease of commuting and is measured by variables such as travel time, transportation cost, convenience and the availability of different modes of transport. In addition, well-functioning public transport services have a positive impact on housing development (Karagöl, 2007, p.22). The availability of transport networks attracts a large population and contributes to the functioning of the work areas, especially the business areas. From this point of view, Mahamud, Samat and Noor stated that the development of an area is difficult if the road system is not well established in that area. In many urban areas, the reason behind the construction of highways and nodes is the demand of people for easy access to different destinations. Transportation networks not only facilitate people's daily lives but also reduce the construction cost of urban uses such as shopping centers and hospitals (Mahamud, Samat & Noor, 2016). Therefore, areas closer to transport links have greater potential for urban and residential development. Different types of roads are constructed for different purposes and this situation leads to different impacts on urban sprawl (Li, Zhou, Quyang, 2013, p.4). All these arguments need to add that a more efficient transport network will shorten the travel time. In this case, the directive effect of the distance from the city center on urban development loses its importance (Mahamud, Samat, Noor, 2016).

Distance to Commercial and Industrial Area

Industrialization and commercialization are important determinants of urban development. These two activities are important economic forces in developing of an area. The areas closer to the city center where intensive commercial and industrial activities take place are more likely to be more urbanized. These areas offer many opportunities for employees to live near the workplace. In addition, the presence of these areas will trigger the development of the road network in a way to improve trade on a regional scale. As a result, lands close to urban socio-economic centers have a high potential to be used for different urban uses and to become new development areas (Mahamud, Samat, Noor, 2016).

2.2.3.2. Availability of Amenities

The housing development is influenced not only by transportation conditions but also by environmental characteristics of the area. Therefore, environmental factors such as the availability of public and environmental amenities should be taken into account (Romkaew, 2001, p.2).

Public Amenities

Distance to public facilities is one of the important factors affecting and directing urban development. The existence of public institutions, administrative offices, health and education institutions, sports facilities, and other social activities on an area is one of the important factors that make that area attractive for housing companies to produce housing projects. The attraction of housing producers to the region will stimulate local authorities to increase public facilities and improve infrastructure for the population to live in this area. This will unintentionally lead to the formation of a new development zone alongside the existing urban land. With the addition of new public uses to the region, new neighborhoods will develop rapidly in areas close to these new uses, while the development of areas without public uses will be very slow (Mahamud, Samat, Noor, 2016).

Environmental (Natural) Amenities

Proximity to environmental facilities consisting of natural elements or open spaces can be considered as an accessibility factor that increases the value of the property. Many studies have shown that housing development is affected by the environmental characteristics of the location. Households prefer to buy housing from locations with a beautiful view. For example, cemetery views have a negative impact on housing sales, while buyers are willing to pay extra for areas with river or lake views (Karagöl, 2007, p.22). From an aesthetic point of view, areas related to industry, trade or transport infrastructure have a negative impact on real estate. Public open spaces and urban parks enhance the quality of life by increasing air quality, recreation options and aesthetic values (Xiao, 2012, p.52). This situation causes the urban residents who want to reach fresh air, recreation activities, and a calm environment intertwined with nature, show great demand for green spaces. This demand for green and open spaces greatly influences housing development and site selection decisions. In summary, green and open spaces have a significant reflection on housing development (Duran, Valero, Llorca, Botti, 2011).

2.2.3.3. Neighborhood Factors

Apart from accessibility and the existence of different types and numbers of urban uses, the characteristics of the neighborhood are also considered as significant criteria for housing development. The characters of the neighborhood can be classified under three headings:

13. Socioeconomic variables such as the education or income level of the residents
14. Types of nearby uses
15. External variables such as security level, crime rate, air, and noise pollution levels

Age, income, ethnicity, lifestyle characteristics of the population in a neighborhood constitute the socio-economic structure of that neighborhood and these characteristics have an important determining role in the development of housing. The

socioeconomic status of the neighborhood affects the provision forms and prices of housing (Xiao, 2012, p.47-49). At the same time, the proportional distribution of the different uses around affects housing development. Numerous articles have reported that areas close to urban areas or large urban uses have greater and faster development potential (Li, Zhou, Quyang, 2013, p.4). At the same time, areas that threaten people's health or safety due to adverse environmental conditions are not suitable for housing development.

2.2.4. Social and Economic Factors

In today's big cities, the demographic characteristics of individuals are rapidly changing. As a result of globalization, increasing communication opportunities and changes in population structure, many different housing inhabitant profiles have emerged. With these different user profiles, new lifestyles have emerged and therefore new housing provision types that can meet the needs of all these lifestyles have emerged (Ünsal Gülmez and Ulusu Uraz, 2010, p.54-55).

Population growth and density, needs and habits of the inhabitants, family type, household size, age distribution, education and income level, are the socio-economic factors that have impacts on housing provision and these factors are discussed in this study. These factors affect housing planning and cause spatial and architectural transformations, changes and differentiations on housing production (Vural, 2017, p. 45).

In this section, social and economic factors that affect housing investment preferences in terms of supply and demand and may lead to differentiation in housing provision are examined. The main factors covered in the study are summarized below.

2.2.4.1. Population Growth and Density

The effects of the demographic structure on housing supply-demand and investment preferences are among the subjects that have been specifically examined. Demographic factors such as population growth, age distribution of population,

gender, marital status, educational status determine housing demand. Population growth increases the demand for all goods and services as well as the demand for housing. In other words, housing demand is expected to increase while population increases (Öztürk and Fitöz, 2009, p. 28). Antczak and Stępniak emphasized that there is a clear relationship between the total population and population growth rate and the number of completed residential units. The increase in the population raises the need for city growth and increase in built environment (Antczak and Stępniak, 2015, p.76). Therefore, housing production levels vary according to housing demand. In other words, the difference between the two settlements in terms of population growth will lead to differentiation in the amount of the produced dwelling units.

The population growth rate and the amount of new population added to the city annually are decisive on the size of the area to be allocated for housing development. Due to high population growth and density, urbanization speed and demand for land in urban areas are increasing. Despite the high land prices, it is necessary to produce a certain level of housing stock to meet the housing needs of the rapidly growing population. In this respect, high-rise houses are built on the mentioned lands due to factors such as high land prices and investor's desire to make a profit. Therefore, high population growth and high density is a factor that triggers high-rise housing production. Residential areas consisting of high-rise apartment buildings are more common in areas with high population growth and high density, whereas less-storey houses are built widely in low-density areas (Vural, 2017, p. 85). This shows that population growth rate and population density are the factors that cause differentiation on housing provision.

2.2.4.2. Family Type and Household Size

Household size is one of the important factors affecting housing demand and supply. In principle, while the decrease in the household size increases the demand for housing, the increase in the household size decreases the demand for housing. Decreasing household size is also closely related with urbanization. As urbanization

rate increases, household size decreases. Household size is lower in countries with developed economies, even though it is high in developing countries. It is understood that household size is directly related with economic development and urbanization (Hatipoğlu and Tanrıvermiş, 2017, p.55).

The findings of a study conducted by Ünsal Gülmez and Ulusu Uraz in 2010 reveal that household size and family type are important factors that determine people interaction with the built environment. In line with the varied user profiles, the types of produced dwelling units also diversify. Households are diversifying almost all around the world and have different needs and expectations. The number of rooms and floor area of the houses vary according to the household size. For example, the increase in the percentage of small households causes the expansion of small housing production with 1 or 2 rooms. Today, housing units including many different room numbers from 6+1 to 1+1 and in different sized for different needs from 50 m2 to 500 m2 can be located within the same apartment block.

People involve in very different household types throughout their lives. Therefore, the built environment should respond to this diversity in terms of the housing stock it contains. The housing stock should contain a variety of size and designs to address all household types and expectations from gender differences (Ünsal Gülmez and Ulusu Uraz, 2010, p.54-64).

2.2.4.3. Education and Income Level

There are many studies in the academic literature showing that different user profiles in terms of socio-cultural and economic structure also lead to differentiation in housing production. In addition to per capita income, the distribution of income among the layers of society directly affects housing expenditures and housing investment preferences. The realization of the housing investments is thought to be related with the income level and inhabitants are able to access the houses according to their income levels (Hatipoğlu and Tanrıvermiş, 2017, p.54). An unequal income distribution differentiates housing demand and supply. In this case, housing demands

of high income groups and low income groups differ from each other. According to Antczak and Stępniak, the income level is important for the analysis of housing demand. High incomes encourage housing developers to take new investment decisions (Antczak and Stępniak, 2015, p.76). In case housing producers choose especially high income groups as the target audience, the housing qualities change and the luxury housing supply emerges and excessive profits are reached (Öztürk and Fitöz, 2009, p. 27).

When Turkey's urbanization experience after 1980 is examined, the emergence of new housing provision types is observed. When the housing stock of the cities in that period is examined, three main groups are remarkable. In the first group; low-income slum areas, in another group; apartment areas produced by cooperatives and small entrepreneurs (build-sell), which mostly address middle and lower income levels, in the last group; there are villa type gated luxury housing estates which are located in the prestigious areas of the city and where high income groups show high demand. The reason for the differentiation of housing provision forms in these areas is the differences in education and income level (Sayar and Süer, 2004, p.76-81).

The differences in the economic and cultural structure differentiate consumption habits and determine the housing demand of the users. Increased gap between income groups and polarization causes homogenization of the fragmented poles within themselves and is effective in the emergence of differences in housing production.

2.2.4.4. Age Distribution

Age distribution can also have a significant impact on the development and differentiation of housing activity. According to the life cycle hypothesis developed by Modigliani (1986), age plays an important role in the relationship between consumption and income. Accordingly, it is expected that an economy with a young population structure will need a loan to meet its needs such as housing, vehicle or white goods and will have a relatively higher debt level (Modiglian, 1986). The high rate of young population and the decrease in household size are among the most

important factors increasing the demand for housing (Hatipoğlu, Tanrıvermiş, 2017, p.69).

Age structure of population affect the demand and supply for housing. Gregory Mankiw and David Weil (1989) conducted a study about the effect of population age distribution on the housing price. Based on this study, they assert that around the 30 years old population is one of the largest demand groups for housing. Furthermore, the demand for housing declines after their 40s. Ermisch (1996) reported that the population age distribution had a significant impact on the demand for housing and noted that the demand for housing would decrease with the aging population. Ha Jiming (2007) argued that when the working age population in a country is high, in other words, the dependency ratio is low, the investment rate in that country is high due to high demand. Therefore, it can be said that age distribution is a factor that has a big impact on the amount of housing production. This suggests that there may be differences in housing production levels in residential areas where there are differences between young, elderly and dependent population rates.

CHAPTER 3

URBAN DEVELOPMENT AND HOUSING IN TURKEY

3.1. Brief History of Urbanization and Urban Policies in Turkey

Everyone has the right to housing to meet basic human needs. The housing is the only place where an individual's safety is ensured and privacy are available. The right to housing in the Social and Economic Rights Section of our Constitution indicates that the state is responsible for providing housing to individuals. The social state is obliged to meet the housing needs of all. As every person has the right to have a safe house, the government has the duty to increase the choices, diversity and accessibility in the housing. Article 57 of the 1982 Constitution states that housing is the right of citizens with the following statements. “The State shall take precautions to meet the housing needs in a planning framework considering the characteristics of cities and environmental conditions, and also support mass housing enterprises.” (Balkır, n.d., p.342).

Turkey's urbanization experience is evaluated and discussed by many researchers. Although these studies show great similarities to each other, they also include some differences and periodicization efforts. Some of these efforts may need to be addressed. For example, according to the classification made by İlhan Tekeli, urban research in Turkey can be studied in four main periods. The first of these was the period from the first years of the Republic under the dominance of Kemalist ideology to the end of World War II. Tekeli calls this period as “Radical Modernity Project”. The second period is the process until 1960, which he described as “the period when populist modernity was inadequate”. After that, he considers the period between 1960 and 1980 as a separate period and defines the fourth period as “post-1980” (Tekeli, 2010, p.302-345). Tarık Şengül brings a periodization proposal of the urban

experience in Turkey and discusses the key features of each period in an article titled as “Türkiye’de Kentleşmenin İzlediği Yol Üzerine: Bir Dönemleme Girişimi”. Accordingly Şengül, the urbanization process in Turkey is divided into three distinct periods. These are respectively titled as follows. "Urbanization of the Nation State" for the period between 1923-1950, "Urbanization of Labor Force" for the period between 1950-1980, "Urbanization of Capital" for the period after 1980 (Şengül, 2009, s. 103). Şengül, who mainly refers to Tekeli in describing the nation-state process, emphasized the squatters during the period between 1950 and 1980, which he defined as the Labor Force Period. In addition, he expressed the contradiction between the emerging squatter culture and the urban middle classes and adressed the early stages of class polarization. In the scope of the thesis, the process starting with the proclamation of the Republic of Turkey and extending to the present will be discussed in four main periods.

- **1923-1950:** Early Republican Period, Slow Urbanization,
- **1950-1980:** Rapid and Unplanned Urbanization After Migration,
- **1980-2000:** Post-Liberalization, Partial Urbanization and Mass Housing Period
- **After 2000:** Post-Earthquake, Capitalization and Transformation Period on Urban Area

Many researchers consider the post-1980 urbanization process as a single period. However, in this study, it would be more appropriate to consider post 2000 as a separate period. Neoliberal policies began to show their impact on the city in the 1980s. However, especially after the investment of large capital in the real estate sector, the social and spatial separation of the residential areas that emerged in big cities is realized after 2000. Also under this study, housing provision policies developed in these periods will be explained in the context of urbanization process. In summary, this study aims to explain history of housing development in Turkey in the four main periods mentioned above.

3.1.1. Slow Urbanization Post-Republic, 1923-1950 Period

The first period covers the period between the declaration of the Republic and the end of the Second World War. Although Turkey had not entered World War II, this phase can be seen as the process of building a state that is trying to restructure between the two wars.

The most important issues that the state should think about the housing organization of the period were the reconstruction and housing problems of the cities that got out of War of Independence. In other words, the producer and investor that dominates the housing production of the period is the state. However, in the period until the 1930s, there were not many houses produced, and re-use of existing houses was mostly proposed instead of new housing production. The houses produced by the state between 1925 and 1934 were mostly built in the new capital Ankara for the use of public officers (Koca, 2015, p.21).

Even though a strong urbanization movement was not observed in the whole country during the first period, the urban population remained almost constant even if the population living in the city increased due to the reasons arising from the internal dynamics of the city. According to the 1927 population census, 24.2% of the total population of Turkey alive in urban areas, this rate could only rise to 25% by 1950. Migration to urban areas is almost non-existent. Ankara, the new capital, is the only exception in that period. While the population growth in many major cities did not exceed 20-30 per thousand, the rate was 61 per thousand in Ankara (Keleş, 2004: 58; Işık, 2005: 60- 61).

The housing problem was seen only as a peculiar problem of Ankara, which was an growing and expanding city in terms of population and function. Imagined as the model city of the new regime, Ankara constitutes the most important planning experience of the early years. The fact that the bureaucracy settled in this city caused a large population of civil servants to settle here and increase the functions of the city (Arslan, 2014). Tekeli noted that, the leaders of the Republic wanted to create the

concrete example of the fundamentalist modernity project in Ankara. It would be a planned city and be equipped with modern housing. The knowledge gained from the experience of Ankara was institutionalized by the successive laws in the 1930s. Laws on Municipal, Public Sanitation, Building and Road passed in the first half of the 1930s constituted the institutional structure of fundamentalist modernity for the development of cities. These laws provided a modernist framework of legitimacy for urban development (Tekeli, 2011). With the Municipal Law enacted in 1930, municipalities were given the duty to build factories for building materials, to build and rent cheap municipal housing and to sell land to those who would like to buy and organize land in the development areas of the municipality. However, this task was a voluntary duty of the municipalities and the municipalities, which were insufficient to allocate resources even for their mandatory duties, had difficulty in fulfilling the duty of housing (Arslan, 2014).

Until the 1930s, although the state tried to solve the problem of planning and housing by various laws, the state could not be an active actor in housing production due to problems in organization and lack of sufficient capital (Sey, 1998, p.275). In this period, the individual who owns the land was realizing housing production as a financier and practitioner. The dwellings were mostly low-density singular houses with gardens, mostly produced for the individual's own use. Briefly, the landowner, who was a producer and investor of housing until the 30s, was trying to solve the housing problem by building a low-density single house or apartment (Koca, 2015).

Production was organized in 1935 with the establishment of Bahçelievler Housing Cooperative in Ankara. In 1936, it was announced that a construction company was needed for the unit consisting of 150 houses to be built with the loan to be obtained from Emlak and Eytam Bank. Then, in 1937, Emlakbank Yapı Ltd. Şti. was established (Boran, 2009, p.44).

When The Second World War began in 1940 was changing the balance in Turkey's economy, it has also stopped the production of housing industrialization efforts and

disrupt their activities. In the 1940s, studies aimed to provide housing for government employees came to the forefront. The Emlak Eytam Bank supported the construction of housing for government employees. In addition, SSK, which was established in 1945, started to provide housing loans under the condition of forming cooperatives. This situation changed the forms of housing production and provision. With the Civil Servants Housing Law enacted in 1944, civil servants, officers and military officers who did not have any other housing in the same city would benefit from the houses builted in areas permitted by the Ministry of Public Works. The Saraçoğlu (Namık Kemal) Neighborhood in Ankara was built with the authority granted by this law and consists of 434 residences. The neighborhood, which was designed by the German architect Paul Bonatz for the settlement of the high-level bureaucrats of the Republic, was created with Ebenezer Howard's understanding of the Garden City. In the neighborhood, there are houses with large gardens, walkways, theater, library and school. This first large-scale housing project in the history of the Republic was realized through the company of Emlak ve Eytam Bank (Arslan, 2014).

The laws and experiences between 1923 and 1950 indicate that housing policies were developed through the city of Ankara. It is understood that the forms of presentation in the first period are limited to one house, one apartment building, workers 'and civil servants' houses or houses formed by cooperatives. The construction process continued at low density through individuals and housing cooperatives. Although the population accumulation in the cities started to increase towards the end of the period, the urbanization rate was slow as a result of low-density housing production. However, the housing production process gained a different dimension with the emergence of new housing presentation forms such as squatters towards the end of the period (Koca, 2015).

3.1.2. Rapid and Unplanned Urbanization after Migration (1950-1980)

The second period, which Şengül called as "urbanization of labor power", experienced a rapid urbanization process. In the period after 1950, there are two important events affecting the housing production and provision types in Turkey. The first factor that is decisive in the urbanization of the period is the growth of the cities by migration from rural areas. The economic recession experienced during World War II gained a different dimension with the end of the war. Post-war mechanization and industrialization have been influential all over the world. As a result of these developments, the depreciation of agricultural production and the transition to a market economy has followed a similar path in Turkey. Mechanization in agriculture left the agricultural workers in Anatolia unemployed and the unemployed people found the remedy to migrate to the cities. Therefore, there was a big increase in the urban population. This increase can be easily followed with the help of numerical data. While the population increase in urban areas was 20,1% between 1940 and 1950, it increased by 4 times between 1950 and 1960 and reached 80,2%. Thus, a new population coming with immigration was added to the citizen who could not meet the housing demand with the existing housing production methods (Koca, 2015, p.24). However, as Şengül states, despite all this rapid increase, there has been no change in the minimalist policies of the state in this field. While the state's intervention in urbanization remained limited, the process was left to the initiative of local communities (Şengül, 2009, p.123). Until the 1950s, there was no production for the lower income group except for the houses produced for workers and civil servants. This problem is mostly the problem of a new citizen who comes to the city after the migration and does not have a regular income. This has led to the inclusion of new squatters, a new form of housing presentation and new actors producing the squatters. This new form of housing, which is mostly directed to the lower income group that does not have a regular income, has rapidly increased in the non-zoning areas of the city and formed slums (Koca, 2015, p.24).

The planned period began with the establishment of the State Planning Organization and the preparation of the first plan in 1963 as stipulated by the 1961 Constitution (Sey, 1998, p.288). In the first five-year development plan covering the years 1963-67, the housing problem was dealt with for the first time as a whole and its relation with development was established. The concept of social housing has been discovered and ways of making cheap and small housing have been sought. However, a sufficient number of housing production could not be realized (Keleş, 2004, p.506). With the use of public services in slum areas and improvement of these environments in the 1st Development Plan, the state started to formalize an informal form of housing. The Squatter was used for the first time directly in the official documents as a housing type with the Squatter Act[1] (Law No. 775) (Sey 1998, p.288). Thus, squatter has identified as one of the forms of housing presentation produced in Turkey. In 1953, the State introduced the law on the Encouragement of Building Construction (Law No. 6188) in order to reduce the development of slums. However, according to Sey, this law has made apartment building widespread rather than reducing demand for slums. The law proposes that the vacant land under the authority of the municipalities were given to individuals who do not own housing. However, this law did not provide any solution for the lower income group to acquire housing. Instead, it encouraged the production of apartments for middle-income groups currently living in the city (Sey, 1998, p.286; Koca, 2015, p.25).

Organizations such as the Ministry of Housing and Development, Ministry of Labor, Social Insurance Institution, Real Estate and Credit Bank were also established during this period and were authorized to increase the home ownership among the citizens (Arslan, 2014). Encouraging policies for housing cooperatives also took place in this period. As land prices increased, it became difficult for the middle classes to own individual housing. In response to this need, small capital developer's housing provision developed within the market rules. In this period, as an alternative to the small capital developer's housing provision, the building cooperatives was developed.

[1] Gecekondu Kanunu, Law No.775

Before the Second World War, the construction of housing through the cooperatives took place only in Ankara. After the war, this form of housing began to emerge in other cities. Until 1960, co-operatives with mostly 7-30 partners were established. The legal infrastructure required by the form of housing production by both the small capital developers and the cooperatives was completed with the The Flat Ownership Law[2] enacted in 1965 (Tekeli, 2011).

In the period after 1950, The Flat Ownership Law, which was enacted in 1965, has become the second most important issue affecting the development of production and forms of housing presentation in Turkey. The production of apartments by cooperatives or private sector entrepreneurs has become widespread by this law. The land owner, who could not build an apartment on his own land due to the increase in construction costs during this period, gave a certain portion of the building to investor in return for completion of construction. In other words, some part of these buildings belong to the entrepreneur and the other part belong to the land owner. Thus, the build-sell apartment buildings, which were built by the private sector entrepreneur, have emerged. With the Cooperative Law which came into force in 1969, the private sector investor who buys land on the periphery of the city similar to the build-sell method, produces houses through becoming cooperative and provides finance with regular payments each month, and can produce more housing units than the apartment. Thus, the apartment buildings, which are applied as a single block with multiple apartments, have evolved into large scale settlements formed by repeating a block in the process (Koca, 2015, p.25).

The fact that the house production has been transferred from the state to the private sector producer and become sellable in units after The Flat Ownership Law has caused the house to be seen as a profitable commodity. While all forms of housing provision produced in the process from the declaration of the Republic until 1965 were meaningful in terms of use value, they gained value through exchange value after The

[2] Kat Mülkiyeti Kanunu, Law No. 634

Flat Ownership Law. This change in the definition and perception of housing is directly reflected in the housing architecture. The first period houses, which are defined on the basis of usage value, are the structures designed by the architect. Interior planning is made in order to meet the needs of the owner, and facade and form designs gain importance as they are considered as an element of prestige. However, as a result of the urgency of solution of the housing need, the houses were mostly produced with an approach based on the repetition of plan schemes and floor layouts without being involved in a similar design process to the first period (Koca, 2015, p.25).

As a result, the rate of urbanization has increased considerably compared to the previous period with all these regulations, new housing provision types and the introduction of new actors. The unplanned and sometimes illegal production of the housing units in the city led to the unplanned development of the cities. On the one hand, it is possible to talk about the development of slum settlements that cannot be predicted where they can grow, and on the other hand, an urban development where apartment settlements can be increased and raised with new and illegal floors in the city centers where there is no vacant land. Apart from a limited number of small-scale planning and inspections, the government could not make enough interventions to meet housing demand due to immigration and to develop the plans of cities to be developed in this direction. The same assessment can be made for residential architecture and architects. Architectural projects that could be designed to meet the needs of different income groups and to determine the direction and shape of the city's development could not be produced (Koca, 2015, p.25).

3.1.3. Post-Liberalization, Partial Urbanization and Mass Housing Period (1980-2000

Tarık Şengül calls the Turkey's third period of urbanization as "urbanization of capital" (Şengül, 2009, p.137). He emphasized that radical changes in Turkey's economic policy has occurred in the 1980s. The country has turned its inward economic policy outward in a neoliberal line. (Tekeli, 2011). Within this framework, while industrial investments were largely abandoned, large cities became the main target of state and private investment. While previously neglected areas such as infrastructure, transportation and housing attracted investment, medium and large-scale capital groups began to attract the rents obtained in urban areas and started to turn to cities in the 1990s (Şengül, 2009, p.138). According to Bilgin, the main feature that distinguishes the post-1980 period from the previous period is that large capital groups begin to invest systematically in the construction and real estate sector (Bilgin, 1998, p.267).

Another important development occurred after 1980 in Turkey is changes occurring in the structure of local government in 1984. Metropolitan municipalities were created depended on the Law numbered 3030[3] and the revenues of the municipalities were increased. After that, The Urban Development Law No: 3194[4], enacted in 1985, had a important impact on housing manufacturing, with authority provided to municipalities in drawing up plans and granting rights for housing approval. This decentralization of planning contributed to significant increases in planned areas, developed land, and housing production in many cities. Municipalities were also enabled to conduct land subdivisions in planned areas; however, this power was not used by some municipalities to generate adequate amount of land with planning approval for housing production (Türel and Koç¸ 2015, p.58).

[3] Law No.3030: The law on the Management of Metropolitan Municipalities-Büyüksehir Belediyelerinin Yönetimi Hakkında 3030 Sayılı Kanun
[4] Law No.3194: İmar Kanunu

In addition to local governments, two Mass Housing Laws[5] were enacted in 1981 and 1984. A Housing Development Fund was established to provide housing loans with these laws and a Housing Development Administration[6] was established to manage this fund (Tekeli, 2011). Furthermore, for the first time, a privilege was brought to the housing cooperatives by these laws and the cooperatives were given priority in the provision of land. The mission of the Public Housing Administration has been identified as meeting the rapidly growing demand for housing in a planned manner by encouraging the production of housing in Turkey. With these regulations, the state started to organize the construction of housing projects (Türel, 1989, p.146). Thus, although the foundation of housing cooperatives in Turkey laid in the 1930s, housing cooperatives intensively entered our daily lives in 1980s. With the encouraging effect of the above mentioned regulations, especially in 1984, there has been a large increase in the number of cooperatives and unions. Between 1984 and 1989, the rate of houses produced by cooperatives increased to 25-30%. 1980-1990 period is defined as the golden period of housing cooperatives. The shortage of resources experienced by the Mass Housing Fund in 1989 slowed down the increase in the number of cooperatives. However, the share of cooperatives in housing production continued to be important until 2000 (Aydın ve Yarar, 2007, p.39).

According to Tekeli's statement, in the post-1980 period, three actors played an active role in the development of public housing presentation. These are the association of cooperatives, TOKİ and the developers with great entrepreneurial character. While the first two actors were directed towards middle income groups, the third actor was directed towards the upper income groups of the society (Tekeli, 2011). These large capital groups, which shape the economy, have formed less densely gated settlements in the suburban areas. The existence of larger usable lands in the suburban areas and the expansion of existing parcels in these areas has increased the applicability of large-scale housing projects in these areas (Koca, 2015, p.27). The gated settlements, which

[5] Law No.2985 and Law No.2487: Toplu Konut Kanunu
[6] Toplu Konut İdaresi (TOKİ)

are called “rich ghettos” by Tarık Şengül, are the forms of housing provision located on the lands far from the center. Additionally, they are provided with security and environmental order, they are mostly isolated and not related to the environment in which they are located (Şengül, 2009, p.143). The middle-upper classes of the city, who settled in the city center, started to demand for these security sites established outside the city due to the increase in density in the center (Eraydın and Altay, 2011).

According to Tekeli, another interesting feature of this period was the change in the quality of squatter amnesties in 1984 with the law numbered 2981[7]. The mentioned squatter amnesty highlighted the value of change in these areas, in other words, their potential to be development area. The slum districts, which were initially located on the outside of the city, began to be included in the center of the growing city in the 1980s, and thus became the focus of urban rent. The new squatter amnesty, unlike previous ones, did not foresee the rehabilitation of these areas, but the transformation of these areas, and especially the areas close to the city center, began to become apartment buildings in a very short time in the form of build-sell construction. In other words, the request of squatter owners to receive shares from urban rent has been encouraged by the state. According to Tekeli, this can be seen as the beginning of “the form of housing provision through transformation” which will become more widespread in the following period (Tekeli, 2011). Şengül puts forward that the opening of the slums to development affects the political behavior of the population living there. According to him, although the government gained political support from the population living there, the slums were able to develop in the extent of their proximity to the zoned part of the city and the suitability of their geographical conditions (Şengül, 2009, p.144-145).

In the post-1980 period, as a result of the support of private sector investors by the state in the production of housing, the distribution of the central authority system and the transfer of the planning and approval powers to the local administrations, different

[7] Law No.2981: Development Amnesty Law (İmar Affi Kanunu)

forms of formation emerged in the cities (Eraydın and Altay, 2011). According to Arslan, the most apparent feature of post-1980 housing production was the gradual withdrawal of small entrepreneurs from the market. The main determinants of the period were the cooperatives and the large capital groups newly entering this area, which significantly undertook the housing production in the country. The first decade of the period was the times that cooperatives developed and the second decade was when the effect of large capital increased. From the early years, when neo-liberal policies prevailed, social segregation became visible in both public and residential areas of the city (Arslan, 2014).

3.1.4. Post-Earthquake, Capitalization and Transformation Period on Urban Area (After 2000)

As mentioned before, Tarık Şengül has been studied Turkey's urbanization process in three periods: urbanization of the nation-state, urbanization of labor power and urbanization of capital. Although this periodization effort of Şengül presents a very explanatory view, a fourth period will be included in the thesis. According to Balaban (2011), the political powers that have been faced with the problem of funding since the early 1990s have tried to solve the resource problem through privatization policies in the 1990s and through the construction and real estate investments after 2000. As a result, cities have become key points in the integration of the country into the global economy. For this reason, the increase in the effect of capital on the city in the post-2000 period needs a new periodical definition. Based on this assumption, Arslan (2014) called the new period covering the period from the beginning of the 2000s to the present day as “the capitalization of the city”.

Neoliberalism is not only an economic dimension, but one of the most closely related areas are the cities and urbanization processes. After 2000, housing development in Turkey has been shaped by the global economy and capitalist-neoliberal approaches which are effective in the beginning of the 1980s. As it is widely stated in the literature of urban administration, central governments are trying to establish their relations with

the global economy through cities, especially through city centers. Global capital continued to invest in housing in the 2000s as in the previous period. National, international financial institutions, banks or large-scale investors have started to produce housing either by participating in housing production alone or by forming partnerships and expanding the scale of production compared to previous periods (Koca, 2015, p. 28-29). In this period, urban transformation projects, large-scale urban projects, privatizations, gated housing developments, shopping centers and residences stand out as concrete examples of neoliberal spatial structuring and the city is reorganizing on the basis of the actors of the state and capital (Bal, 2011, p.1-3). Additionally, in the 2000s, neo-liberal urbanization discourses such as "competitive cities", "attracting investment in cities", "brand cities", "urban marketing" and "gentrification" were brought to the forefront (Uğurlu, 2013, p.7).

As Balaban clarifies, two growth periods based on construction activities and real estate investments have experienced in Turkey. The first period is the intervention process towards urban space production that started in 1980s with the adoption of neoliberal policies. The second period started after the 2001 crisis. In both periods, the government supported the growth in the construction sector with both direct and indirect investments and legal and administrative arrangements. More specifically, one of the main reasons for the growth in the sector was state support and contribution (Balaban, 2011, p.22). Similar to the period of growth in the 1980s, the state has made many changes in the planning and zoning legislation and has radically changed the institutional structure of the planning and urban planning system in the growth period after 2002. The general purpose of the amendments made during this period is to ensure rapid and effortless realization of investments in construction, real estate and tourism. In addition, by giving development and planning powers to the investor institutions, the decentralized planning powers in the mid-1980s were partially centralized in this period (Balaban, 2011, p.24-25).

The production of the built environment has always been key to the continuity of capital accumulation. According to Penpecioğlu, David Harvey analyzed this key role

and revealed the relationships between the production of urban space and the processes of capital accumulation. Harvey's theoretical approach that focuses on the concept of capital accumulation reveals how the over-accumulation crisis faced by industrial production, which could be defined as “the first cycle of capital”, was temporarily overcome by transferring capital to the second and third cycles. “The second cycle of capital” is the fixed capital investments that involve the production of the urban built environment. The capital transferred to the second cycle becomes a spatially fixed investment and forms the built environment necessary for production and consumption. Factories, infrastructure systems, schools, hospitals, residential areas, shopping centers are different components of the urban built environment and are constantly reproduced for the profitability of capital accumulation (Penpecioğlu, 2011, p.62). From the point of view of Harvey’s theoretical framework, the relationship between the production of built environment and capital accumulation in Turkey can be examined through policies prevailing in this period.

Allocating and selling public lands to the private sector for tourism, mass housing, shopping centers and urban transformation projects, increasing the authority of TOKİ and encouraging mass housing production, supporting built environment production in coastal areas and tourism centers, supporting large-scale urban projects, and the organization of public-private partnerships as institutional structures implementing these projects are the main policies of this period. With these policies, the distribution of planning powers among different state institutions has created the basis for non-holistic interventions in the urban space. In addition to this, the transformation of the industrial areas into business centers, hotels, luxury residential areas, university campuses, shopping centers, and the opening of the slum areas to the multi-storey buildings with reclamation and zoning plans were the main applications during the period (Uğurlu, 2013, p.7). All these developments indicate that the government in Turkey included in the process of transferring the capital to the second cycle (Penpecioğlu, 2011, p.67).

One of the key words of the post-2000 period was urban transformation. Urban transformation projects, which came to the agenda for the first time as a concept among the debates on the durability and legality of the collapsed houses after the 1999 earthquake, were considered by the AKP administration as the main policy tool for solving socioeconomic problems in the city. The concept of urban transformation has directly affected housing production with various laws after 2000. Within the scope of Law on Conservation by Renovation and Use by Revitalization of the Deteriorated Historical and Cultural Immovable Property (Law No. 5366[8]), it is possible to implement urban transformation in historical and cultural areas. With the Law on Municipalities (Law No. 5393[9]), local governments have been authorized to carry out urban transformation projects. Finally, with the Law No. 6306[10] on Transformation of Areas under the Disaster Risks, the transformation of structures considered risky for disaster situations in any part of the city was justified (Koca, 2015, p. 29).

Legal regulations played a major role in the shaping processes of the city. Local governments trying to attract capital groups can make project-based decisions on individual lands. In other words, according to the planning decisions taken by the municipalities, the zoning rights of the two parcels lying side by side in the city may be completely different from each other (Koca, 2015, p. 30).

In addition to local administrations, TOKİ has become a main actor in urban regeneration projects supported by broader powers and financial resources. After 2002, legal arrangements were enacted, which expanded TOKİ's areas of activity and increased its resources. As a result of these arrangements, TOKİ has become the only authorized institution in the field of housing and land production. It has acquired new tasks from the production of profit-making projects to the preservation of historical

[8] Law No.5366: Yıpranan Tarihi ve Kültürel Taşınmaz Varlıkların Yenilenerek Korunması ve Yaşatılarak Kullanılması Hakkında Kanun
[9] Law No.5393: Belediye Kanunu
[10] Law No. 6306: Afet Riski Altındaki Alanların Dönüştürülmesi Hakkında Kanun

areas and has the authority to make and approve zoning plans for the land transferred to it (Balaban, 2011, p.24).

Increasing the density of housing provision forms and starting to be designed in a fragmented way is critical for the development of cities. The housing sector realized by the construction sector and TOKİ has exceeded the country's requirement, and in many provinces there has been a surplus of housing rather than a housing deficit (Uğurlu, 2013, p.10). In addition, the planning decisions taken by many different institutions on the parcel scale after 2000 are damaging to the holistic development of the cities. Planning integrity is lost with the parcel-based decisions applied for mixed settlements where mostly residential units and different trade and service units are designed together. Constantly changing and transforming residential areas in the city make it difficult to follow the changes in the city's macroform (Eraydın ve Altay 2011). In addition, the position of the architect after the 2000s is quite different from other periods. In this period, the houses are designed for the maximum profit calculated by the investor or through general accepted assumptions in the market. The position of the architect has changed from the license technician to the image maker (Koca, 2015, p. 32).

CHAPTER 4

HISTORY OF URBANIZATION IN ESKİŞEHİR

4.1. Overview of the Study Area and Its Location within the City

Eskişehir has served as natural intersection among Central Anatolia, Marmara, Aegean and Mediterranean regions, making it a transition region from economic, military and political standpoints. While majority of Eskişehir's coverage area is located in the Upper Sakarya Part of Central Anatolia Region, it partly extends into Western Black Sea Part of the Black Sea Region on the north and Central Western Anatolia Part of Aegean Region on the west & southwest. The city is adjacent to the following cities in the given directions (Figure 4.1):

- Ankara on the north & east.
- Bolu on the north.
- Bilecik on the northwest.
- Kütahya in the southwest.
- Afyonkarahisar on the south.
- Konya on the southeast.

To the north & south of the area of the study are mountainous areas. An area of plains lies in the east-west direction in the middle of the region. The Plains of Eskişehir is a bowl-shaped, wide, flat area with an elevation varying between 770 and 900 meters, located between Mount Türkmen and Mount Sündiken. The Plains of Eskişehir is irrigated by Porsuk River, the longest arm of Sakarya River, entering from southwest and exiting at east (Figure 4.2). The line Porsuk flows along is a natural boundary which has been used as a reference for determining administrative boundaries since the Ottoman Empire times. Based on this, the area on the north of the Porsuk River, which divides Eskişehir into two regions in the east-west direction, forms the district

of Tepebaşı whereas the area on the south of the river forms the district of Odunpazarı (Figure 4.3) (Şahbaz, 2016, p.75).

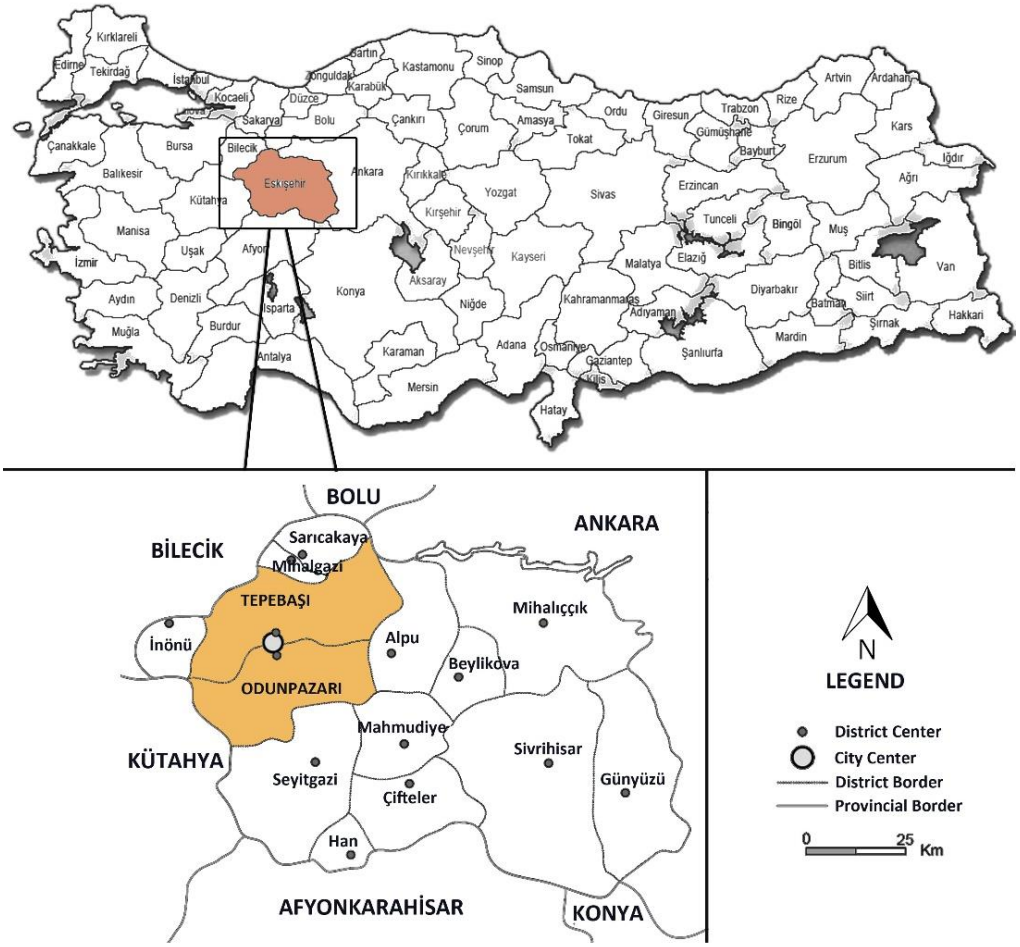


Figure 4.1. Location of Eskişehir and its Central Districts

(Source: Figure prepared by the author)

From an administrative point, the study area covers the regions remaining within the borders of the districts of **Tepebaşı (1.403 km²) and Odunpazarı (1.120 km²).** This **2.523 km² area** forms around **18,07%** of the Eskişehir province, which covers an area

of **13.960 km²** (General Directorate of Maps, 2014). This field is surrounded by the following (Figure 4.1):

- Mihalgazi and Sarıcakaya on the north.
- Alpu on the east.
- Mahmudiye on the southwest.
- Seyitgazi on the south.
- Kütahya on the southwest.
- İnönü on the West.
- Bilecik on the northwest.

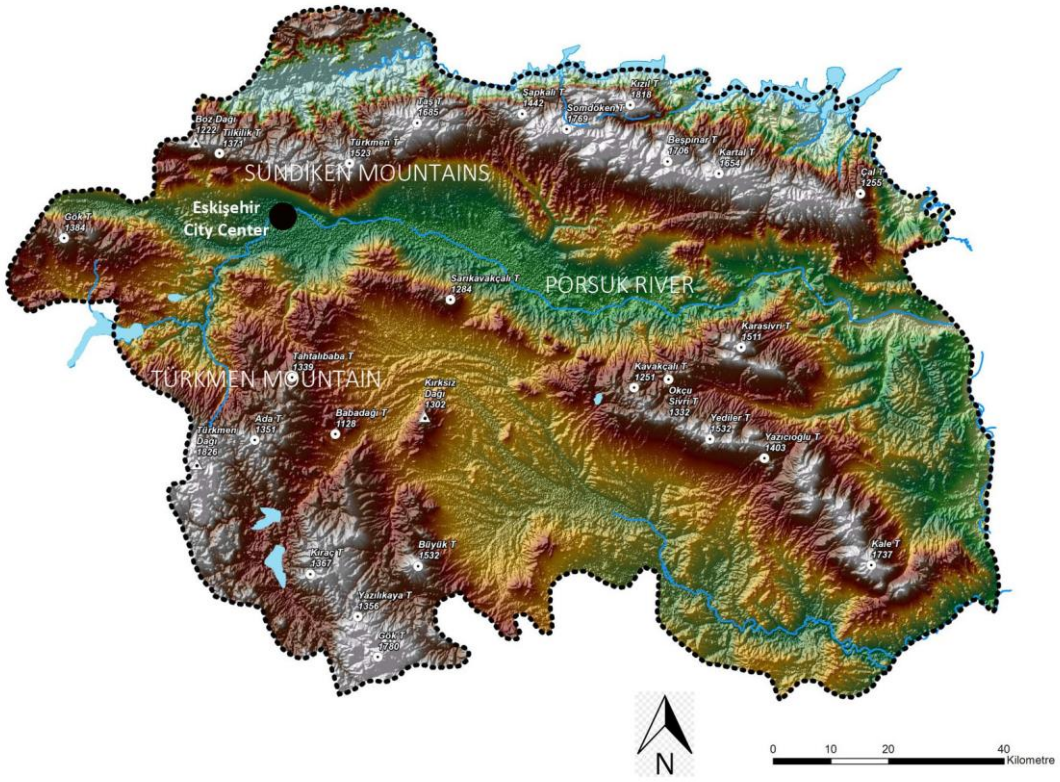


Figure 4.2. Physical Features of Eskişehir

(Source: Web.1, İstatistiklerle Eskişehir 2017, p.11. Tags added on the map by the author)

Municipalities of Tepebaşı and Odunpazarı, located within the boundaries of Eskişehir Metropolitan Municipality, were established as lower-tier (alt kademe) municipalities in accordance with the Statutory Decree No.504, named "Yedi İlde Büyükşehir Kurulması Hakkındaki Kanun Hükmünde Kararname" and published in the Official Gazzette on September 9, 1993. With the Law No.5747, published on 06.03.2008 and named "Büyükşehir Belediyesi Sınırları İçerisinde İlçe Kurulması ve Bazı Kanunlarda Değişiklik Yapılması Hakkında Kanun", their legal status was promoted to district. In other words, the study area, which used to be the cental district of Eskişehir till 2008, was separated into two different districts (Odunpazarı and Tepebaşı) with this law. With the Law No.6360, named "On Dört İlde Büyükşehir Belediyesi ve Yirmi Yedi İlçe Kurulmasına Dair Kanun", published on Official Gazette on December 6, 2012, the boundaries of Eskişehir Metropolitan Municipality were extended such that it would cover the provincial administrative boundaries. Additionally, the legal entities of the municipalities in the aforementioned area, governing the towns and villages were removed such that villages were merged with neighbourhoods and municipalities were joined together as single neighborhoods under the name of towns with the district municipalities by which they were legally bound. Consequently, the boundaries of the Metropolitan Municipality became the provincial administrative boundaries whereas the boundaries of Odunpazarı and Tepebaşı district municipalities started covering the administrative boundaries of these districts as well. Under the regulations enforced by the aforementioned law, the study area exhibits no legal entity as a village beyond this date (Şahbaz, 2016, p.92-93).

The central districts of Eskişehir consist of two districts, namely Odunpazarı and Tepebaşı. According to the Address-Based Population Registration System (Adrese Dayalı Nüfüs Kayıt Sistemi in Turkish, abbreviated as "ADNKS") data from 2018, the population of Odunpazarı is 404.267 and the district consists of 85 neighbourhoods, making it the most crowded district of Eskişehir. The population of Tepebaşı is 359.303 and the district consists of 91 neighbourhoods. Total population of the study area is 763.570 people, which constitutes 87.6% of the whole population

of the city (871.187). In other words, the majority of the population present in the city is concentrated in the city center (TÜİK, 2019).

Figure 4.3. Porsuk River and the Locations of Tepebaşı and Odunpazarı Districts.

(Source: Figure prepared by the author using images from Google Earth 2019)

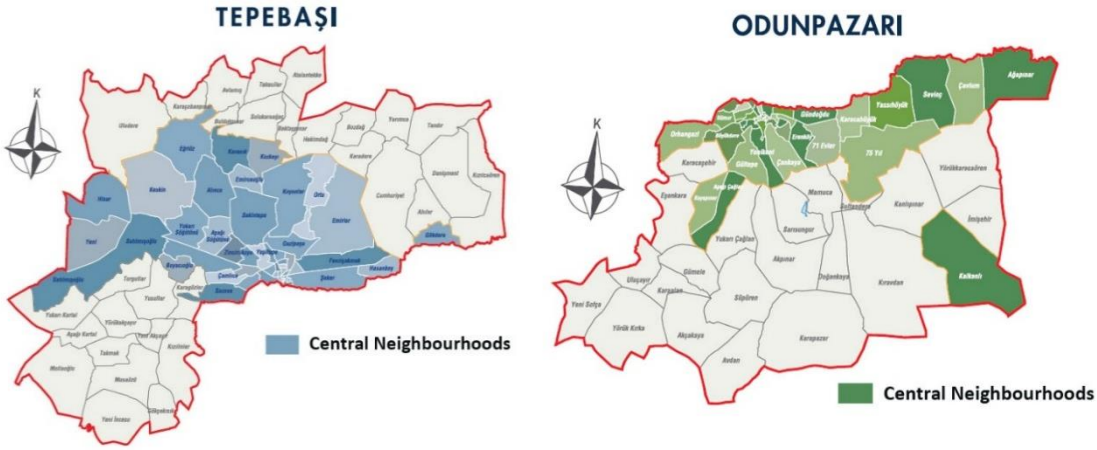


Figure 4.4. Borders of Tepebaşı and Odunpazarı Districts

(Source: İstatistiklerle Eskişehir, 2017, p.4-6)

4.2. Historical Development Process of Eskişehir City Centre

Due to immigration and its geopolitical position, Eskişehir has had its own idiosyncratic development. In other words, the city owes its originality to its different and unusual set of socioeconomic development conditions. According to Demir, Eskişehir, despite being located in the middle of the Central Anatolia, has had a different urban development process compared to other Anatolian cities where Turkish-Islamic synthesis is prevalent. In contrast to other Anatolian cities, which are mainly formed around the mosques and Islamic-Ottoman social complexes, the spatial development of Eskişehir has mainly occurred around Porsuk River and the railway (Demir, 2008, p.64).

The regime of the new state, established after the proclamation of the republic, caused some radical changes in some cities. With modernisation policies getting high on the agenda, some cities were aimed to be developed in the industrial area. One of the cities chosen with this purpose in mind was Eskişehir. Due to the presence of railway transportation, several public investmens were made in the city and the city was beefed up in the industrial area, which also shaped the production of housing and the choice of location for housing.

In the pre-1956 period, point sites such as immigrant houses, public housing and houses specifically designed for workers, which were developed around state policies as an extension to the industry could be observed within the city. After the Master Plan in 1956, residential practices started to change. With the Master Plan in 1986, mass housing and cooperative practices became more common in present and new areas of development. Finally, in the post-2000 period, TOKİ (Toplu Konut İdaresi - Public Housing Administration) started exercising its own practices as an organization and has been increasing its shear volume in the city ever since.

To sum up, the aim in this part of the study is to determine the factors which influenced the formation of the modern city center in Eskişehir while focusing on the changes in physical, social and spatial properties of Eskişehir throughout historical process.

When factors like investments made into the city, changes in the current housing pattern, new settlement zones, and residence production methods etc., some breaking points can be observed, starting before the proclamation of the republic. At this point, the urbanisation process of Eskişehir is analysed under 5 different headings, namely the Pre-Republic Period, 1923-1950 Period, 1950-1980 Period, 1980-2000 Period and Post-2000 Period. Within the scope of this analytic study, the focus is on the districts of Tepebaşı and Odunpazarı, aiming to determine whether a significant difference in development and trends exist between the two districts.

4.2.1. Pre-Republic Period

Before the proclamation of the republic, Eskişehir was a city in which residential and commercial zones had developed at different points, with a central population of less than 30000 people. In a similar fashion to the other city centers which emerged in the second half of the 19th century in Turkey, the city center of Eskişehir consists of a traditional center and a modern center in the form of a dual structure. Based on this concept, this dual structure is formed by the traditional center Taşbaşı area and Köprübaşı area, forming the new center and integrating with Taşbaşı region. In the master plan of the city dating back to 1896, three major spots draw attention. To the south of Porsuk River is Odunpazarı, the first traditional residential area, and Sıcaksular area with Turkish baths & Taşbaşı Bazaar. The neighboorhoods where immigrants and non-Muslim people live are located to the north of Porsuk River. Porsuk River is a threshold which divides the city into two physically and socially. Located in the center of the city and covering both sides of Porsuk River, the islands of Köprübaşı and Çukurçarşı are examples of the old commercial areas of the city. These three main regions have their own characteristics of settlement patterns. Whereas the residential area in Odunpazarı is dominated by an organic pattern, the one in Taşbaşı has a pattern of small commercial parcels. Radial roads focusing on the old bridge connecting to Çukurçarşı draw attention in Köprübaşı (Koca, Karasözen, 2010, p.194).

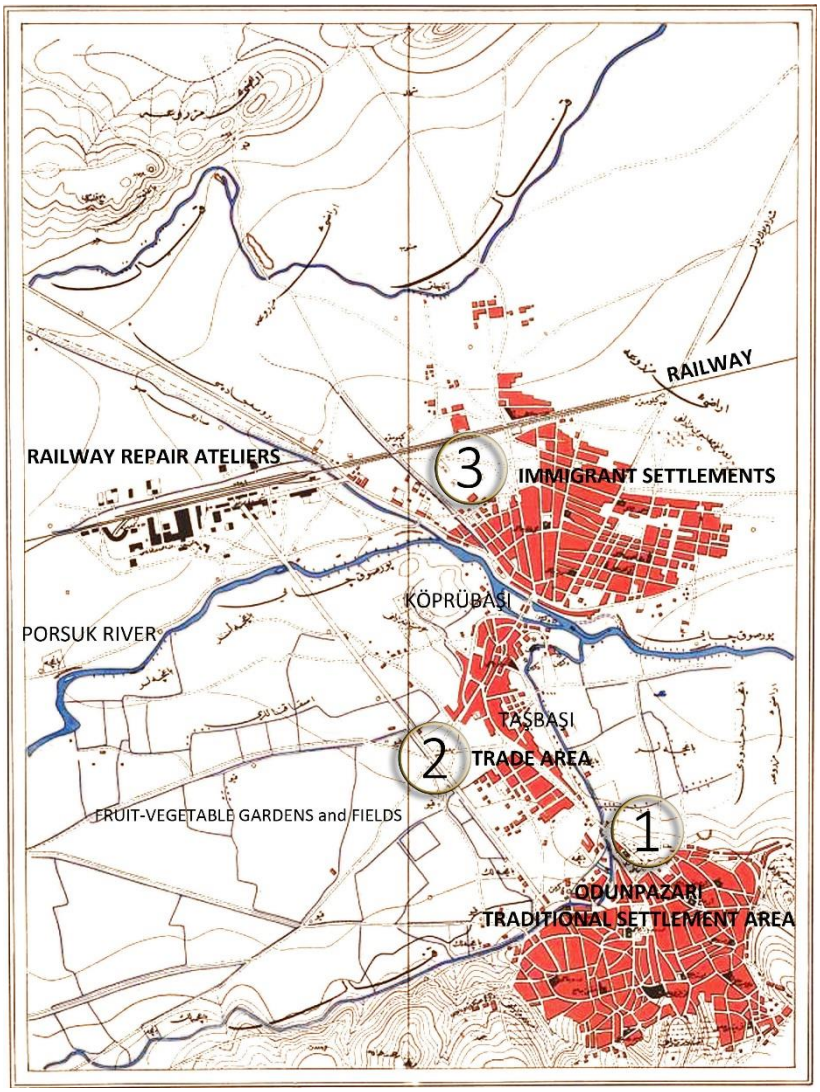


Figure 4.5. First Map of Existing Settlements in Eskişehir (1896)

(Source: General Directorate of Mapping - National Cartography Authority. Text added by the author)

Site selection and development of industrial areas have played an important role in the formation of Eskişehir city macroform since the Pre-Republic period. Comissioned in 1892, the Baghdad-Berlin railway both revived the trade life in Eskişehir and turned the city into a strategic point from a military standpoint. Despite the revival in the economic life caused by the railway, pre-industrial characteristics of the city are

prominent in the macroform of the city during this period. Construction of Railway Retail Ateliers, the settlement of most of the immigrants' coming from Balkans and Kırım around the north of Porsuk River and the passing of Berlin-Baghdad Railway through the city all contributed to the spatial development of the city (Aksoylu, 2012, p.2). Albek states that the oldest neighbourhoods are Cunudiye and Şarkiye, followed by Karapınar and Dede. Along with the more recently established Akarbaşı, the neighbourhoods of Akcami, Paşa, Akçağlan, Alanönü, which were established following the aforementioned neighbourhoods, formed the core region of the city, which is called Odunpazarı today (Albek, 1991).

Although a big chunk of the population lived in Odunpazarı region back then, which is located on a slope, a new development started from the slopes of the city towards the railway & the plains of the city after formation of the neighborhoods of Hacı Seyit, Hacı Alibey, Hayriye, İhsaniye and Mamure, which were established & populated by immigrants. With the establishment of Eskibağlar and Güllük neighborhoods, where brickyards are located, the settlement leaped to the north of the railway and ethnic stratification was observed in the residential areas. On the contrary to Odunpazarı region, the newly formed neighborhoods are not formed in an organic manner. Roads intersecting each other vertically have formed a geometric urban pattern. Furthermore, these settlements are centered on Porsuk River and expand towards plains of Eskişehir through radial branches (Aksoylu, 2012, p.2). Consequently, the railway, along with Porsuk River, which plays an important role in shaping the city, has become an important element in dividing the city and forming its shape (Çakmak, 2008).

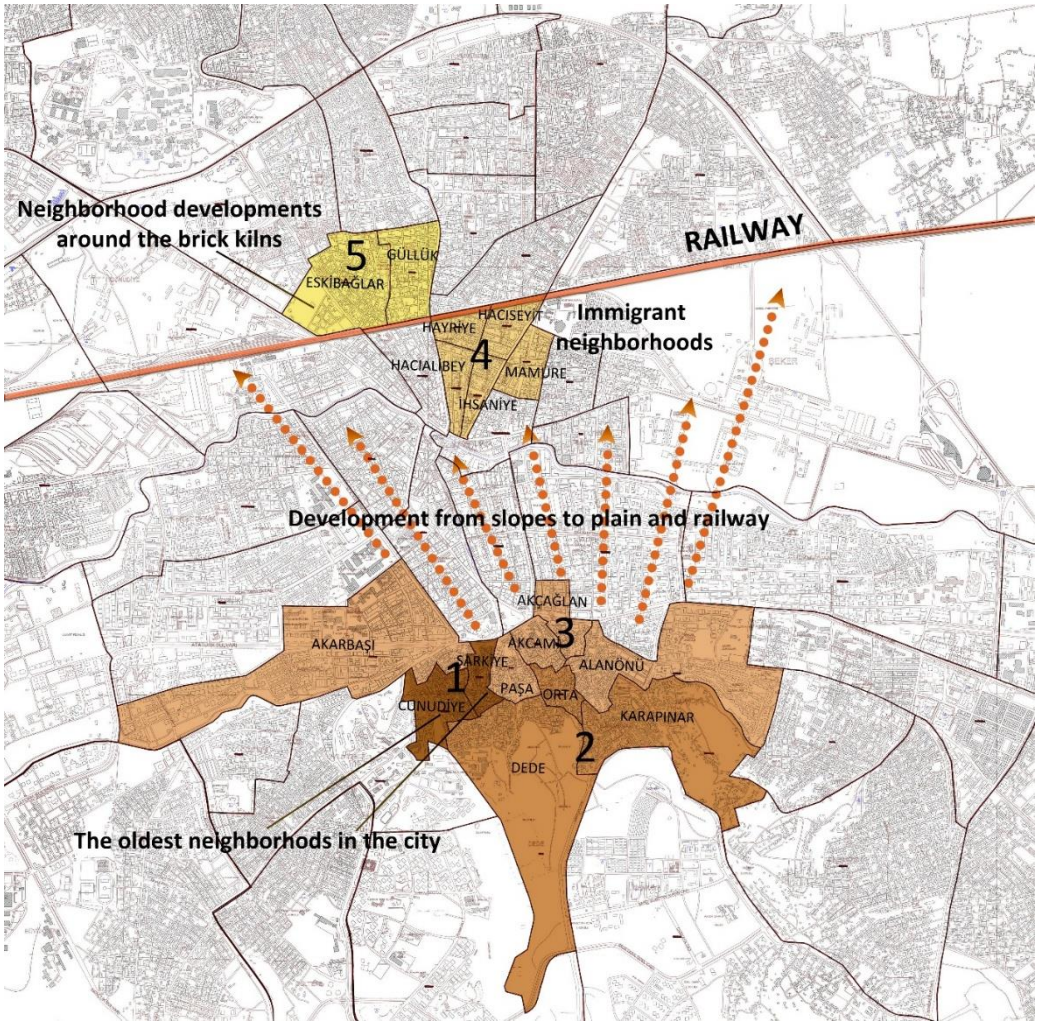


Figure 4.6. Urban Development in the Pre-Republic Period in Eskişehir

(Source: Figure prepared by the author using current neighbourhood borders)

Figure 4.7. Old Train Station Building

(Source: Web.3)

Figure 4.8. Railway Retail Ateliers

(Source: Web.2)

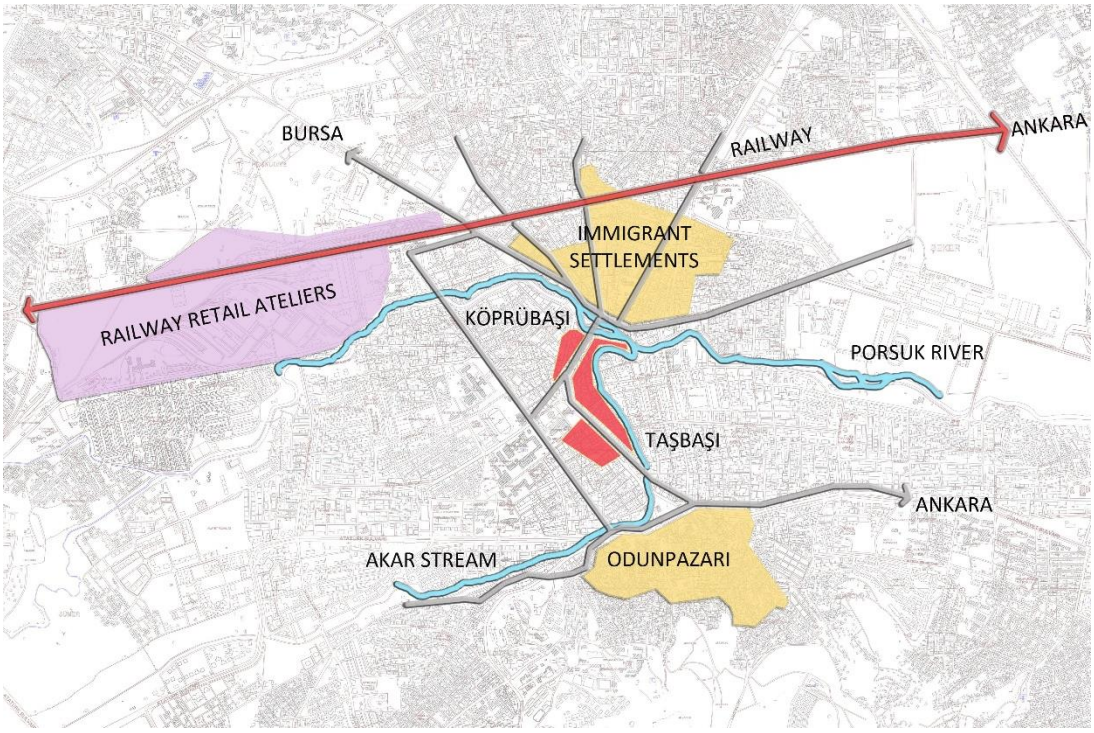


Figure 4.9. Spatial Development of Eskişehir City Center in the Pre-Republic Period

(Source: Figure prepared by the author. Landuse map taken from (Ertin, 1994) as base map)

Table 4.1. *Important Changes in the City during the Pre-Republic Period and Differences between the Districts*

(Source: Table is prepared by the author)

Important Developments and Investments in the City
• 1892 - Railway construction between Eskişehir and İstanbul is completed and trips start • 1894 - Railway Retail Ateliers are established for the maintenance of locomotives and trains
Differentiations
• Railway Retail Ateliers and the railway, which are some of the important industrial investments of the period, are located in the north whereas the old bazaar/trade areas are located in the south. • People living in the new settlement areas added to the city mostly choose to live in the north of Porsuk River due to industrial investments.

- Neighborhoods where immigrant and non-Muslim people live are concentrated around the north of the river whereas residential areas populated with natives are mostly located south of the river.

- Odunpazarı, the first traditional residential area, is built on a slope, whereas the immigrant neighborhoods are developed on flat areas towards the plains.

- The two settlement areas are bound to have some differentiation based on ethnicity.

- The settlements in the north, shows a tendency to develop in radial and geometric form. A more organic development pattern is observed in the southern settlements.

- The central district, separated into two today, have shown different tendencies in terms of urbanization since the Pre-Republic period.

- **Note:** Since Tepebaşı-Odunpazarı distinction does not exist during this period yet, the terms "south of the river" and "north of the river" are used. Today, settlement areas located on the north of the river reside within the boundaries of Tepebaşı and settlement areas located on the south of the river reside within the boundaries of Odunpazarı.

4.2.2. 1923-1950 Period

One of the most important spatial developments of this period when the nation-state was established and the Republic was proclaimed is the establishment of factories in small Anatolian cities along the railway route (Tekeli, 2009). Industrial development in small cities has led to spatial, social, cultural and economic changes and developments. Important public investments made in Eskişehir in this period in accordance with this policy are: Aeroplane Maintenance Center (1926), which was later converted to Air Supply Maintenance Centre and Eskişehir Sugar Factory (1933). In the period between 1923 and 1950, a large number of investments were made by private sector on top of public investments. In this period, industrial facilities dependent on soil and stone such as brick and tile factories, which were important back and other industrial facilities processing food started their operations.

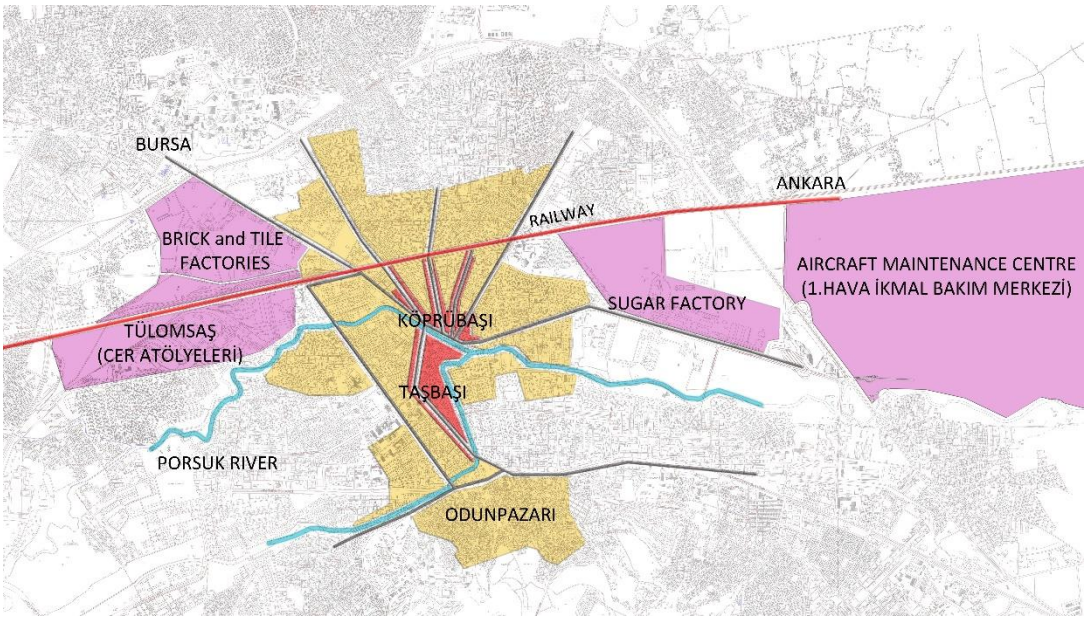


Figure 4.10. Spatial Development of Eskişehir City Center between 1923-1950

(Source: Figure prepared by the author. Landuse map taken from (Ertin, 1994) as base map)

For the tile and brick factories and flour plant, which all were private investments, Factories Zone, which has a size of approximately 62 hectares, was chosen. Established in connection with the railway and highway, these facilities became an indicator of the industrial history & identity of the city. Throughout this period, industrial areas were concentrated at two extreme points, northeast and northwest of the city. While State Railways Cer Workshops, flour and tile factories are located in the northwest of the city, Sugar Factory and Aircraft Maintenance Center are located in the northeast, all in connection with the railway (Aksoylu, 2012, p.3).

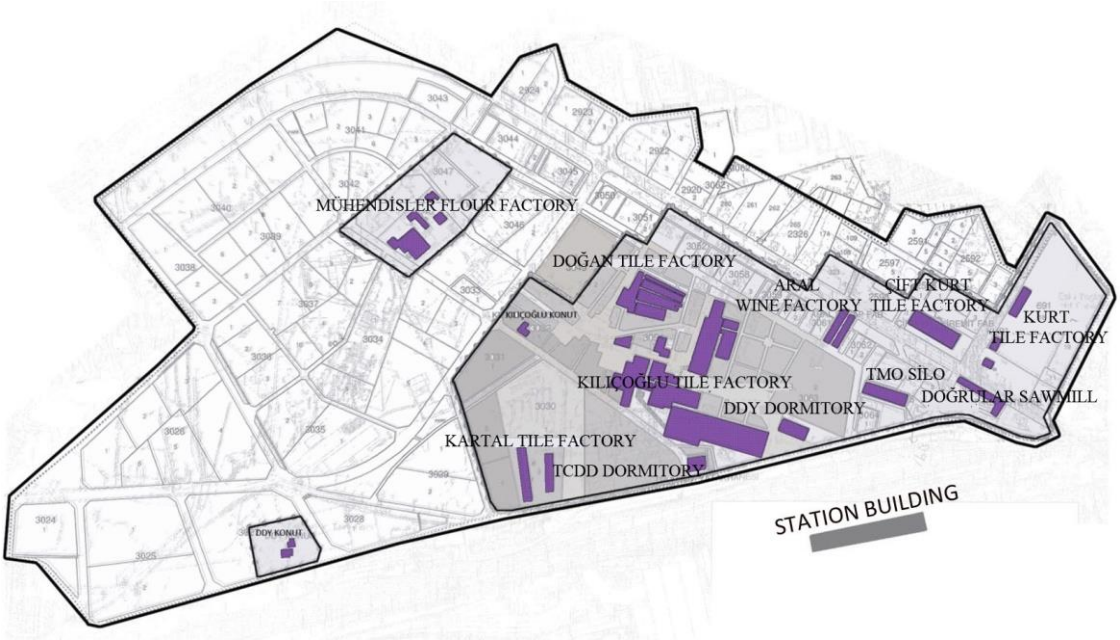


Figure 4.11. Old Factories Zone Protection Area and Changing Boundaries

(Source: Eskişehir Metropolitan Municipality)

As a result of the tendency of the employees in industrial facilities to choose a place close to their work places, Şeker, Yeni Mahalle, Işıklar and Ömerağa neighborhoods were formed in the northeast of the city. In the northwest, Kırmızıtoprak and Yenibağlar neighborhoods were established around State Railworks facilities, the

flour plant and the tile factories. 1- or 2-storey houses adjacent to each other, 2- or 3-storey buildings made from reinforced concrete by demolishing the old single-storey houses with gardens in the city center, villas with gardens around Porsuk River are the main housing types of this period. Whereas apartment-type housing became widespread during this period, lodging buildings, which is accepted as the beginning of mass housing, came up as a new form of presentation by the hand of the state. Such settlements have been built in State Railworks and Eskişehir Sugar Factory in Eskişehir since the 1930s, in an attempt to provide the employees with the shelter they need as well as modernizing the society through cultural & social acitivites carried out here. In this respect, TÜLOMSAŞ and sugar factories are sites of modern architecture and industrial heritage (Özkut, 2017, p.43).

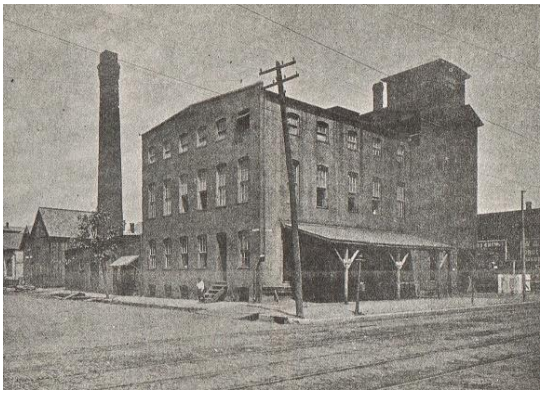


Figure 4.12. A Flour Plant in The Old Factories Zone (Source: Web.4)

Figure 4.13. A Brick and Tile Factory in The Old Factories Zone (Source: Web.5)

Figure 4.14. TÜLOMSAŞ and Buildings around the Railway Area

(Source: Figure prepared by the author. Images from Google Earth 2019 used as basemap)

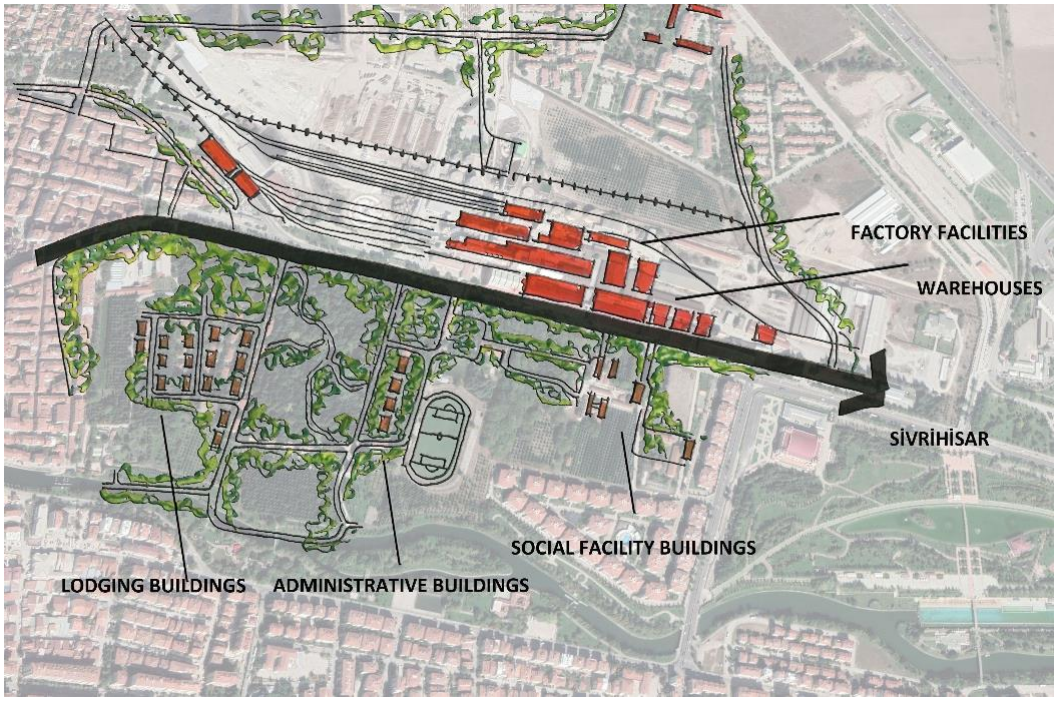


Figure 4.15. Sugar Factory and Buildings around the Factory Site

(Source: Figure prepared by the author. Images from Google Earth 2019 used as basemap)

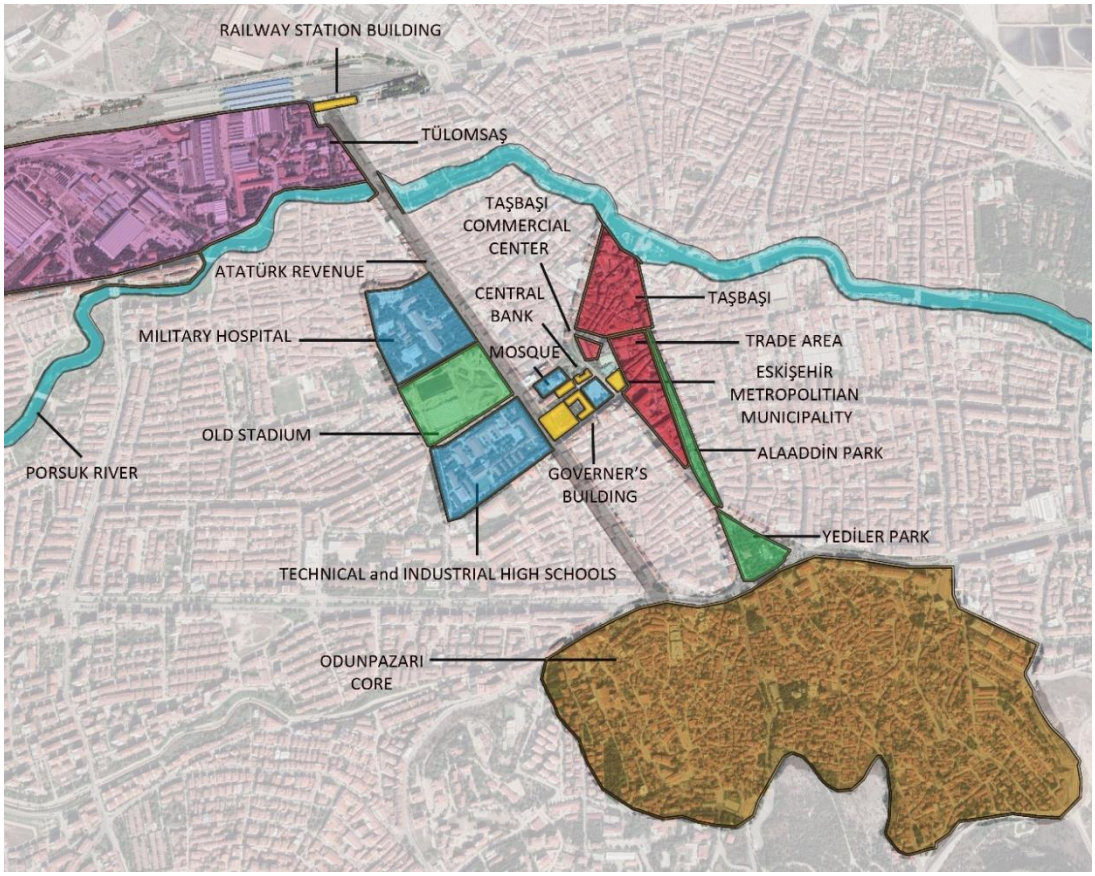


Figure 4.16. İstasyon Avenue and Development of Different Urban Functions around this Road

(Source: Figure prepared by the author. Images from Google Earth 2019 view used as a basemap)

Figure 4.17. Old View of İstasyon Avenue

(Source: Web.6)

Figure 4.18. Current View of İstasyon Avenue

(Source: Web.7)

Although new, modern residential areas were built around the industrial settlements in this period, traditional historical pattern in the Odunpazarı region continued to exist. This made the traditional-modern duality in the city even more apparent (Özkut, 2017, p.38). The space between the two settlement cores, which was previously empty, began to fill rapidly with public buildings and commercial units built during this period, merging the dual structure eventually. Residential areas concentrated around central business areas and industrial facilities, resulting in development in a limited area. Transition from traditional pattern to the modern structure was achieved in the newly developing residential areas. One of the distinctive features of this period is the numerous number of schools, hospitals, parks and administrative buildings constructed during it. The vicinity of the station, Atatürk Avenue, which connects the station to Odunpazarı and the neighborhoods in which immigrants lived played an important role in the positioning of educational structures. Technical Schools Campus, which was established in order to meet the qualified personnel demand required by rapid industrialization, is one of the landmarks of the city in terms of stressing the importance given to vocational education. State Hospital (1929), Sugar Factory Hospital (1944), Maternity and Child Care Centre (1948), Air Force Hospital (1948-1949), Tuberculosis Dispensary and Chest Diseases Hospital (1949) were also established in this period. It can be observed that health facilities are concentrated in factory areas and the city center. The old stadium built on Atatürk Street, Yediler Park, Necatibey Park and Alaaddin Park are recreational areas built during this period. The characteristic property of these parks is the conversion of old cemetery areas into active green spaces. The city's entertainment and sightseeing places are Yalaman Island and the waterline. Besides the traditional public spaces of the city such as Köprübaşı, Hamamyolu and Odunpazarı, an official public space named “Vilayet Square” was also formed during this period. In 1945, a 1/1000 scale local zoning plan and some arrangement of the square was made for Government House and its surrounding enviroment. Thus, the first administrative center and square of the city, which was charecterized by the Courthouse and the Central Bank as well as the Government House, was established (Koca, Karasözen, 2010, p.194). Public

buildings, which mostly were concentrated in Odunpazarı during the reign of Ottoman Empire, became mostly concentrated around the Governor's Office in Arifiye with the proclamation of Republic. Today, most of the public buildings present in the city center are located in the Arifiye neighborhood (Şahbaz, 2016, p.179). The Government House, built between 1945 and 1948, and the Courthouse, built between the years of 1947 and 1949 are among the most important administrative structures of the period, along with the City Hall built in Köprübaşı (Aksoylu, 2012, p.6).

Table 4.2. *Important Changes in the City during the 1923-1950 Period and Differences between the Districts*

(Source: Table prepared by the author)

Important Developments and Investments in the City
• 1927 - 1949 Tile and brick factories established. • 1926 - Aeroplane Maintenance Center established. (1st Air Supply Maintenance Centre) • 1928 - Railway Retail Ateliers bought by the state (TÜLOMSAŞ) • 1933 - Sugar Factory starts production • 1938 - 1948: Flour plant established • State Hospital (1929), • Sugar Factory Hospital (1944), • Maternity and Child Care Centre (1948), • Air Force Hospital (1948), • Tuberculosis Dispensary and Chest Diseases Hospital (1949) • Governor's House (1948) • Courthouse (1949) • City Hall • Technical schools, parks and a stadium was built on Atatürk Street
Differentiations
• The modern-traditional duality existing in the residential areas of Tepebaşı and Odunpazarı regions becomes apparent. • Modern city center features predominate in the north of Porsuk River while the old housing pattern maintains its existence in the southern part, where natives of Eskişehir live. • The northern part of Porsuk River, where the district of Tepebaşı is located today, is selected for industrial investments by the public and private sector. • Social areas such as hospitals, schools, parks and administrative structures are concentrated in Odunpazarı.

4.2.3. 1950-1980 Period

Although spread and spatial boundaries were directed by industrial uses during the period the city did not have a Master Plan, spatial growth has been realized in a planned manner since 1956. In 1956, the first Master Plan of the city was prepared and new residential areas were planned in line with it. The 1/5000 Scale Master Plan, which was approved and put into effect in 1956, is the project prepared by Mehmet Ali Topaloğlu and Bülent Berksan, which came first in the competition organized in 1952 (Karasözen, 2010, p.195).

Figure 4.19. 1956 Master Plan (1/5.000)

(Source: Eskişehir Metropolitan Municipality)

In the 1/5000 Scale Master Plan, the industrial areas were planned to be developed in the nearby neighborhood of the Factory Zone and serve the existing industrial zones on İsmet İnönü Street. Taking the newly developing housing areas into consideration, Cengiz Topel Street was to be opened as an alternative road. Positioning of new

development areas in the east of the Factories Zone, encircling the surrounding area of residential areas with green fields as buffers and restricting the city in the north direction with a ring road are important decisions present in this plan (Yılmaz, 2009).

In an attempt to solve the housing problem in the city, lodging buildings and housing cooperatives were embraced as the solution between 1950 and 1960. During this period, 1290 houses were produced by seven separate cooperatives founded and supported by public banks and organizations. Cooperative residences in the neighborhoods of Şeker, Osmangazi, Sümer and Ertuğrulgazi, which are located in the vicinity of the industrial settlements, were built during this period on the principles of "Garden City". Established by the cooperative which the Sugar Factory employees found, the Neighborhood of Şeker is one of the first examples of single-storey cooperative residences with gardens, reflecting the principles of garden city. Such residences were also built for the employees of the Sugar Factory in the Neighbourhood of Gökmeydan in 1958 (Aksoylu, 2012, p.7). Settlements in Osmangazi (1956), Sümer and Ertuğrulgazi (1958) were established by employees and civil servants working in State Railworks and Sümerbank Cotton Factory after the area around Porsuk River, in which fruits and vegetables were grown by irrigated farming, was opened to housing development by the municipality in an attempt to prevent squatters. These settlements reflect the planning concepts of the period during which they were formed as well as the housing plan types, socioeconomic status of the groups in the society and their way of life present back then. They are also an intermediate solution in the transition period of traditional to modern, rural to urban. For these reasons, they are reminscent of the past and have sociological importance (Özkut, 2017, p.40).

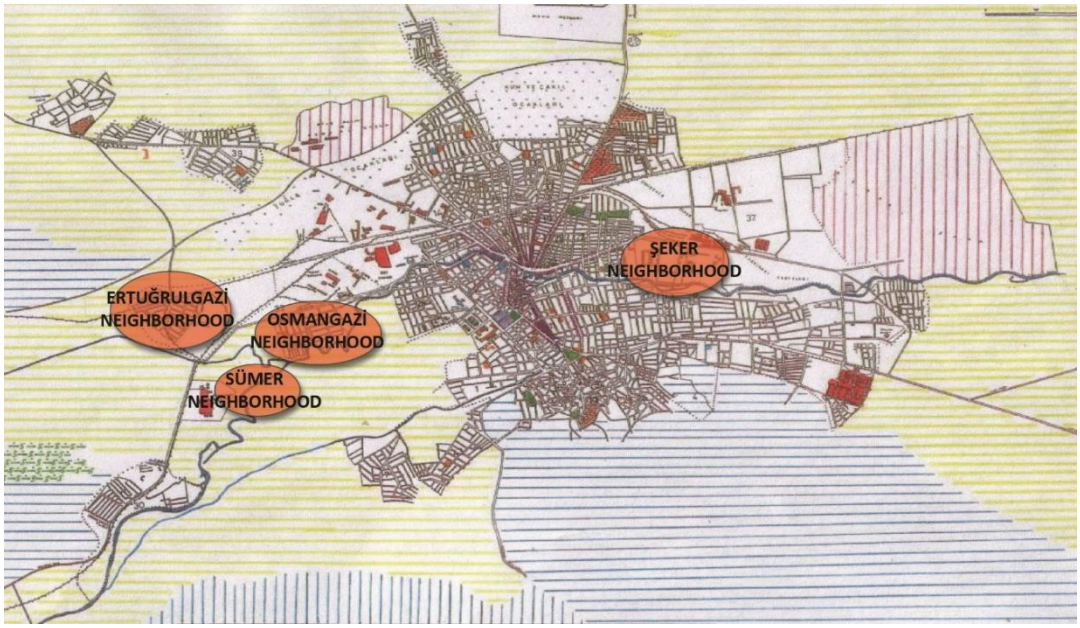


Figure 4.20. The Neighborhoods Where The First Cooperative Dwellings Emerged in The City between 1950-1980

(Source: Markings and texts added by the author. Landuse map taken from (Ertin, 1994) as base map)

Figure 4.21. Sample of Civil Servant Cooperative Houses (left)

(Source: Web.8)

Figure 4.22. Sample of SSK Cooperative Houses (right)

(Source: Web.9)

The concept of detached, low-storey housing owned by a single person, which was prevalent in the early years of the republic, changed with the Flat Ownership Law issued in 1965. 1- and 2-storey buildings started getting replaced with 7- or 8-storey apartment buildings in which different individuals could own different flats in different storeys. This type of construction resulted in the city rising physically and gaining density (Öztürk, 2016, p.864). The most striking examples of this situation in the city are the neighborhoods of Akarbaşı, Kırmızıtoprak and Deliklitaş. In these neighborhoods, 1- and 2-storey detached houses were replaced by 3- and 4-storey apartments built by cooperatives and individuals, resulting in the creation of new streets in the region close to the Central Business Area, which was previously utilized as agricultural area. The apartment building pattern which developed among these streets resulted in the establishment of the Neighborhood of Vişnelik (Ulu, 2005, p.5).

One of the important uses added to the city during this period was the Ankara-İstanbul ring road, which led to the formation of new residential areas towards the northern part of the city. Large migrations from rural areas to the city occurred during the 1950-1960 period. Squatter houses built without the required permissions & licenses on the lands belonging to the Treasury and municipality appeared in the city for the first time around the 1950s. Due to the rapid migration from rural to urban areas, a large area of squatter of houses, located to the north of the railway, formed in the neighborhoods of Esentepe, Şarhöyük, Ömerağa, Tunalı and Zafer. In the following years, new squatter neighborhoods such as Yeşiltepe, Yıldıztepe, Sütlüce, Çamlıca, Gündoğdu (Takkalı), Emek, Ömür, Yenidoğan, Büyükdere and Fevzi Çakmak, in which low-income portion of the society was concentrated, were added to these areas (Şahbaz, 2016, p.110-114).

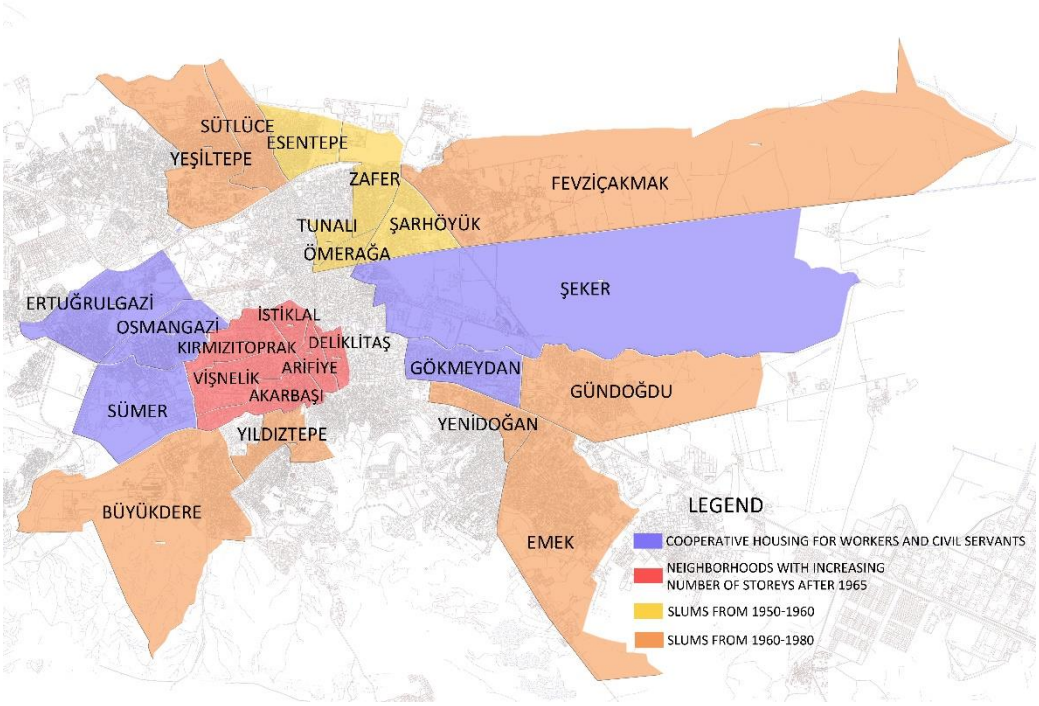


Figure 4.23. Presentation of Slum and Cooperative Areas between 1950-1980

(Source: The figure was prepared by the author by using current neighborhood boundaries)

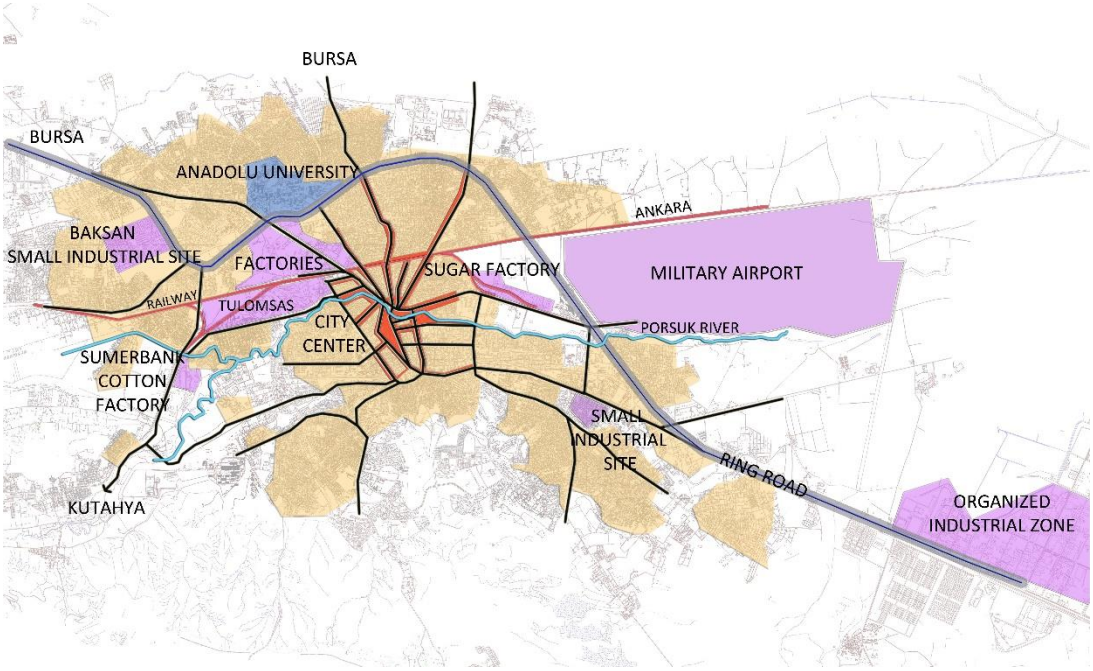


Figure 4.24. Spatial Development of Eskişehir City Center between 1950-1980

(Source: Figure prepared by the author. Landuse map taken from (Ertin, 1994) as base map)

Due to the rapid development in the northern part of the city, an independent sub-center was formed in Tepebaşı area. Between the years 1960 and 1980, the population of the city approximately doubled, and the city reached its current macroform in this period (Ulu, 2005, p.5).

In this period, the area covered by the industrial zones in the city increased with the addition of new industrial facilities. Established in 1953 and 1956 respectively, the Cement Factory and Sümerbank Cotton Factory are important industrial investments realized with public incentive. Additionally, many small businesses operating in the field of manufacturing industry were founded between 1950 and 1960. One of the most important investments into the city was the foundation of Anadolu University, starting its life under the name "Eskişehir Yüksek İktisat Ticaret Okulu" in 1958. The bus terminal, aimed to provide the necessary intercity connections to the city through highways was opened in 1963. However, the biggest development that affected the macroform of the city was the opening of the Organized Industrial Zone (OIZ) in 1973. The OIZ, which seemingly is located along the Eskişehir-Ankara motorway in the east direction when looked at in a map, was founded in a region which is flat and suitable for new developments. With this development, industrial zones, which previously concentrated in two different zones in the 1923-1950 period, heaped together in different spots of the city. Industrial facilities are grouped together in four main zones, with State Railways facilities and privately owned factories in the northwest, the Sugar Factory in the northeast, Sümerbank Cotton Factory in the west and small industrial facilities along with the Organized Industrial Zone in the east (Demir, 2008, p.78). The most important factors which affected the macroform of the city throughout this period are the beginning of cooperative activities, the construction of İstanbul-Ankara belt highway and the foundation of Organized Industrial Zone. With all these advancements, the population increased rapidly, requiring the preparation of a second master plan in the 1970s. This urban plan scheme, having a scale of 1/5000, was prepared by a private planning company in 1978.

Figure 4.25. Figure 25. 1/5.000 Scale Master Plan, 1978

Source: Eskişehir Metropolitan Municipality

Foundation of Anadolu University is another factor that sparked urban growth, which is also very important in the development of Eskişehir's identity as a "university city". The belt highway, industrial zones and finally the university laid the foundation for Tepebaşı region's turning into a center of attraction whereas the most important investment in Odunpazarı region during this period was the Organized Industrial Zone starting operation, which is one of the most important urban uses affecting the development of city macroform as well as the development of the district itself. In the plan prepared in 1978, new residential development areas close to the OIZ were planned. As such, the presence of OIZ created an attraction and new residential development areas were formed in the southwest of the city.

Table 4.3. *Important Changes in the City during the 1950-1980 Period and Differences between the Districts*

(Source: Table prepared by the author)

Important Developments and Investments in the City
• 1953 - Cement Plant established • 1956 - Sümerbank Cotton Factory established • 1956 - Ring road opened • 1958 - Anadolu University founded • 1960 - Small Industial Area opened • 1963 - Bus terminal opened • 1973 - OIZ starts operating • 1954 - Sugar Factory Lodging Cooperative • 1956 - 1/5000 Scale Master Plan • 1956 - State Railworks Cooperative • 1965 - Flat Ownership Law issued • 1976 - Social Security Administration Labourer Residences Cooperative • 1978 - 1/5000 Scale Master Development Plan
Differentiations
• New settlements directly associated with the industrial areas mostly clustered around Tepebaşı region increase. • The opening of Anadolu University and the ring road on the north of Porsuk River are the most important developments in Tepebaşı during this period. • On the south of the river, the opening of OIZ and Sümerbank Cotton Factory are factors which shape the development of both Odunpazarı and the city. • Due to the developments happening in the northern region of the city, an independent sub-center is formed in Tepebaşı region. • The locals of Odunpazarı, who belong to the upper-income group, settle around Köprübaşı whereas workers and migrants prefer residing around the factories. Civil servants start settling in lodging buildings provided by the state. • Housing construction through cooperatives mostly occur around Tepebaşı region and its nearby area (namely the neighbourhoods of Şeker, Gökmeydan, Osmangazi, Sümer and Ertuğrulgazi) • Squatter and cooperative areas emerge on the periphery of the city, while pattern of apartment buildings become widespread in wealthy areas.

Squatter areas are first formed in the north of the river. The differentiation due to ethnic structure in residential areas in the previous period turns into a differentiation due to social stratification in this period.

4.2.4. 1980-2000 Period

In this period, the old city center and settlements were subject to physical, functional and social renovation. In the area to the north of Porsuk River, modern center and housing properties predominate. Here the buildings are mostly renovated and their storey number has been increased. The upper-class living in the city have started fleeing towards the periphery of the city. The most important factor influencing the city macroform are buildings built by cooperatives as well the 7 and 8 storey buildings built in the city center in place of the old 2, 3 and 4 storey buildings as anticipated in the master plan. In this period, the tendency of constructing high rise buildings by non-cooperative initiatives has increased, resulting in an increase in population density and elevation in regions of city close to the center. With the Eskişehir Master Plan and Reclamation Master Plan approved in 1986, 1, 2 and 3 storey building patterns were increased to 4 storey parcels at minimum and parcels on main streets were increased to 5-6-7-8 storeys, which resulted in the city's elevated height and concentrated development. After these developments, illegal residential areas and luxury residences with gardens have formed in the outer periphery of the city.

In this period, agricultural areas (especially the neighbourhoods of Vişnelik and Kırmızıtoprak) which occupied vast spaces were reduced through master plans and turned into residential areas, resulting in the destruction of first-class agricultural soil which previously provided the city with the vegetables and fruits it needed (Ulu, 2005, p.6). With the addition of new zones between 1990 and 1997, Eskişehir OIZ reached an area of 32 million m², making it the biggest OIZ in Turkey. As a large-scale industrial facility starting operation in this period, only TUSAŞ Aeroplane Engines Factory chose a location on the north side of the city. In 1993, Anadolu University was divided into two and Osmangazi University was established in the southwest part

of the city. One of the most important decisions made in terms of urban use during this period was moving the bus terminal away from the present pattern of the city.

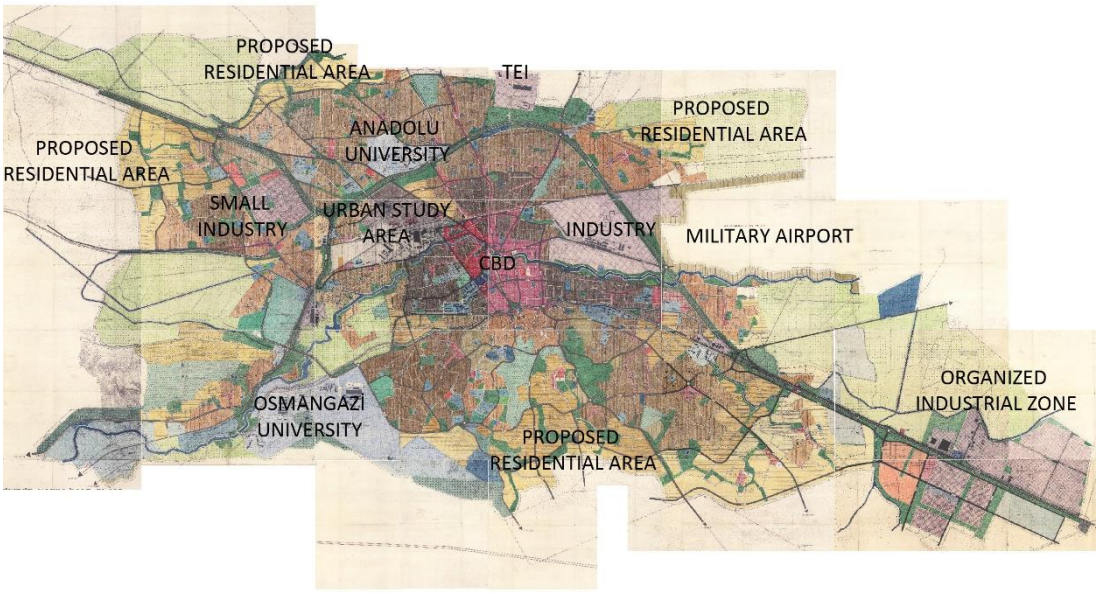


Figure 4.26. 1/5.000 Scale Master Plan (1986)

(Source: Eskişehir Metropolitan Municipality. Text added by the author)

Upon examining the plan of 1986, it can be seen that new development areas for housing are mainly planned in the northwest and southeast of the city center. By positioning TUSAŞ in the north and Osmangazi University in the south, the growth of the city in the northern and southern directions was limited. Integration of two major university areas into the city has highlighted the educational function of the city. These two large urban areas have become a factor leading & restricting the physical development of the city. In general, the plan of 1986 aims to canalize urban growth towards east. As such, the OIZ is treated as a tool for orienting urban development towards east. During this period, the city continued to grow around the industrial areas. Another important planning decision is the relocation of the plants located in the factories zone to the OIZ. As can be seen from the plan, east side of İsmet İnönü Street

is planned to be a residential area and the west side is planned to be an urban study area. Thus it was decided that industrial areas would be moved out of the city center and the function of the emptied areas would be changed as residential and commercial areas. Consequently, gaps between housing areas were filled and the city reached its current macroform as suggested by the spatial usage decisions made between 1980 and 2000.

Table 4.4. *Important Changes in the City during the 1980-2000 Period and Differences between the Districts*

(Source: Table prepared by the author)

Important Developments and Investments in the City
• 1985 - TUSAŞ (Türkiye Uçak Motorları Fabrikası - Turkish Aeroplane Engines Factory) founded • 1986 - New Master Plan approved • 1993 - Osmangazi University founded • 1993 - New bus terminal opened • 1990 - 1997 Eskişehir OIZ reaches an area of 32 million m² with the addition of new zones, making it the biggest of its kind in Turkey
Differentiations
• The old city center and settlements in Odunpazarı region is subject to functional and social renovation. • In the area to the north of Porsuk River, modern center and housing features dominate. Most of the buildings here are rebuilt and their number of storey are increased. • Among the important investments made in the city during this period, Osmangazi University is located in Odunpazarı whereas TUSAŞ and the new bus terminal are located in Tepebaşı. • Large new residential development areas are planned both in Odunpazarı and Tepebaşı. The main factors guiding housing development are the ring road and university in Tepebaşı, and the presence of OIZ in Odunpazarı.

4.2.5. 2000-2019 Period

The most recent development in Eskişehir is the increase in transportation, renovation and transformation projects in the city center. One of the major reasons for the change seen in the center is the transformation in urban transportation. ESTRAM, which aims to provide easy and convenient transportation in Eskişehir, was opened in 2000 (Demir, 2008, p.82). With an approximate line length of 52 km, ESTRAM cross-connects the northwest-southeast and southwest-northeast regions of the city. The tram (ESTRAM), which serves the central areas of the city, has been extended to new residential areas in Batıkent and Çamlıca in the west, Çankaya in the south and Emek-71 Evler in the east. At present, there are 7 tram lines in the city consisting of 4 main lines and 3 ring lines.

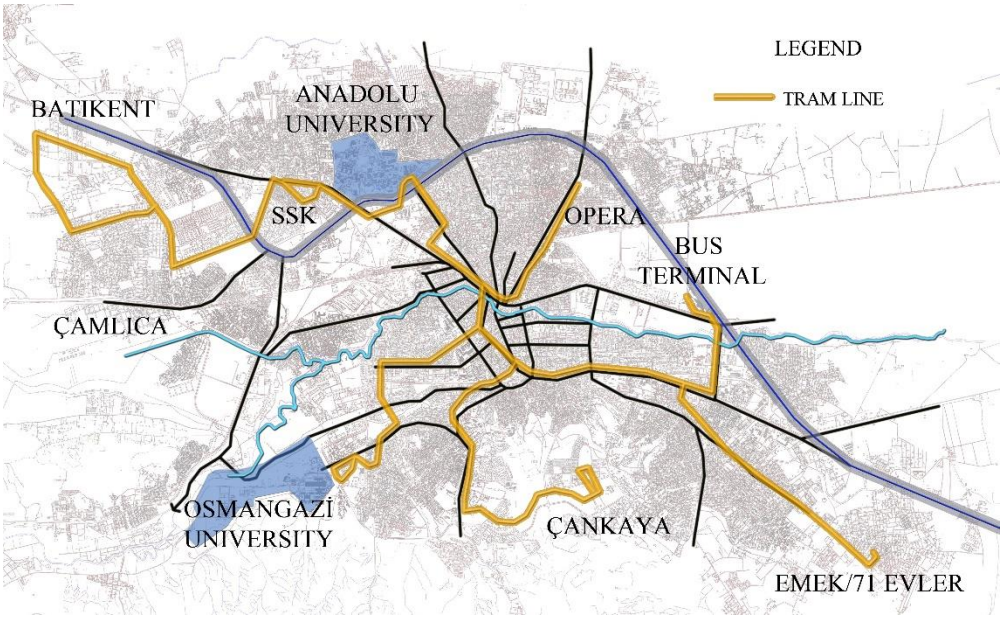


Figure 4.27. Tramway Lines Existing in the City at the Present Time

(Source: The figure prepared by the author)

Figure 4.28. Köprübaşı Region in the 1990s (left) (Source: Web 10)

Figure 4.29. Köprübaşı Region at the Present Time and the Tramway Line (right) (Source: Web 11)

In this period, recreational areas were formed by Porsuk River and its surrounding area. In order to rehabilitate Porsuk River, which was reported to be one of the most polluted streams in Europe by OSCE in 2002, a fully-fledged plan including riverbed cleaning, landcape design, renovation of old bridges, replacing old vehicles and precautions towards decreasing risk of disaster was prepared and included in Eskişehir Metropolitan Municipality Urban Development Projects in 2001. With this project, covering an area of 10 km², mud present in the riverbed of Porsuk River was removed and precautions against ground liquefaction were taken. With the riverbed thoroughly and completely cleaned, new landscape use plans were materialised and 24 new bridges were built over Porsuk River (Büyükerşen and Efelerli, 2006, p.453).

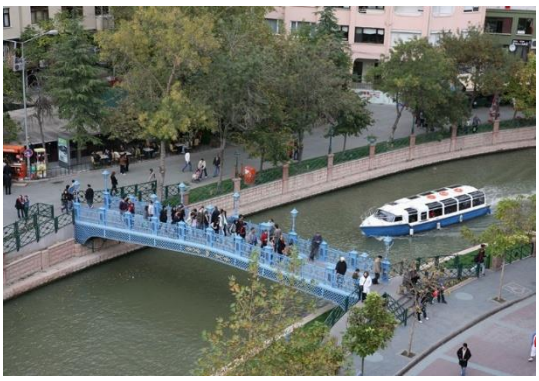


Figure 4.30. Sides of Porsuk River at the Present Time (left) (Source: Web.12)

Figure 4.31. Porsuk River (right) (Source: Web. 13)

With the completion of Porsuk Rehabilitation Project in 2008, Porsuk River and its surroundings integrated with the city center and turned into a commercial and recreational axis. Supported on the south with residential areas and commercial structures which are part of the buildings in these residential areas, many cafes and recreational areas are present on the north of this axis. Having become the main axis of the city ultimately and shaping the physical structure of the city, Porsuk River forms a continuous green spine within the city. The location selection of urban uses and large green fields added to the city in the post-2000 period, such as Kentpark, Sazova and Eskişehir Stadium was done in a way that would connect them with Porsuk River.

Figure 4.32. Overview of Eskişehir Kentpark (left) (Source: Web.14)

Figure 4.33. Eskişehir Kentpark (right up) (Source: Web.15)

Figure 4.34. Eskişehir Sazova Park (right down) (Source: Web. 16)

Another important decision made during this period, affecting the center was the transformation of the Factories Zone, which was unable to meet the production style of the new period. With the opening of Eskişehir OIZ in 1973, the factories within the city were moved to the OIZ. The Factories Zone, which has been idle for a long time, turned into a new attraction point after 2010. A new transformation was realized by building big shopping centers and recreational areas on the space emptied upon moving the factories on it (Şahbaz, 2016, p.184). The buildings present in the area were transformed into the following:

- **Kurt Brick and Tile Factory:** Transformed into *Espark Shopping Mall.*
- **TMO Silo:** Transformed into *İbis Hotel.*
- **Kanatlı (Gümülcine) Flour Plant:** Transformed into *Kanatlı Shopping Centre.*
- **Lumber Factory:** Transformed into *222 Park* (recreational area).
- **Fresh Fruit and Vegetable Market:** Transformed into *Haller Youth Center.*
- **Aral Wine Factory:** Transformed into *Hayal Kahvesi.*
- **Mühendisler Flour Factory:** Transformed into *Özdilek Shopping Mall.*
- **Rim Factory:** Transformed into recreational area.

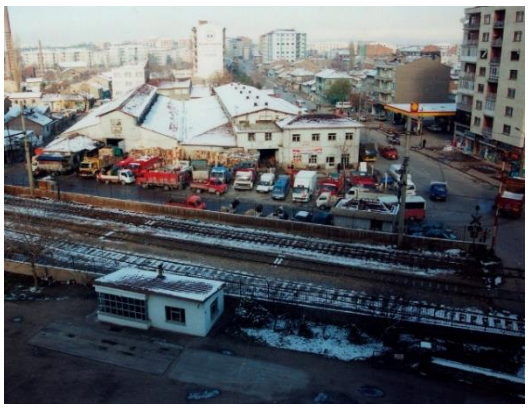


Figure 4.35. Old Wholesale Fruit-Vegetable Hall of Eskişehir (left) (Source: Web. 17)

Figure 4.36. Haller Youth Center of Eskişehir (right) (Source: Web. 18)

Figure 4.37. Eskişehir Kanatlı Shopping Center (left) (Source: Web. 19)

Figure 4.38. Eskişehir Espark Shopping Mall (right) (Source: Web. 20)

In addition to these, transformation and renovation works were initiated in the historical Odunpazarı area and the historical city center was revived. Some of the old historical houses, most of which are made of wood, have been restored, albeit partially, whereas some of them have been rebuilt using reinforced concrete in accordance with their original form. Parts of some building such as the mosques have been rearranged such that they are suitable for multi-purpose use. With the opening of boutique hotels, cafes and restaurants as well as museums and exhibition halls in the historical Odunpazarı area, this region has become one of the most important spots for domestic tourism.

Figure 4.39. Post-Restoration Examples of Historical Odunpazarı Houses (left) (Source: Web. 21)

Figure 4.40. Post-Restoration Examples of Historical Odunpazarı Houses (right) (Source: Web. 22)

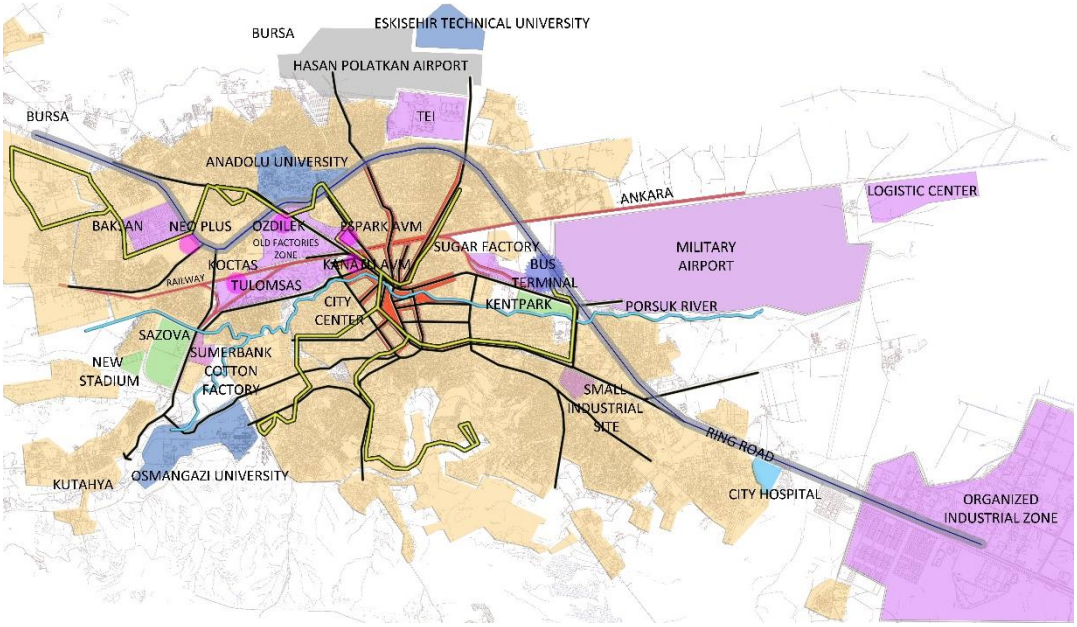


Figure 4.41. Spatial Development of Eskişehir City Center after 2000

(Source: The figure prepared by author) (See Appendix A for details)

Starting with the 2000s, significant changes can be observed in Eskişehir in terms of housing development. The earthquake in 1999 steered the middle- and upper-class of the city to new & relatively decent neighborhoods. Their first stop was the newly-built, earthquake-resistant, luxury residences with private security in Vişnelik and Sümer neighborhoods, resulting in people with high income levels partially moving away from the city center. However, it can be observed that the higher-income group leaving the center of the city in the early 2000s has started returning to the city center recently. With the revisions made to the master plan, new shopping centers, bars, cafes, restaurants, luxurious recreational places, private hospitals, hotels and residences have started reattracting middle- and upper-income groups back to the center. In the last 10 years, there is a complete urban transformation covering various issues such as housing, entertainment, food and beverage, business and living areas for middle- and upper-income groups can be observed, especially in the Factories Zone (Akarçay, 2016, p.178).

In addition to the recent investments in the city such as Sazova Science Park, Kentpark, the new stadium and shopping malls, a transformation towards 5- and 6-storey apartments can be seen in the old neighbourhoods where detached houses used to be prominent, which starts after 2004 with the tramway being put into service. The settlement of Batıkent, located far from the city center back then, started having a closer relationship with the city as the space between started getting filled. Villa type-settlement areas have become widespread in Sazova neighborhood, to which Porsuk River has also contributed. The student population around the Osmangazi and Anadolu Universities has also changed the way most housing is offered. Due to the rapidly growing student population, production of small flats called “apart” has increased and the rental rates in the city have gone up. In Büyükdere and Yenibağlar neighborhoods, which are close to the universities, a large number of 1+1 studio flats can be found.

Figure 4.42. TOKİ Kentpark Residences in Neighborhood of Şeker (left) (Source: Web. 23)

Figure 4.43. TOKİ Odunpazarı Residences (right) (Source: Web. 24)

It can be seen that housing offered by TOKİ for the lower-income groups after the 2000s are generally located on the outer walls or in the suburbs of the city. Construction of the housing was done by TOKİ in the following regions: Odunpazarı-Vadikent, Ihlamurkent, Odunpazarı-Vadişehir, Tepebaşı-Şeker Neighborhood and Tepebaşı-Aşağı Söğütönü. Gentrification projects were also carried out in the city. It can be said that these gentrification projects generally targeted the low- and middle-income groups in the neighborhoods of Karapınar, Erenköy, Huzur and Alanönü, all

of which are located within the district boundaries of Odunpazarı. These regions were declared to be “Squatter Prevention Zone” and transformation was initiated. Covering an area of 48 hectares, the project area is important due to its proximity to the city center and historical Odunpazarı Houses. Neighborhoods of Mustafa Kemal Paşa, İhsaniye, Hacıalibey, Yeni, Işıklar and Mahmure of Tepebaşı District, along with the neighborhoods of Deliklitaş and Kurtuluş of Odunpazarı District were declared to be risky areas under The Law No. 6306, named “Afet Riski Altındaki Alanların Dönüştürülmesi Hakkında Kanun”. However, execution was suspended in 2018. Additionally, an area of 93 hectare found in the Gündoğdu, Emek, Yenidoğan, Erenköy neighborhoods of Odunpazarı District have been declared to be risky (Eskişehir Provincial Directorate of Environment and Urbanization, 2019).

Figure 4.44. Mustafa Kemal Paşa, İhsaniye, Hacıalibey, Yeni, Işıklar, Mamure, Deliklitaş ve Kurtuluş Neighborhoods Risky Areas Zone (left)
(Source: Web. 25)
Figure 4.45. Karapınar, Erenköy, Huzur ve Alanönü Neighborhoods Squatter Prevention Zone (right)
(Source: Web. 26)

Another important development during this period is the revision in Master Plan of 1986 due to the plan becoming inadequate as times passes by. In 2002, a 1/5000 Scale Revision Master Plan was prepared in order to meet the demand caused by the

increasing population. The Master Plan was prepared according to the target of population of 1.200.000 for 2020.

Figure 4.46. 1/5000 Scale Revision Master Plan of 2002

(Source: Eskişehir Metropolitan Municipality)

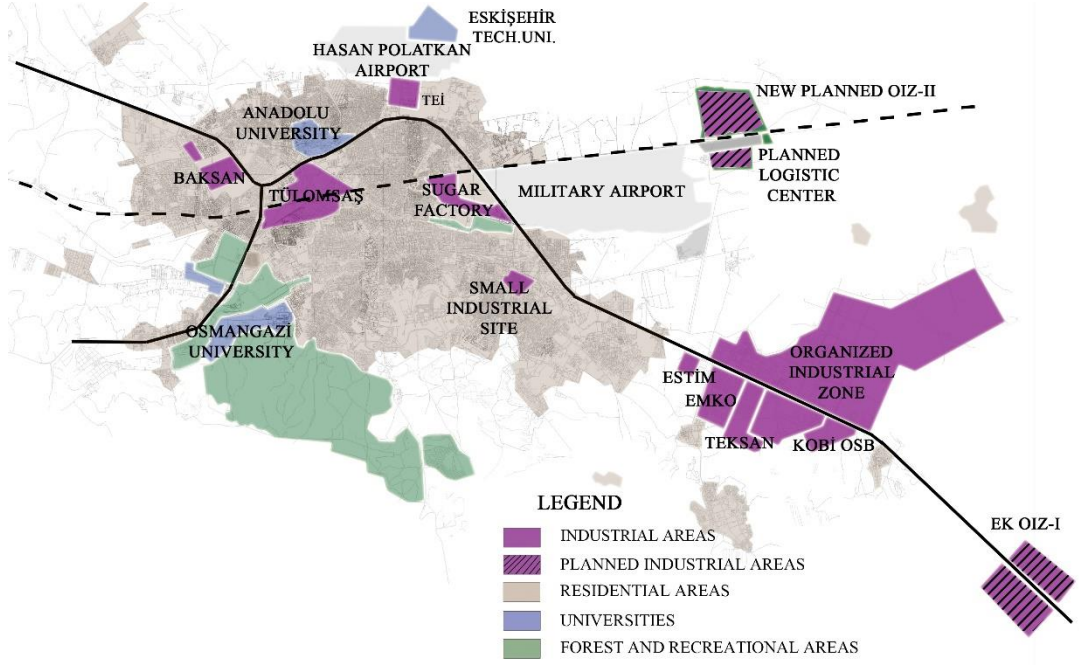


Figure 4.47. Important Urban Use and Industrial Areas in City at the Present Time

(Source: Figure prepared by the author)

The 1/100.000 Scale Eskişehir Environmental Plan covering the whole province of Eskişehir was approved in 2006. In the development principles of this plan, it is stated that development areas should be chosen from regions other than agricultural areas. However, it is also stated that development areas can be selected in a balanced manner after detailed studies in order not to destroy agricultural areas if these new development areas need to expand due to city dynamics such as thresholds. Then, the 1/25.000 Scale Eskişehir Metropolitan Area Central Region Master Plan was approved in 2016. It is stated that in the report of the 1/25.000 scale plan that the current development trends of the residential areas in the central region of Eskişehir metropolitan area are directing urban development along the northwest-southeast axis of the city (Bursa-Ankara). Within the scope of the plan, labor and population estimates were made for the Central Region of Eskişehir Metropolitan Area in addition to determining the lower and upper limits of the development. Based on past population movements, it is predicted that the population of the planning area covering the metropolitan area, which is expected to occur as a result of natural developments, will vary between **954.630** and **1.237.225** for the year 2030 (2030 planning area population estimation **(1.237.225)**, is in line with the estimation of 1/100.000 Scale Eskişehir Province Environmental Plan, which is **1.181.774** for year 2025). Density value to be applied to housing development areas covered within the scope of 1/25.000 Scale Master Plan is 51-120k/ha. The distribution of housing development areas in the planning area and the recommended gross densities are given below (1/25.000 Scale Master Plan, 4th Stage Report No: 4, p.25).

Table 4.5. *Distribution of Residential Development Areas in 1/25.000 Scale Master Plan*

(Source: 1/25000 Scale Master Plan Research Report)

Districts	**Area (Ha)**	**%**	**Gross Density (Person/Ha)**	**Average Population (Person)**
Odunpazarı	1290	33	51-120	**109.650**
Tepebaşı	2667	67	51-120	**226.695**
Toplam	3957			

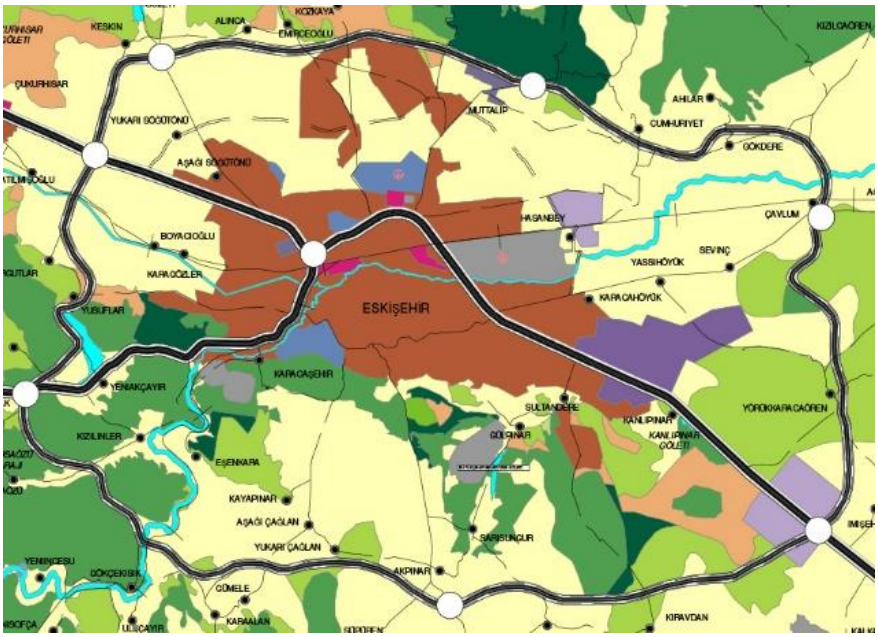


Figure 4.48. Eskişehir 1/100000 Environmental Master Plan, City Center and Surrounding Area

(Source: Eskişehir Metropolitan Municipality)

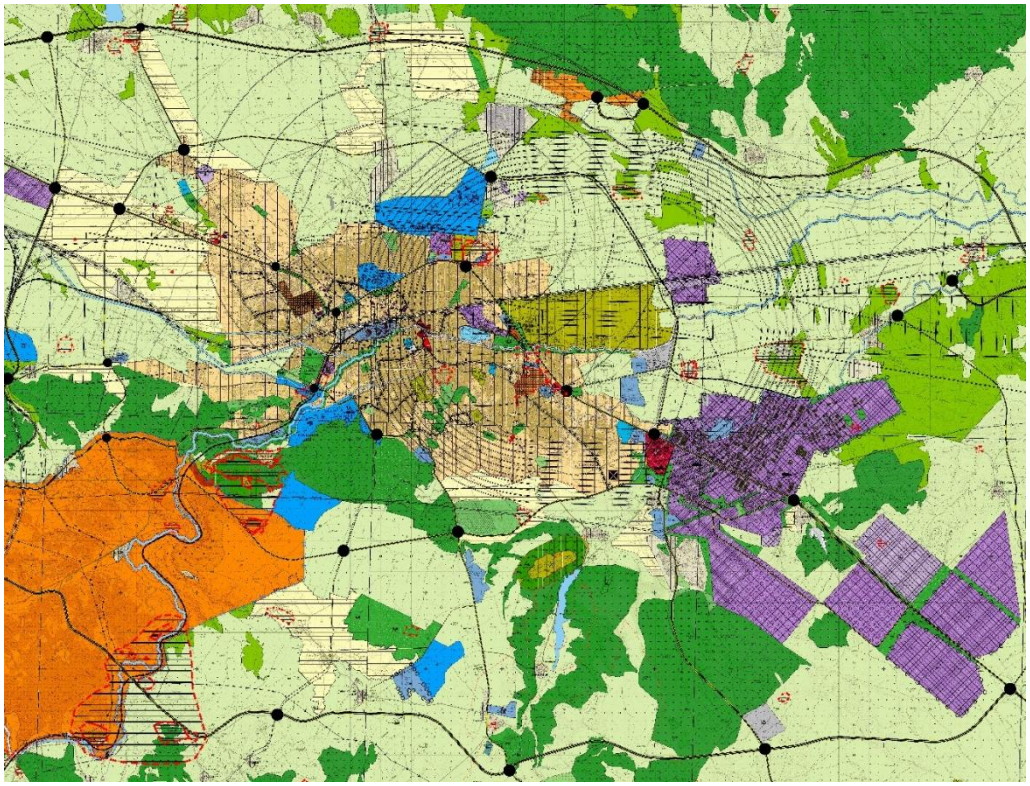


Figure 4.49. Eskişehir 1/25000 Scale Master Plan, City Center and Nearby Area

(Source: Eskişehir Metropolitan Municipality)

Table 4.6. *Important Changes in the City during the 2000-2019 Period and Differences between the Districts*

(Source: Table prepared by the author)

Important Developments and Investments in the City
• 2001-2008: Porsuk River Rehabilitation Project • 2002 - 1/5000 Scale Revision Master Plan approved • 2004 - ESTRAM starts operating • 2006 - Odunpazarı Conservation Plan commences • 2006 - 1/100000 Scale Environmental Master Plan approved • Transformation of Factories Zone starts • 2007 - Espark Shopping Mall • 2007 - Kanatlı Shopping Mall • 2007 - Neoplus Shopping Mall • 2008 - Sazova Science, Arts & Culture Park • 2009 - Kentpark • 2011 - Özdilek Shopping Mall • 2016 - New stadium opened • 2016 - 1/25000 Scale Master Plan approved • 2018 - Eskişehir Technical University opened
Differentiations
• Porsuk River divides the city into two both physically and socially during this period. New buildings and upper-income groups are densely present in the north while older and more traditional buildings and lower-income groups are present in the south • Among the green fields added to the city in the post-2000 period, Kentpark is located in Odunpazarı while Sazova Park and Eskişehir Stadium are located in Tepebaşı. Housing developments aiming the upper-class have been realized around these uses, which were positioned so as to be in connection with Porsuk River. • Almost all of the new shopping centers and recreational areas opened recently in the city are within the boundaries of Tepebaşı, indicating that new commercial investments in the city are mostly concentrated in Tepebaşı. In this context, the region has become a new commercial & social center. • During this period, Tepebaşı revived economically through the transformation of the Factories Zone whereas Odunpazarı did with the restoration of its historical houses. Despite Odunpazarı having become an

important tourism point with the rehabilitation project carried out, it has lagged behind Tepebaşı in terms of its central functions.

- High-income population of the city moved away from the city center partially and led to the formation of luxury housing areas in the neighborhoods such as Batıkent and Çamlıca, which are located within the boundaries of Tepebaşı district.

- Building constructed for the lower-income groups by TOKİ are generally located on the outer walls of the city. Most of these buildings are concentrated in Odunpazarı.

- According to the 1/25000 scale plan, more urban development areas are planned in Tepebaşı compared to Odunpazarı, indicating that the growth trend of the city is in the west direction.

- In the final situation, Odunpazarı has turned into a region that mostly develops through protective master plans whereas Tepebaşı has turned into a region that continuously grows with new investments, expanding and merging with the city with transformation of industrial areas.

CHAPTER 5

THE CASE STUDY ANALYSIS: HOUSING PRODUCTION IN ESKİŞEHİR

The aim of this part is to evaluate various aspects of housing production in the last 17 years in Eskişehir. This study evaluates the data obtained from Municipalities and TÜİK after 2003 for construction and building permits and examines the development of housing production in Eskişehir, especially in terms of supply and demand. For this purpose, firstly, the level of housing production in Eskişehir is compared with countrywide and with other metropolitan cities. In this study, the aim has been to discuss the effects of housing production policies on the growth of Eskişehir city. In the next section, production details are given on the basis of central districts by focusing on Tepebaşı and Odunpazarı, where the majority of housing production has taken place. In the last part, analyses and evaluations are made to reveal the factors that lead to the differentiation of housing production between Odunpazarı and Tepebaşı districts. After all, it is expected that the findings of this analysis would provide significant inputs to urban development planning activities in Eskişehir, especially concerning the decisions regarding housing development.

5.1. Comparison of Housing Production Level in Eskişehir with Country and Other Metropolitan Cities

One of the major events affecting the development of Turkey's economy in the new millenium is the 2001 economic crisis. The 2001 crisis has had significant impacts not only on the national economy but also on all sectors and issues related to the country's economic life. Some of these impacts are observed in rapid development of the construction sector and the level of new residential construction in cities. As a result of the structural reforms made after the economic crisis, the effects of the crisis were reduced and the country's economy started to grow again. In this process, construction investments have grown rapidly and the construction sector has become one of the

leading sectors that triggered growth in the national economy. Statistical data on new housing production also clearly illustrate this situation (Balaban, 2015, p.85-90).

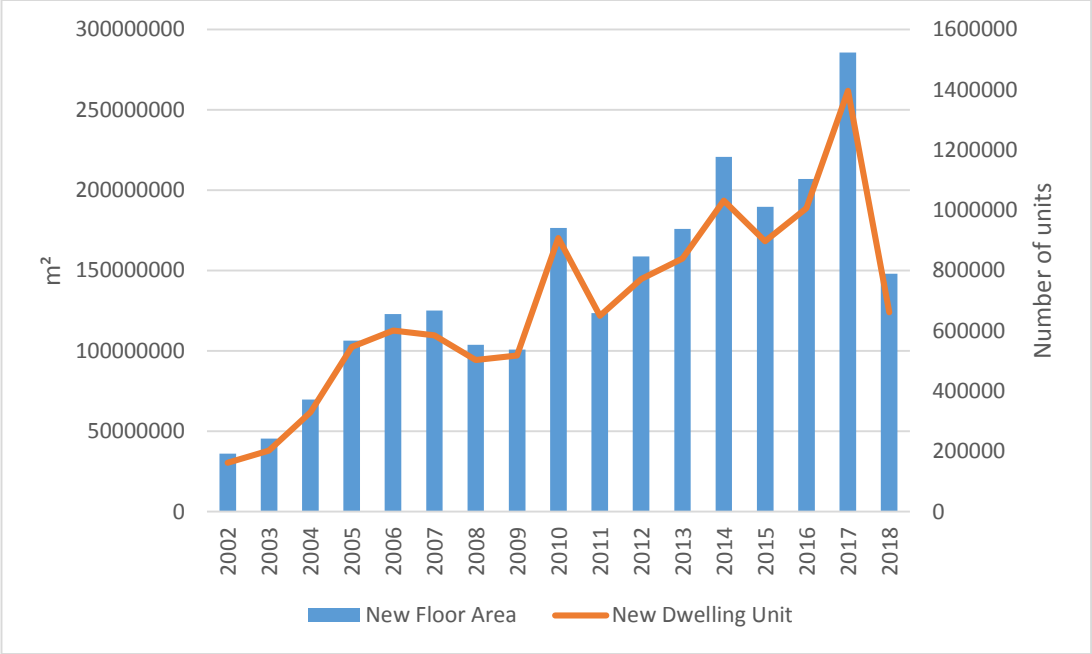


Figure 5.1. New Dwelling Unit Production and Floor Area in Turkey, 2002-2018

Source: TÜİK, Construction Permits

Figure 5.1 shows the data on new housing production, in terms of the number of new dwelling units and the floor area of the new housing construction between the years of 2002 and 2018 based on construction permits. As seen on the graph, a significant growth was realized in the number and floor area of new dwelling units constructed after 2002 in Turkey. The construction of new housing units (flats), which was around 162.000 annually in 2002, increased to 600.000 in 2006, to 900.000 in 2010 and to 1.390.000 in 2017. This increase in the number of housing units is not partial or seasonal, but shows a continues growth trend. Similarly, the floor area of new buildings has grown increasingly. The floor area of the new buildings, which was around 50 million square meters in the early 2000s, reached to 175 million square meters in 2010 and 280 million square meters in 2017. On the other hand, there was a significant decrease in construction of new building and housing units in 2018. In that year, the production of new housing units decreased to 661.000 and the floor area

decreased to 147 million square meters. This situation can be considered as the result of the economic problems experienced in 2018 and the excessive increase in foreign exchange prices.

This growth in new buildings and housing production across the country is observed in almost all of our cities, especially in metropolitan cities. The housing sector data that belongs to Eskişehir also confirms this finding. Figures 5.2 and 5.3 contain data on the production of new dwelling units and buildings in Eskişehir between 2002-2018. According to Türel and Koç (2015), the volume of housing supply in Turkey is best illustrated by the annual start of housing (construction permits) rather than by the completion (occupancy permits). The occupancy of many dwelling units without getting permits causes this situation. Because of this, the data related to construction permits (annual housing starts) is used to show the size of new production in the scope of this study. This data provides direct information on new housing production.

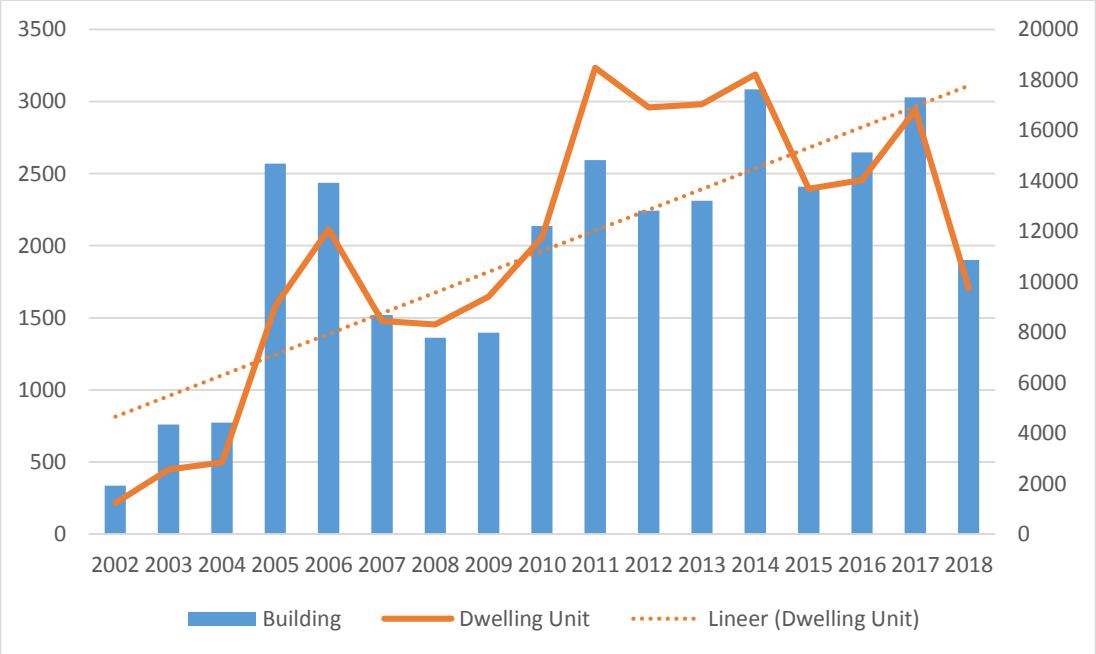


Figure 5.2. Building and Dwelling Unit Production in Eskişehir, 2002-2018

Source: TÜİK, Construction Permits

Figure 5.2 shows the change in the number of buildings and dwelling units that started to be constructed after the 2001 crisis. Similar to Turkey, a continuous growth trend in new housing production is also observed in Eskişehir after 2002. The number of new buildings, which were around 340, and the number of housing units, which were around 1.230, in 2002 respectively reached to 2.600 and 18.480 in the year of 2011. In 2017, the annual production of building construction reached to 3.030 and the production of new housing units reached to 16.800. In other words, in the 15-year period between 2002 and 2017, the production of new housing in Eskişehir province grew 9-fold in terms of the number of buildings and 13-fold in terms of the number of housing units. Especially in 2011-2014, housing production in Eskişehir reached a remarkable level. The production peaked in 2017 in terms of the number of buildings and in 2011 in terms of the number of dwelling units (flats). In 2018, similar to the overall picture in Turkey, a decrease was occurred in the number of new dwelling units and building production. In addition, it is seen that the construction sector in the city has also been negatively affected by the global economic crisis between 2008 and 2009. This situation shows that construction sector of Eskişehir is also affected by negative economic conditions in the country and in the world.

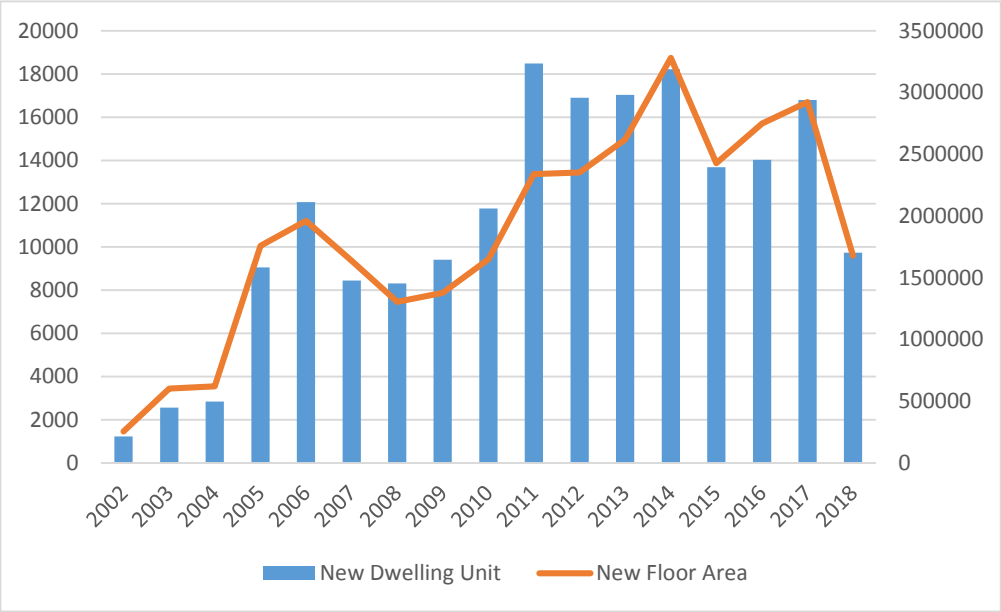


Figure 5.3. New Dwelling Unit and New Floor Area in Eskişehir, 2002-2018

Source: TÜİK, Construction Permits

Figure 5.3 shows, the number of dwelling units and the floor area are together. The general trend is similar and the floor area of houses has increased over time. The total area, which was 253.985 m² in 2002, increased to 3.281.178 m² in the peak year 2014.

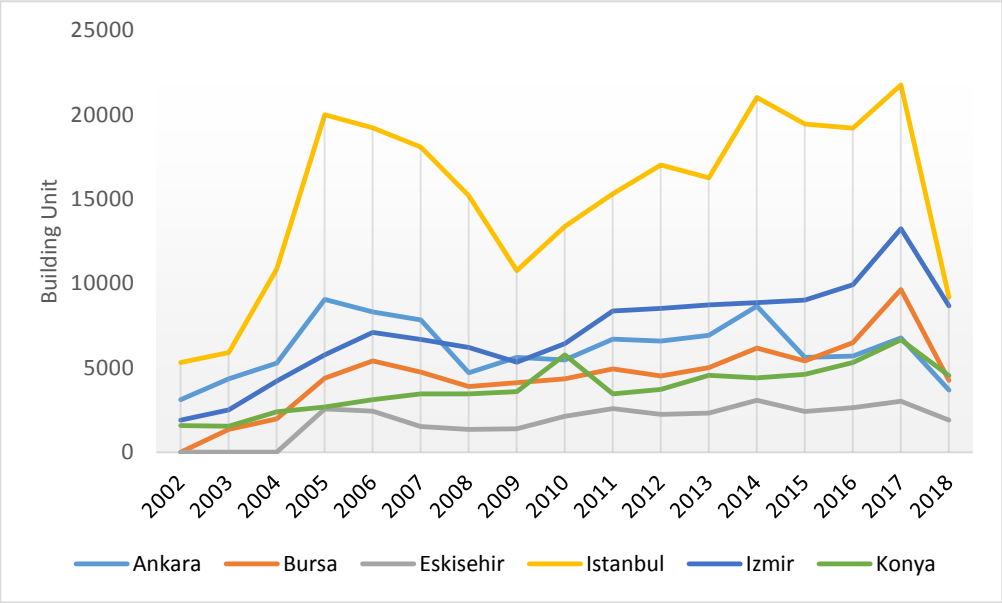


Figure 5.4. Building Production in Metropolitan Cities, 2002-2018
Source: TÜİK, Construction Permits

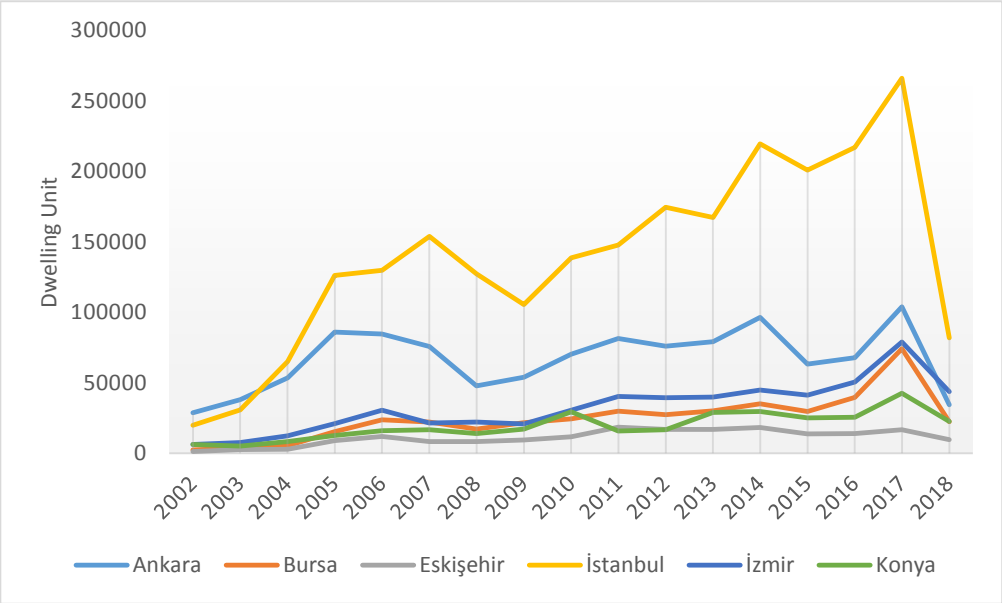


Figure 5.5. Dwelling Unit Production in Metropolitan Cities, 2002-2018
Source: TÜİK, Construction Permits

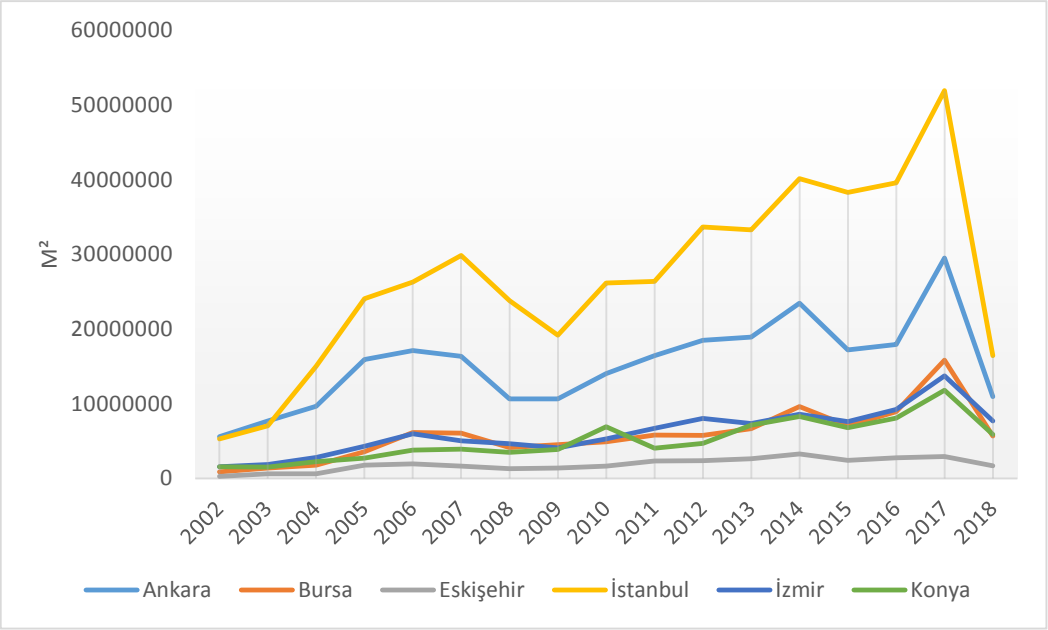


Figure 5.6. Floor Area in Metropolitan Cities, 2002-2018

Source: TÜİK, Construction Permits

Using the data obtained from construction permits accessed from TÜİK, the annual number of newly produced buildings, dwelling units and the total new floor area that belong to six metropolitan cities are compared. Data for this comparison are presented in Figure 5.4, Figure 5.5 and Figure 5.6. According to this assessment, in terms of the number of new buildings, dwelling units and the total amount of new construction, Eskişehir is located in the last row and falls behind the other selected metropolitan cities. However, unless these results are evaluated together with household data, it is difficult to make a comment on the supply-demand situation. In this context, it is necessary to compare the population data of cities with housing production data in order to see the relationship between housing production and housing needs.

Table 5.1 presents the total number of housing units and the total number of households in the six metropolitan provinces for the years between 2000 and 2018. In addition, the increase in number of households and housing units in these cities over the last 18 years is also included in the table. According to Balaban, it is not easy to access the data of the total stock in Turkey. One of the main reasons for this is that the

building censuses are not made regularly and the last census was done in 2000 (Balaban, 2015, p.95). In the last case, the total number of dwelling units used for residential purposes in the year of 2000 and the number of new dwelling units started to be built in cities between 2002-2018 can be reached through TÜİK. Using this data, the total stock amount is calculated approximately. Due to the lack of new housing production data for 2001, data for 2002 were taken into account twice. Therefore, these numbers reached reflect the approximate amount of housing stock.

Table 5.1. *Total Dwelling Units and Total Households in Metropolitan Cities*

Provinces	**Total Dwelling Units in 2000**	**Total Dwelling Units in 2018**	**Total Household in 2000**	**Total Household in 2018**	**New Dwelling Units (2000-2018)**	**New household (2000-2018)**
Ankara	1128625	2299536	1018371	1709882	1170911	691511
Bursa	640197	1067539	545391	890832	427342	345441
Eskisehir	207717	399518	190284	308996	191801	118712
Istanbul	3393077	5786016	2550607	4306967	2392939	1756360
Izmir	1140731	1699448	922729	1401292	558717	478563
Konya	469894	809509	444354	616334	339615	171980
Türkiye	16235830	28010462	15070093	23221218	11774632	8151125

Table 5.2. *Housing Production for Per Household and Housing Oversupply in Metropolitan Cities*

Provinces	**New Dwelling Unit/New Household Between 2000-2018**	**Housing Oversupply Between 2000-2018**	**Total Dwelling Unit/Total Household in 2018**	**Total Housing Oversupply in 2018**
Ankara	1,7	40,9 %	1,3	25,6 %
Bursa	1,2	19,2 %	1,2	16,6 %
Eskisehir	1,6	38,1 %	1,3	22,7 %
Istanbul	1,4	26,6 %	1,3	25,6 %
Izmir	1,2	14,3 %	1,2	17,5 %
Konya	2,0	49,4 %	1,3	23,9 %
Türkiye	1,4	30,8 %	1,2	17,1 %

Table 5.2 shows the number of new dwelling units per new households and a percentage of housing oversupply which belong to Turkey and six metropolitan cities for the period of 2000 and 2018. At the same time, the table shows the number of housing units per household and the percentage of total housing surplus in these six metropolitan cities by taking into account the total housing units and the total number of households in 2018.

When the ratio of new housing units to new households is examined on Figure 5.7, it is seen that the province with the highest rate is Konya with 2,0, followed by Ankara with 1,7. The number of housing units per new household in Eskişehir is 1,6 and it is seen that Eskişehir leaves İstanbul, İzmir and Bursa behind in the list. From here, can be concluded that between 2000-2018, 1,6 dwelling units were produced for each new household in Eskişehir. When the ratio of the total number of dwelling units to the total number of households is analyzed, it is seen that Eskişehir has a similar tendency in housing production with other metropolitan cities.

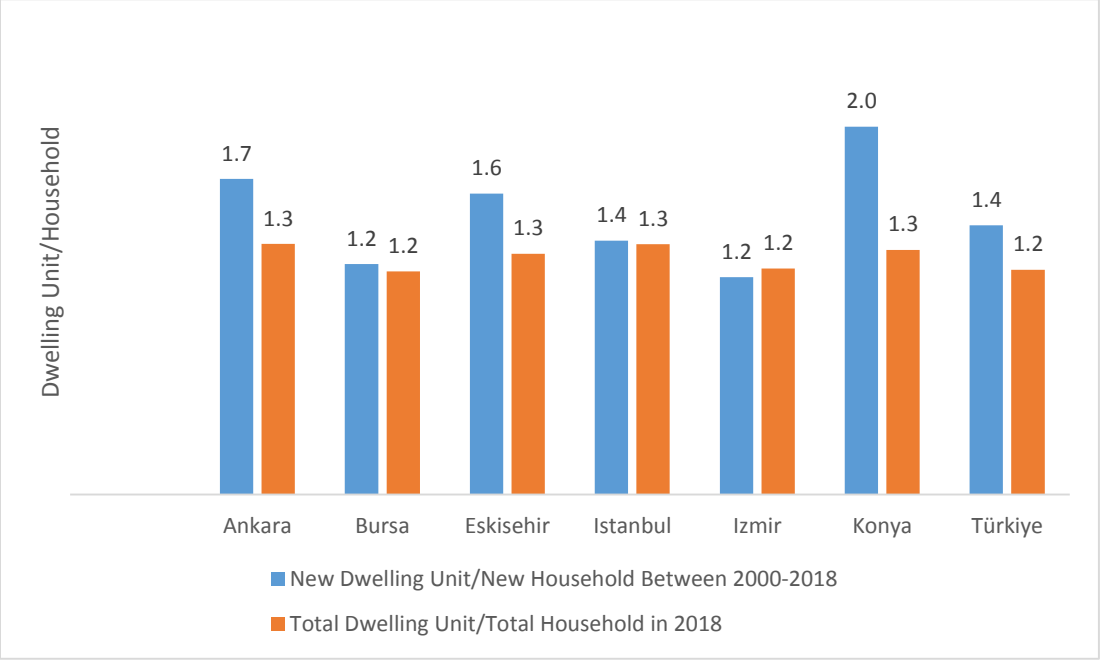


Figure 5.7. Dwelling Unit Production for Per Household, 2000-2018

Source: TÜİK, Construction Permits

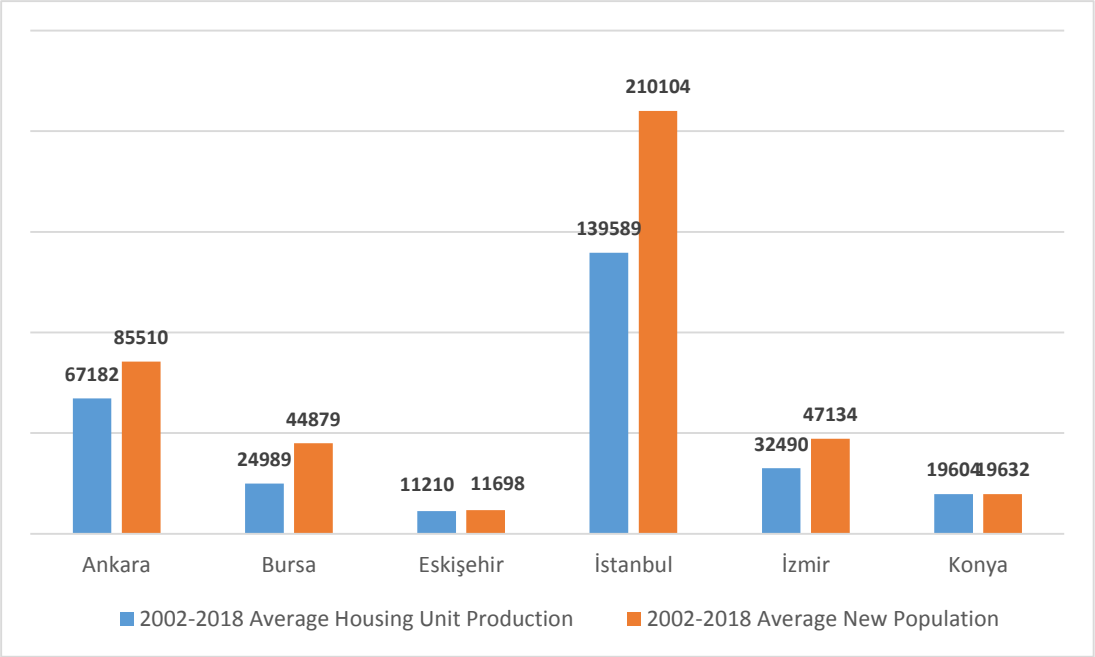


Figure 5.8. Average Housing Unit Production and Average New Population in Metropolitan Areas, 2002-2018

Source: TÜİK, Construction Permits

On Figure 5.8, the average of annual housing unit production and annual population increase in the six metropolitan cities between 2002-2018 are given. It is seen that the difference between the two variables observed in Ankara, İstanbul and Bursa is not realized in Eskişehir. In addition, Eskişehir is at the last place among other provinces in terms of annual population growth and housing production. Another information presented on this graph is that, average increase in population is around 11.700, while the average housing unit production was around 11.210 in Eskişehir each year in the period between 2002-2018.

Figure 5.9 shows the change of household size in cities between 2008-2018. As can be seen from the graph, when the data of the last ten years are examined, Eskişehir is the province with the smallest household size. At the same time, it is understood that household size tends to decrease in all provinces. The numbers of housing units production and population increase are close to each other in Eskişehir. As different from other cities, this can be interpreted in relation to household size. The fact that the

household size in Eskişehir is lower than other cities may cause the housing demand in the city to be higher than other cities. By the year of 2018, household size in Eskişehir is 2,7 and this value is below the average size of 3,4 in Turkey.

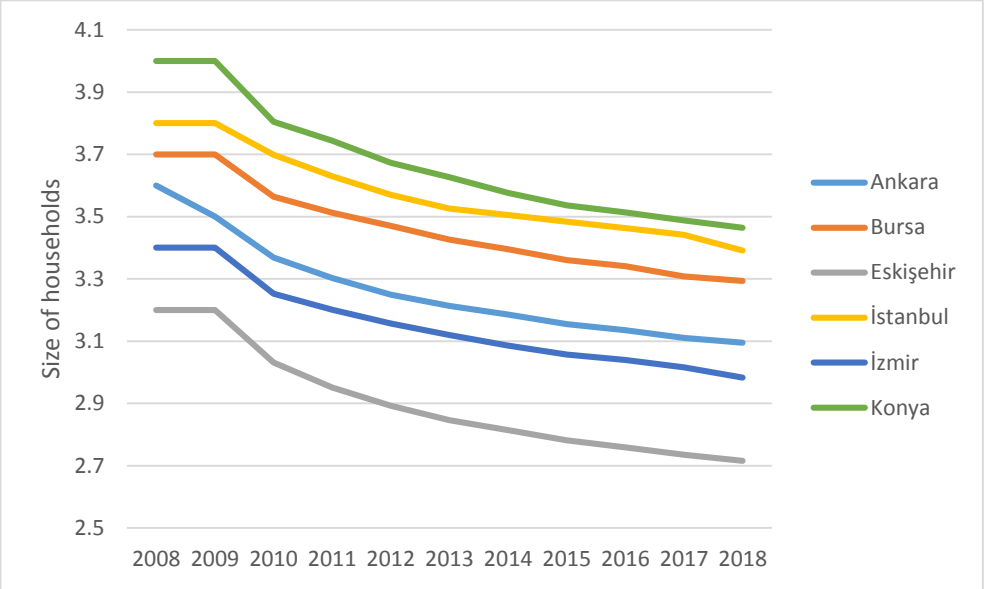


Figure 5.9. Average Size of Households by Provinces, 2008-2018

Source: TÜİK, Construction Permits

Figure 5.10 illustrates the relationship between housing supply and demand. Between 2000 and 2018, if the number of new dwelling construction is higher than the number of new households, then this is considered as housing oversupply and its share in total production is thus examined. Accordingly, although Eskişehir has the lowest value in total new housing production among these provinces, a different picture emerges when analyzed proportionally. In the last 18 years, Konya is leading in housing surplus with the rate of 49,4% and Konya is followed by Ankara with 40,9% and then by Eskişehir with 38,1%. In other words, approximately 38% of the new dwelling units in the Eskişehir in last 18 years were produced above the actual need. Therefore, it can be argued that although the total amount of production in Eskişehir is small compared to other provinces, when it is evaluated together with population dynamics a considerable overproduction or oversupply is found on a provincial basis. In Figure

5.11, it is understood that 22,7% of the total number of housing units in Eskişehir is in excess of housing need. In this case, Eskişehir leaves Bursa and İzmir behind.

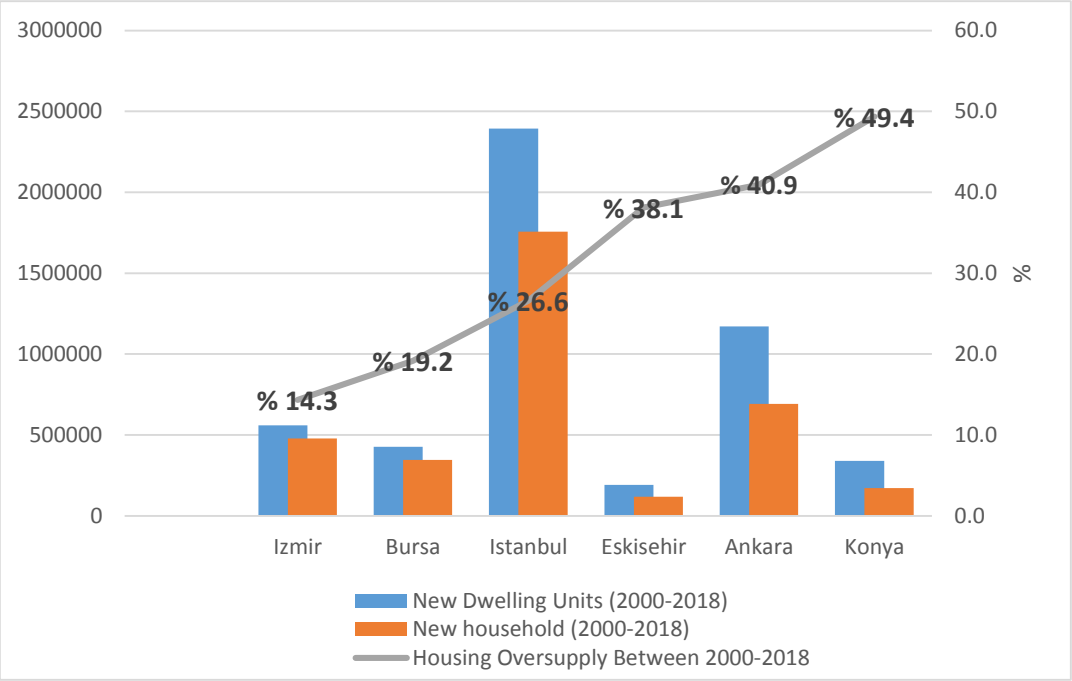


Figure 5.10. Housing Oversupply, New Dwelling Unit and New Household, 2000-2018
Source: TÜİK, Construction Permits

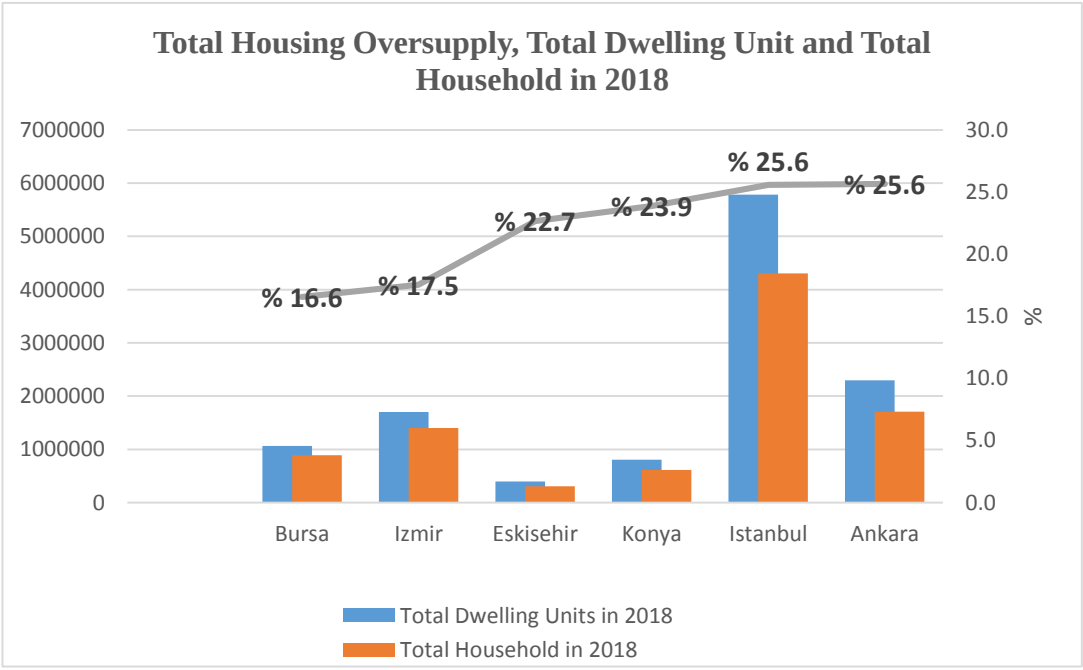


Figure 5.11. Total Housing Oversupply, Total Dwelling Unit and Total Household in 2018
Source: TÜİK, Consruction Permits

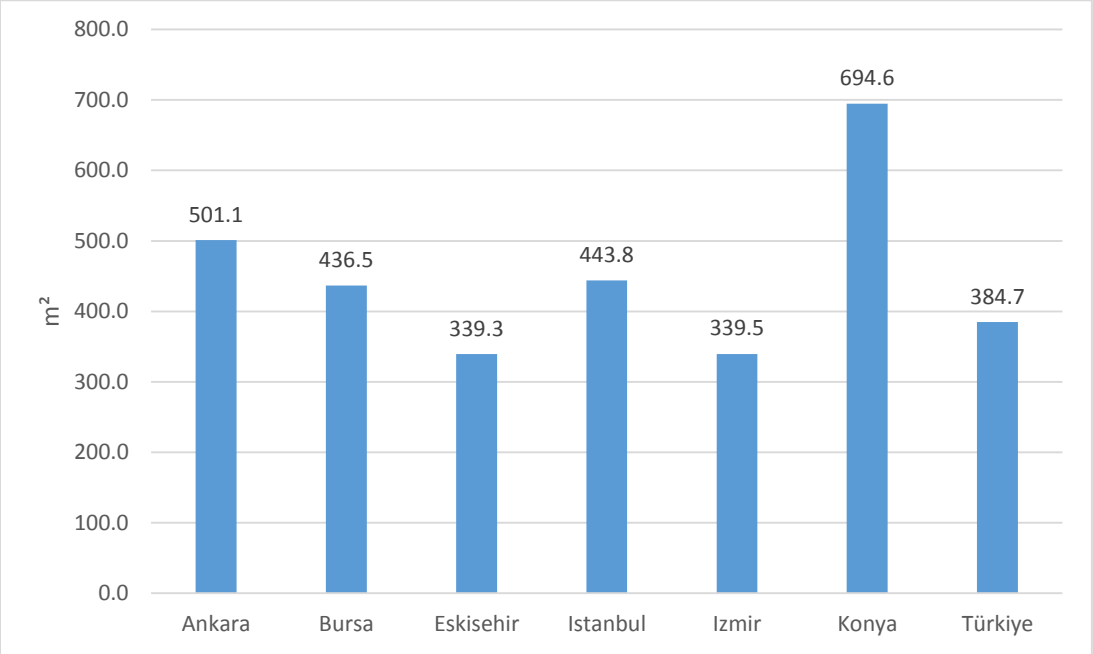


Figure 5.12. New Floor Area Production for Per New Household, 2013-2018

Source: TÜİK, Construction Permits

Another method that will be used to compare the amount of built environment production in Eskişehir with other provinces is examining the amount of floor area of new construction per household. Figure 5.12 shows the average new floor area per new household between 2013-2018. Accordingly, the highest production per new household is realized in Konya with 694 m². Eskisehir is below the average of Turkey and ranks in last place with the lowest value among other cities. In other words, in the last five-year period, approximately 340 m² new of floor area has been realized annually for each new household added to the city. This shows that although there is a housing oversupply and demand in the city, the floor area of the constructed units is small compared to other provinces. Consequently, construction activities occupy less area in Eskişehir's urban area than in other provinces.

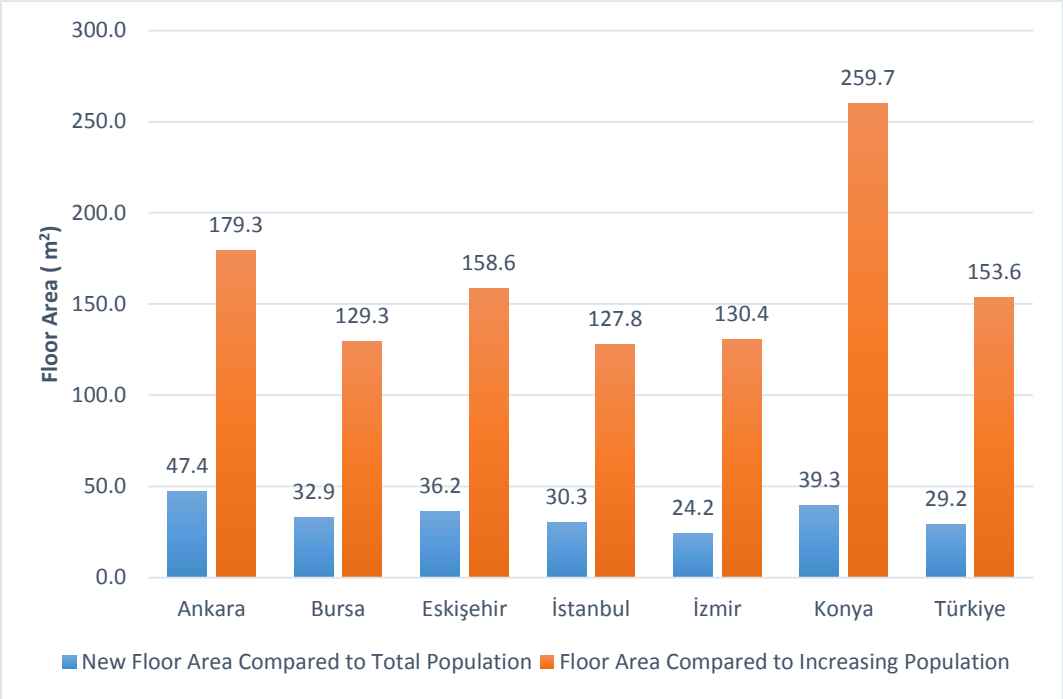


Figure 5.13. Relationship Between Floor Area and Population in Metropolitan Cities, 2002-2018

Source: TÜİK, Construction Permits

Figure 5.13 shows the relation between the floor area and the population obtained by the ratio of the new building floor area in metropolitan cities to the increasing and total population. Accordingly, while the new floor area was 36 m² for per people in Eskişehir between 2002 and 2018, this rate was calculated as 47 m² in Ankara, 39 m² in Konya, 33 m² in Bursa and 30 m² in İstanbul. These calculations are based on the total population. When these rates are calculated according to the population newly added to the city in the same period, Eskişehir ranks at the third place after Konya and Ankara with the floor area of 159 m².

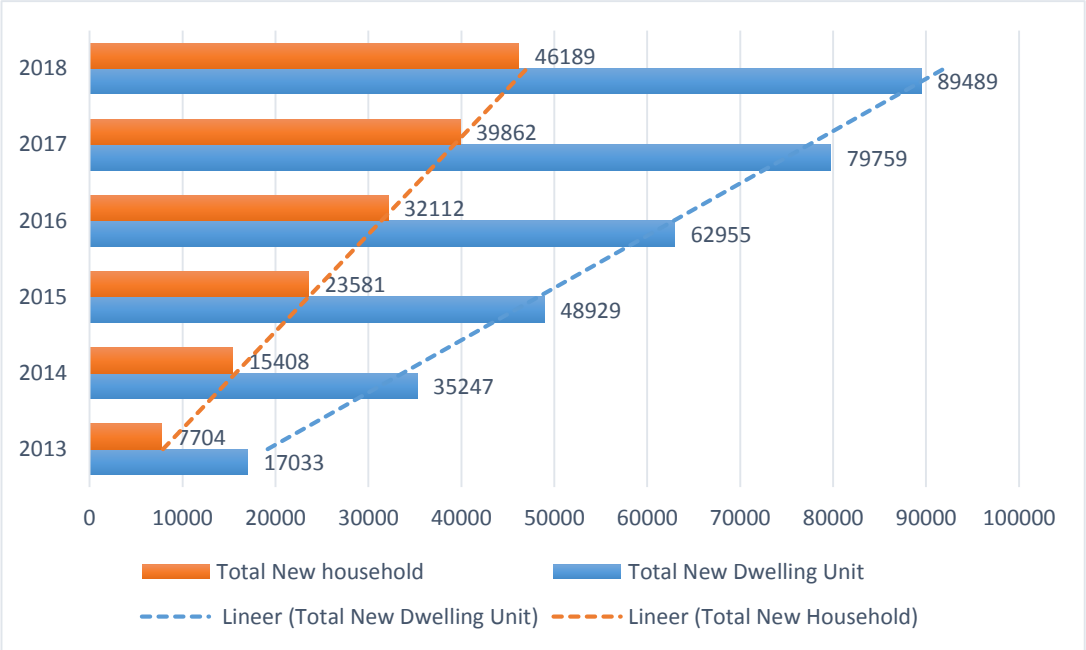


Figure 5.14. New Housing and New Household Accumulation in Eskişehir Between 2013-2018

Source: TÜİK, Contruction Permits

Finally, another indicator of the relationship between housing supply and demand in Eskişehir is the ratio of total housing stock to total household. The lack of data on the total number of households for Eskişehir before the year of 2013 causes an obstacle. In this case, the general trend in the province has been tried to be presented with the data of the last 5 years since the total number of household and total housing stocks for Eskişehir before 2013 could not be reached. Figure 5.14 does not show the total housing stock or the total number of households in the province. It was created only to express the new total between 2013-2018. Therefore, Figure 5.14 represents the accumulation of new dwelling units and households in the city between 2013-2018. As can be seen, there has been an increase in both stock and household numbers in Eskişehir in this period. The housing surplus has been increasing since 2013. At the same time, the graph shows that the gap between housing demand and housing supply is opened in favor of housing supply and the proportion of vacant housing in total housing stock is increasing.

As a result, effects of increased housing production after the 2001 crisis in metropolitan cities and the result of this process in Eskişehir are put forward in this part. For this purpose, housing production values in Eskişehir were compared with other metropolitan cities in the last 17 years. From this point of view, it has been investigated whether there are different trends in housing production between metropolitan cities. According to the study carried out with analysis of statistical data, it is seen that housing production in Eskişehir is at a considerable level. Housing production in Eskişehir increased in the post-2000 period similar to the trend on countrywide. However, in terms of the total number of new buildings, new dwelling units and the total new floor area between 2002 and 2018, it lags behind other selected metropolitan cities and ranks in the last place. However, this information needs to be interpreted differently because of the Eskişehir's smaller household size and lower population growth. Housing production data is evaluated by establishing a relationship with household data because this result is not informative about the supply and demand situation in the city. The first results obtained from the study is that 1,6 dwelling units were produced per new household in Eskişehir between 2000-2018. This situation shows that Eskişehir leaves İstanbul, İzmir and Bursa behind in the list in the production of new dwelling units for per new household. When the ratio of the total number of housing units to total number of households is examined, it is observed that Eskişehir has a similar production tendency with the value of 1,3 in the production of dwelling units for per household. In addition, approximately 38% of the new dwelling units in Eskişehir in the last 18 years have been produced above the need. Additionally, 22,7% of the total number of housing units in Eskişehir is in excess of housing need today. In this case, Eskişehir leaves Bursa and İzmir behind. Although the total amount of production in Eskişehir is small compared to other provinces, there is a considerable production surplus on a provincial basis when it is evaluated together with the population dynamics within itself. At the same time, it has been observed that the surplus of dwelling units in the city has increased in the last 5 years. According to the calculations made on the floor area of the constructions that have been started, the average 340 m² floor area has been realized for each new household in the city in the

last five years. This result reveals that although the housing production is more than demanded in the city, the floor area of the produced housing units is small compared to other provinces. Consequently, construction activities occupy less area in Eskişehir's urban area than in other provinces.

In summary, it can be said that there is housing production in greater numbers than actual need of households in Turkey. Additionally, this high level of production prevailing in the country can be said to be caused by irregular market conditions. Moreover, significant differences can be observed in the amount of construction size per household between cities although a large number of housing produced in Turkey. The study conducted in 2015 by Türel and Koç on eight cities of Turkey has shown that there is a more positive relationship between housing construction and the amount of subdivided land by the municipalities than the total size of planned land (Türel and Koç, 2015, p. 67). From this point of view, it is thought that Eskişehir Metropolitan Municipality's planning decisions to limit the land supply may cause the lower floor area for per household in Eskişehir than other metropolitan cities. According to Keskinok (2018), an excess amount of planned area is a product of shaping the urban development strategies according to market demand in Turkey; however, this situation is not experienced at the same level in every city. In this regard, İstanbul is in the lead because of being the focus of international capital and Ankara is a city supported by public resources under the conditions of political power. Keskinok states that the future of political power will be determined by investments realized in more planned areas of big cities. For this reason, he also emphasized that the crazy projects and urban transformation projects in recent years are realized to contribute capital circulation. He argues that the government supports the decisions and financial structure of cities governed by a mayor who is a member of the ruling party (Keskinok, 2018, p.250-255). In this case, the lack of sufficient support from the central government to Eskişehir Metropolitan Municipality may also be one of the factors causing low amount of construction area in the city when compared to other cities. Difference between political perspectives of the municipality and the central

government may form the basis for this situation. Although Eskişehir Metropolitan Municipality is governed by a mayor from the Republican People's Party (CHP), the first party in the General Provincial Assembly has been the Justice and Development Party (AKP) in the last period. Due to the political disagreements between local governments and the members of the provincial assembly, functioning of urban projects has been disrupted and urban transformation projects have not been implemented (Yıldız, 2013, p.126-136). This example demonstrates that the production of built environment in cities managed by actors with different political ideologies is affected by political atmosphere.

5.2. The Share of Tepebaşı and Odunpazarı Districts in New Housing Production

It can be stated that Eskişehir has a single-centered development tendency and population structure. A large part of the total population, economic investments and employment opportunities of the province are concentrated in the center. The districts outside the center have relatively low population. This situation increased the population mobility within the city in time and caused migration from the rural areas and other districts to the center. This single-centered structure is clearly visible in the housing production statistics. After 2003, Tepebaşı and Odunpazarı, the two central districts, had the largest share in the total housing production in the province. In other words, most of the new housing production in the province was realized in Odunpazarı and Tepebaşı. The figures 5.15 and 5.16 below present data on new housing production in central districts.

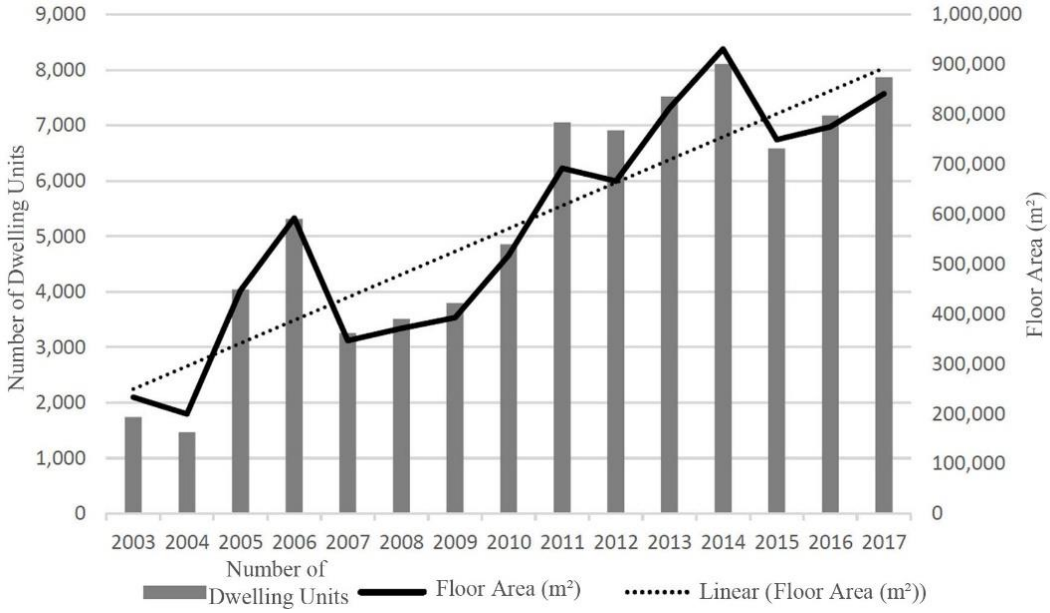


Figure 5.15. New Housing Construction in Odunpazarı (according to construction permits)

As can be seen in the figures, both the number and floor area of the dwelling units started to be constructed after 2004 have increased significantly. The number of dwelling units started to be built in Odunpazarı district increased from 1.471 in 2004 to 8.104 in 2014. Similarly, housing size has been in a steady upward trend. The number of new dwelling units in Tepebaşı was 754 in 2003 and 9.920 in 2014. In 2017, the number of new dwelling units started to be built in Odunpazarı and Tepebaşı districts was 7.866 and 8.467, respectively. Although the growth trends of both districts are similar in nature, Odunpazarı has a relatively stable and continuous growth. Another interesting difference is that the number of dwelling units in Odunpazarı is lower compared to Tepebaşı, while the size of the total housing construction area is larger. This will be discussed again in the following sections.

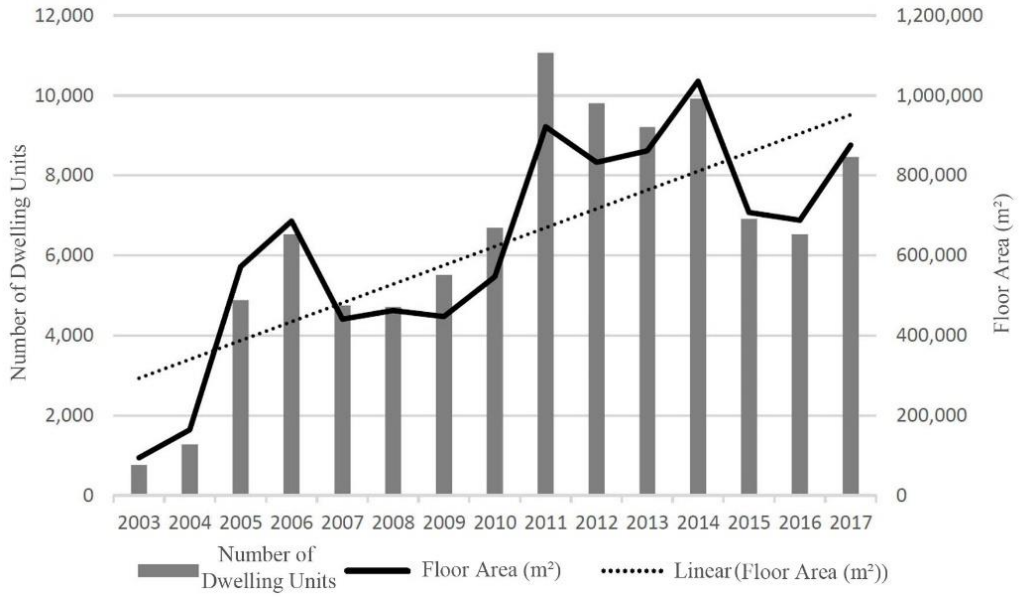


Figure 5.16. New Housing Construction in Tepebaşı (according to construction permits)

Most of the new dwelling units that are being built in the city are produced in the Odunpazarı and Tepebaşı districts (Figure 5.17). For example, in 2011, 18.122 of the 18.442 new dwelling units licensed throughout the city were located in the central districts.

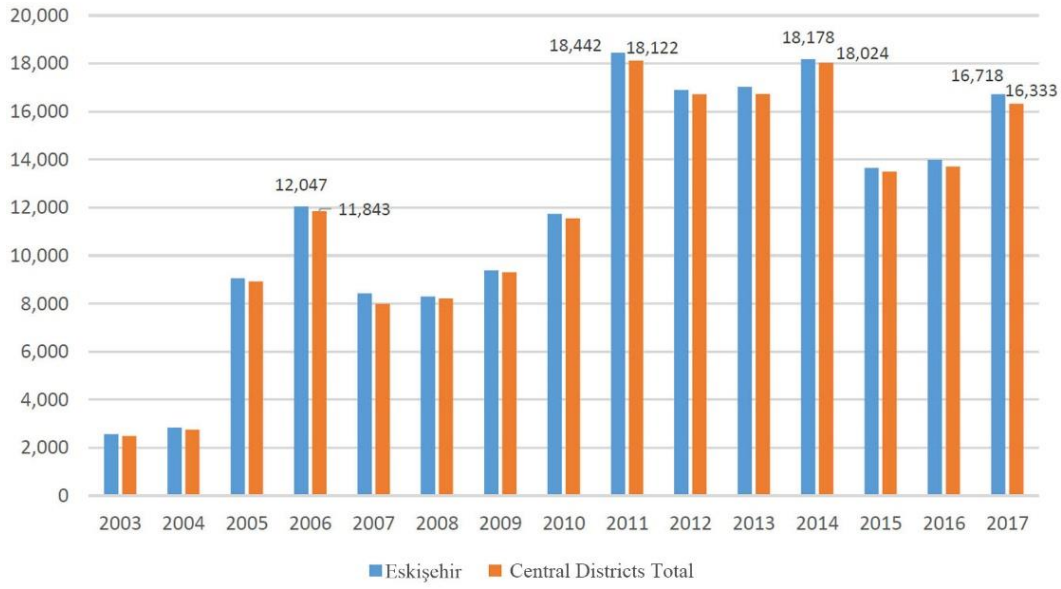


Figure 5.17. Share of Central Districts in Housing Production - Number of Units in a Year (according to construction permits)

When the rates are evaluated, the dominance of central districts in housing production becomes more evident. Figure 5.18 shows the ratio of the number of new buildings and dwelling units, which were started to be built in Odunpazarı and Tepebaşı districts between 2003 and 2017, to those that were started to be built in whole city. As can be seen, apart from exceptional cases such as 2007, 95% of the buildings and 98% of the dwelling units started to be constructed in Eskişehir are located in the central districts. In the post-2003 period, the lowest rates in terms of central districts were observed in 2007 as 90,6% in buildings and 94,9% in dwelling units. The highest rates were in 2008 and 97,6% of the buildings and 99,1% of the housing units were constructed in the central districts. An interesting point in the Figure 5.18 is the difference between the building and independent dwelling unit ratios. Almost every year, there is a difference of approximately 3 points between the two rates. The main reason for this is that the buildings constructed in the central districts have much more storeys and contain more units compared to other districts.

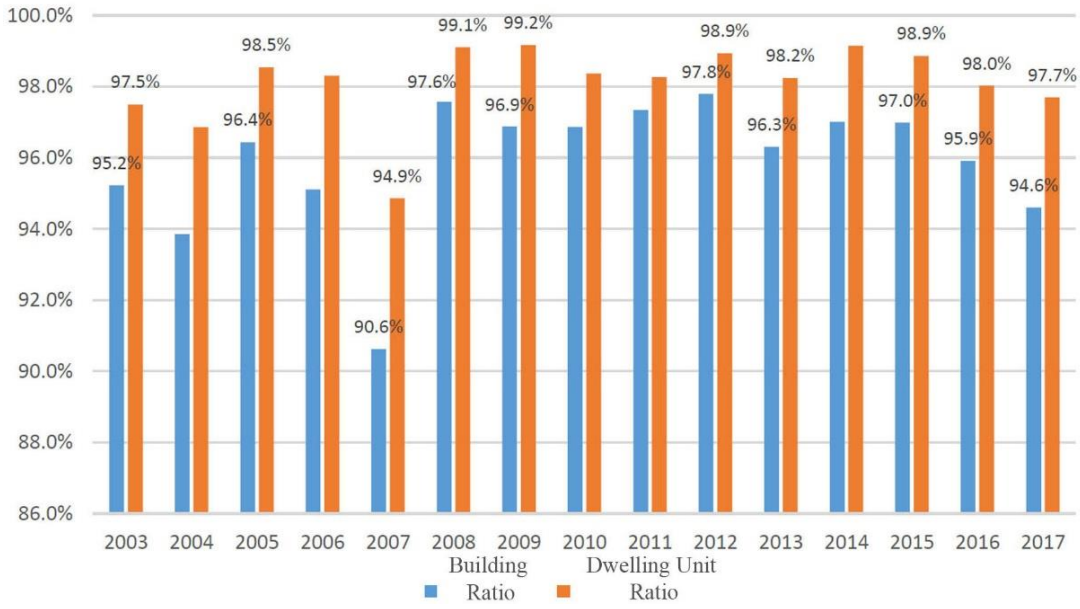


Figure 5.18. Share of Central Districts in Housing Production - Ratio of Building and Dwelling Units (according to construction permits)

When the rates in terms of the floor area of building and dwelling unit are examined, the 3-4 points difference observed between the building and housing unit ratios disappears. In Figure 5.19, the share of central districts in housing production is given proportionally in terms of building and floor areas. As can be seen, 97-98% of the houses started to be constructed in Eskişehir province, except for 2007, corresponds to the housing production in the central districts. In 2007, this ratio was realized as 93% in terms of floor area (Figure 5.19).

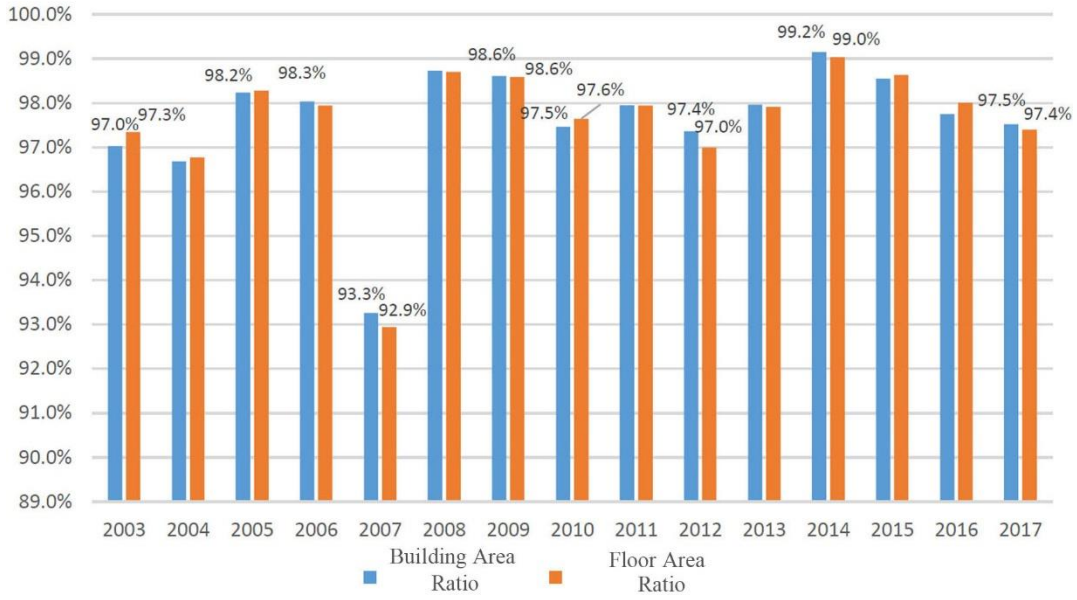


Figure 5.19. Share of Central Districts in Total Housing Production - Floor Area Ratios (according to construction permits)

The comparison of the shares of Odunpazarı and Tepebaşı districts is given in Figure 5.20. In this figure, the shares of Odunpazarı and Tepebaşı districts in the total number of dwelling units started to be constructed in Eskişehir between 2003-2017 are presented separately.

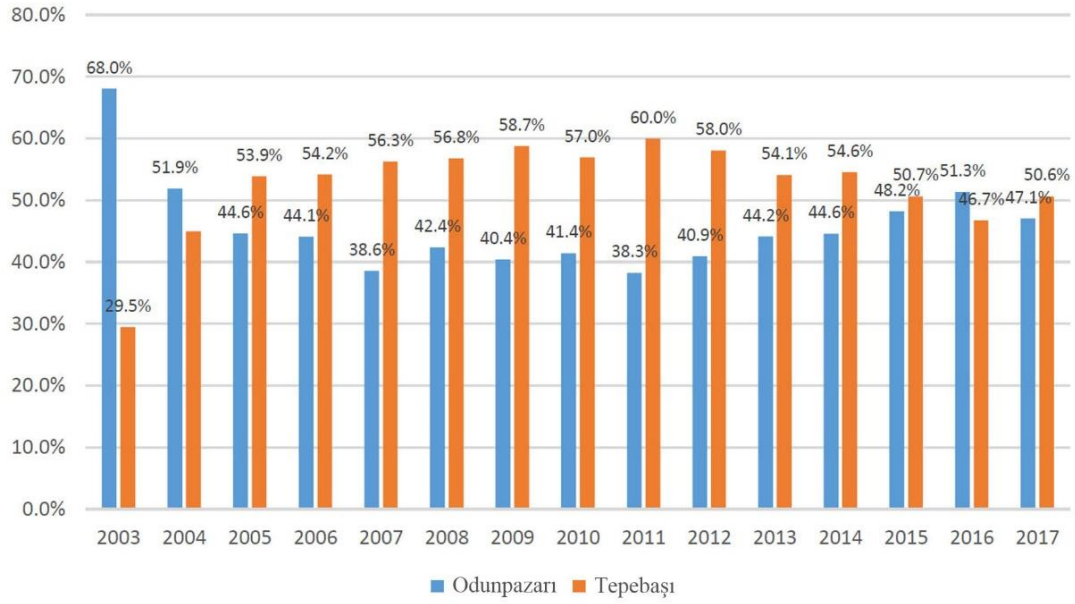


Figure 5.20 Share of Central Districts in Dwelling Unit Production - Dwelling Unit Ratios (according to construction permits)

As it is seen, Tepebaşı district is located in front of Odunpazarı in the production of new dwelling units. The difference between the two districts rises to high levels in some periods, while the difference sometimes closes or even can be displaced. At the beginning of the analysis period, especially in 2003 and 2004, while the share of Odunpazarı in the total housing production in the province was higher, it was observed that Tepebaşı district was prominent between the years of 2005-2014. In addition, the proportional distribution between districts in 2010 and 2011 is 60% in Tepebaşı and almost 40% in Odunpazarı. In this case, it is observed that the difference has reached the level of 20 points in favor of Tepebaşı. Since 2015, the difference has started to decrease and the share of both districts in total housing production is almost equal.

In summary, after 2003, there was a growth in construction investments, especially in new housing production in Eskişehir as in countrywide. It is also proved by statistical data that the number of houses started to be built has increased in terms of both the number of buildings, dwelling units and the floor area over the years. Central districts

are dominant in total new housing production in the city. The new construction in central districts constitutes between 95% and 98% of the total housing production in the city. Especially in terms of the number of housing units and floor area, it is clear that the share of central districts has reached to 98% in general and 99% from time to time. Moreover, there is a distinct differentiation among the central districts. Although the share of both districts in total production approaches to each other from time to time, the amount of production in Tepebaşı district is generally higher than in Odunpazarı. It can be noted that Tepebaşı district is head of the new housing production among all districts in Eskişehir.

5.2.1. Average Floor Area

The data on the average size of the houses started to be constructed between 2003 and 2017 is presented in Figure 5.21, in particular for the whole city and central districts. The most common finding in the graph is that the average floor area is decreasing during periods when total housing production increased. In 2003-2004, before the rapid growth in housing production volume started, the average size of the produced houses was around 130 square meters. In 2005, when the growth in housing production accelerated, the size of the produced houses began to decline. In the period between 2010-2012, when the housing production peaked, the average housing unit area decreased to less than 100 square meters. The most important reason for this may be the increase in housing production for different income groups and the intensification in the production of multi-storey houses, which include houses with lower average usage area. As can be seen in the figure, there has been some increase in the average size of the houses produced in recent years, and the average floor area has increased to 105 square meters across the city and in central districts.

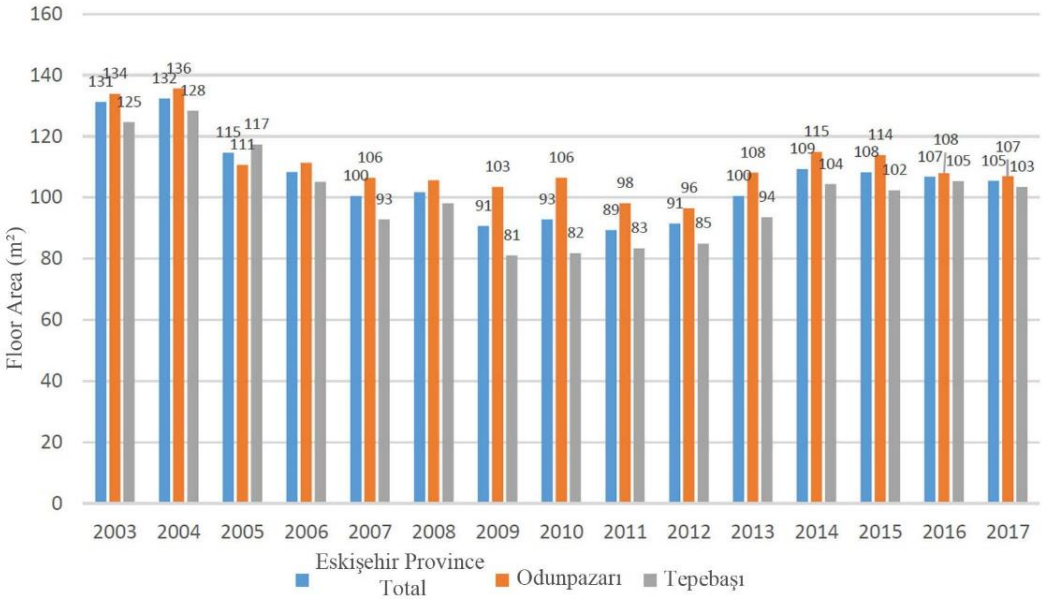


Figure 5.21. Change of Average Floor Area by Years (according to construction permits)

There is a clear distinction between residential units in terms of size. When the average size of the new houses is examined by years, it is observed that the houses produced in Eskişehir province and Odunpazarı are larger than those produced in Tepebaşı (Figure 5.21).

Between the years of 2003 and 2017, with one exception (2005), the annual average size of the new housing units in Tepebaşı was lower than the average housing size in Eskişehir and Odunpazarı in each year. Especially, the difference between Odunpazarı and Tepebaşı is quite clear and the difference in floor area between the two districts sometimes reaches 15-20 square meters. For example, while the average size of the houses started to be constructed in Tepebaşı district in 2010 was 82 square meters, the size of the new housing starts in Odunpazarı in the same year was 106 square meters. When this data is taken together with the data presented in the previous section, it is understood that the housing production is higher district but the average living area of the produced houses is lower in Tepebaşı. However, it is observed that houses produced in Odunpazarı are relatively less in number but larger in size.

Between 2003 and 2017, the average size of the new housing starts was 106 square meters in Eskişehir, 111 square meters in Odunpazarı and 100 square meters in Tepebaşı (see Table 5.3).

5.2.2. Annual Housing Supply

The change in the annual housing supply in districts based on the housing starts is given in the Figure 5.22. The data in this graph are obtained by multiplying the number of new dwelling units with the average household size in Eskişehir province and central districts. Thus, the size of the population targeted by the housing supply between the years of 2003 and 2017 was tried to be determined. As can be seen, there was a significant increase in housing supply in 2005 with the beginning of growth in housing production. Compared to 2003 and 2004, there has been a significant growth in housing supply in all three administrative units.

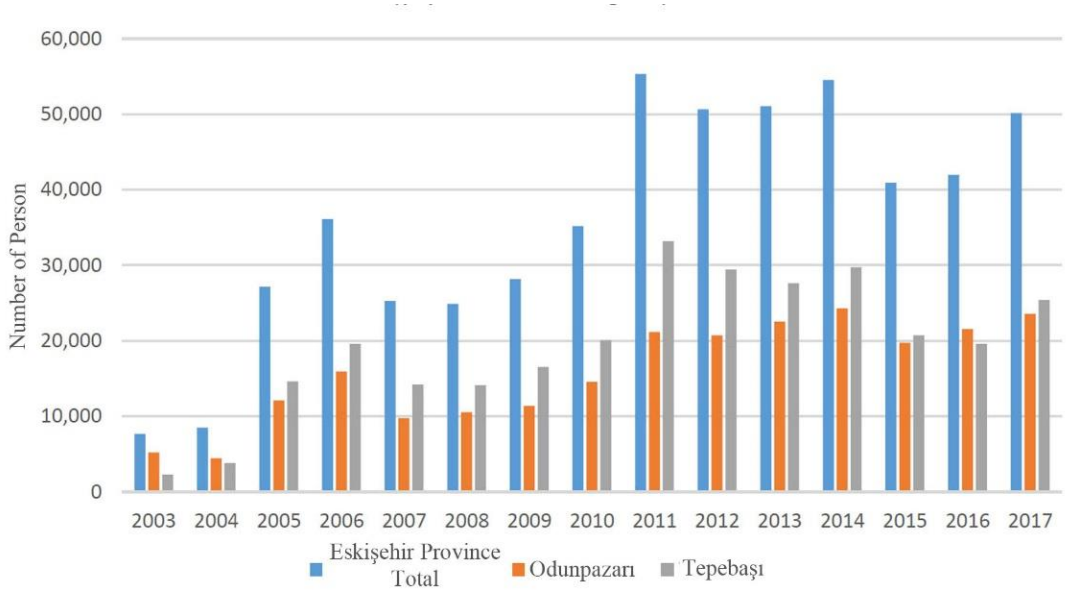


Figure 5.22. Change in Housing Provision for Years-Number of Housing Units x Household Size (according to construction permits)

The period between the years of 2005 and 2017 represents two sub-periods of five years in terms of growth in housing supply. Although there was a significant growth in housing supply between 2005 and 2010, this growth fell behind the level between

2011 and 2017. In the first sub-period, housing supply was sufficient for the population of 25.000-35.000, while in the second sub-period housing supply was sufficient for the population of 45.000-50.000. There is a difference between the central districts in favor of Tepebaşı district. As mentioned before, the higher level of housing production in Tepebaşı compared to Odunpazarı leads to this situation. In the first sub-period, housing supply was provided to between 10.000-15.000 inhabitants, while in the second sub-period housing supply increased to 25.000 inhabitants. With a few exceptions, in all years between the years of 2003 and 2017, there was sufficient housing supply for a larger population in Tepebaşı compared to Odunpazarı.

A summary of the data discussed so far on the basis of the main period between the years of 2003 and 2017 is given in Table 5.3. In the mentioned period, the number of housing unit starts in Eskişehir province is 11.950. 5.281 of this total are realized in Odunpazarı and 6.467 in Tepebaşı. The difference in annual production of new housing units between central districts is approximately 1.200. The share of the houses produced in these districts reaches almost 98% in terms of both the number of dwelling units and the floor area. This shows that housing production is concentrated in central districts. The average floor area data shows that the leadership among the central districts belongs to Odunpazarı. In Tepebaşı district where more housing production has been realized, the average floor area has been 100 square meters between the years of 2003 and 2017, whereas in Odunpazarı, where relatively less housing units has been constructed, larger houses have been produced. In this period, the average floor area in Odunpazarı is 111 square meters. In terms of annual housing supply, Tepebaşı District is ahead of Odunpazarı depending on production surplus. Between 2003 and 2017, there has been housing production to meet the housing need of 19.400 people per year in Tepebaşı. In Odunpazarı, that number is 15.842. Between 2003 and 2017, there was a sufficient supply of housing for the population of 19.400 in the Tepebaşı. In the period of 2003-2017, when the construction sector showed a high growth throughout the province, new housing production has been started for 35.849 people each year.

Table 5.3. *Summary of Housing Production in Main Period*

	Average Values Between 2003 and 2017		
	Eskişehir	**Odunpazarı**	**Tepebaşı**
The Average Number of Annual New Dwelling Units	11.950	5.281	6.467
Annual Average of New Floor Area (m²)	1.220.567	571.192	622.328
Dwelling Unit Production in Central Districts	11.747		
New Housing Floor Area in Central Districts	1.193.520		
Share of Total New Dwelling Unit Production in Central Districts	98%		
Share of New Housing Floor Area in Central Districts	98%		
Average Floor Area (m²)	106	111	100
Average Housing Supply	35.849	15.842	19.400

5.2.3. Housing Production According to Type of Investor

Housing production in the period between 2003 and 2017 is also examined in terms of construction ownership or in other words housing provision types. The data provided by TÜİK differs according to three basic housing types: private-handed production, public-handed production and production by construction cooperatives. In the Figure 5.23, the number of dwelling units in the buildings is presented according to the ownership and location of the building between the years of 2003 and 2017. As can be seen, the most common form of housing provision is private production. Housing produced by private entrepreneurs or private construction firms in various sizes constitutes a large portion of total housing production. In the period mentioned, the number of housing units produced by private individuals or firms throughout the province was 167.125, while the housing units produced by public institutions and building cooperatives were 6.076 and 5.683, respectively. In proportion (Figure 5.24), 93% of the houses produced throughout the province were produced by the private sector, while the half of the remaining 6% was produced by public institutions and the other half by construction cooperatives.

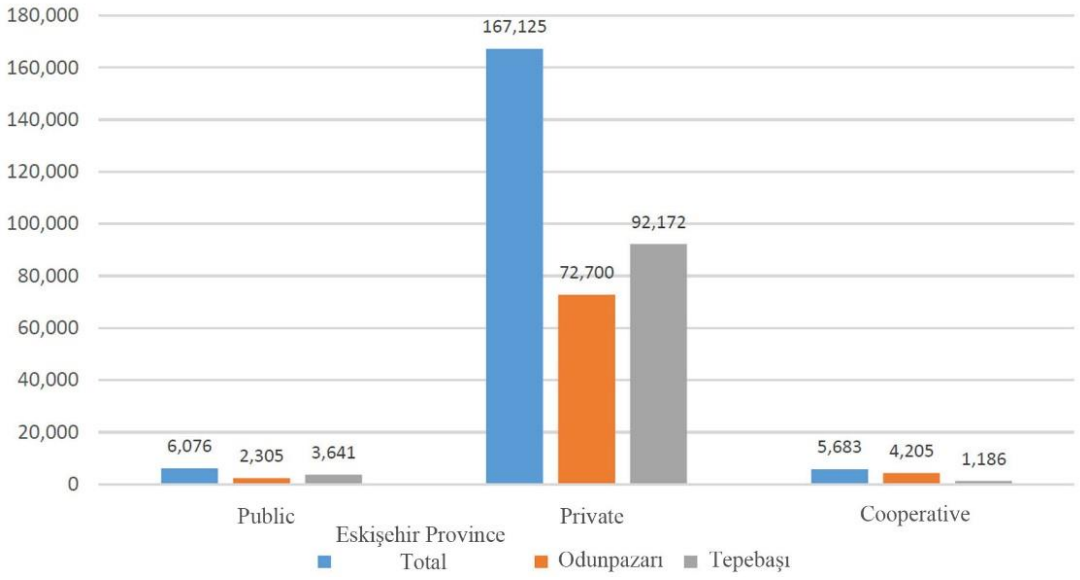


Figure 5.23. Housing Production According to Type of Investor and Number of Housing Units Between 2003-2017 (according to construction permits)

In metropolitan districts, the situation is similar to the total city. Housing production is predominantly carried out by private sector companies, but production is also performed by public institutions and building cooperatives in a limited level. In addition, a difference between districts is observed in housing produced by cooperatives. Tepebaşı, which is ahead of Odunpazarı in housing production, is also ahead in terms of housing produced by public and private sectors, while it falls significantly behind Odunpazarı in the number of houses produced by building cooperatives. While the number of housing unit starts by cooperatives in Odunpazarı is 4205, this number is 1.186 in Tepebaşı between the years of 2003-2017 (Figure 5.23). Therefore, it can be said that building cooperatives are more active in Odunpazarı in the period between 2003 and 2017 compared to Tepebaşı. Tepebaşı, on the other hand, seems to be the center of housing production, mainly through the private sector. To put it proportionally, 95% of the new housing constructions permitted in Tepebaşı between 2003 and 2017 were realized by private firms and 1% by cooperatives, while these rates were respectively 92% and 5% in Odunpazarı (Figure 5.24).

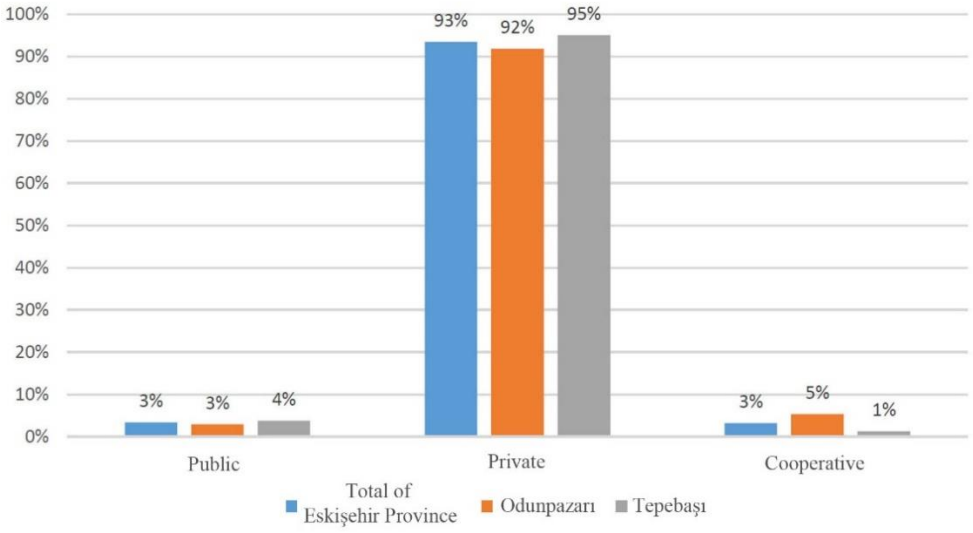


Figure 5.24. Housing Production Rates According to Type of Investor and Number of Housing Units Between 2003-2017 (according to construction permits)

Figure 5.25, the comstruction area of the housing units in the buildings between 2003 and 2017 is presented according to the ownership of the construction and the location. Comments made on the data in Figure 5.23 are also valid for the data in this figure. Production by private sector is a common form of production in all three settlements. At the metropolitan districts, building cooperatives are more active in Odunpazarı.

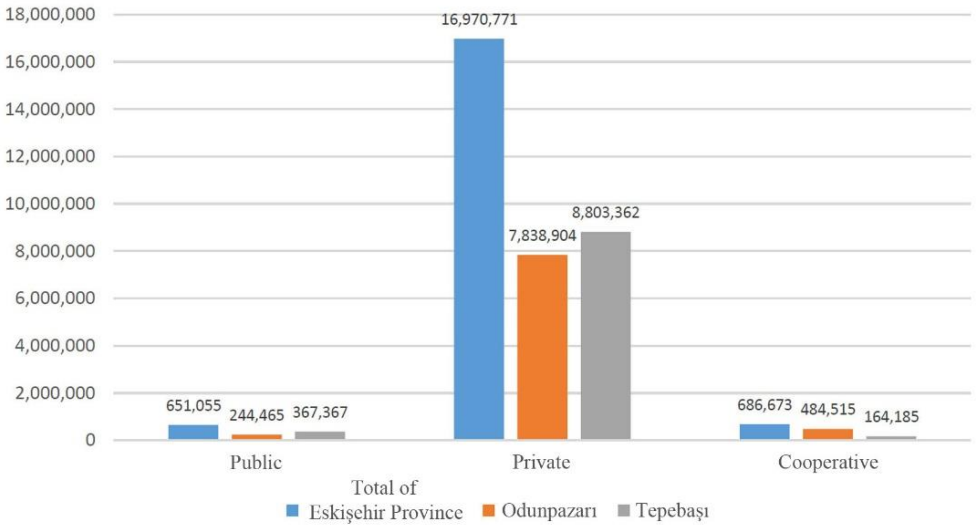


Figure 5.25. Housing Production According to Type of Investor and Floor Area (m²)

Between 2003-2017 (according to construction permits)

The last data examined in relation to type of investor is the average floor area presented in figure 5.26. As can be seen, in production by private entrepreneurs, which is the most common form of provision, units are smaller than other forms of housing supply. Although the amount of private production varies in districts, the average floor area is around 100 square meters. It is understood that the private sector has built larger houses (107,8 m²) in Odunpazarı compared to the Eskişehir total and Tepebaşı, while smaller houses (95,5 m²) were built in Tepebaşı. The houses built by public institutions are slightly larger compared to houses produced by private sector. Additionally, the houses constructed in Odunpazarı by public institutions are larger than those in Tepebaşı.

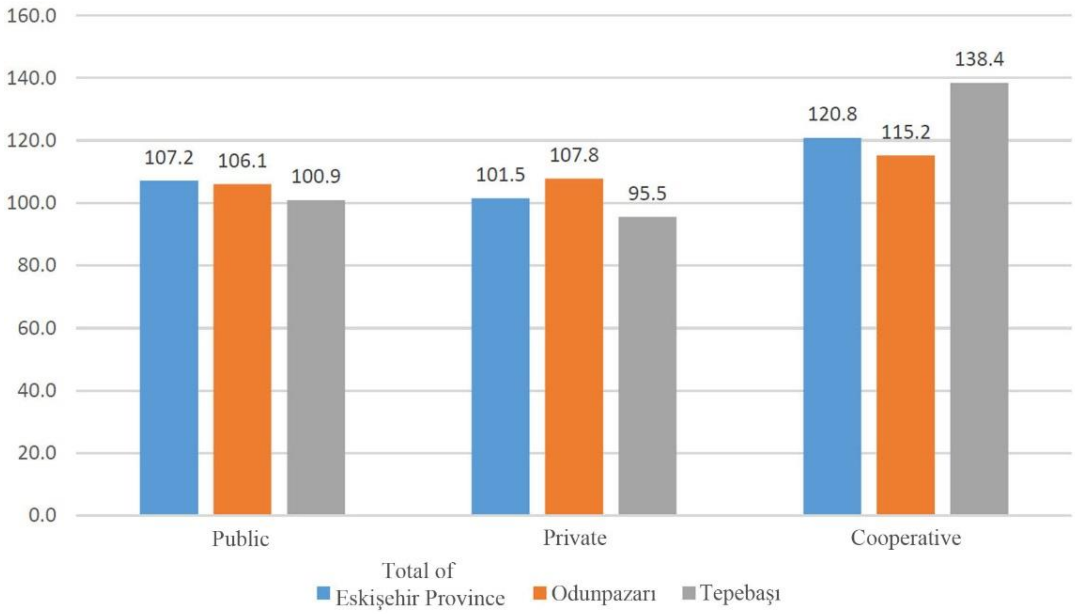


Figure 5.26. Floor Area According to Type of Investor Between 2003-2017

(according to construction permits)

The situation is different in houses produced by cooperatives. First of all, the houses produced by cooperatives are larger in all three regions than the houses obtained by other types of provision. The average area of the houses produced by the cooperatives is calculated as 120 square meters. Among the central districts, unlike the previous results, the cooperative houses in Tepebaşı are approximately 23 square meters wider

than units produced in Odunpazarı. While the average area of the houses produced by the private and public sector in Tepebaşı is 100 square meters, it increases to 138.4 square meters in the production made by cooperatives. The production of single family houses for the upper income group and low-rise apartment buildings for the middle-upper income group in Tepebaşı district by cooperatives can lead to this situation.

5.2.4. Housing Production According to Number of Storey

Another important data to understand the development and current situation of housing provision in Eskişehir is the production of new housing according to the number of storey. In the figure 5.27, the data on the storey number of the residential buildings started to be constructed in the city between 2003 and 2017 are presented. Data are based on construction permits and calculated on the number of buildings and independent dwelling units.

As can be seen, in Eskişehir province, the concentration of building heights is in 3, 4 and 5 storey apartment type residential buildings. Between the period of 2003 and 2017, 81,5% of the new houses were constructed in three, four or five storey buildings. Among these, it is understood that four and five storey residential buildings are most preferred. 70% of the new housing production in Eskişehir consists of four and five storey buildings. When the data belonging to the same period is examined through the housing unit, the situation does not differ. In Eskişehir, it is understood that 3 to 6 storey type apartment buildings are generally preferred in the production of new houses, and among these, four or five storey buildings are most commonly preferred (Figure 5.27).

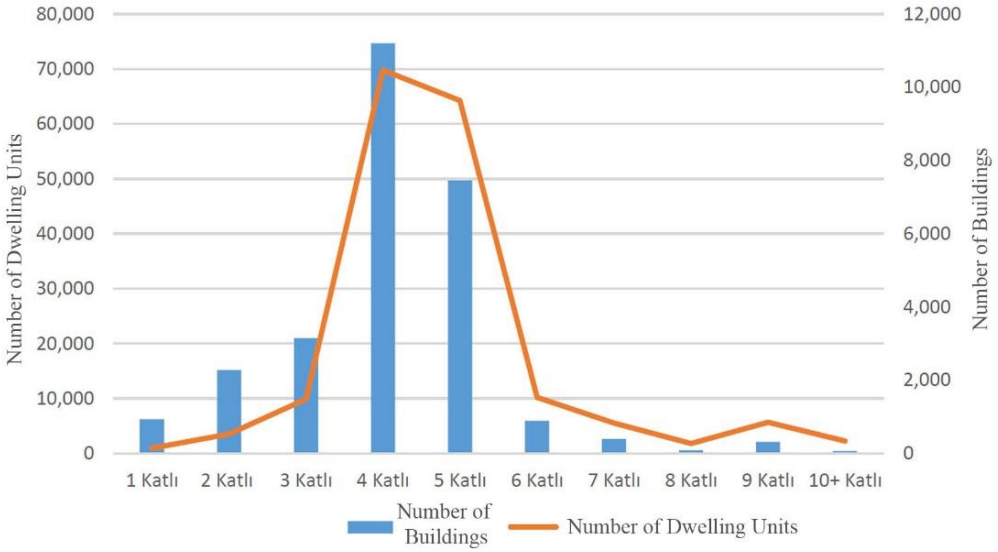


Figure 5.27. Housing Production According to Number of Storey Between 2003 and 2017 - Eskişehir (according to construction permits)

The situation in the metropolitan districts is similar to whole city. In both districts, the most preferred buildings for new housing production are four or five storey apartments. Concentration in buildings at this height is more distinct in Tepebaşı than in Odunpazarı. Between the years of 2003 and 2017, 73% of the new residential buildings started to be constructed in Odunpazarı and 83% in Tepebaşı composed of 4-5 storey buildings (Figure 5.28-5.29).

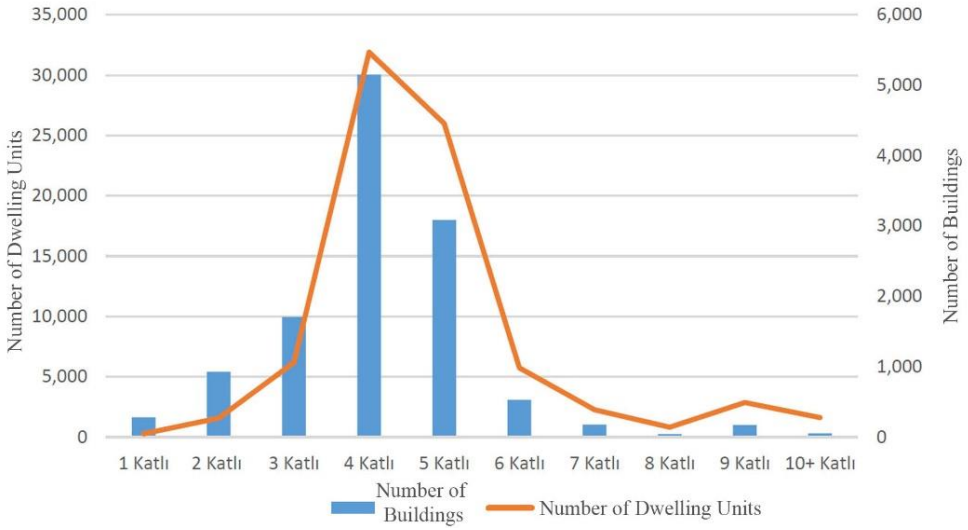


Figure 5.28. Housing Production According to Number of Storey Between 2003-2017 - Odunpazarı

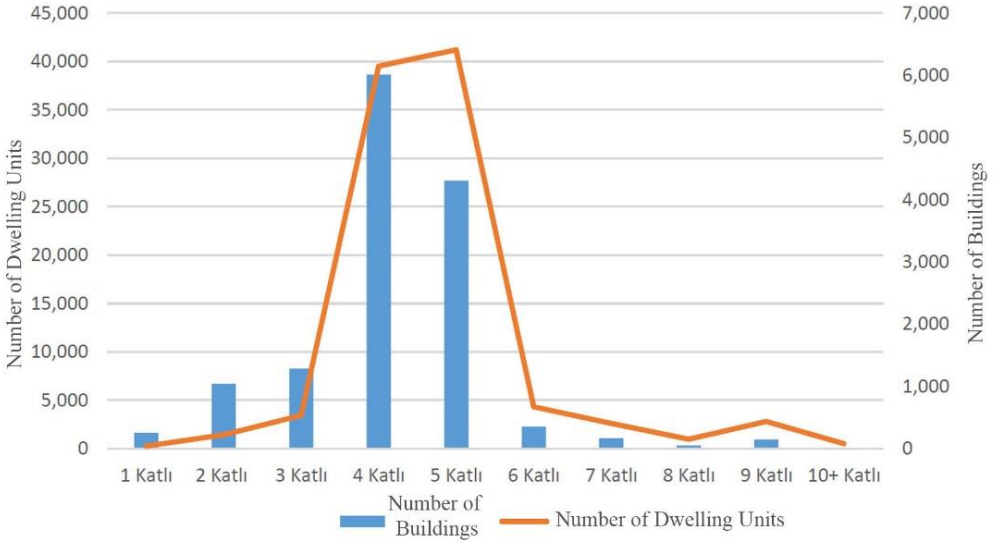


Figure 5.29. Housing Production According to Number of Storey Between 2003 and 2017 - Tepebaşı

An important difference between the central districts is that the 3 and 6 storey buildings in Odunpazarı are constructed at a higher rate compared to Tepebaşı. In Odunpazarı, 15% of the houses produced in this period were 3 and 6 storey buildings, while this rate was 8% in Tepebaşı (Figure 5.30).

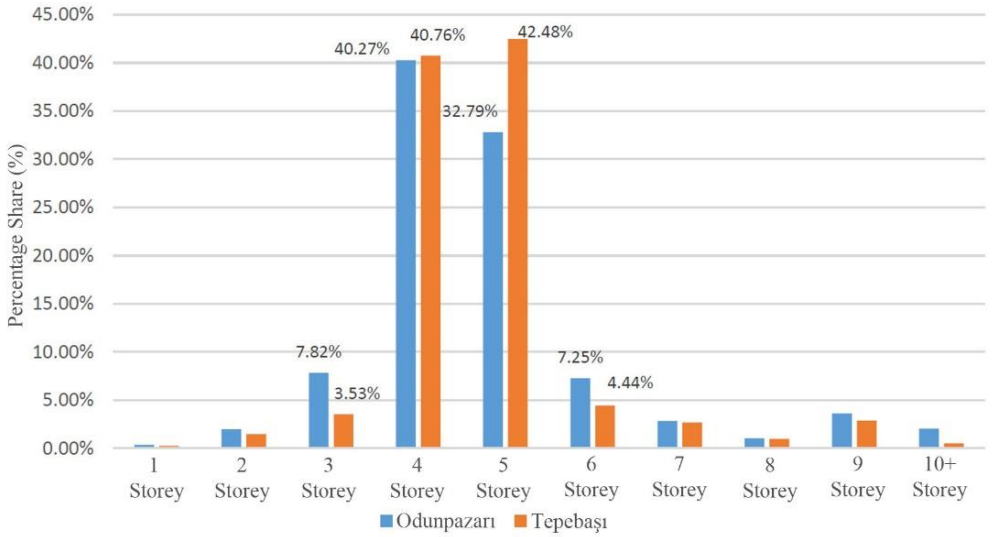


Figure 5.30. Housing Production According to Number of Storey Between 2003-2017 - Central Districts Comparison (according to construction permits)

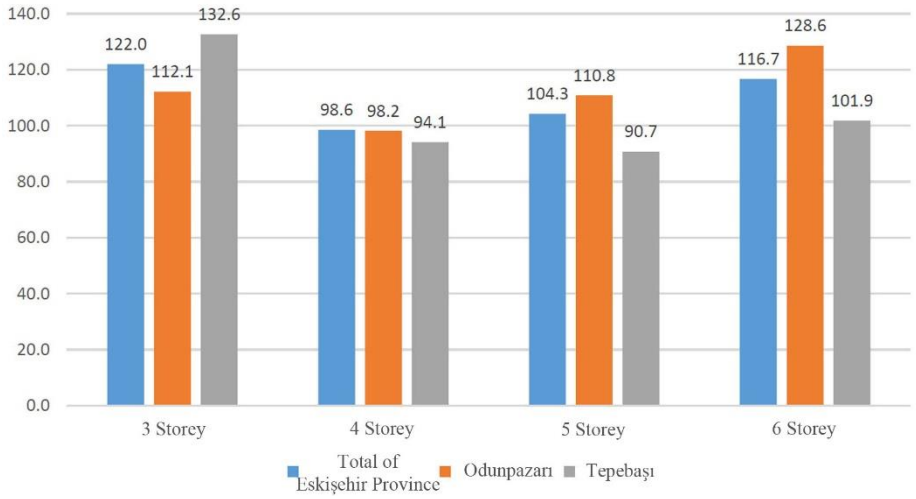


Figure 5.31. Housing Production Between 2003-2017 - Average Floor Area According to Number of Storey (according to construction permits)

The last data evaluated under this title is the housing floor area according to the storey number. In figure 5.31, this data is presented in terms of settlement locations. As can be seen, the most commonly preferred housing units in 4 and 5 storey buildings are smaller than the housing units in 3 or 6 storey buildings. While the units in the four and five storey buildings are between 95-105 square meters on average, square meters in three storey buildings and 115 square meters in six storey buildings. An important issue seen in Figure 5.31 is the differentiation of the area of the housing units among the central districts. As mentioned before, the houses produced in Odunpazarı are wider than those produced in Tepebaşı. Especially as the number of the storeys increases, the average size of the houses in the Odunpazar increases and the ones in the Tepebaşı decrease. This situation changes as the number of storeys decreases. For example, the average unit area in three storey houses is approximately 20 square meters larger in Tepebaşı district than those in Odunpazarı.

5.2.5. Vacancy Rate

The total number of households and dwelling units belonging to the Metropolitan districts namely Tepebaşı and Odunpazarı are given in Table 5.4. Accordingly, while the vacancy rate in Odunpazarı district was 27,8%, this rate was 30,1% in Tepebaşı district in 2018. The result obtained from these values is that there is high housing

surplus and vacancy rates in both districts. Furthermore, Tepebaşı district left behind Odunpazarı in terms of vacancy rate.

Table 5.4. *Tepebaşı and Odunpazarı Districts Housing Vacancy Rates in 2018*

	Total Number of Households	**Total Number of Dwelling Units**	**Vacancy Rate**
Odunpazarı	138.444	191.734	27,8 %
Tepebaşı	131.184	187.662	30,1 %

5.2.6. Results

The results obtained from the data presented in the report are specified below.

- After 2003, similar to the country-wide trend, there has been a significant growth in the production of new housing in Eskişehir. New housing production peaked especially in the period of 2010-2014.
- The number of houses started to be built over the years has increased constantly in terms of the number of buildings, dwelling units and floor area.
- Central districts dominate the total new housing production in the city. The housing starts in both central districts constitutes between 95% and 98% of the total housing production in the city.
- There is a differentiation between the metropolitan districts. Although the share of both districts in total production are close from time to time, the amount of production in Tepebaşı district is generally higher than in Odunpazarı.
- Tepebaşı district is in the first place in the new housing production among all districts in Eskişehir.
- In 2005, when the growth in housing production accelerated, the area of the housing units decreased. In the period between the years of 2010 and 2012, housing production peaked and the average floor area decreased to less than 100 square meters.

- There is a clear distinction between dwelling units in terms of floor area. It is observed that the houses produced in Eskişehir province and Odunpazarı district are larger than units produced in Tepebaşı district.
- The difference in the living area of the housing units between the two districts is quite clear and increases to level of 15-20 square meters.
- Although there is more dwelling production in Tepebaşı district, the average living area of the produced dwellings is lower. On the other hand, relatively few but spatially larger dwellings are produced in Odunpazarı district.
- In the period of 2003-2017, when the construction sector showed a high growth in the city, new housing production was started for 35.849 people in each year.
- In this context, Tepebaşı district is ahead of Odunpazarı due to the excess annual housing provision. In Tepebaşı, between the years of 2003 and 2017, housing provision was adequate for a population of 19.400 people, while this number was 15.842 in Odunpazarı.
- The most common form of housing provision in Eskişehir is private production. The dwellings produced by private entrepreneurs or private construction firms constitute a large part of the total housing production.
- In metropolitan districts, the situation is similar to the city in general. Production carried out by private sector companies is the most common housing provision type in the city. On the other hand, a limited production is carried out by public institutions and building cooperatives.
- There is a difference between the districts in the production made by cooperatives. Tepebaşı is significantly behind of Odunpazarı in the number of dwelling units constructed by the building cooperatives.
- Dwelling units produced by cooperatives are larger than those produced by private sector. The ranking in terms of average housing unit size is as follows; cooperative, public and private production.
- The vacancy rate in Odunpazarı district was 27,8%, this rate was 30,1% in Tepebaşı district in 2018.

- In Eskişehir Province; 3, 4 and 5 storey apartment buildings are densely located. Among these, it is understood that 4 and 5 storey residential buildings are preferred most commonly.
- In the metropolitan districts, the most preferred buildings for new housing production are four or five storey apartments. The concentration of buildings at this height is more distinct in Tepebaşı district than in Odunpazarı.
- It is seen that while the dwellings are between 95-105 square meters on average in four and five storey buildings, 120 square meters in three-storey buildings and 115 square meters in six-storey buildings.

5.3. Reasons for The Differentiation of Housing Production Between Odunpazarı and Tepebaşı Districts

In this section, the factors that affect the differentiation of housing production between Odunpazarı and Tepebaşı districts and the development of residential areas in Eskişehir city center within a historical process are explained on the basis of Chapter 2 which generates the theoretical framework. The differences in housing production between the two districts in the post-2000 period are generally as follows;

- Number of housing units production; **Tepebaşı > Odunpazarı > Other Districts**
- Size of produced housing units; **Odunpazarı > Tepebası**
- 6 storey buildings are constructed at a higher rate in Odunpazarı while the concentration of 4 and 5 storey buildings is more distinct in Tepebaşı.
- Number of houses produced by building cooperatives; **Odunpazarı > Tepebası**
- The size of the houses produced by the cooperatives; **Tepebaşı > Odunpazarı**

5.3.1. Physical and Geomorphological Reasons

Physical factors and natural environment components that guide the spatial organization of cities are described in Chapter 2. These components and factors are

presented under the headings of topography, soil, geology, hydrology and climate. According to the information presented at that part, physical and geomorphological factors have impacts on location selection, positioning, physical expansion, development direction, spatial distribution and size of cities. Additionally, type of architecture, structures, buildings, servicing conditions and economic activities are influenced by these factors. Have physical and geomorphological factors been effective in the development of residential areas in Eskişehir and the differentiation of housing production in two districts of the city center today? This section aims to answer to these questions.

The development process of Eskişehir is explained in Chapter 4. The most important physical elements of the city have been Porsuk River at all periods. Based on this, the spatial development of Eskişehir has mainly occurred around Porsuk River and the railway. Porsuk River divides Eskişehir into two regions and has been used as a reference for determining administrative boundaries since the Ottoman Empire times. Based on this, the area on the north of the Porsuk River forms the district of Tepebaşı whereas the area on the south of the river forms the district of Odunpazarı. The first traditional residential area occurred on the south of Porsuk River with the name of Odunpazarı. Today, in Eskişehir settlement center, there are hot springs between the Hava Hastanesi in the west and Deliklitaş Street in the east.

Sıcaksular area was an important factor on the existence of this settlement. Although most of the population lived in the region of Odunpazarı during this period, due to the slope of the land, newly formed housing areas in the city emerged on the banks of the Porsuk River. Later, it moved towards the north of the river and developed in more flat areas. Therefore, the slope of the land has been an obstacle in the formation of new residential areas and these areas were not preferred in the first place in terms of settlement suitability. At that time, large plains were seen more suitable for the construction of new settlements, highways and other human structures. The reason behind the railway, another threshold that divides the city in two, is located north of the center of the city is the terrain in this part of the city which is flatter. As a result,

in the early stages of the urban development process, the population had a tendency to concentrate more on the plains, whereas hilly areas were less preferred because steep slopes were not suitable for settlement and transportation infrastructure. Starting from this, it can be said that the slope, which is an important topographic element, has been effective in the formation of land use and residential areas in Eskisehir over time. The elevation map of Eskisehir, which displays a range of elevation with different colours is below. The map also provides idea of topography and contour of Eskisehir. The elevation map clearly shows that there is an obvious elevation difference between Tepebaşı and Odunpazarı districts.

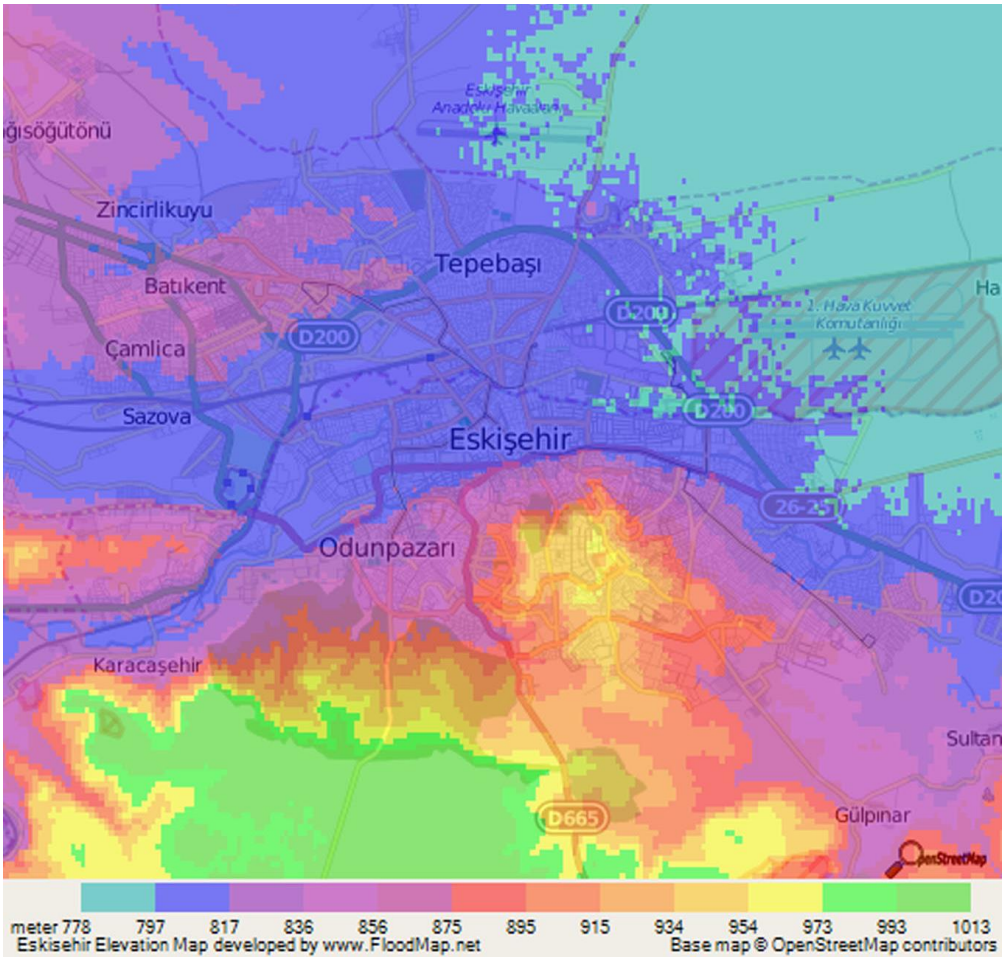


Figure 5.32. Elevation Map of Tepebaşı and Odunpazarı Districts

(Source: Web 27)

In the general Geological Survey Report of Eskişehir, it is stated that although there are areas in the north and south of the city center where the elevation is high, there are flat areas in the central part where settlements are dense. The elevation of the city center from the sea is between 779 m and 1278 m. When the slope map is examined, it is observed that where the settlement is concentrated, the slope is generally flat and the slope angle is less than 5°. The slope increases with the elevation of the topography to the south of the city center. It is stated in the report that the slope angle varies between 10°-20° in these places. South of Sultandere, the new settlement of Eskisehir, and in a limited area around Karacaşehir, the slope exceeds 20° (General Geological Survey Report of Eskişehir City Centre, 2001). This may result in a difference in the amount of housing production between the two districts, because slopes can generate insecure circumstances needing extra building and engineering expenses. For this reason, the construction investor may prefer the Tepebaşı district, which has flatter areas. The study area does not face active and potential natural disasters in terms of landslides, rock falls and flooding. Although the city experienced flooding as a result of the flooding of Porsuk River in the 1960s, the river does not pose a flood risk today. Therefore, the banks of the river do not constitute an obstacle in terms of housing development. Earthquake is the only natural disaster that is thought to affect the field actively and potentially.

Eskisehir was included in the 2nd degree earthquake zone in the last organized map of Turkey earthquake zones. In earthquake and vulnerability studies, it was determined that the major source of earthquake risk for Eskişehir city is the Eskişehir Fault Zone. Various magnitude earthquakes occurred on the Eskişehir fault in 1900, 1939, 1956 and 1961. There are also Dodurga and Taycılar Faults close to the center of Eskişehir. None of these faults is 1st degree fault. Eskişehir Fault is 2nd degree and the other faults are 2nd and 3rd degree respectively. Therefore, although not at a high level, the city is at risk and danger of earthquakes.

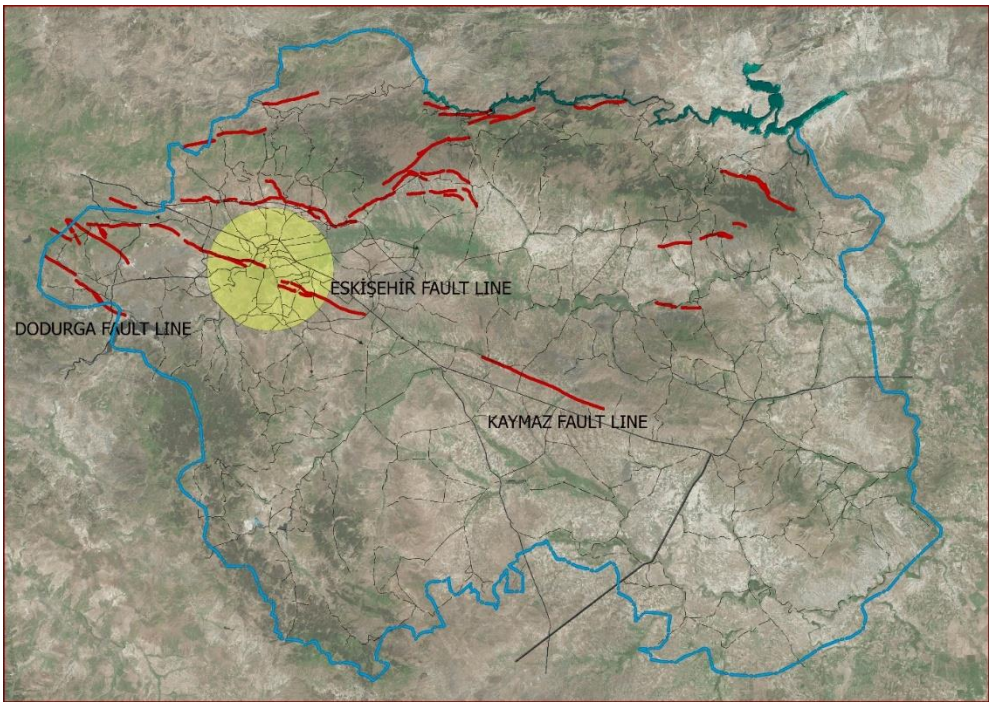


Figure 5.33. Fault Lines In Eskişehir

(Source: The data was generated by data taken from the Directorate of Disaster and Emergency Management (AFAD))

When the direction of Eskişehir Fault is examined, it is seen that the fault passes close to the existing settlements and development areas of Odunpazarı. However, the same fault line is also a threat for development areas in Tepebaşı. On both sides of this fault line, which is thought to affect Eskişehir settlement in terms of earthquake, approximately 50 meters zone is defined as an area not suitable for settlement. It is underlined that construction should not be allowed in this area (General Geological Survey Report of Eskişehir City Centre, 2001). In this case, there is not enough data to discuss whether the fault line has an impact on the differentiation of housing production at present. However, in future, this fault line may come up as a threshold factor for housing production in both districts. In addition, the groundwater level in Eskişehir city center is very close to the surface. Eskişehir settlement is generally concentrated on the alluvial material carried and brought by Porsuk River and this increases the risk of post-earthquake damage. The ground of Eskişehir has been

evaluated and mapped in terms of liquefaction potential. Places with high degree of liquefaction potential have been found. Eskisehir is classified as suitable areas (SA), preventive areas (PA) and unsuitable areas (USA) in terms of land suitability.

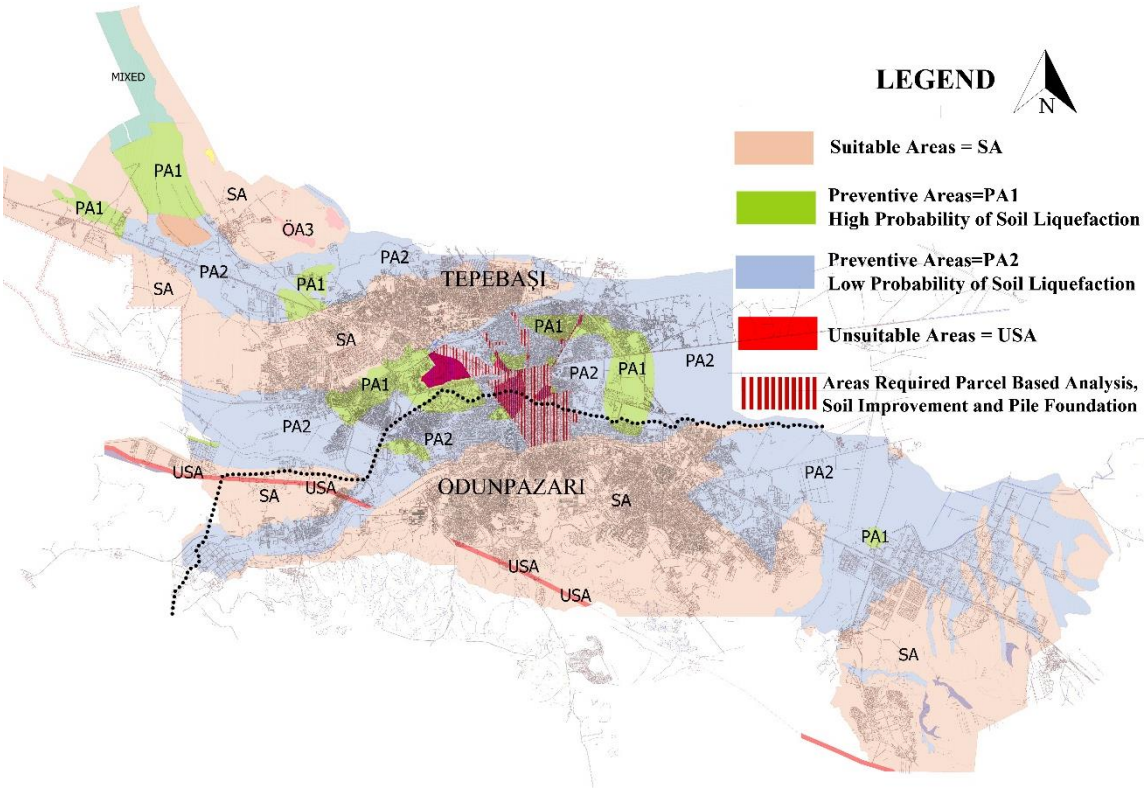


Figure 5.34. Land Suitability Map for The Settlement of Eskişehir

(Source: The figure prepared by author using with Geology and Geotechnical Survey Report for Settlement of Eskişehir)

- In the citywide geological survey report, it is stated that ground surveys may not be necessary in structures up to 2 floors (including 2 floors) in suitable areas (SA). It is mentioned that geological and geotechnical surveying is carried out on the basis of zoning island between 2-4 floors (including 4 floors) and on the basis of parcels between 4-8 floors (including 8 floors).

- Preventive areas are divided into two different subregions as PA1 and PA2. There are areas with high liquefaction potential in the PA1 Region, while there is a

low probability of liquefaction in the PA2 Region. It has been stated that up to max. 4 storeys in PA2, max. 2 storeys in PA1 may be granted with building permission.

- When the Geological Survey Map is examined, it is observed that precautionary areas occupy a large place within the borders of Tepebaşı district. In this case, it is appropriate to permit construction up to 4 floors in these areas, which explains the reason for the 3-4-5 storey building density in the city.

As can be seen from the land suitability map, the amount of preventive area which has high liquefaction risk is more in Tepebaşı district. At the same time, there are more suitable areas in Odunpazarı district in terms of geological situation. By considering elevation, slope and geological survey analyzes, the following evaluation could be made. Odunpazarı is more challenging in terms of topographic elements, but it is less risky in terms of geological situation compared to Tepebaşı. This situation has the potential to explain why the 4 and 5 storey buildings are more common in Tepebaşı and 6 storey buildings are common in Odunpazarı. In order to reduce the additional construction costs that may arise from the topographic structure of Odunpazarı district, the number of floors may be increased. This may also be a factor that can cause the higher number of 6 storey buildings in Odunpazarı district.

As a result, physical factors such as topography, soil type, geological conditions and hydrology have been influential in the formation of residential areas within the urbanization processes of Eskişehir. The geological risk of the ground in the city center is an important factor in the intensive construction of 3-4-5 storey buildings throughout the city. Today, it is difficult to say that the difference in numerical and spatial production between the two districts is mainly due to physical factors. However, there is an obvious difference of elevation and slope between the districts of Odunpazarı and Tepebaşı. The low elevation and slope values on the Tepebası and the large area coverage of flat areas may have a positive effect on the increase in housing production numbers in this district.

5.3.2. Location and Land-Use Related Reasons

Site selection and development of industrial areas have played an important role in formation of Eskişehir city macroform since the Pre-Republic period. New and modern residential areas were built around the industrial settlements. Cooperative houses in Osmangazi, Sümer and Ertuğrulgazi Neighborhoods were established by employees and civil servants working in State Railworks and Sümerbank Cotton Factory. Apart from this, Porsuk River not only plays an important role in shaping the city but also has become an important element in dividing the city and forming its shape. One of the important uses added to the city was the Ankara-İstanbul ring road, which led to the formation of new residential areas towards the northern part of the city. Apart from this, the opening of the Organized Industrial Zone (OIZ) in 1973 have a significant effect on the macroform development. Foundation of Anadolu and Osmangazi Universities is another factor that sparked urban growth, which is also very important in the development of Eskişehir's identity as a "university city".

In the post-2000 period, many new urban uses were added to the city and changes in spatial structure occurred. Among the green fields added to the city in the post-2000 period, Kentpark is located in Odunpazarı while Sazova Park and Eskişehir Stadium are located in Tepebaşı. Housing developments aiming the upper-class have been realized around these uses, which were positioned so as to be in connection with Porsuk River. Almost all of the new shopping centers and recreational areas opened recently in the city are within the boundaries of Tepebaşı, indicating that new commercial investments in the city are mostly concentrated in this region. In this context, the region has become a new commercial & social center. During this period, Tepebaşı revived economically through the transformation of the Factories Zone whereas Odunpazarı did with the restoration of its historical houses. Despite Odunpazarı having become an important tourism point with the rehabilitation project carried out, it has lagged behind Tepebaşı in terms of its central functions. In the final situation, Odunpazarı has turned into a region that mostly develops through protective master plans whereas Tepebaşı has turned into a region that continuously grows with

new investments, expanding and merging with the city with transformation of industrial areas.

All these developments regarding the city's land use has a positive effect on housing production of Tepebaşı district. For example, the settlement of Batıkent, located far from the city center, started having a closer relationship with the city as the space between started to be filled. Villa type-settlement areas have become widespread in Sazova neighborhood, to which Porsuk River has also contributed. The student population around Osmangazi and Anadolu Universities has also caused a change in development of housing sector in Eskişehir. Due to the rapidly growing student population, production of small flats called "apart" has increased and the rental rates in the city have gone up. A large number of 1+1 studio flats can be found in the neighborhoods which are close to the universities.

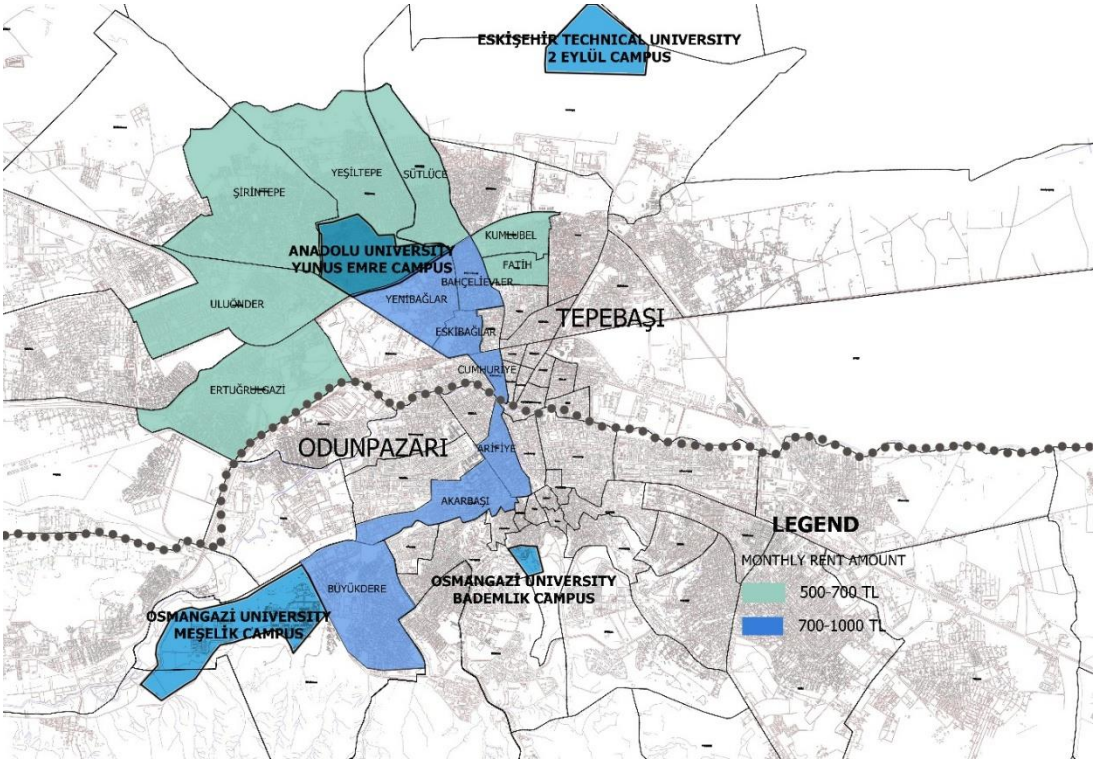


Figure 5.35. Distribution of University Areas and Apartments by Rental Values (1+1 studio flats)

(Source: Figure prepared by the author)

The rent values in Yenibağlar, Eskibağlar and Bahçelievler Neighborhoods, where the students of Anadolu University are concentrated, and Büyükdere and Akarbaşı Neighborhoods where Osmangazi University students are concentrated are higher than the other neighborhoods where the 1+1 studio type flats are located. Therefore, it can be observed rent prices increased in neighborhoods where student population is concentrated. The central location of the studio type apartments in Cumhuriyet and Arifiye neighborhoods is another factor that increases the rental value. In addition, during the telephone interviews conducted with real estate offices throughout Eskişehir by author, it was underlined that the demand for 1+1 studio type houses for investment purposes is high. There are significant numbers of investors who want to buy 1+1 or 2+1 houses and then rent them to students. In summary, the population of students residing in neighborhoods near campus areas has changed the quality of housing provision in these areas since the beginning of the 2000s. Finally, it is understood that the student population is clustered intensely in Tepebaşı district. Parallel to this, the number of neighborhoods containing studio type housing is higher in Tepebaşı. This may be an effective factor in housing production with higher number and small square meter in Tepebaşı district.

There are two airports in Eskişehir city center, one civil and one military. The presence of airports constitutes a threshold for housing development in the city. The urban development areas within the borders of Tepebaşı district are under the influence area of Eskişehir Hasan Polatkan Airport and Military Jet Base. It is seen that the housing development in the direction of Bursa road and the residential area of Batıkent remain within the flight cones in the mania plans of the airports. In case of development in these areas, 1. Main Jet Base Command and Ministry of Transportation-General Directorate of Civil Aviation should be consulted. Therefore, when determining the height of new buildings, the criterias of the Mania Plans of these airports should be followed. In terms of location, both airports heavily influence the Tepebaşı district. In the previous part, it was investigated whether there is a differentiation in terms of floor height between the two districts in housing production and the following result was

reached. An important difference between central districts is that 6 storey buildings in Odunpazarı are constructed at a higher rate when compared to Tepebaşı between the years 2003 and 2017. Additionally, the production of 4 and 5 storey buildings in Tepebaşı is higher than the production amount in Odunpazarı (You can see Figure 5.28 and 5.29 at the previous part). The emergence of such a differentiation between the two districts in terms of floor heights might be due to the location of the airports, which may have had a restrictive effect on the height of buildings in Tepebaşı. Therefore, the airports in the city and their location may be an effective factor in differentiation of housing provision.

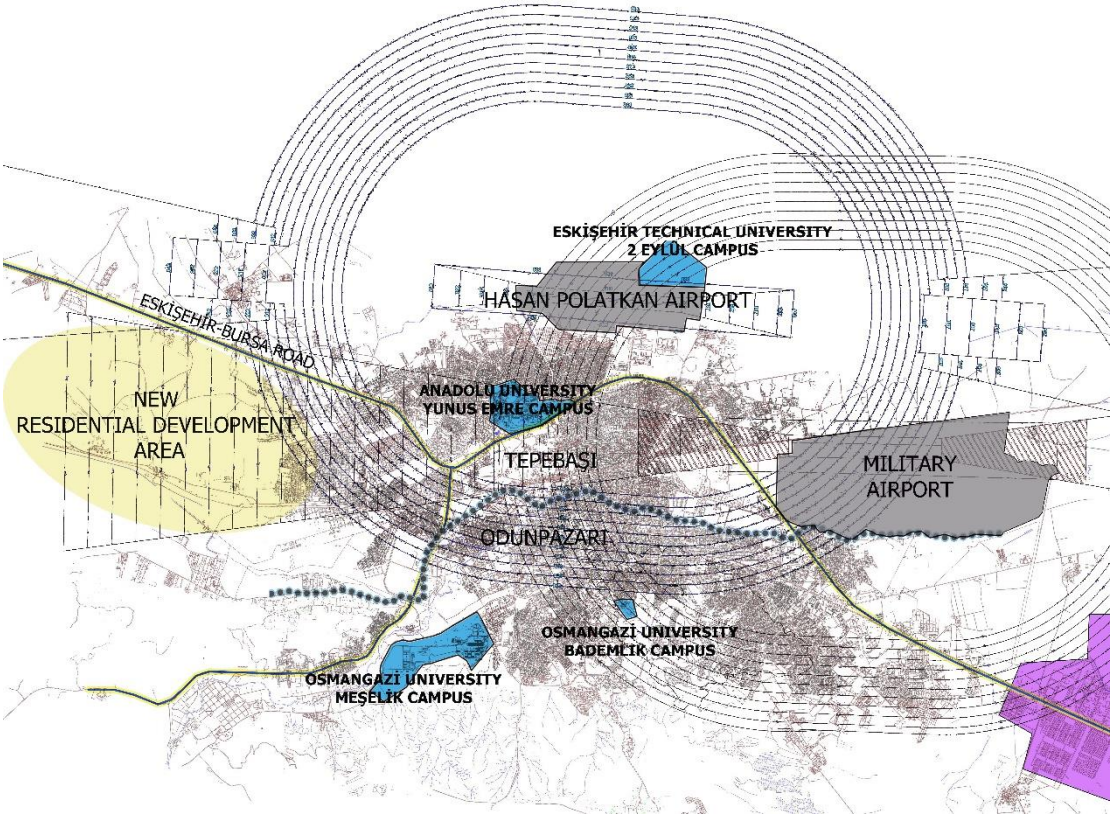


Figure 5.36. Military and Civil Airports and Mania Plans in the City Center

(Source: Figure prepared by the author)

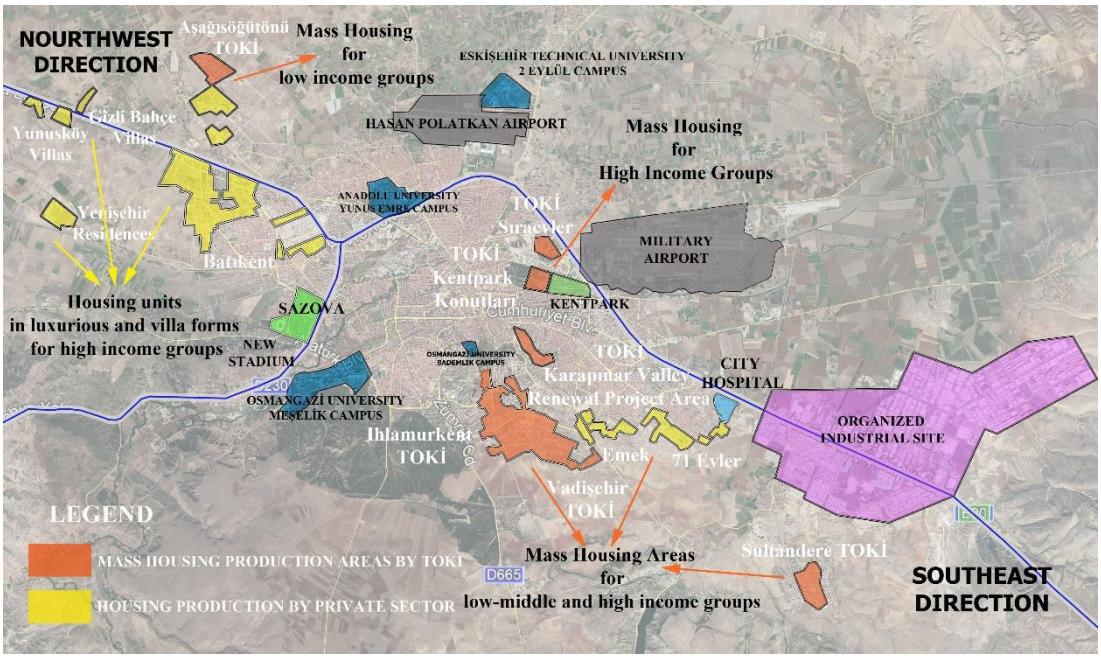


Figure 5.37. New Residential Areas Developed in The City After 2002

(Source: Figure prepared by the author) (See Appendix B for details)

By using satellite photographs of Eskişehir province in 2002 and 2019, newly formed residential areas are identified between these years. Accordingly, it is observed that the new residential areas are concentrated in the northwest and southeast of the city. When the settlements in the Batıkent region is examined closely, it is understood that there is a housing production which consists housing units constructed in luxurious and villa forms and targets the upper income group. In the northwest, a mass housing area has been established by TOKİ by targeting the lower income group in Aşağısöğütönü neighborhood. The other houses produced by TOKİ in Tepebaşı district are located near of the sugar factory and Kentpark. These housing areas are realized in the form of fund raising by method of revenue sharing and demand organization. In addition, these residences generally address the upper income group. When the new residential areas formed in the southeast of the city are examined, it is observed that many new housing units are produced in Ihlamurkent, Vadişehir, Karapınar, Emek, 71 Evler and Sultandere settlements. In this area, the housing

provision is carried out by TOKİ, building cooperatives and private sector companies. Most of the housing production in Ihlamurkent, Vadişehir, Karapınar and Sultandere settlements was realized by TOKİ. Although the residences produced in these areas are predominantly designed for the lower and middle income groups, it is found out that there are many luxury housing estates especially for the upper income group in Vadişehir and Ihlamurkent settlements. In the settlements of Emek and 71 Evler, there are new housing areas created by the private sector and cooperatives. In particular, the proximity of 71 Evler neighborhoods to Eskişehir City Hospital can be an attractive reason for new residences in this area. In addition, the driving factor behind housing production across the entire area may be providing the housing need of the working population in the Organized Industrial Zone. Therefore, it can be said that the Organized Industrial Zone, which is the largest working area in the city, is an effective urban use on housing production.

In the previous section (5.2), it was investigated whether there is a difference between the two districts in terms of the actors involved in housing production and the following conclusion was reached. There is difference between the districts in the production made by cooperatives. Tepebaşı is significantly behind Odunpazarı in numbers of housing units produced by building cooperatives. However, the cooperative houses produced in Tepebaşı are wider than those produced in Odunpazarı. The production of single family houses for high income groups and low-rise apartment buildings for middle and high income group in Tepebaşı district can lead to differentiation of construction size in units produced by cooperatives. The presence of the Organized Industrial Zone may be an effective factor in concentration of the working population in Odunpazarı district. As a result of the tendency to choose a location close to the working area, there may be a heavy demand for housing around the Organized Industrial Zone. This may lead to the preference of cooperatives in housing production in order to meet the housing needs of the lower income group. Therefore, the reason why cooperatives are more active in Odunpazarı district can be explained in this way.

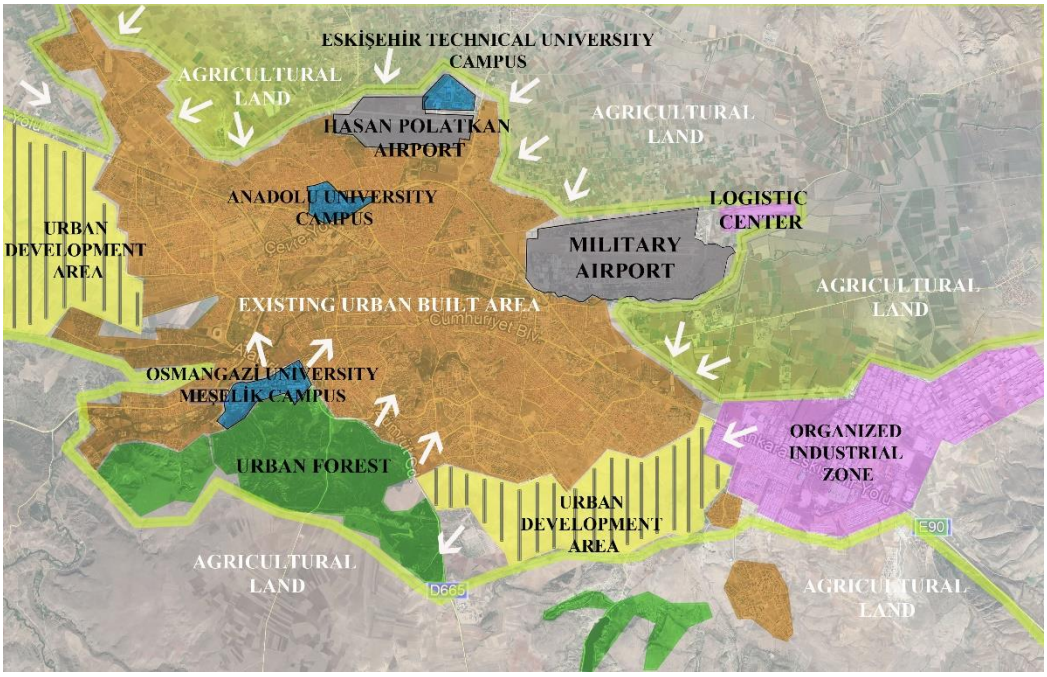


Figure 5.38. Natural and Artificial Thresholds of Eskişehir City Center

(Source: Figure prepared by the author)

In the current situation, when the city center of Eskişehir is examined, it is seen that the areas where urban development can be realized are quite limited. The city is surrounded by large social infrastructure areas and parks. In the northern part of the city, Anadolu University Campus and Eskişehir Anadolu Airport are located and in the south Osmangazi University Campus exists while in the east Military Airport is located. In addition, Kent Park and Sazova Science-Arts and Culture Parks around the city are important determinants of the city's macroform. Ring Road surrounds the city from the north. In other places, Eskişehir Metropolitan Area is surrounded by agricultural and forest lands. Eskişehir has maintained its single-centered growth until today. The commercial facilities are stuck and concentrated in the city center. At present, Eskişehir has reached its natural boundaries and thresholds. 1/25.000 scale plan was revealed two important developments axis. The first one is the southeast-northwest axis, which has a strong development tendency in the current situation, and

the second one is the north-south axis with high geological and energy efficiency potential. When the city's present natural and artificial thresholds have taken into consideration, urban growth will realize in a southeast-northwest direction at the first stage because this type of development can be easily added to the existing urban form. As a matter of fact, when the areas where new housing production realized are examined closely, it is seen that the northwest-southeast axis of the city come to the forefront. The location of the new development areas proposed in the 1/25.000 scale development plan also supports this situation. While low-density residential areas developed in the neighborhoods of Batıkent, Zincirlikuyu and Söğütönü in Tepebaşı district represent the northwestern focus of this axis; 71 Evler, Emek, Vadişehir, Ihlamurkent, Sultandere development areas, which are formed within the boundaries of Odunpazarı district, represent the southeastern focus of this axis. These settlements are developed to meet the housing needs of the population working in Organized Industrial Zone and other industrial areas in the south of Ankara Highway. While the housing production takes place in the two focal points of the city, renovation continues in the dense housing blocks around the central business area.

This growth trend in the direction of Bursa Road on the west of the city can also be followed by population data. The percentage change of the population between the years 2007 and 2017 of the neighborhoods located in the center and nearby of Eskişehir is calculated and the size of the population increase trend of the city is shown in Figure 5.39. As a result of this study, it can be inferred that the city center tends to develop in the north, northwest and southeast directions. In the south, the neighbourhoods in the Odunpazarı area lagged behind of the neighborhood in Tepebaşı in terms of population growth. It is observed that the population increase in Batıkent, Çamlıca, Emek, 71 Evler neighborhoods is remarkable. This situation proves the development trend in the northeast-southwest direction.

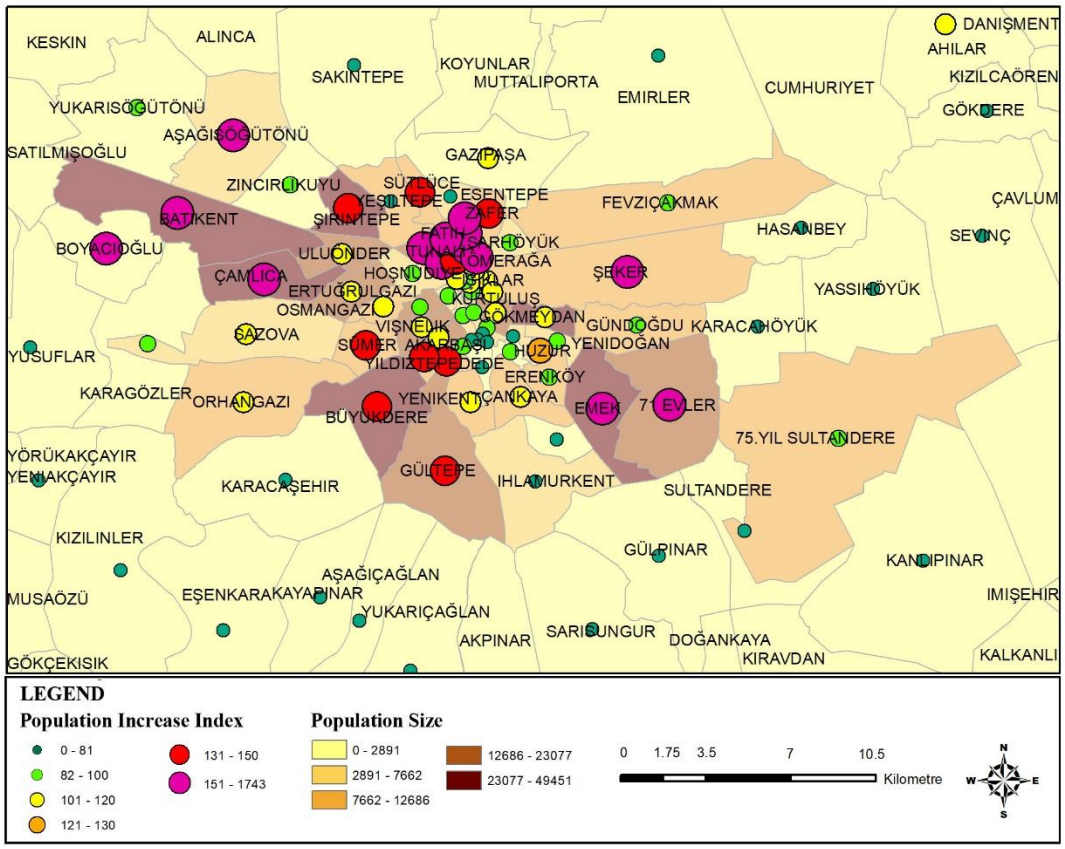


Figure 5.39. Population Change Analysis by Neighborhood

(Source: Figure prepared by author)

In summary, plan decisions, existing uses and natural thresholds lead to a developmental pressure in the northeast-southwest direction of the city. In addition, the existence of industrial-educational uses and health facilities shapes the housing provision types.

5.3.3. Social and Economic Factors

In this section, the socioeconomic structure of the two metropolitan districts are analyzed. In this context, the size and growth trends of the population, the number and size of households, age distribution, educational status were examined for two districts and factors that might have had an impact on the differences in housing production were revealed.

5.3.3.1. Population Size and Growth Trends

Municipalities of Tepebaşı and Odunpazarı, located within the boundaries of Eskişehir Metropolitan Municipality, were established as lower-tier municipalities in 1993. With the Law No. 5747[11], their legal status were promoted to district in 2008. In other words, the study area, which used to be the cental district of Eskişehir till 2008, was separated into two different districts (Odunpazarı and Tepebaşı) with this law. With the Law No. 6360[12], the boundaries of Eskişehir Metropolitan Municipality were extended such that it would cover the provincial administrative boundaries in 2012. Consequently, the boundaries of the Metropolitan Municipality became the provincial administrative boundaries whereas the boundaries of Odunpazarı and Tepebaşı district municipalities started covering the administrative boundaries of these districts as well. Under the regulations enforced by the aforementioned law, the study area exhibits no legal entity as a village beyond this date (Şahbaz, 2016, p.92-93).

According to the Address-Based Population Registration System (Adrese Dayalı Nüfüs Kayıt Sistemi in Turkish, abbreviated as "ADNKS") data from 2018, the population of Odunpazarı is 404.267 and the district consists of 85 neighbourhoods, making it the most crowded district of Eskişehir. The population of the district of Tepebaşı is 359.303 and the district consists of 91 neighbourhoods. Total population of the study area is 763.570 people, which constitutes 87.6% of the whole population of the city (871.187). In other words, the majority of the population present in the city is concentrated in the city center (TÜİK, 2019).

Table 5.5. *The Population of Eskisehir, Odunpazarı and Tepebaşı in 2019*

	Eskişehir	**City Center**	**Tepebaşı**	**Odunpazarı**
Total Population	871.187	763.570	359.303	404.267
Share in the Total Population (%)		87,6%	41,2%	46,4%

[11] Law No.5747: Büyükşehir Belediyesi Sınırları İçerisinde İlçe Kurulması ve Bazı Kanunlarda Değişiklik Yapılması Hakkında Kanun
[12] Law No. 6360: On Dört İlde Büyükşehir Belediyesi ve Yirmi Yedi İlçe Kurulmasına Dair Kanun

As seen in Figure 5.40 and Figure 5.41, these graphs indicate the annual total population change and the increase in annual population of Tepebaşı and Odunpazarı after 2008. According to Figure 5.40, the total population of Odunpazarı has always been more than Tepebaşı in the last 10 years. Moreover, the population of both districts displayed a steady upward trend. As indicated in Figure 5.41, the population of Tepebaşı increased rapidly in 2008-2018 period.

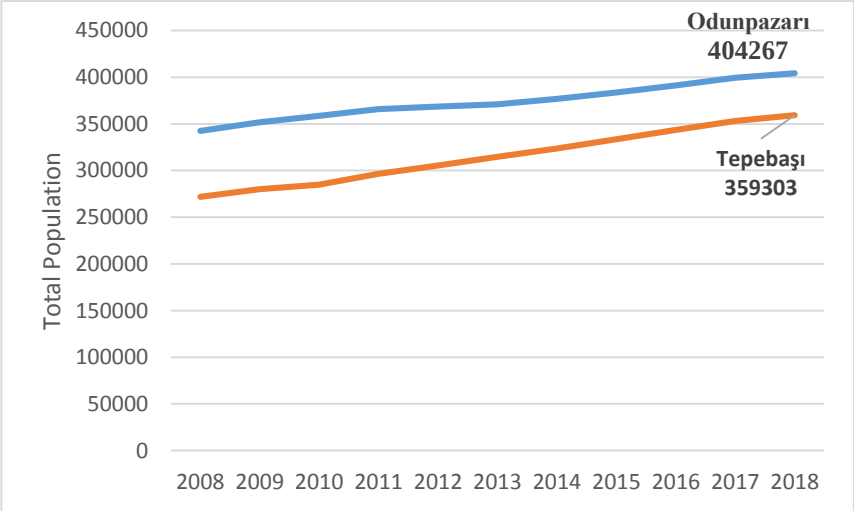


Figure 5.40. Annual Increase In The Population of Odunpazarı and Tepebaşı Districts, 2008-2018
(Source: The figure is prepared by the author according to TÜİK data)

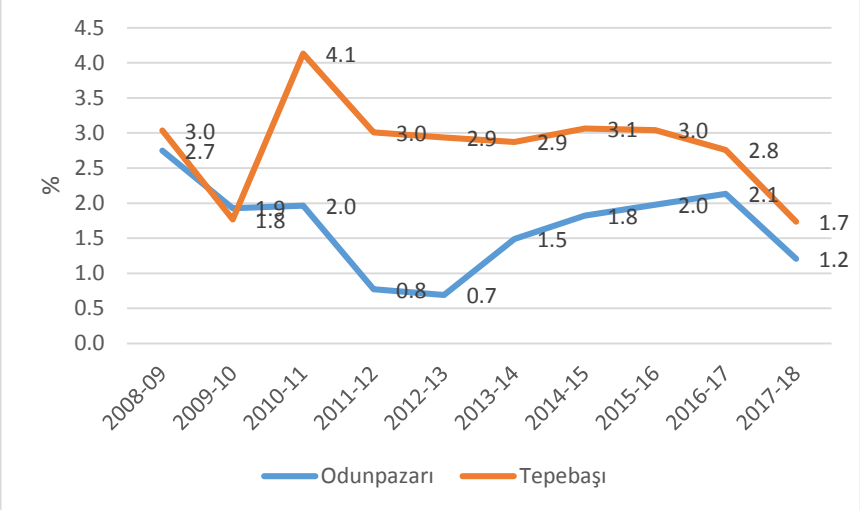
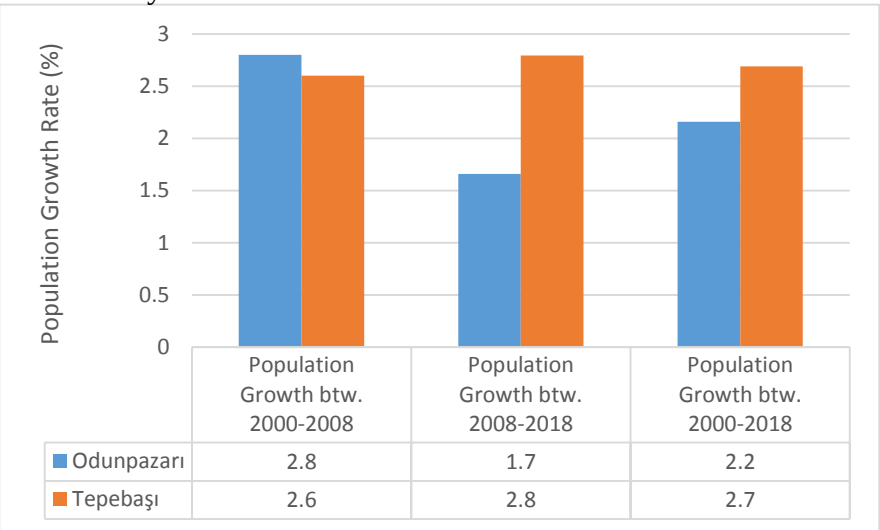


Figure 5.41. Annual Rate of Population Growth in Odunpazarı and Tepebaşı, 2008-2018

(Source: Annual rate of population growh calculated by author according to TÜİK data)

Tepebaşı and Odunpazarı have existed as two separate districts since 2008. Therefore, there is no data on the total population size of the districts before 2008. However, population data for lower tier municipalities (alt kademe belediyeler) and small town municipalities (belde belediyeleri) can be accessed through TÜİK in 2000. Accordingly, the settlements of Çukurhisar, Gündüzler and Muttalip, which were small town municipalities (belde belediyesi) in 2000, were included within the borders of Tepebaşı since 2008. In the light of this information, the population of Tepebaşı and Odunpazarı in 2000 were calculated according to their present boundaries. While this calculation was made, the population of Çukurhisar, Gündüzler and Muttalip settlements was added to the population of Tepebaşı and the total population was obtained. As displayed in Figures 5.42 and 5.43, 2008 was considered as the reference year and population growth rate and annual average population increase in previous and after this year are examined. According to Figure 5.42, while the average population growth rate of Odunpazarı was larger than Tepebaşı between 2000-2008 years, the average population growth rate of Odunpazarı decreased between 2008-2018 years and Tepebaşı is ahead. When the average population growth rate is examined in the 2000-2018 period, Tepebaşı comes first with a value of 2,7. This information can be interpreted as follows. In the last 18 years, 2,7 persons were added to the total population and 2,2 persons were added to the Odunpazarı for each new 100-person increase in the population of Tepebaşı. As displayed in Figure 5.43, the annual average population growth is presented in district populations for before and after 2008. Accordingly, while Odunpazarı was leading in terms of annual population growth before 2008, Tepebaşı surpassed Odunpazarı during the post-2008 period. Between 2000 and 2018, approximately 7.660 people were added to the population of Tepebaşı and approximately 7.235 people were added to the population of Odunpazarı in every year. As a result, it is indicated that Tepebaşı has rapid growth trend and attracted population in the post-2000 period, especially after 2008. It can be said that the transportation, transformation and socio-cultural facility investments, which were made more accessible to inhabitants in Tepebaşı, have been effective in the emergence of this situation. There are various incentive roles in increasing the population of the

district such as implementation of the Porsuk River Rehabilitation Project, transformation of the old factories region into new luxury residential and commercial areas, making the district a new and modern center of commerce as opening of a large number of shopping centers within the boundaries of the Tepebaşı, adapting ESTRAM to operation and increasing the line length related to accessibility, increasing of large-scale urban parks and the existence of two universities with opening of Eskişehir Technical University.



	Population Growth btw. 2000-2008	Population Growth btw. 2008-2018	Population Growth btw. 2000-2018
Odunpazarı	2.8	1.7	2.2
Tepebaşı	2.6	2.8	2.7

Figure 5.42. Changes in Population Growth Before and After 2008

(Source: Annual rate of population growh calculated by author according to TÜİK)

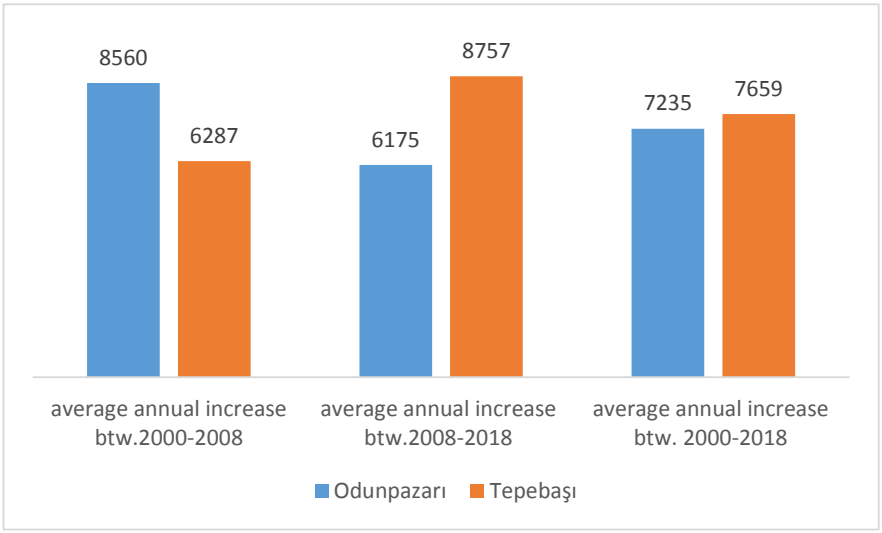


Figure 5.43. Average Annual Population Increase Before and After 2008

(Source: Annual rate of population growh calculated by author according to TÜİK)

The rapid increase in the population of Tepebaşı district will also lead to an increase in housing demand. This may be a factor that causes the higher number of housing unit production in Tepebaşı when compared to Odunpazarı.

5.3.3.2. Total Number and Size of Households

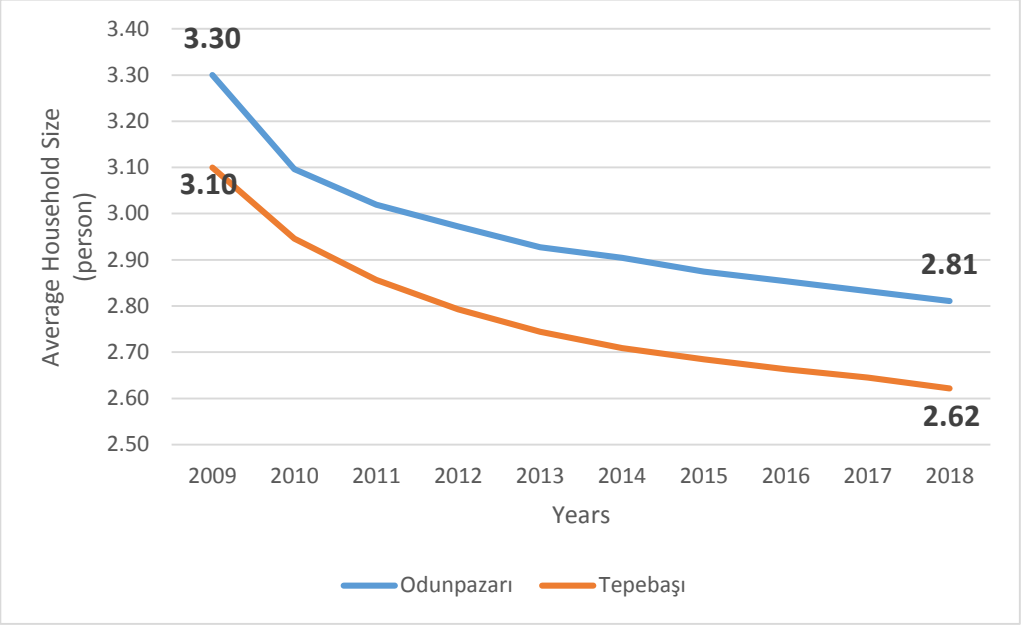


Figure 5.44. Average Household Size by Districts Between 2009-2018

(Source: The figure is prepared by the author according to TÜİK data)

According to TÜİK, the average household size at district level started to be given in 2009 due to the improvement of administrative records. When the changes in household size in Figure 5.44 is examined from 2009 to the present, it is seen that Tepebaşı district has lower levels than Odunpazarı in this period. In 2018, the average household size of the Tepebaşı was 2,62 and this value was 2,81 in Odunpazarı. In this period, both districts showed a downward trend in terms of household size. The relatively lower average household size in Tepebaşı district can be considered as an effective factor in the smaller floor area of housing units constructed in the district. However, in order to make a healthier conclusion, the number of households should be examined in terms of household size.

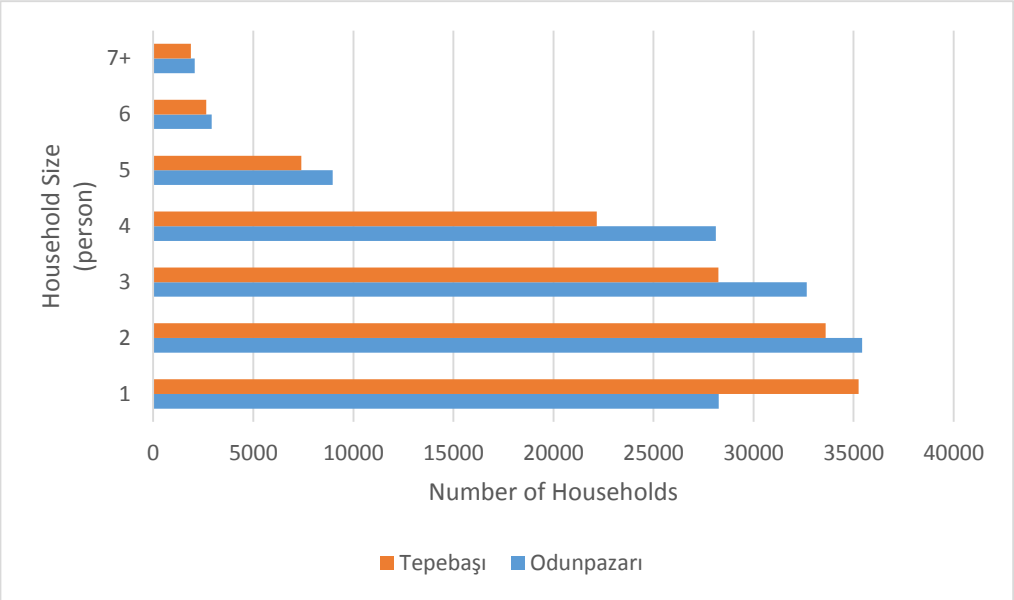


Figure 5.45. Number of Households by Household Size In 2018

(Source: The figure is prepared by the author according to TÜİK data)

When the total number of households in the districts in 2018 is examined in terms of household sizes, a few important differences are observed. The first one is that the number of 1-person households is more in Tepebaşı district with a big difference. In the distribution of other household sizes, numerical leadership belongs to Odunpazarı district. In the number of households consisting of 3 and 4 people, the difference has increased and Odunpazarı has a superiority in number. Apart from these, the largest number of households in Tepebaşı district is composed of 1 person and it is followed by households consisting of 2 people. In Odunpazarı, the group with the highest number consists of 2 person families, this group is followed by 3 person families.

The excess number of 1 person households in Tepebaşı may be the reason behind the production of smaller housing units in this district. Another factor that may be effective in the emergence of this situation may be the concentration of student population in Tepebaşı. On the other hand, the high number of households consisting of 3,4,5 persons in Odunpazarı may be an effective factor in the production of larger housing units in this district. As a result, it can be concluded that the number and size of households could be a factor which has a decisive role on housing production and

may lead to differentiations in housing provision. Household size may especially be an effective factor in the production of housing units in different sizes for Eskişehir case.

5.3.3.3. Age Distribution of Population

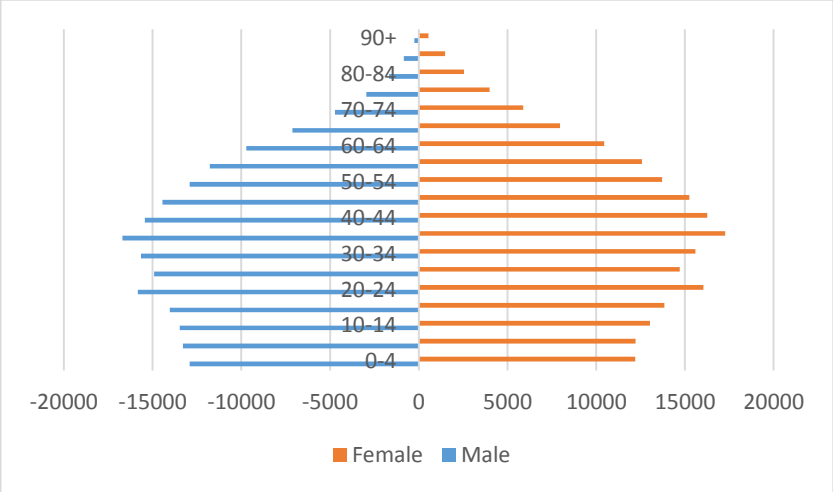


Figure 5.46. Population Pyramid of Odunpazarı in 2018

(Source: The figure is prepared by the author according to TÜİK data)

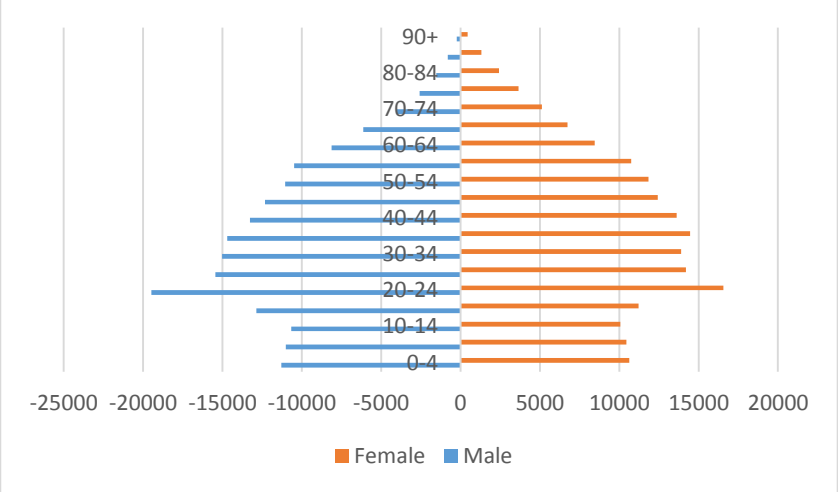


Figure 5.47. Population Pyramid of Tepebaşı in 2018

(Source: The figure is prepared by the author according to TÜİK data)

When the distribution of the total population in terms of age groups is examined in 2018, it is understood that even though the two central districts generally present

similar approaches, they differentiate at one point. When the population pyramid of Tepebaşı is examined, it is seen that the population between the ages of 20-24 has the highest share in the total population and the population between of 20-24 in Tepebaşı is more than the population between of 20-24 in Odunpazarı. The city has a large number of university students, and the concentration of the neighborhoods where students reside in Tepebaşı may be the basis for this situation. There are 32.297 active students in Osmangazi University, 22.375 in Anadolu University and 12.313 in Eskişehir Technical University since 2019. The total number of students is approximately 67.000 in the two central districts. The clustering of residential areas of students in campus areas in Tepebaşı bring about existing highly the population in the 20-24 age group.

According to the following tables, the percentage distribution of different age groups within the total population is also calculated. The distributions of female, male, young, old, active and dependent populations were determined based on districts. Accordingly, although the two districts generally have similar rates, it is observed that the active population rate is higher in Tepebaşı district and the dependency rate is lower as parallel. Therefore, it is concluded that the population of children and the elderly is more in Odunpazarı. While the dependency rate in Odunpazarı was 41% in 2018, it was 38% in Tepebaşı.

As a result, it is considered that universities are effective in the large number of young people in the 20-24 age group in Tepebaşı. The high number of students living in Tepebaşı region leads to the construction of a large number of 1+1 apartments in the district. Thus, this situation affects production of the small size of housing units in Tepebaşı. In addition, the dependent population ratio is higher in Odunpazarı and it is an effective factor production of the larger size of the housing units in this district.

Table 5.6. *Proportional Distribution of Odunpazarı District Population (2018)*

(Source: The table is prepared by the author according to TÜİK data)

Proportional Distribution of Odunpazarı District Population (2018)		
Female Population Rate	Female Population/Total Population	**50,86 %**
Male Population Rate	Male Population/Total Population	**49,14 %**
Dependency Ratio	[(0-14 age group) + (65 + age group)] / (15-64 age group)	**41,0 %**
Child Population Rate	(0-14 age group) / Total Population	**19,2 %**
Working Population Ratio	(15-64 age group) / Total Population	**71,0 %**
Elderly Population Rate	(65+ age group) / Total Population	**9,9 %**

Table 5.7. *Proportional Distribution of Tepebaşı District Population (2018)*

(Source: The table is prepared by the author according to TÜİK data)

Proportional Distribution of Tepebaşı District Population (2018)		
Female Population Rate	Female Population/Total Population	**49,62 %**
Male Population Rate	Male Population/Total Population	**50,38 %**
Dependency Ratio	[(0-14 age group) + (65 + age group)] / (15-64 age group)	**38,1 %**
Child Population Rate	(0-14 age group) / Total Population	**17,85 %**
Working Population Ratio	(15-64 age group) / Total Population	**72,4 %**
Elderly Population Rate	(65+ age group) / Total Population	**9,7 %**

5.3.3.4. Education Level of The Population

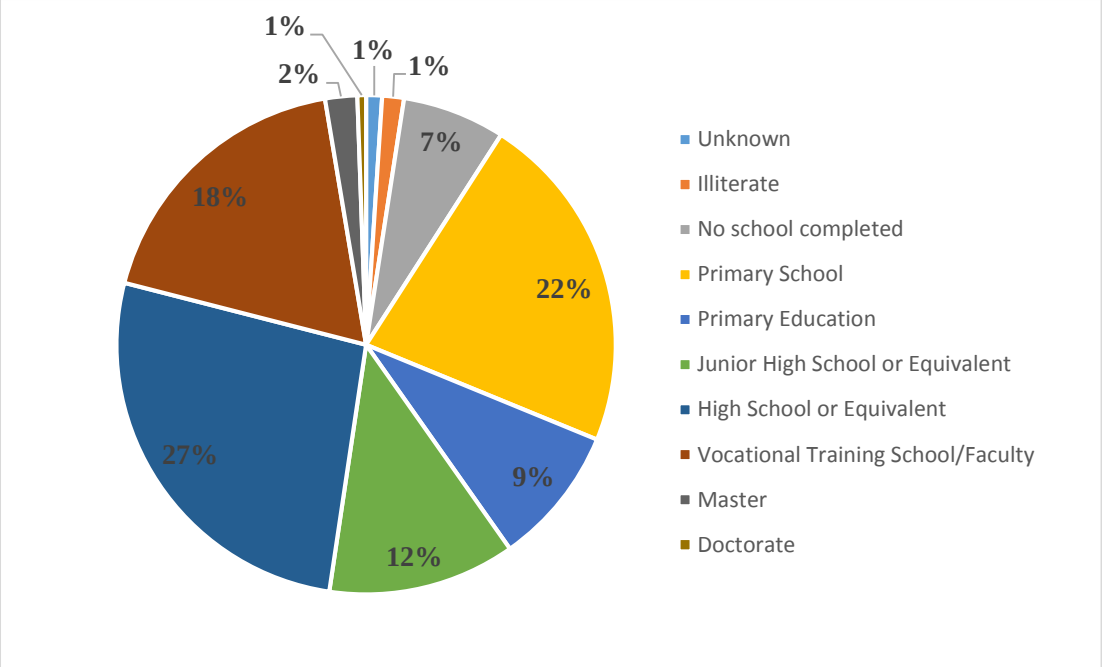


Figure 5.48. Population in Odunpazarı by Educational Attainment, 2018 (Population 6 years of age and over)

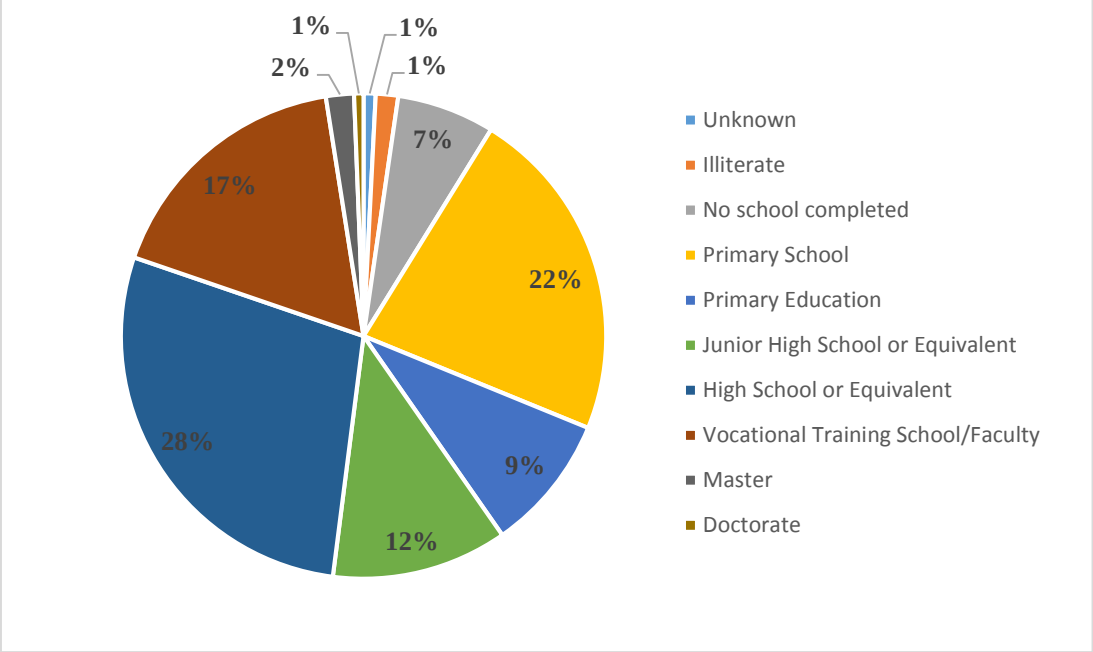


Figure 5.49. Population in Tepebaşı by Educational Attainment, 2018 (Population 6 years of age and over)

When the educational status of the population living in Tepebaşı and Odunpazarı districts is examined, it is seen that there is no differentiation between them. On the contrary, the population of districts has the same proportions in terms of the level of education completed. The number of high school and primary school graduates is high in both districts. Therefore, education level is not one of the factors that differentiate the amount and shape of housing production in the central districts because there is no difference in the educational status of the population.

CHAPTER 6

CONCLUSION

6.1. Summary of the Researh

Housing has always been a basic need for individuals and countries. Construction activities always play important roles in the formation of urban built environment and shaping of urban settlements. Moreover, construction sector has significant impacts on urban economies. Housing production has also been an important agenda item in each period for Turkey. Following the 2001 economic crisis, a new era in terms of the role of government intervention in the housing sector has begun in Turkey. In many different countries of the world, neoliberal policies gained popularity after the 1980s and direct state intervention in the housing sector has decreased. The role of market in housing provision and the functioning of the sector have started to increase, as a general trend. However, contrary to the trend in many countries, the national government has become an active actor in housing production and sector in Turkey after 2000. In the new millenium, a nationwide housing mobilization was initiated. The production of new housing has been supported by the national government with new construction investments in vacant lands, historical urban sites, squatter (gecekondu) areas and the areas under disaster risk (Özdemir Sarı, 2015, p.73). Similar to the growth trend across the country, there has been a growth in construction investments, especially in new housing production in Eskişehir after 2000. In this regard, this thesis aims to determine the factors affecting housing production processes in Eskişehir and the reasons for the differences in housing provision types and production levels throughout the central districts of the city. For this purpose, housing production is analyzed in various aspects in the central districts of Eskişehir. The factors triggering housing development are discussed within the context of supply and demand situation. According to this, the domination of the central districts on the total

new housing production is determined. Then, the housing production in the city center is examined more closely. As a result of the extensive analyses, some differences between the housing areas produced in cental districts of Eskişehir have been found.

6.2. Discussion of the Research Findings

The differences in housing production between the two districts in the post-2000 period are generally as follows;

- Number of housing units producation; Tepebaşı> Odunpazarı> Other Districts
- Size of produced housing units; Odunpazarı > Tepebaşı
- 6 storey buildings are constructed at a higher rate in Odunpazarı while the concentration of 4 and 5 storey buildings is more distinct in Tepebaşı.
- Number of houses produced by building cooperatives; Odunpazarı > Tepebaşı
- The size of the houses produced by the cooperatives; Tepebaşı > Odunpazarı

At this point, the factors that could be effective on the differentiation of housing production between districts and the development of residential areas in Eskişehir city center within the historical process are explained on the basis of the theoretical framework. As a result of the analyses and evaluations, the following inferences and comments can be made.

Physical factors such as topography, soil type, geological conditions and hydrology have been influential in the formation of residential areas within the urbanization processes of Eskişehir. The geological risk of the ground in the city center is an important factor in the intensive construction of 3-4-5 storey buildings throughout the city. Today, it is difficult to say that the difference in numerical and spatial production between the two districts is mainly due to physical factors. However, there is an obvious difference of elevation and slope between the districts of Odunpazarı and Tepebaşı. The low elevation and slope values on the Tepebası and the large area coverage of flat areas may have a positive effect on the increase in housing production

numbers in this district. Additionally, Odunpazarı is more challenging in terms of topographic elements but has less risk in terms of geological situation when compared to Tepebaşı. This has the potential to explain the reason of high number of 4 and 5 storey buildings in Tepebaşı and 6 storey buildings in Odunpazarı. It is also possible to increase the number of floors in order to reduce the extra construction costs that may arise from the topographic structure of Odunpazarı district.

In the post-2000 period, many new urban uses were added to the city and changes in spatial structure occurred. In the final situation, Odunpazarı has turned into a region that mostly develops through conservation master plans whereas Tepebaşı has turned into a region that continuously grows with new investments. One of the largest urban uses in the city is university areas. The student population around the Osmangazi and Anadolu Universities has caused an important change in the development of housing sector in Eskişehir. Due to the rapidly growing student population, the production of small flats called "apart" has increased and the rental rates in the city have gone up. A large number of 1+1 studio flats can be found in the neighborhoods which are close to the universities. Finally, it is understood that the student population is clustered intensely in Tepebaşı district. Parallel to this, the number of neighborhoods containing studio type housing is higher in Tepebaşı. These may be an effective factor in housing production with higher number and small square meter in Tepebaşı district.

Another important urban uses which cover large areas in the city are the airports. There are two airports in Eskişehir city center, one civil and one military. The presence of airports constitutes a threshold for housing development in the city. The urban development areas within the borders of Tepebaşı district are under the influence area of Eskişehir Hasan Polatkan Airport and Military Jet Base. Therefore, when determining the height of new buildings, the criterias of these airports should be followed. In terms of location, both airports heavily influence the Tepebaşı district. The emergence of such a differentiation between the two districts in terms of storey number enable us to argue that the location of the airports might have had a restrictive

effect on the height of buildings in Tepebaşı. Therefore, the airports in the city and their location may be an effective factor in the differentiation of housing provision.

At present, Eskişehir has reached its natural boundaries and thresholds. There are two important possible developments axis. The first one is the southeast-northwest axis and the second one is the north-south axis. Accordingly, it is observed that the new residential areas are concentrated in the northwest and southeast of the city. The production of single family houses for the high income group and low-rise apartment buildings for the middle-high income group in Tepebaşı district can lead to differentiation of construction size in units produced by cooperatives. The presence of the Organized Industrial Zone may be a significant factor in the concentration of the working population in the Odunpazarı district. As a result of the tendency to choose a location close to the working area, this might have caused a heavy demand for housing around the Organized Industrial Zone. This may be a factor to the preference of cooperatives in housing production in order to meet the housing needs of the lower income group. Therefore, the reason why cooperatives are more active in Odunpazarı district can be explained in this way. As a result, the existence of industrial, technical and educational uses and health facilities could be effective on shaping of the housing provision types.

Lastly, the demographic factors that might have an impact on the differences in housing production are revealed. Accordingly, while Odunpazarı was at the forefront in terms of annual population growth before 2008, Tepebaşı came to the forefront in the post-2008 period. As a result, it is indicated that Tepebaşı has rapid growth trend and attracted population in the post-2000 period, especially after 2008. The rapid increase in the population of Tepebaşı district will also lead to an increase in housing demand. This may be a factor that causes the higher number of housing unit production in Tepebaşı. Additionally, the number and size of households could be a factor which has a decisive role on housing production and may lead to differentiations in housing provision. Household size may especially be an effective factor in the production of different size housing units for Eskişehir case. The relatively lower average household

size in Tepebaşı district can be considered as an effective factor in the smaller floor area of housing units. However, in order to make a healthier conclusion, the number of households is examined in terms of household size. The excess number of 1 person households in Tepebaşı may be the reason behind the production of smaller housing units in this district. On the other hand, the high number of households consisting of 3,4,5 people in Odunpazarı may be an effective factor in the production of larger housing units in this district. Moreover, the distributions of female, male, young, old, active and dependent populations were determined based on districts. Accordingly, although the two districts generally have similar rates, it is observed that the active population rate is higher in Tepebaşı district and the dependency rate is lower as parallel. Therefore, it is concluded that the population of children and the elderly is more in Odunpazarı. As a result, it is considered that universities are effective in the large number of young people in the 20-24 age group in Tepebaşı. The high number of students living in Tepebaşı region leads to the construction of a large number of 1+1 apartments in the district. Thus, this situation affects production of the small size of housing units in Tepebaşı. In addition, the dependent population ratio is higher in Odunpazarı and it is an effective factor on the production of the larger size housing units in this district.

As a result of all these evaluations, it can be concluded that physical and geomorphological, location-landuse related and demographic factors can be effective on housing production processes and differentiate housing production in Eskişehir city center.

Table 6.1. *The Summary of Factors for the Differentiations of Housing Production Between Tepebaşı and Odunpazarı Districts*

FACTORS	DIFFERENTIATIONS BETWEEN TWO DISTRICTS	FACTORS FOR DIFFERENTIATIONS
AMOUNT OF UNIT PRODUCTION	Number of housing units production; **Tepebaşı > Odunpazarı**	**Location and Landuse Related**
		• Existence of university campus areas and clustering of housing production targeting university students in Tepebaşı. • Concentration of new commercial and recreational investments mostly in Tepebaşı. • Positive effect of Ankara-Bursa Ring Road on the growth trend and occurrence of new developments in the northwest direction of the city.
		Administrative
		• Allocation of more development area in Tepebaşı via master plan decisions.
		Physical-Geomorphological
		• The low elevation - slope values and the large area coverage of flat land in Tepebaşı. • Due to the existing thresholds in the city, the potential of more sprawl areas in Tepebaşı.
		Socio-Economic
		• The rapid increase in the population of Tepebaşı after 2000.

NUMBER OF STOREYS	6 storey buildings are constructed at a higher rate in Odunpazarı while the concentration of 4 and 5 storey buildings is more distinct in Tepebaşı.	**Location and Landuse Related** • Existence of two airports heavily influence Tepebaşı. The location of the airports might have had a restrictive effect on the height of buildings and lead to production of shorter buildings in Tepebaşı. **Physical-Geomorphological** • Odunpazarı is more challenging in terms of topographic elements, but it is less risky with regards to geological situation compared to Tepebaşı • The high amount of preventive areas which have high liquefaction risk in Tepebaşı and construction permit up to 4 storey in these areas. • Existence of more suitable but challenging areas in Odunpazarı and the possibility of increasing the number of storey in order to reduce construction costs in these areas.
CONSTRUCTION AREA	Size of produced housing units; **Odunpazarı > Tepebası**	**Location and Landuse Related** • The number of studio type small size dwellings is higher in Tepebaşı because of the housing need triggered by university areas.

		Socio-Economic
		• The relatively lower average household size, the excess number of households consisting of 1 person and the concentration of student population in Tepebaşı can lead to production of smaller units. • The high number of households consisting of 3,4,5 persons in Odunpazarı may be an effective factor in the production of larger housing units. • The higher ratio of dependent population in Odunpazarı may be a factor on production of the larger size housing units.
OWNERSHIP OF PRODUCTION	Number of houses produced by cooperatives; **Odunpazarı > Tepebası** The size of the houses produced by the cooperatives; **Tepebaşı > Odunpazarı**	**Location and Landuse Related**
		• Cooperatives may be more active in Odunpazarı to meet the housing needs of the working class in the Organized Industrial Zone.
		Socio-Economic
		• Concentration of working class and middle-high income groups in different parts of the city. The production of single family houses and low-rise apartment buildings for the middle-high income group in Tepebaşı and the production of housing for the workers and low income groups in Odunpazarı can lead to differentiation of construction size in units produced by cooperatives.

6.3. The Importance of Thesis for The Further Studies

Housing is one of the primary instruments of urban planning and includes various social, economic, political and structural elements. Therefore, it is extremely sensitive to fluctuations in socio-economic and political structures also changes in local characteristics. Similar to Turkey, the cities of developing countries continue to grow and they need new housing units in addition to the existing housing stock. In this context, knowing the factors which have influence on housing production has great importance in terms of making functional decisions for the development of cities. Therefore, a study for Central Districts of Eskişehir Metropolitan Area is important in terms of contributing to the development of more sustainable conditions in the near future and addressing urban growth with certain spatial growth strategies.

This study was largely completed with the analysis and evaluation of secondary data. The quantitative and qualitative data related to the case study were not collected being physically in the field and were mostly obtained through institutions. The majority of these data are statistical and numerical data. A limited amount of communication was established with the stakeholders that have roles in city administration. Therefore, there is not much contact with the local actors and authorities regarding the housing production processes and the factors affecting these processes. The disadvantage arised by this situation in the thesis is that the effects of political factors on housing production could not be discussed in detail for Eskişehir case. When the post-2000 period is examined, it is understood that the two metropolitan districts and the Eskişehir Metropolitan Municipality were governed by officials with different political views and backgrounds in some periods. There is also difference between local and central government in terms of political view. There are many studies indicating that political factors may have been effective on housing production processes, especially on urban transformation projects in the new millennium. In further studies, inclusion of political and administrative factors that may have an impact on the differentiation of housing production in Eskişehir, will contribute to enrich the discussion on this issue.

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Web.10: https://mobile.twitter.com/eskisehirbb/status/918460485204398080/photo/1

Web.11: https://mobile.twitter.com/eskisehirbb/status/918460485204398080/photo/2

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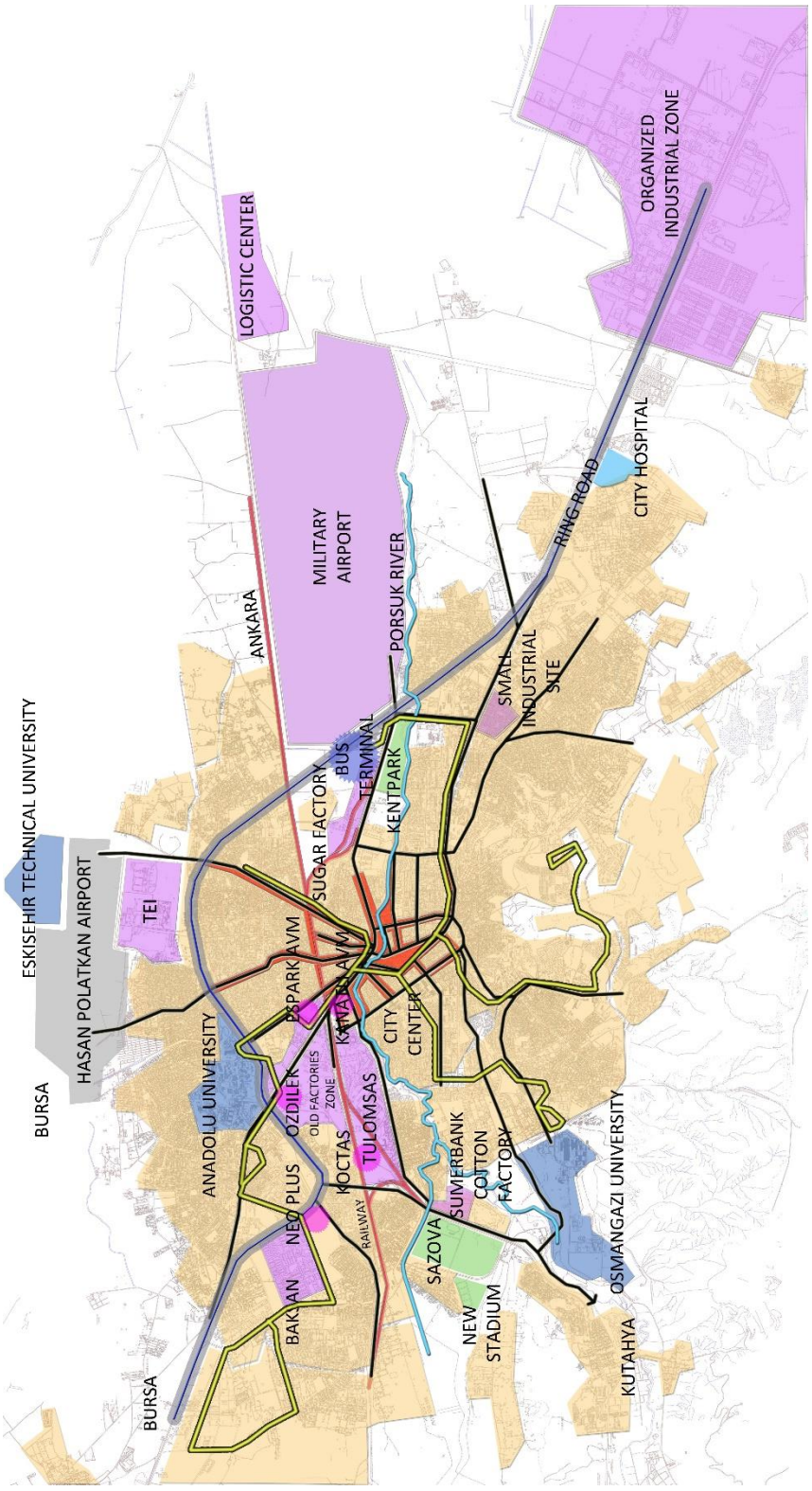
A. Spatial Development of Eskişehir City Center after 2000



B. New Residential Areas Developed in The City After 2002