DISSERTATION

The influence of the refugees on the German housing market

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Deutsche Kurzfassung

Seit 2015 ist Europa das Ziel der größten Anzahl von Flüchtlingen seit dem Zweiten Weltkrieg. Die Unterbringung aller Einwohner der Entsendeländer bringt viele Herausforderungen mit sich, insbesondere wenn ein Aufnahmeland bereits unter einem gravierenden Wohnungsmangel leidet - Flüchtlinge benötigen bei oder kurz nach ihrer Ankunft Zugang zum Wohnungsmarkt. Die vorliegende Studie verwendet statistische Daten über die Flüchtlingsbevölkerung, gruppiert die Flüchtlinge in Etappen und segmentiert den Wohnungsmarkt auf der Grundlage einer aufgebauten Datenbank. Sie extrapoliert ein analytisches Modell, um zu untersuchen und zu verstehen, wie der Zustrom von Flüchtlingen in Deutschland den Wohnungsmarkt des Landes beeinflusst hat.

Alle am Wohnungsprozess beteiligten Akteure werden vorgestellt und ihr Einfluss wird entsprechend dem analytischen Einflussmodell gewichtet.

Die Flüchtlinge selbst stellen einen Akteur dar, aber ihr Einfluss - sowohl direkt als auch indirekt, abhängig von der Dauer des Aufenthalts - wird als begrenzt angesehen, da ihre Entscheidungsbefugnis in Bezug auf den Zugang zum Arbeits- und Wohnungsmarkt begrenzt ist. Es gibt deutliche Hinweise darauf, dass das Verhalten von Kleinvermietern - die den deutschen Mietwohnungsmarkt dominieren - den Wohnungsmarkt in gewissem Maße beeinflusst, während professionelle Vermieter auf die Entscheidungen der Regierung angewiesen sind, um irgendeine Art von Einfluss auf den Wohnungsmarkt zu erzeugen. Auf der anderen Seite besteht eine starke Korrelation, was die staatlichen Stellen betrifft. Die angewandte Politik und die politischen Entscheidungen haben einen überragenden und vielfältigen Einfluss auf den Wohnungsmarkt und seine neuen Bedürfnisse, die durch die zusätzliche Flüchtlingsbevölkerung bestimmt werden. Die für Deutschland angewandte Politik wird umfassend illustriert und kommentiert, wobei die vorhandene Literatur zu analogen Fällen der Vergangenheit weltweit genutzt wird.

English Abstract

Starting in 2015, Europe has been the destination of the largest number of refugees since the Second World War. Accommodating all residents of sending countries brings many challenges, especially when a host country is already experiencing a severe housing shortage—refugees need access to the housing market upon or soon after their arrival. Using statistical data on the refugee population, clustering the refugees into stages and segmenting the housing market based on a built-on database, this study extrapolates an analytical model to investigate and understand how the influx of refugees in Germany has influenced the nation's housing market. All stakeholders involved in the housing process are introduced and their influence is weighted accordingly to the analytical influence model.

The refugees themselves represent one stakeholder, but their influence - both direct and indirect, depending upon the length of the permanence - is found to be limited, as it is limited their decisional power related to the access to the labour and housing markets. Strong evidence is found that the behaviour of small-scale landlords - who dominate the German rental housing market- influence the housing market to a certain extent, while professional landlords rely on the governmental decisions in order to generate any kind of influence on the housing market. On the other side, a strong correlation is found as far as the governmental bodies are concerned. The policies applied and the political decisions have a paramount and manifold influence on the housing market and its new needs determined by the added refugees population. The policies applied for Germany are widely illustrated and commented, exploiting existing literature on analogous past cases worldwide.

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Elena Simona Serban

"The greatest glory in living lies not in never falling, but in rising every time we fall."

Nelson Mandela

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Glossary

Source: (OECD & EC, 2016)

Migration: the movement of a person (migrant) or a group of persons, either across an international border (international migration) or within a State (internal migration). It is a population movement, encompassing any kind of movement of people, whatever its length, composition, and causes; it includes migration of refugees, displaced persons, economic migrants and persons moving for other purposes, including family reunification.

Refugee: generally refers to a third-country national or stateless person who, owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, political opinion or membership of a particular social group, is outside the country of nationality and is unable or, owing to such fear, is unwilling to avail himself or herself of the protection of that country, or a stateless person, who, being outside of the country of former habitual residence for the same reasons as mentioned above, is unable or, owing to such fear, unwilling to return to it (Directive 2011/95/EU) (UN Refugee Agency).

Asylum seeker: Person seeking international protection who has applied but not yet been granted the status of 'beneficiary of international protection'.

Subsidiary protection: it is given to a third-country national or a stateless person who does not qualify as a refugee, but in respect of substantial grounds which have been shown to believe that the person concerned, if returned to his or her country of origin or, in the case of a stateless person, to his or her country of former habitual residence, would face a real risk of suffering serious harm and who is unable or, owing to such risk, unwilling to avail himself or herself of the protection of that country.

Tolerated person: This status is granted to people whose asylum requests have been rejected, but who cannot be deported. These individuals however need permission from immigration officials to be able to work.

Unaccompanied minor: A non-EU national or stateless person below the age of eighteen who arrives on the territory of the EU Member States unaccompanied by an adult responsible for him/her whether by law or custom, and for as long as s/he is not effectively taken into the care of such a person, or a minor who has left unaccompanied after s/he has entered the territory of the EU States.

Non-EU born: People who were born outside of the EU. When analyzing integration, it is useful to also consider the country of birth as migrants might get naturalized over time in which case they will not be captured by looking at citizenship but they still may experience integration difficulties even after naturalization.

Naturalization: People of citizenship other than that of the country in question (host country) who obtain the nationality of that country.

Third-country nationals: A person not having the nationality of an EU State.

Second generation: The children of immigrants that were born in the host country.

In the following text, when not beneficial for the exposition, migrants under refugee protection or subsidiary protection are generally named under the term of refugees, for the sake of simplification.

Acronyms and Abbreviations

AIDA – Asylum Information Database

BAMF – The Federal Office for Migration and Refugees

BBSR – Bundesinstitut für Bau-, Stadt- und Raumforschung – Federal Office for Building and Regional Planning

EC – European Commission

ECRE – European Council of Refugees and Exiles

IAB – The Institute for Employment Research

IFHP – International Federation for Housing and Planning

IMF – International Monetary Fund

LMD – Landesamt für Flüchtlingsangelegenheiten

MPI – Migration Policy Institute

MUF – Modulare Unterkunft für Flüchtlinge – modular accommodation for refugees

OECD – The Organisation for Economic Co-operation and Development

RHP – Refugees Housing Panel

SOEP – The German Socio-Economic Panel

UNFPA – United Nations Population Fund

UNHCR – United Nations High Commissioner for Refugees

UNRRA – United Nations Relief and Rehabilitation Administration

Chapter 1 Introduction

‘Migration is ubiquitous to life. Birds do it, bees do it, even plants do it (intergenerationally), and it has been part of human history from its African origins to its globalizing dispersion today. Whether viewed as departure (emigration), as arrival (immigration) or both (migration), long-term moves of people on a wide scale across political borders have grown in importance for human societies along with the rise of the political power structures demarcated by those boundaries, and human migration has acquired a host of varying meanings to those who have studied it in recent decades’ (Keeling, 2010).

The present work deals with a societal issue that has been a hot topic in the media and politics over the last few years: the migration of non-European citizens to Europe, a phenomenon that intensified in 2015. ‘The largest migration wave since Second World War,’ as the commentators put it (ECHO, 2015), has gathered together multiple parties (i.e. governments, developers, volunteers, the general public) in long debates. Many ideas, interests and speculations were generated at the economic, social and political levels. This thesis addresses each of these contexts, focusing thoroughly on the impact of this mass migration on the shape and form of the German real estate market. The principal subject of the present work is therefore housing.

Because a massive migration brings economic challenges and changes social relations, it also impacts the housing market. (Green & Vandell, 2001) assume that real estate goods are created from factors of production including labour (e.g. developers, contractors, construction workers, etc.), land (e.g. the site, its location, and other amenities) and capital (e.g. physical capital and financial capital). Any large migration wave impacts each of these components. The present thesis connects the factors characterizing the real estate market from 2015, when refugees first began arriving in Germany in large numbers, to the current year, 2019, and analyses the overall impact of the refugees’ arrival on the housing market, including their impact on the housing market value chain and market-inherent behaviour.

1.1. Statement of the problem and relevance of the research

The present thesis deals with the effects of the migration fluxes that have touched Europe—and Germany in particular—in recent years. 'In the last years, Europe has experienced the greatest mass movement of people since the Second World War. More than 1 million refugees and migrants have arrived in the European Union, the large majority of them fleeing from war and terror in Syria and other troubled countries'[1].

The political instabilities, civil strife and armed conflicts the Middle East and the Islamic World (e.g. Iraq, Afghanistan) have endured in recent decades forced many residents of these areas to flee their countries and thus gave rise to an influx of migrants into Europe (Keijzer & Schraven, 2015). The exodus escalated with the civil war in the Syrian Arab Republic in 2011 and ISIS's proclamation of a caliphate in 2014 (Middelhoff, 2015). Large numbers of citizens left their homes for surrounding countries as well as Europe. Africa, which has one of the largest population densities in the world, represents one additional contributor to the present migration wave towards Europe, with its citizens fleeing its borders to escape poverty. Other countries such as Kosovo (where, according to the UN, one-third of the population lives below the poverty line), Serbia and Albania contribute to the number of migrants due to the ongoing economic crises inside their countries (Keijzer & Schraven, 2015).

The current movement of refugees from non-EU countries into Europe was, at a certain point (i.e. on the 31st of August 2015, at a press conference (Bundesregierung, 2015)), facilitated by decisions taken at the political level. Chancellor Angela Merkel publicly licensed the free circulation of refugees into Germany, clearly stating 'refugees welcome'. Even if it was a decision taken by the head of one country, it impacted other countries too because the number of migrants suddenly increased (as a result of Chancellor Angela Merkel declaring that Germany would place 'no limits on the number of asylum seekers' for Germany (TheLocal, 2015)) and they had to pass through several European countries (e.g. Republic of North Macedonia, Hungary, Austria, etc.) to reach Germany.

The large number of people migrating at the same time generated challenges for European countries. When the present migration elevated in this extraordinary way (i.e. the number of migrants soared in the last months of 2015, arriving at more than one million civilians (ESI, 2015)), European countries were not prepared for it. Because European

[1] http://publications.europa.eu/webpub/com/factsheets/refugee-crisis/en/

governments did not have a plan to distribute the refugees between their countries at the beginning of the mass migration, refugees initially settled in ad-hoc accommodations (e.g. tents, camps). The high concentration of refugees in the same place gave rise to unsuitable living conditions, overcrowding and nightly battles between refugees and thus the areas where the camps were established became dangerous (Christides & Kuntz, 2017)).

The literature (Mateman, 1999) indicates that an equal distribution of refugees around a city or country is important in order to prevent segregation. In this way, the proper allocation of the refugees across diverse accommodation settlements could avoid transforming entire neighbourhoods into ghettos, because refugees may be drawn to settle in migrant areas. Equal distribution can prevent the new arrivals to cluster therefore in disadvantage areas. Accordingly, in Germany the EASY[2] quotas are introduced to distribute the refugees among the 16 federal states and Merkel advocated for the introduction of quotas for allocating refugees across European countries (Bundeskanzlerin, 2015), in this way the refugees cannot converge only to one country.

'Shelter is a basic human right and necessity. The conditions in which people live determine to a great extent their health, well-being, and ability to engage in a gainful occupation, pursue self-improvement through education and recreation and in consequence attain a decent standard of living' (The ECRE Position Paper on Integration of Refugees in Europe, 2016). People who flee to Europe must receive proper shelter. Finding accommodation for them is difficult; even finding an empty building to shelter them may only serve as a temporary solution. There are not enough reception centres available for such numbers and refurbishing/converting or constructing new buildings takes time. Hence, finding a solution is crucial, otherwise, at the moment of their arrival, many locations can be transformed into places that are not properly furnished and well-divided to accommodate people. For instance, the solution that the German government adopted for the initial accommodation is those of a gated community (Kather, 2015) (e.g. fenced establishments accommodating a large number of refugees), where people cannot integrate in the society since they interact just among themselves.

Housing is the foundation of any integration process; a basic human need, it plays an important role for everyone, and an especially important role for people who flee their countries

[2] Königstein Key (Königsteiner Schlüussel) is based on demographic and economic characteristics of the federal states and is calculated 2/3 of tax revenue +1/3 of the inhabitants number of each federal state (Michael Kalkmann, 2016)

to feel safe in a new environment. When refugees arrive in a host country, the government offers them the cheapest form of housing (Christides & Kuntz, 2017; DeutscheWelle, 2019). Most refugees arrive in a host country in a compromised state of health, due to fleeing from civil strife and traveling long distances in precarious conditions. Being placed in shared accommodation, where situations of overcrowding are often revealed, while at once having to keep up with school or any educational training (e.g. learning the language of the host country) may be difficult. Evidence reveals that refugees living in such accommodations demonstrate drops in motivation and concentration for learning (Abdelilah et al., 2019). In order to have better performance when learning, one needs a proper space to carry out all the chores related to his own educational development. Because language learning is part of the refugee integration process in a host country, placing refugees in good housing matters.

A comparable situation, with respect to the housing allocation for a big number of people as hosts of a country, occurred in Germany after the Second World War. The country was recovering after the war—many buildings had been bombed and there was a high demand for labor. Thus, a large number of working migrants (i.e. Gastarbeiter) were needed[3]. The migrants moved primarily to help to reconstruct Germany after the war's destruction and they did not expect to be placed in proper accommodations or to stay in the country for long periods. Due to additional policies for family reunification and the introduction of a new Aliens Act that allowed working migrants to become German citizens, many remained in Germany, accepting it as their new home (Burkhardt & Seifert, 2012). Nowadays, economic uncertainty, new policies (e.g. restrained access to family reunification), and different social behaviours (e.g. anti-foreigners campains on social media platforms, the stigmatigsation of refugees (Erhardt, 2015)) make integrating refugees more challenging.

Having already accommodated a high number of people in the past and being now registered as home to the highest number of asylum applications in Europe (considering the total from January 2015 to December 2016 (Burmann & Valeyatheepillay, 2017)) in the current wave of refugees, Germany offers a particularly fruitful site for research on how a refugee influx impacts the real estate market of the host country. Notably, in Germany, the supply of houses to rent or to buy is lower than the demand (Möbert, 2017), there is a shortage of affordable housing (IFHP, 2015) and the social housing sector is shrinking (Kofner, 2017).

[3] The German government signed even a recruitment treaty with Italy (in 1955), Spain, Greece (in 1960), Turkey (in 1961), Portugal (in 1964), Tunisia, Morocco (in 1968) and Yugoslavia (in 1968) to fill in their demand for workers (Burkhardt & Seifert, 2012).

The momentum in the housing market gained by the influx of refugees made German citizens aware that they may be facing additional competition (i.e. the refugees) for rental units: as Germany's population grew in 2015, the nation registered its highest increase in residential real estate (4.5%—not only in metropolitan areas but also in smaller cities and university cities) (Psotta, 2015). However, refugees have fewer housing choices on the open market (e.g. there are registered cases in which refugees with protected status stated they had been searching for housing for more one year (Young, 2017)), especially at the beginning of their journey in the host country, when the government is in charge of allocating them to available housing settlements.

Refugees can also encounter additional hurdles (e.g. poor access to adequate information, legal hurdles and discrimination) in their housing search. For instance, housing discrimination performed by small-scale landlords who refuse to rent to refugees living with the help of government subsidies or who are not able to pay the deposit needed to receive the house or who discriminate against refugees on the basis of race or religion fuel the business of smugglers and contribute to the development of an informal housing market (Foroutan, Hamann, El-Kayed, & Jorek, 2017a). Basically, with long waiting lines for a housing unit from the responsible authorities and the landlord's refusal of renting an apartment to them, the refugees find themselves in the situation of renting on the informal housing market or remain homeless[4]. For instance, in cities like Berlin, where an acute housing shortage is registered, growing networks of informal housing are forming (Young, 2017).

Since affordable housing (i.e. housing below the average price on the renting index) in Germany is scarce, the government's response to the allocation of refugees around the country was to construct new establishments in determined areas. However, introducing such building structures (e.g. container homes) in the neighbourhoods may alter the value of the other properties located in the area. For instance, some people who were concerned with this aspect requested compensation when the number of accommodated people was large (FOCUS, 2015), while others quarrelled with the authorities against building such accommodation units in good quarters (Laufer, 2015). In addition, an experiment performed by (Liebe, Meyerhoff, Kroesen, Chorus, & Glenk, 2018) which investigated German citizens' behaviour with respect to erecting units for accommodating refugees (e.g. empty large buildings, container, multi-purpose hall) in the vicinity of their home (e.g. from 500 m to 1.4 km), discovered that Germans

[4] According to (Wohnungslosenhilfe, 2017) the estimation and forecast of homeless refugees has started to rise since 2016 (around 436 000).

rather disapprove of building large refugee accommodations but are in favour of renovating existing buildings and new good quality building units for refugees.

For some, the evolution of Germany's housing market mirrors society's evolution, with housing conditions changing with respect to the financial evolution of the citizens and their way of living. For instance, the government tried to integrate the refugees on the open housing market (e.g. refugees were placed in available estates in the open housing market in East Germany) by allocating them in peripheral residential complexes (e.g. isolated complexes from Neu Olvenstedt quarter[5], Magdeburg), with the main goal of revitalizing the area. However, these establishments were targets of violence and attacks (Coburn, 2016). In addition to these, multiple other facilities around the country that host refugees were set on fire or flood (Blickle et al., 2015). These sorts of events are blocking the integration of the refugees in the housing market.

1.2. Goals and Objectives

Limited academic literature exists on the connection between the current exodus of refugees and the housing markets. The broader literature focusses more on economic migration, therefore, few recent studies[6] investigate the effects of the present refugee influx on the property market in Turkey (Balkan, Tok, Torun, & Tumen, 2018; Tumen, 2016) and Jordan (Hawarin, Assaad, & Elsayed, 2018). For Germany, relevant current scholarly work from (Rauck & Kvasnicka, 2018) studies the impact of the mass arrival of refugees on the residential housing rents on the shorter run. Since empirical research on forced migration and its generated implication in the housing markets is scarce, the present thesis responds to this gap by uncovering the changes reported in the housing market after refugees began to arrive en masse in 2015, results of interest to the public at large as well to policymakers. More specifically, this thesis contributes to the gap by constructing a model of influences of the different factors (e.g. social framework, stakeholders, economic factors) that arise from the complexity of refugee migration that impacts the housing market. This model can be adapted to any country. Moreover, the thesis identifies the common goals of successes and of barriers to the integration

[5] This quarter was part of the German housing program of 1980, where 556 acres were devoted to building units for 30 000 people from multiple working-class categories (e.g. professor, bus driver, salesperson) but also sheltered vulnerable persons (this was reported a good integration of the people). However, after the fall of the Berlin Wall, the vacancy rate in this quarter began to fall due to employment-related migration (Coburn, 2016).
[6] Other related studies to the subject relevant to the present research are presented in the literature research section.

of refugees into the German housing market by identifying different, time dependant, stages for the refugees and segmenting the housing market accordingly.

To achieve this aim, this thesis tackles the following question:

How do the present refugee influx dynamics influence the housing market?

and set of sub-questions:

- What are the key factors (e.g. cultural heritage of refugees, governmental policies, work and educational opportunities, third sector organizations) driving this influence?
- Which housing submarkets are influenced by the refugee influx?
- How will this influence steer the housing market's further development?
- Does this new situation generate investment opportunities?
- How extended is the influence of refugees on the housing markets?

However, to answer these questions, empirical evidence is required and clarification on the definition of the term influence used in the present thesis is needed. Influence is defined as follows:

The capacity of one or several entities to produce an effect on a specifically identified system. In the context of the present thesis, the identified system under study is the housing market. Each entity, who will be introduced extensively in the present thesis, produces, over time a change on the housing market and its afferent housing segments. This change is quantified from a series of effects that will define the extent of the influence.

This thesis evaluates the reasons that refugees chose Germany as their host country and focuses on the problems of housing allocation. The German property market is considered diverse, with regions of massive growth (e.g. in type A cities[7] and their metropolitan regions) and rapid contraction (e.g. east of Germany, where "ghost" cities were identified (Coburn, 2016)) and considerable gaps between 'affordable' and 'expensive' areas (Möbert, 2017). The key idea in this thesis is to use the variety offered by the German housing market to determine

[7] Classification by market type; e.g. A-type: major cities of international a national importance (e.g. Berlin, Düsseldorf, Frankfurt am Main, Hamburg. Cologne, Munich, Stuttgart), with larger property markets in all segments.

whether refugees can access any of its sectors. The objective is to establish a housing market segmentation, tailored to the profile of the refugees.

To achieve this objective, the present research determines the composition of the current wave of refugees, establishing their demographic profile. The profile of the refugee influx is tailored using key information from statistics. This action is paramount because it is necessary to differentiate the stages a refugee goes through in a host country until and after they are granted protection status.

As I have already stated, the government plays a major role in refugee development and integration. The initial dispersal of refugees within a host country and the distribution of refugees around its housing establishments are the federal government's responsibility. Through the responsible authorities, centralized (e.g. reception centres, follow-up accommodation) and decentralized (e.g. non-shared housing units[8]) accommodations for refugees are offered. Determining all the stakeholders who have any involvement in such housing provision is a further goal of the present research.

For instance, generally, housing developers have to deal with different housing requirements for various types of housing in response to the purchasing power of their clients. Therefore, the housing developers may find building housing for/letting housing to refugees attractive, as the payment is made by the government. Moreover, housing developers may also find other opportunities after refugees integrate. Analysing the types of refugees in Germany and establishing their behavioural patterns may thus help future housing developers establish a strategy for mid- to long-term investments. Therefore, the present research is also concerned with the long-term implications of permanent housing for refugees with granted protection status.

Since the present migration of the refugees has a long-term impact on the housing market, the policies of one county have to be tackled to favour housing integration. According to (IFHP, 2015), projects that seek to improve refugee housing provision should consider the following elements: housing policy and affordable housing allocation, zoning and planning regulation (e.g. in some countries the current rules for reusing an existing space may block the establishment of new housing for migrants) and housing and integration (social aspects of integration are linked with housing aspects through schooling, community interaction, employment, etc.). To the extent that was possible, these factors are further considered in the present work.

[8] DESTATIS

1.3. Structure of the study

In the following lines, the content of each chapter is briefly presented. Therefore, the thesis proceeds as follows.

Chapter 2 explores the importance and changes determined by migration globally and in Europe. The first part of the chapter describes the theoretical framework referencing the most important theories about migration (the push-pull theory, the neoclassical economic theory and the theory of network migration). The second part of the chapter indicates how the housing market has developed and changed over time concerning elevated migration levels. Using results from renowned researches, the impact made by migration on modification and expansion of cities is highlighted. It is addressed how the housing market (i.e. housing rents and house prices) is responding to migration flows and which could be the ownership rates among the migrants and their position towards the ownership sector over time. Moreover, it is assessed which impact has migration on neighborhood dynamics. The last part of the chapter examines the role of segregation in the housing market and depicts the changes driven by it. The differential ties between migrants and natives towards access to housing are highlighted.

Chapter 3 considers the history of migration, in particular, focuses on the migration fluxes starting from 2014 (known as the fourth refugee crisis). The statistics related to the refugee's migration period 2014-2018 are examined. They are used to form the profile of the refugee who resides in Germany. The next part of the chapter explores the impact of the refugees on the housing market by illustrating the demand. The demand is built on statistical numbers related to the following aspects: demography, education, country of origin and employment (also in relation to German language knowledge). Later on, the chapter focuses on the laws and policies enacted by the government with respect to the refugees. There, the available protected statuses which refugees can take and under which conditions are presented. The idea is to highlight under which circumstances refugees may produce an influence on the housing market. After, the procedures that refugees have to undertake to get a protected status is examined, highlighting the accommodation that refugees may receive consequently. Finally, the implication of the government and how the implemented policies and decisions produce an influence on the housing market is analyzed.

Chapter 4 focuses on highlighting the factors which generate an influence on the housing market. With the aid of the information displayed in Chapter 3 and the analysis of the social and economic frameworks, a model takes form. This model represents a synthesis that serves as a basis for the entire thesis. The last section of the chapter focuses on the division of refugees into four stages. The stages are set depending on various criteria connected to the refugees. This division is made to calibrate better their influence on the housing market. The status of the refugees is evolving over time, hence, their influence on the housing market may be different.

Chapter 5 defines the segmentation of the housing market in the five subsections (submarkets). Inside each of these sections, different specific dynamics are presented. Next, the chapter illustrates the development of the informal housing market sector in Germany. Then, it shows the evolution of informal letting, the informal market of brokers and how the black market takes form inside the housing market. The chapter continues by introducing the container housing market. The size of the sector is analyzed using data collection representing 30 case studies of container home settlements from Berlin. Afterwards, the new buildings constructed for the refugees are analyzed in the subchapter of dedicated housing for the refugees. The chapter proceeds with the examination of the social housing sector. The housing allowances that permit the construction of the dwellings which take part from the housing stock are introduced and the ownership and stakeholders are indicated. There are introduced also two additional attributes: the size of the sector and the tenants' structure. This helps to place the refugees in the context and to indicate how they may be able to access this sector. The last part of the chapter is concentrating on the open housing market sector. This particular sector has various characteristics to be tackled. Here it is examined to what extent the refugees are admitted to taking a house from this sector. A weighting of all factors, dependencies and effects is performed to be able to evaluate the overall influence.

Chapter 6 concludes the most valuable takings from the present thesis. There are summarizing the results of the analysis and the influence of the refugees on the housing market is assessed.

The sources used in the present research are referenced within the text and summarized with details at the end of the volume in the bibliography section.

Chapter 2 The Theoretical Framework

2.1. Introduction to the theoretical framework

A brief definition of human migration given by the United Nation refers to 'the movement of people from one place in the world to another for the purpose of taking up permanent or semi-permanent residence, usually across a political boundary'. The phenomenon of migration may be categorized according to the following: **internal migration** (e.g. moving in the same city, country, continent), **external migration** (e.g. moving in another city, country, continent), **population transfer**, which could be involuntary or forced (e.g. moving out of the region forced by the government), **impelled migration** (e.g. moving upon unfavourable situations within the area), **step migration** (e.g. moving progressively between places), **chain migration** led to migration fields in a clustered area, a designated neighbourhood (e.g. moving within connected groups, generally one person leaves and then gradually takes the others), **return migration** or **circular migration** (e.g. moving back to their birthplace) and **seasonal migration** (e.g. moving due labour climate conditions) (Hunter, 2005).

These definitions given above illustrate the complexity of reasons and contexts which preliminary answer the question: 'why do people migrate?'. Every motive has its concept behind and it has been theorized multiple times. A comprehensive conclusion or set of results can be found in (Hamilton, 1994; Massey et al., 1993; Muth, 1971). Several theories related to international migration highlighting their connection to the housing market are presented more in detail in the present dissertation.

The theories presented hereafter pave the floor for an overview and synthesis of the key conceptual and theoretical frameworks which are applied to the housing market and property prices in Germany.

2.2. The theories of migration

Although different categories can be identified, according to what presented above, the phenomenon of migration can be univocally traced back to the general **push and pull theory.** Economic, social and political factors push people to leave a country or a certain place and at the same time pull them to choose as end destination a specific country or place (Portes A. and Borocz, 1989). Many times, the push factors as lack of jobs[9], poverty, civil strife, war, political and religious persecution, while factors as higher standards of living, higher wages, labour demand[10] or political and religious freedom, are attracting them to other specific countries, where they think they can fulfil their aspirations.

The push and pull theory of migration has become the dominant migration model based on various environmental, demographic, and economic factors which are playing a role in migration decisions (Haas, 2008).

Hatton's reference research provided a benchmark for the current research because it develops an economic model demonstrating that potential migrants are taking their decision based on calculations and predictions made both for the host and home country (Hatton, 1995).

Another equivalent idea is suggested by the **neoclassical economic theory**, which indicates that people migrate due to the necessity of different labour conditions and the wage differences between regions. Also, international migration relies on the differences in supply and demand around countries, making people from low-wage areas move to the high-wage ones (Massey et al., 1993).

These theories are used as a foundation of the present research to identify the main push factors (e.g. civil strife in Syria and Iraq) that determined the current international migration wave from non-European countries and pull factors (e.g. strong economic situation, political stability, a guarantee of personal rights) that defined countries like Germany as a favourite final destination.

[9] For example, India's unemployed sector it is estimated to be around 10.8 million in 2014, but in reality, is much more, according to International Labor Organization. However, the number of skilled workers continue to increase yearly.

[10] To support their growing economies, developed countries are creating the demand of low skilled labor. For example, people from Mexico are attracted by jobs in US, because the wages are bigger for doing the same job, even if the unemployment rate in US (4.9% in 2016) is bigger than in Mexico (3.8% in 2016), according to tradingeconomics.com.

Both source and host countries play also an important role in the total number and the composition of the migrants (Borjas, 1989). The change of the political conditions in 2015 when Europe had to open its borders made possible the free movement of non-EU migrants towards countries like Germany, Sweden, Hungary, and Austria so that these countries received 2015 around two-third of asylum applications of overall Europe.[11]

The migration causes multiple changes inside each county at the macroeconomic level (the labour supply decreases and wages are rising in the origin country whereas the opposite is happening in the host country), at the microeconomic level (the economic condition of the individuals is generally deeply affected in both senses) and also to the relationship between the two countries.

Relevant for the present thesis is also the **network theory of migration** which affirms that the existence of migrant networks where people share helpful information (e.g. concerning accommodation, finding a job, financial assistance, etc.) make easier the movement from one country to another and could influence their decision in choosing the location where they will settle. The migration often happens based on an existing network of people with a similar background, who can help for a faster integration process. Networking also represents a fundamental source of information for earning opportunities and affordable housing availability. People choose not to move where there aren't opportunities for integration, employment and housing.

Faist's research on network migration suggests that all interchanges of information between a group, which he names the transnational social space, should be based on three criteria: **reciprocity**, characterized by the social norm of equivalence (e.g. contact equivalent workers in different countries) **exchange**, characterized by exploiting the possibility of direct and easy communication (e.g. language) and **solidarity**, a mobilization of collective representations (e.g. religion, nationality, ethnicity, etc.) (Faist, 2000). Additionally, another study on the same topic defines a migrant network as an inherently social process that is organized through networks forged from everyday interpersonal connections that characterize all human groups (Massey et al., 1993).

Expanding networks could produce reduced costs and risks. For instance, for the first migrants who flee in an area where they don't have another person to ask about what to expect

[11] https://en.wikipedia.org/wiki/European_migrant_crisis

at their arrival prior to their departure from the country of origin, the living and transportation costs are inevitably higher compared with those who have connections in the same destination. Once relationships are evolving, a strengthened social structure takes form, to help migration become self-perpetuating. The more the networks grow, the less are the risks for each person (Massey et al., 1993).

Another relevant aspect of the network theory of migration highlighted by Samers is that not every network is trustworthy. Some of them revealed to be dangerous, for instance promising a safe arrival to the host country, turned out to be smuggling and trafficking networks where migrants are forcibly exploited (Samers, 2010).

Sometimes, addressing the smuggler networks is the only viable option to reach the goal of seeking security and protection in the host country. This was, for instance, the case after the political decision of closing the borders in March 2016 (e.g. the Balkan Route) and the deal EU made with Turkey (i.e. prevent illegal migration from Turkey to EU (European_Council, 2016)). As of result of these two decisions, most migrants were blocked in Greece. (Digidiki, 2017).

The theories reviews showed in the present chapter are generating the conceptual framework of the subject and offer a better understanding of how migration is viewed by the researchers over the years. The review from the literature is significant because it displays necessary information and results related to the evolving housing market in relation to the added customers, i.e. the migrants. From a comprehensive economic point of view, migration can be seen to have a dual function, summarized as follows: for capital, it is a source of more abundant and less expensive labour; for the migrants, it is a means of survival and a vehicle for social integration and economic mobility (Portes A. and Borocz, 1989).

2.3. Migration and Housing Market: globally and in Europe

This subchapter is presenting a series of studies from relevant literature connected to the housing market. These studies offer a general overview of the relationship between migration and housing markets and are significant for constructing the analysis on the influence of the refugees on the housing market. The studies show also how migration can change the dynamics within a city, how it affects the housing market of that city and how it can alter the housing prices.

A number of authors have struggled to define how migration can influence the housing market. For instance, (Saiz, 2006), was interested in the housing market changes of a receiving country after the settlement of a large number of migrants. In his research, he took as an example the period when people migrated from Cuba to the USA in 1980.[12] The results of the study showed that rents in Miami increased from 8% to 11%. Additional research completed the results showing that rental units of higher quality were not affected by the immigration wave (Dustmann, 2007).

On the other hand, Filer (1992), studies the housing mobility patterns of natives related to the arrival of a larger number of immigrants. He considers that there is a strong connection between the two. The results show that areas, where larger numbers of immigrants live, are becoming less attractive for natives, mostly among low-skilled and less-educated natives.

Studying the effects of migration on all ethnic groups, Filer presents results also for the minority groups (Filer, 1992). These groups don't show any discriminatory action as natives do (e.g. moving away from the area where new migrants are settling). The ones who choose to leave a neighbourhood, do it merely for working reasons.

Most immigration in Western countries is suburban and is based on the success of previous immigration processes. For example, Brooklyn was the city where all the immigrants were first coming to the USA. They were settling in the area trying to make a living and establishing chain–networks among migrants peers in order to evolve. Brooklyn was the most transited city in America and because of its successful immigration stories now are the second most expensive area to live in the North of the USA after Manhattan (Saunders, 2012). This

[12] Mariel Boatlift was a mass emigration of Cubans which started in 15 April and ended in 31 October 1980. The Castro regime announced that people could freely emigrate to the USA from the Mariel port.
Source: Wikipedia

shows that a city is more attractive when it has multiple success stories of migrants who integrate themselves into the community and reach good living standards. The migrants develop patterns (e.g. started their journey from a basic level of living in the first arrival city of the host country and then evolving and moving to other cities) which they use to help other newcomers. The integration process is recursively optimized and also the local economy adapts to it resulting in slender and more dynamic market dynamics.

According to (Saiz, 2006), in American cities, the growth of housing rents and house prices was definitely associated with immigration inflows. The demand for housing is especially increased by a large number of people who arrive at a certain destination at once. The changes are seen in the rent flows (e.g. the more migrants are coming into the city, the upper goes the rent price and the reverse). Therefore, Saiz states as a rule of thumb that a 1% increase in immigration flow in metropolitan areas is connected with a 1% increase in rents and house values[13]. He furthermore emphasizes that a household in metropolitan areas spends 1/4 of the income on rental payments.

Another study performed by (Ottaviano & Peri, 2006) compares natives of all skill levels with immigrants. It turns out that immigrants have lower house ownership rates. In simple terms, therefore, for immigrants, it is more difficult to take upon a house in the open housing market.

Similarly, turning to the European landscape, an Irish research (Bradely, 1999) has concluded that the refugees in Ireland have extreme difficulties entering the owner-occupied market, not only because of lack of money at their arrival in the country and the slow start which they may have in finding a job with a good income. Additionally, it results quite difficult for the refugees to find affordable accommodation in the open housing market because a very high demand already exists, opposite to a shortage in availability.

Another research study from Ireland showed that housing and employment of refugees are interrelated (Dibelius, 1999). The refugees are normally receiving a monthly allowance for housing rent and expenses from the government. Nevertheless, without any job contract and based only on governmental subsidies, the refugees/migrants find themselves in a very difficult

[13] In his study (Saiz, 2006) he took the US foreign-born (average of 12% in the 2000 census), explaining that to increase this percentage by 1%, is needed an immigration flow about 1.15%. However, increasing 1% of specialized workers will lead to a decrease with 0.03% in their average gain.

position to have access to the open housing market. The available housing options for them are reduced to the ones offered by the government.

Another perspective to which was given intensive attention is the impact of immigration on neighbourhood dynamics. Saiz & Watcher calculate this impact by creating a model based on ethnic clustering preferences among migrants and income heterogeneity of the native population. Their views led to results as the equilibrium in the housing market is kept as long as the poorest natives are living in immigrant neighbourhoods. In response to this fact, the richest natives pay for better housing localization. On the other hand, as long as natives (i.e. rich or poor) don't care about ethnicity and decide to blend through immigrant quarters, an equal housing price increase in the neighbourhood is registered. Therefore, the housing price balance is kept whilst segregation is avoided (Albert Saiz & Wachter, 2006).

Any success story on integrating refugees/migrants into the housing market inside a city provides insights into how things should be tackled. Amsterdam's example of allocating housing for refugees/migrants gives, for instance, a valuable guideline on which type of situation to avoid in order not to fail with refugee's integration. Here, refugees/migrants tended to settle in the peripheral areas of the city at their arrival. They took upon the type of houses they could afford and slightly modified them if possible and if the legislation allowed it, in order to create a small business (e.g. a shop, food supplies, modest restaurant, manufactural artisans, etc.) which could generate additional income to the subsidies the government provided. However, even if people had at the ground floor of the residence building the possibility to open a small business, the neighbourhood was separated from the city by for instance big parks and there were fewer people to sell their products. The planning principles of 1950 (e.g. zoning separation of residential, industrial and commercial, low population density, big grassy empty spaces between buildings) were making it more difficult for the refugees/migrants to integrate and for the area to evolve.

The responsible authorities noticed that the entire area was failing and the integration of migrants was not happening. As a response to this situation, the biggest development in public housing in Europe began (Saunders, 2012). The authorities decided to demolish the buildings and to create new ones with spaces destined to host a mixed-use development. They allowed both people with low-income and with mid-range salaries to the neighbourhood, by providing them with an array of accommodation with prices that fit the total income of any family (e.g. from low-income to high-income). This measure encouraged all types of households to move, creating in this way a social mix.

Urban planning, architectural planning, educational and social policies were working together into transforming a neighbourhood that generated income, was safe, and where people wanted to live and build connections. The neighbourhood has been transformed into an area of interest for people from all around the city, who were eventually interested to come to an event held there. To this success is added that after 10 years, some migrants/refugees who first arrived in the neighbourhood, were able to purchase a house and not renting any longer. Due to the proper development of the neighbourhood, migrants/refugees have been completely integrated. The integration was possible because the key actors of the housing market worked together: national and local governments, housing associations, landlords, refugee-assisting NGOs such as mediation services and refugee community organizations (Mateman, 1999).

2.4. Segregation in the housing market: global models

Residential segregation represents a key figure in the present research. It is defined as the concentration of ethnic, national origin, or socioeconomic groups in particular neighbourhoods of a city or metropolitan area (MPI).[14] Moreover, it is seen as a side effect of urbanization and large-scale immigration, having harmful effects on individuals, local communities, society, unemployment, poor health, and social rifts.

People who arrive in a new country are in the search of neighbourhoods that have a people composition with similar ethnicity. Furthermore, immigrant families tend to become stuck in isolated communities or to remain in the same area they arrived for a longer period. Usually, those neighbourhoods have low-quality housing and low paid jobs. On the other hand, later on, their children may choose to experience different areas by moving into mixed neighbourhoods.

Historically speaking, residential segregation was mostly a transatlantic phenomenon (e.g. Black segregation[15]). However, it appeared in many European countries, experienced mostly by certain ethnic groups such as the Roma groups. These groups are generally moving around without settling in specific areas.

Housing segregation has a plurality of causes (Michael B. de Leeuw & LLP, 2008)):

- discrimination;
- past and current government policies;
- income differentials;
- preferences in the selection process.

Discrimination is determining disparities in the housing sector and facilitates segregation. Immigrant enclaves in the USA are perceived by the natives as non-attractive areas to live in (Albert Saiz & Wachter, 2006). Even if the prices for a house are higher, they are searching to live in areas predominantly with natives.

Any mistaken political decisions regarding housing provision and housing allocation can conduct to housing segregation too. Multiple examples from the U.S. showed that choices

[14] http://www.migrationpolicy.org/research/residential-segregation-transatlantic-analysis
[15] They experienced a high rate of segregation, compared with other races, and severe prejudice and discrimination in urban housing markets (starting with 1900 to 1960). Discriminatory barriers make Black citizens to achieve hard a desirable residential location. (Smelser, Wilson & Mitschell, 2001)

made by local elites, public authorities, and the government are key in shaping urban housing in the U.S. and that the public housing projects promoted segregation within neighbourhoods (Goldstein & Yancey, 1983). Basically, by adopting a policy regarding public housing at the national level (e.g. the Housing Act of 1937), the responsible authorities were having the authority to relocate people (i.e. especially people from poor neighbourhoods) and in turn to begin redevelopment of the area (Schill & Wachter, 1995).

Similarly, the American authorities imported from their European peers an important tool that allowed them to produce segregation: zoning. The city planners were marketing exclusively single families districts and through adopting zoning policies they were excluded from the neighbourhood other functionality they considered unnecessary (Baar, 1992). Other officials prevented through zoning Chinese immigrant businesses to take form in certain neighbourhoods in California and others prevented African Americans to buy homes in all-white neighbourhoods (e.g. in Atlanta, Baltimore, Dallas, and Richmond) (Rodgers, 2001; Toll, 1969; Vose, 1967).

The differences between opportunities and resources in the neighbourhoods are noticed through well-developed areas that have safer streets, higher home values, better services, more effective schools and more supportive peer environments than others (Smelser N.J., 2001). Not every household could purchase a house in such neighbourhoods. Income differentials among households give purchasing constraints that drive segregation in the neighbourhood.

Housing segregation by preference in the selection process is presented in the current thesis by highlighting the results of four paired-testing studies (from 1977, 1989, 2000 and 2012). These studies were performed in the USA and were sponsored by the U.S. Department of Housing and Urban Development (HUD). They were conducted nationwide, trying to answer the following hypothesis: minority home seekers (e.g. African-Americans, Hispanic-Americans, and Asian-Americans) receive a different treatment compared to natives from private real estate agents and rental property owners. By adopting this behaviour private real estate agents and rental property owners establish in this way patterns of housing and neighbourhood inequality.

When it comes to buying a house, the process itself is very complex. Therefore, it has been difficult for the study from 1977 to determine an exact percentage of such registered inequality. However, the study performed in 2012 on housing rental in several neighbourhoods has reached the conclusion that white people receive more favourable treatment than equally qualified black people or Hispanics, with around 28% (Turner et al., 2013). This study showed also that white people receive better treatment than black people in 40.7% of the cases (Turner et al., 2013).

Learning from these experiences could help to find new ways of avoiding the formation of housing segregation.

With the arrival of a large number of refugees in the past years, Europe has to establish a housing solution that prevents housing segregation. It has to find a solution for both temporary and permanent settlements for the refugees and to avoid not transforming any residential areas in ghettos. This is not an easy task considering also that according to the International Federation for Housing and Planning (IFHP), many European member states are facing housing shortages (e.g. Czech Republic, Denmark, The Netherlands, Poland, and Sweden) in the affordable sector of the housing market and the governments are offering lower housing and social support subsidies (IFHP, 2015). As a result of these facts, the private rental housing sector is favoured and many property owners are taking advantage of the present situation offering higher rents.

According to the IFHP, some countries, like The Netherlands have already implemented a model that involves several local actors (e.g. housing corporations, NGOs, local churches, etc.). In order to avoid housing segregation, The Netherlands adopts a model that distributes the refugees evenly within cities, taking into consideration the number of inhabitants that are already living in that municipality. The distribution is made all around the city trying to find suitable housing location which is not concentrating all the refugees in the same area.

Chapter 3 Portraying the refugees

In order to provide a formal frame of reference for the study, the refugees are defined as follows: '*People fleeing conflict or persecution. They are defined and protected by international law and must not be expelled or returned to a situation where their life and freedom are at risk.'* (UN Refugee Agency). This statement is significantly important since the destination country doesn't have the right to expel a refugee before ascertaining its rights. For instance, in Germany, four different forms of protection are being applied:

- refugee protection – as a result of the Geneva Refugee Convention;
- entitlement to asylum protection specified in Article 16a of the German Constitution;
- subsidiary protection: in section 4 subs. 1 of the Asylum Act (AsylG);
- ban on deportation – in Section 60 subs. 5 and 7 of the Residence Act (AufenthG).

Refugees who are getting entitlement to refugee protection and asylum protection, obtain a residence permit for three years with unlimited access to the labour market and are entitled to family reunification. The residence permit and later on, the settlement permit, (received by the refugees if certain requirements are met) are part of the pull factors that could make refugees willing to reside permanently in the host country.

Subsidiary protection[16] is granted by the Ministry. Besides this, a residence permit of one year is given. It can be approved another two years if the refugee still needs protection. The refugees who are granted this type of protection have also unlimited access to the labour market. However, under this protection status, the refugees are normally excluded from family reunification possibilities.

Each of the four refugee protection forms has a specific set of rules to be followed. If none of the first three forms of protection should be applied, the last solution is a ban on deportation. That is to say that the person cannot be expelled from the country. Under the fourth

[16] Is granted if the person '*is threatened by the death penalty, torture, or inhumane or undignified treatment or punishment in their country of origin.'* (Source: (migration, 2018))

form of protection, the refugees receive a one-year residency permit which can be later extended. Afterwards, the settlement permit is received after 5 years.

The refugees are considered to potentially produce an influence on the housing market only if they receive any of these four protection statuses. By receiving one of the four protection statuses, the refugees are, *de facto*, added to the population of the country. With respect to the different protection forms they can receive, their influence on the housing market can differ. Either they can produce an influence on the housing market on a given period of time (i.e. the time-frame of the protection status), or they can extend their influence on the housing market to an indefinite time (e.g. if the permission of permanent stay in the country is granted, or they finalize the naturalization process). Thus, the present thesis considers specifically the refugees who are granted any of these four protection statuses.

A refugee who submits an asylum application is considered an *asylum seeker*. For this reason, in the present dissertation, a reference to *asylum seekers* rather than to *refugees* is often made when reporting official numbers and statistics. The term *asylum seeker* is associated with '*people who are seeking protection from political persecution*', according to Article 16a of the German Constitution or '*are seeking international protection*', according to EU directive (Katz B., 2016).

3.1. A brief history of refugees migration

In the past decades, from the 18th to the mid of the 20th century, the European landscape was mostly defined by emigration, due to the difficult conditions in the home countries, war or poverty (Lehmann, 2015). Over 30 million migrants left the continent to go to the American continent, where at first, proper documents to enter the country weren't necessary. This has changed starting from the end of the 19th century when were introduced new means of people selection (e.g. border controls, quotas, literacy tests, etc.) (Bundy, 2016).

In more recent years, Europe transformed from a continent of emigrants into a continent of immigrants.

Based on the analysis of high migration concentrations over the past decades, researchers have identified four European migration crises.

The first one was created by the First World War and the Russian Revolution[17] together with the movement of the people between Greece and Turkey (1.2 million people between 1922-1923). In addition to the refugees created by the First World War, 1.1 million people were repatriated from Russia to Poland (1918 - 1925) and another 900 thousand Polish citizens were repatriated from the lands occupied by the Germans (1918 - 1921) (Kulischer, 1948). In this period the first rules, institutions, and passports took form (e.g. Nansen passports[18]).

Between 1850 and 1914 voluntary migration was registered. People migrated to countries of the New World (Australia, Argentina, Brazil, Canada and the United States), totalling about one million per year (i.e. the World Bank report highlights that the entire population which migrated consisted of 10% of the entire World's population) (Solimano, 2001). The effects of these movements are seen in the foreign-born population composition, in the USA registering 15% of foreign population in the later 19th century (O'Rourke, 2001) and to the contribution to the national income level pro capita as well to the specific factor price (i.e. the prices of which land, labour, capital, and entrepreneurship are sold) existing in the '*Atlantic economy*' (Solimano, 2001).

The second major crisis was due to the Second World War. By May 1945 there were more than 40 million refugees worldwide. Organizations like Allied Command and the United Nations Relief and Rehabilitation Administration (UNRRA) were formed. They helped to

[17] 15 million Russians to Europe outside the Soviet Union (1917-1922), (Kulischer, 1948)
[18] Internationally recognized travel documents, issued by the League of Nations.

place 800 resettlement camps which served as home for seven million people. By 1951, only 177 000 persons remained in the camps. The rest found another type of accommodation. In the same year (i.e. 1951), UNHCR took form.

After 1950, the European countries registered essential economic progress by adopting global capitalism. In achieving consistent wealth, they attracted foreign workers (from West and Northern European nations, Turkey), increasing in this way the immigrant population (Bundy, 2016). For instance, the Turkish immigrants were the most important group of all the people who migrated to Germany. As a consequence of the post-war demand for labour, the Turks were brought as 'Gastarbeiter' (i.e. guest workers) to help to reconstruct the affected parts of the country.

The government decided to not fully integrate the guest workers in the country. For instance, the Turks were not granted German citizenship. As a result, this choice generated multiple social conflicts which lasted until the present days. 22% of Turkish citizens who are living in Germany still had no German nationality by 2006, despite being born in the country. Even if the legislation has changed in January 2000 and the government granted citizenship to German-born children of foreigners[19], the Turks cannot hold double citizenship (Daniels, 1999).

The third refugee crisis has been classified as starting from 1990 when political crises and armed conflicts took place in certain countries. Countries like Afghanistan and Iraq which were at war generated a large number of refugees which needed protection. This is reflected also in the numbers of people who applied for asylum in Europe. The numbers in Figure 1are gathered over a period from 1989 to 2006.

Starting with 1990, Germany stands out as being the country which accepted the highest number of asylum applicants. In 1992 the number of incomers arrives at about 440000[20], which represents almost two-thirds of that year's total. By 1996, the registered numbers of asylum application in Germany began to fall. Over the years, the numbers of arrivals overall the countries from Figure 1 started to fall again and after 1999 the number of refugees remained unchanged until 2003 when it was registered for another fall (Bundy, 2016).

[19] If at least one parent has a permanent residence permit and has been residing in Germany for at least eight years.
[20] http://ec.europa.eu/eurostat/documents/3433488/5285137/KS-SF-07-110-EN.PDF/c95cc2ce-b50c-498e-95fb-cd507ef29e27

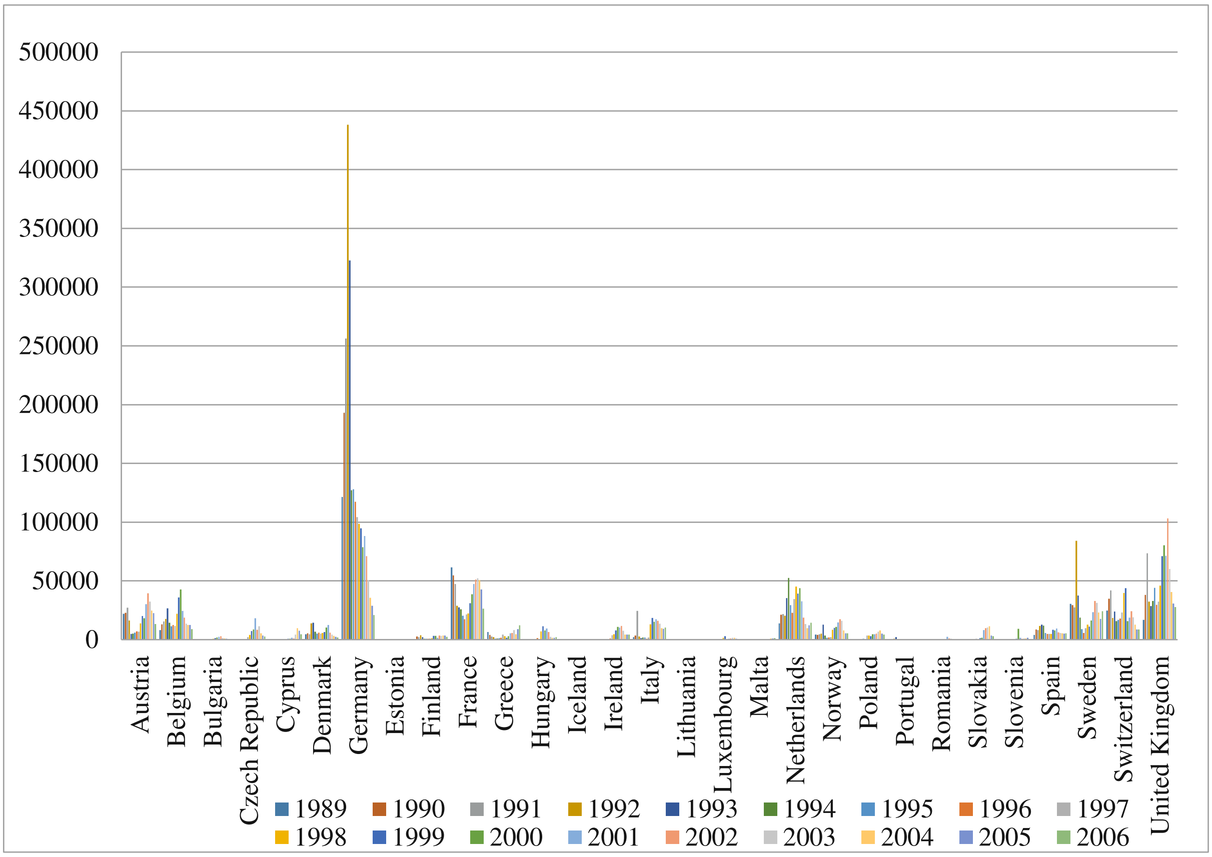

Figure 1 *Asylum applications 1989-2006 in Europe.*
Source: Eurostat

After the 9/11 attacks, the European countries have intensified the refugees' acceptance rules, by introducing more restrictions and controls at the border. To many people, access to the European zone was denied.

The war in Syria, which started in March 2011 created a large number of refugees. From that year on, an estimated 11 million Syrians fled their country to escape the war. They headed towards the neighbouring countries and to Europe. According to UNHCR, 4.8 million fled to Turkey, Lebanon, Jordan, Egypt, and Iraq and 6.6 million were internally displaced within the countries.

The numbers drawn in Figure 2 show that more than 1 million people (from 2011 to 2016) fled to Europe. In addition to the refugees from Syria, the next largest number of refugees who migrated to Europe is from Afghanistan. Also, refugees from Libya, Iraq, Somalia, Sudan and the Democratic Republic of Congo are added. These countries take part in the *fragile countries'* category. The Syrian war, the armed conflicts from Afghanistan and Iraq, and the poverty which affected human population groups from countries like Somalia, Sudan, or the Democratic Republic of Congo are considered to be the fourth refugee crisis (Bundy, 2016). This fourth crisis is of paramount interest in the present thesis. Therefore, hereafter, the composition of the refugee's fourth crisis is presented using several statistics related to the topic.

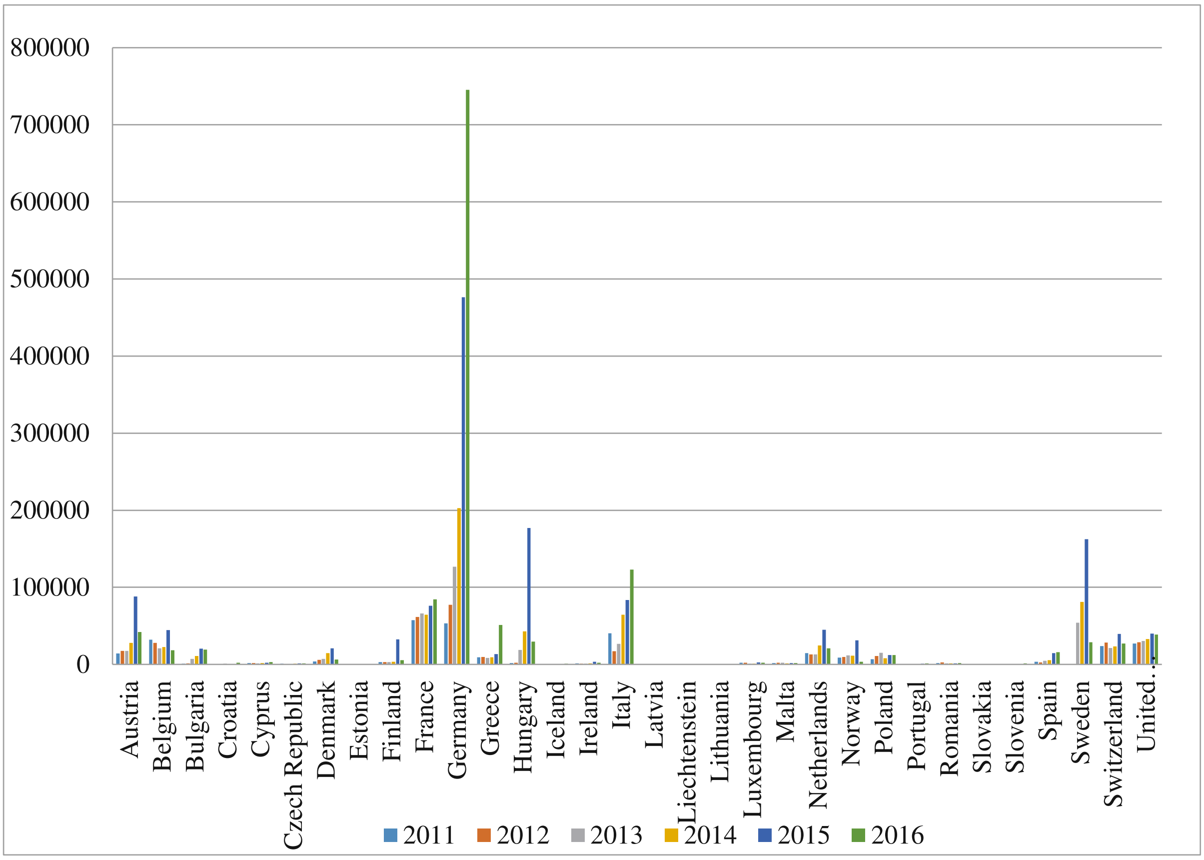

Figure 2 *Asylum applications from 2011-2016 in Europe.*
Source: Eurostat (online data code: migr_asyappctza)

In addition, the numbers from Figure 2 indicate that refugees weren't distributed equally around Europe. Germany is the country that registered the largest number of asylum applicants, i.e. 38%[21] of all the first-time asylum applicants accounted for the total sum registered in the EU Member States. The number of asylum applications began to rise in 2011 and arrive at a peak in 2015. In this year 34% of the total asylum application (from 2011-2016) in Europe were registered only in Germany. In 2015 the registered number of asylum applicants is as large as the total sum of the refugees registered beginning with 1992 to 2002 (Figure 1).

Figure 3 illustrates the numbers of asylum seekers applicants in Europe, from the primary non-EU countries, registered on a period from 2011 to 2016. As noticed in the graph, the majority of non-EU asylum applicants were from Syria. They represent a high percentage of the total number of applications (from 2011 to 2016); more than half of them are registered

[21] Eurostat, 2016

in Germany. Afghanistan is the second-ranked country after Syria with respect to the asylum application number, then it follows Iran. It has to be noted that Eastern European countries like Kosovo and Albania, still contribute to the overall flow of asylum seekers (internal European migration), but with low percentages.

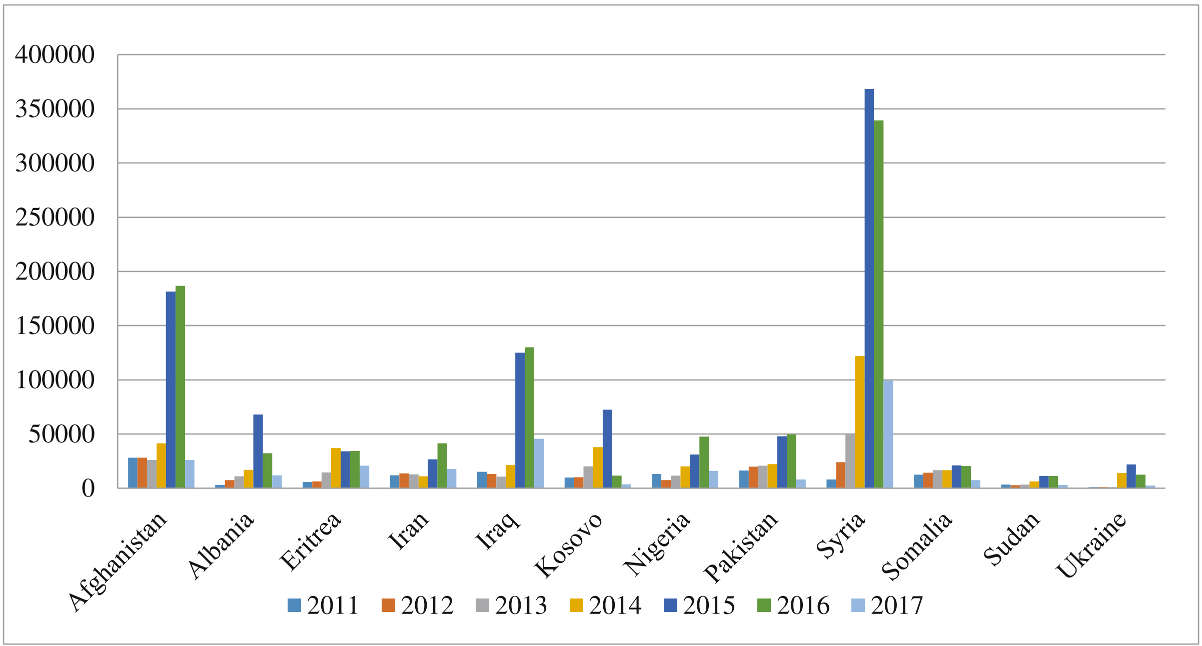

Figure 3 *Primary origins of asylum applications from 2011-2016 in Europe, by country of citizenship.*
Source: Eurostat (online data code: migr_asyappctza)

Beginning with 2011, the number of immigrants in Germany started to rise, increasing by 46% in 2014 compared with the previous years. In 2015 it reached around 2,137,000 million people from which roughly 860000 people departed from Germany to seek a different destination. The net migration of 1.14 million people can be accounted for in Germany. It represents the highest number of asylum applicants that Germany achieved in its history, despite, as shown in Figure 1, Germany has been since a long time (i.e. since the late ’80s) a primary destination.

The numbers provided in Figure 4 by UNHCR show that from 2013 the total number of applications in Germany for both asylum seeker status and refugee status has started dramatically to rise. As a result, the massive immigration of refugees in Germany creates a relevant study case for analyzing the impact they have on the housing market. The analysis is focusing on topics related to the housing market and the main drivers and decision-makers within the refugees’ integration process.

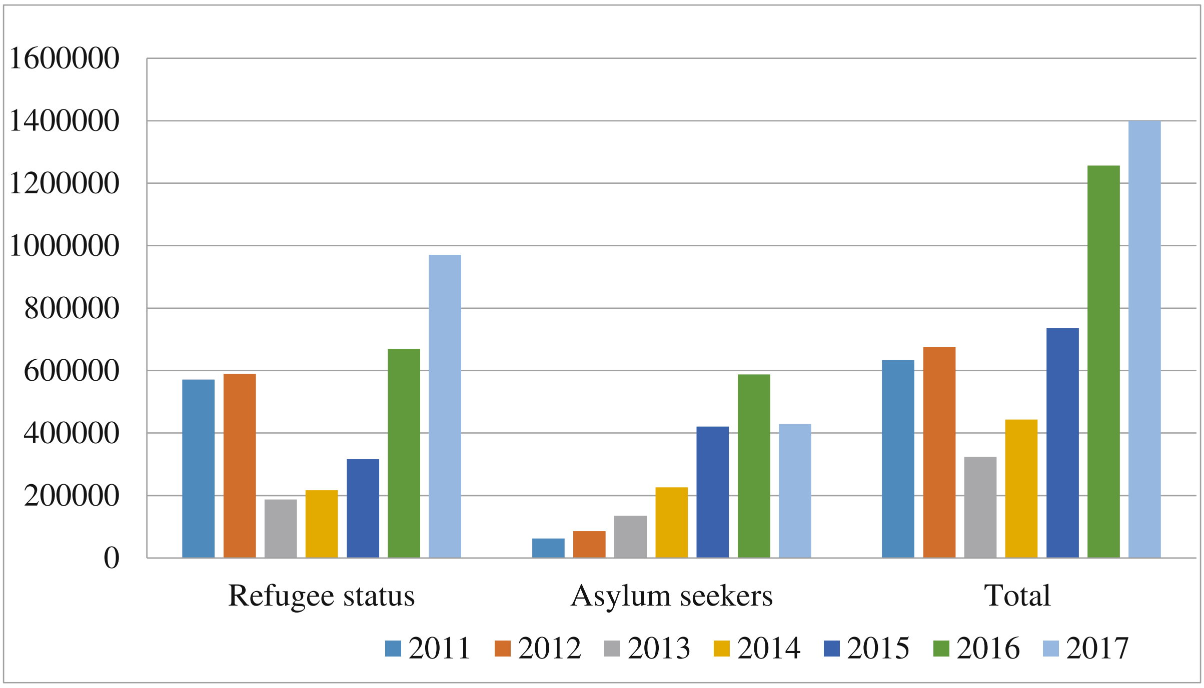

Figure 4 *Refugee status and asylum seeker applications from 2011-2017 in Germany.* Source: UNHCR

Based on all the information presented so far, in the next sub-chapters, a social framework is presented, which includes the examination of the current wave of refugees linked to the theories from the literature research: the push-pull theory, the neoclassical theory of migration, and the network theory. The results from this correspondence are used to shape the connection of the refugees with the housing market from a social perspective and to identify all other stakeholders involved.

This is used to create eventually a model aimed at best describing the local housing market concerning the refugees' demand, which sectors are most affected, who is generating additional influences and how these influences are connected. The model is illustrated as a scheme. The model is used as a point of reference for the entire analysis of the present dissertation.

3.2. Portraying the generation of demand in Germany

In order to find out the consistency of the group of refugees that creates the demand for housing, the demographic characteristics are analyzed. For this purpose, Figure 5 collects the total number of asylum applicants in Germany from 2009 to 2018. Then, the total number of asylum applicants are divided into males and females of different groups of age. As a result, the biggest number of asylum applicants registered is represented by males from 18 to 34 years old. They represent around 34% of the people who arrived in Germany for the whole period (i.e. 2009-2018). Minors (i.e. males and females aged under 14 and males and females aged from 14 to 17) round up almost the same percentage (i.e. 35%). On the other hand, the lowest numbers of asylum applicants recorded are from the group of people registered in the categories of males and females' group of 65 and over 65 years old (it sums up to around 1%).

Furthermore, the percentage of asylum application of males and females up to 35 years old is in 2015 around 80% of total applicants of that year. The trend is rising in 2016 and 2017, reaching 83% of total applications from each year and starting to fall in 2018 to 82%. Important to be noted is that from the young people registered (up to 35 years old) more than 50% are men (2015 – 51%, 2016 – 55%, 2017 – 51%, 2018 – 48%).

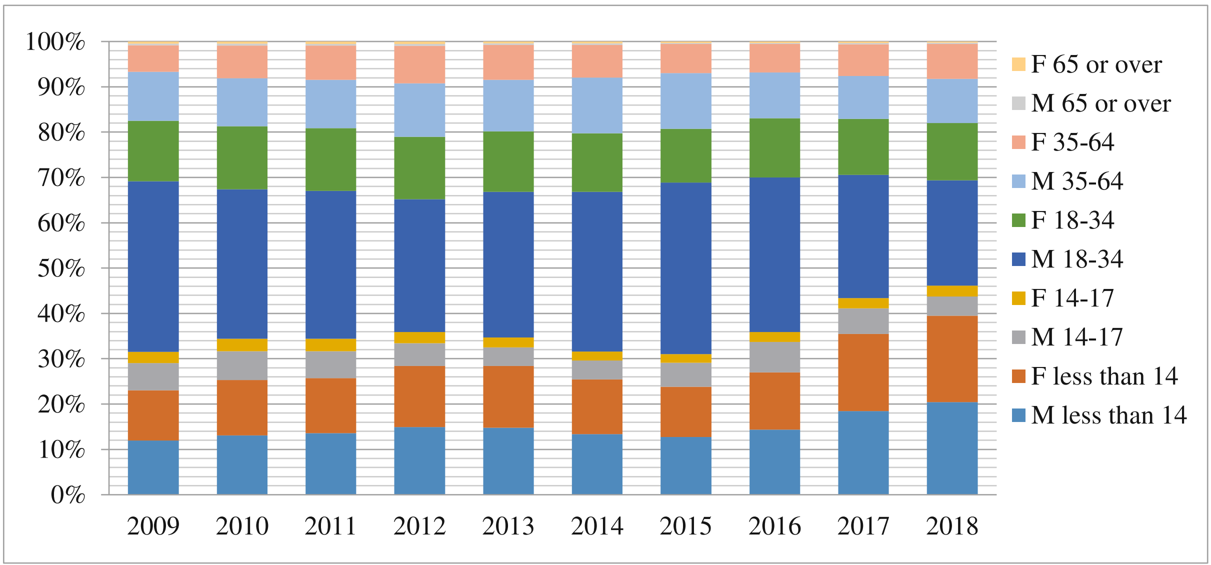

Figure 5 *Asylum applicants from 2009-2018 in Germany, Males (M) and Females (F)*
Source: Eurostat (online data code: migr_asyappctza)

Figure 6 portrayed the first 14 countries with respect to the number of asylum applications registered in Germany from 2008 to 2016. An increase of 40% was registered in 2016 from Syrian asylum applicants in comparison with 2015. The graph shows that Syria is the non-EU country with the largest number of asylum applicants. They represent 28% of total applications (from 2009 to 2018) while 54% of the applications were filled in 2016. The East European countries contribute to the asylum seekers' flow too. Considering the total applications from 2008 to 2016, Albania reaches 5% of the total applicants, Kosovo 4%, and Ukraine 1%.

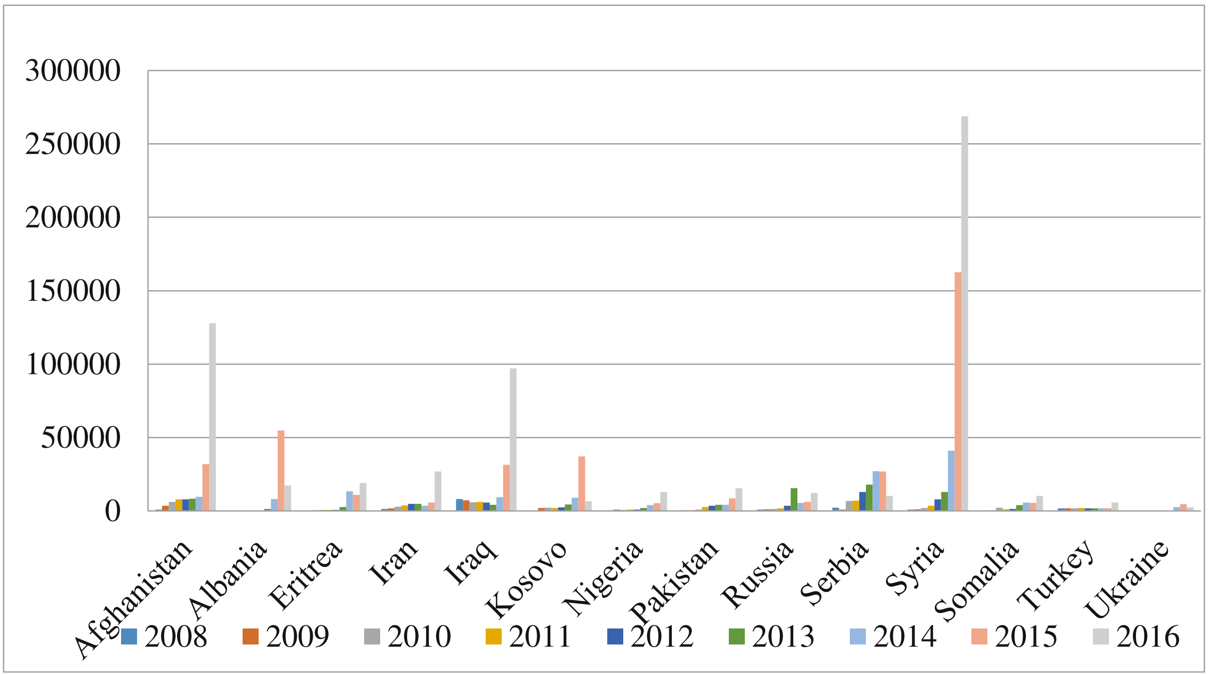

Figure 6 *Primary origins of asylum applications from 2008-2016 in Germany, by country of citizenship.*
Source: Eurostat (online data code: migr_asyappctza)

The demand for housing is related to the income of every household, therefore the employment of asylum seekers is playing an important role in the further development of the housing market. Because of the large number of asylum applications in Germany that had to be processed, the period of asylum procedure had to be expanded. Therefore, from the total number of allocated jobs for refugees, only 9% were occupied, from which the majority were taken by Syrians (OECD, 2017).

Therefore, Figure 7 and Figure 8 picture information about the level of education of the asylum seekers from the first 10 countries of origin (i.e. the asylum application in Germany of the top 10 countries with respect to the total number of applications). In Figure 7 data from 2015[22] are gathered and in Figure 8 from the first half of 2017[23]. The information from the

[22] The year when the asylum and refugee application has started to rise dramatically.
[23] The year when the most asylum and refugee application were processed.

graphs is from two different years, to compare them and to find out similarities or changes concerning the educational background of the asylum applicants. The educational background of asylum applicants plays an important role when getting a job. Having a job, thus, a regular payment can help refugees to enter the local housing market. Hence, evaluating their educational background helps in shaping their profile.

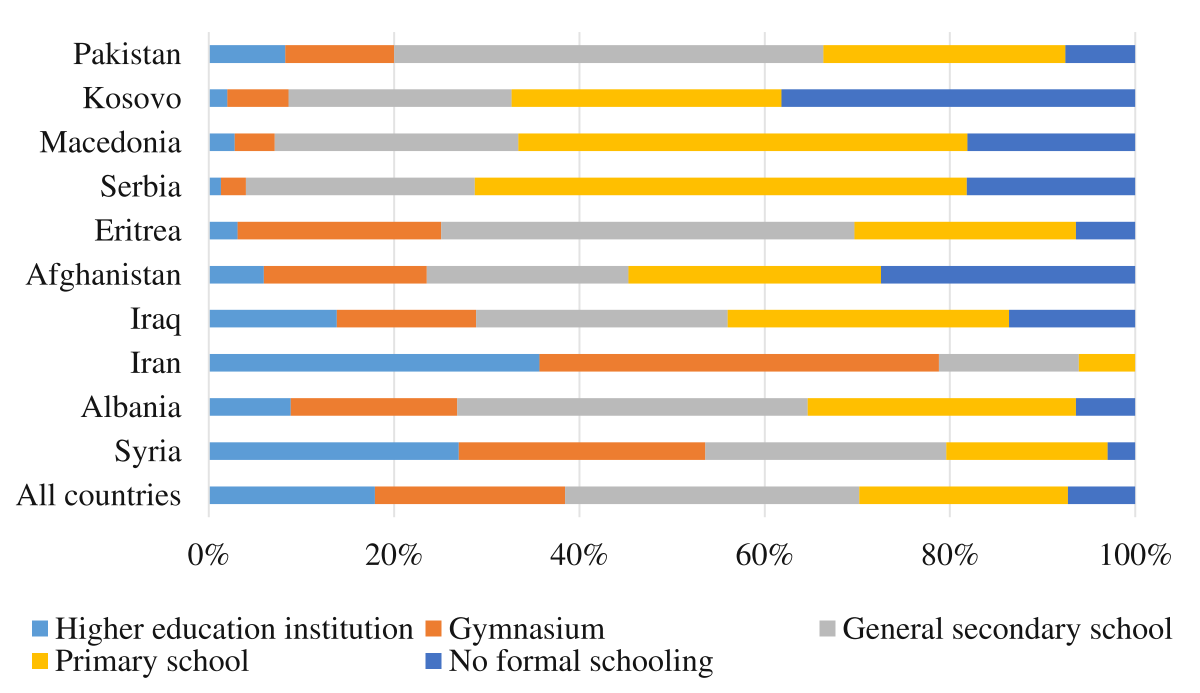

Figure 7 *Educational institution attended by adult first-time asylum applicants from all countries of origin and from first 10 countries in 2015, in percentage.*
Source: © SoKo Data (BAMF/OECD), 2016

The educational ranking in Figure 7 and Figure 8 is divided into 5 categories which correspond as follows: higher education institution (university, technical college), gymnasium (11 or more years of secondary schooling), general secondary school (trade or technical school), primary school (up to four years of school attendance) and no formal schooling (not literate, did not attend a formal school) (Rich, 2016). Comparing the two figures Iran is leading both in 2015 and in 2017 having the highest educational degree from all the countries whose applicants registered in Germany. Syria is the second-ranked country of origin of refugees that have a high degree registered in 2015 and Turkey in 2017.

In 2017, Turkey is also counted through the top 10 countries whose asylum seekers' destination was Germany. Notably is that they represent the second-highest percentage of asylum applicants with a degree from a higher educational institution (about 32%), while the highest number of applicants with a high degree is from Iran. In 2017 there are registered with 3% fewer asylum applicants with a high degree, compared to 2015. By contrast, Serbia in 2015 and Somalia in 2017 are countries of origin with the lowest rate of asylum applicants who have a high degree and a considerable amount of people who have no formal schooling.

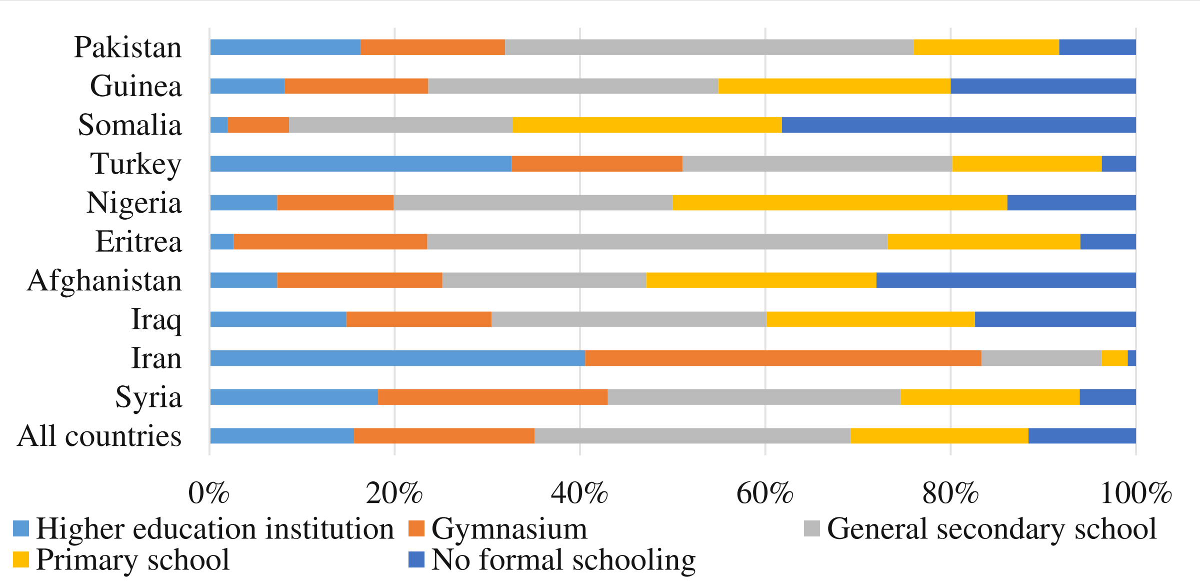

Figure 8 *Educational institution attended by adult first-time asylum applicants from all countries of origin and from first 10 countries in the first half of 2017, in percentage.*
Source: © SoKo Data (BAMF), 2017

Entering the labour market must be part of the refugee's integration plan in every country. This cannot happen if they do not have good knowledge of the host country's language, in this case, German. Therefore, Figure 9 displays the employment rates of refugees in Germany by their level of language skills. The data are collected by the OECD up to the year 2014. Thus, it can be seen that being a native-born, gives you more chances to obtain a job as it shows that having an intermediate/fluent knowledge of the language offers more chances to enter the labour market (64%), rather than when having a beginner level (28%).

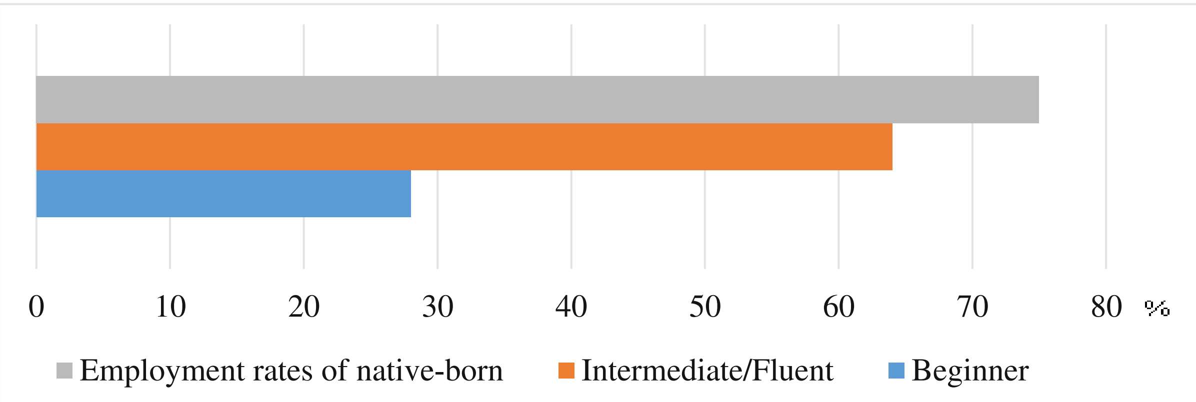

Figure 9 *Employment rates of refugees in Germany by their level of language skills, age 15-64, 2014, in percentage*
Source: (OECD, 2017)

Comparing the beginner with the intermediate/fluent level, the gap is quite big. To sum up, the insights given by this graph are that with a level greater than a beginner, a refugee has more than 64% chances of getting employment.

Figure 10 is particularly relevant because it shows the employment over-qualification of people that take part in three different categories: asylum seekers, non-EU and natives. The data is collected from five European countries: Germany, Belgium, Austria, Spain, and the United Kingdom. The overall trend noticed in Figure 10, is that the asylum seekers take upon jobs that require lower qualification skills than their educational level.

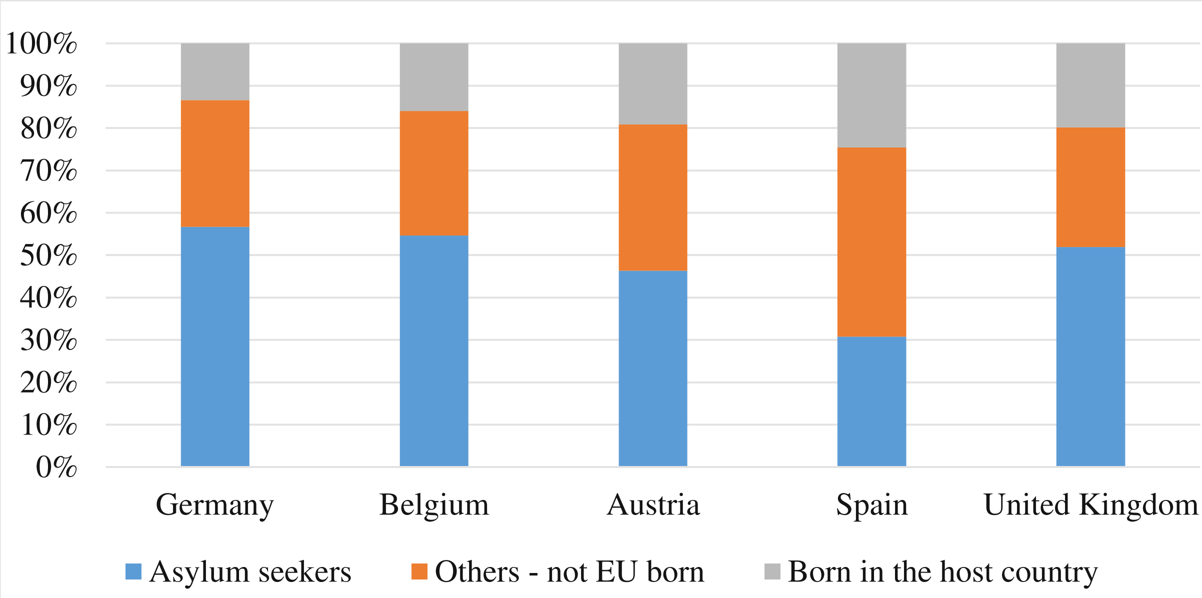

Figure ***10*** *Employment overqualification estimation for highly qualified workers, in percentage*
Source: © Eurostat. OECD 2016

Compared to the other counties, in Germany, the percentage of overqualified asylum seekers employees is registered at the highest rate, while in Spain is the lowest. On the other hand, native employees do not take jobs where they are overqualified. The registered percentage in the countries analyzed in Figure 10 is under 10% (e.g. except Spain where is 12%).

Concentrating only on Germany, the numbers from Figure 10 show that around 86% of the total number of overqualified workers registered is formed from asylum seekers and non-Europeans.

The following graph (Figure 11) is visualizing the employment rate of people who migrated based on a certain reason and their labour evolution with respect to the years of residence spent in the European Union. Using previous knowledge may offer a deeper understanding of how the current situation can evolve over the years.

The graph (Figure 11) is presenting four reasons which answer the question "*why do people migrate?*" The four reasons for migration narrowed in Figure 11 are as follows: employment (e.g. better job opportunity), study, family reunification, and refugees. The data is collected from the group of people aged from 15 to 64 years and monitored over a time frame from 0-20 years.

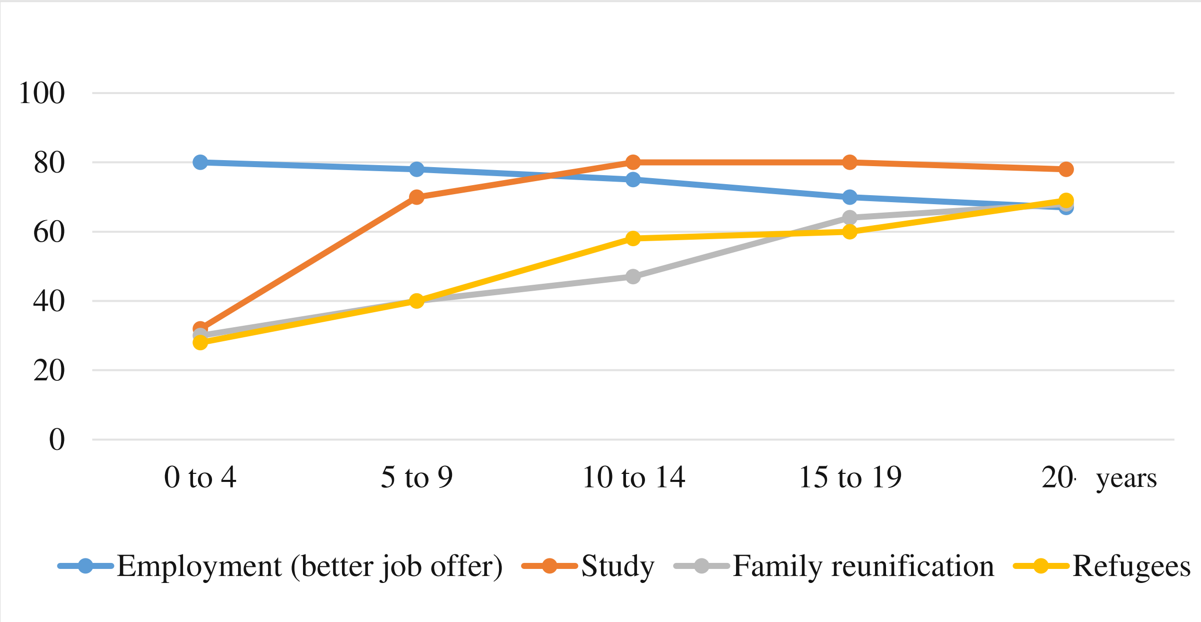

Figure 11 *Employment rate by reason for migration and years of residence in the European Union, age 15-64*
Source: (OECD & EC, 2016)

Excluding the group of people who in the year 0 moved because of a better job offer (i.e. this group doesn't make the purpose of the present thesis), the trend of achieving employment is increasing over the years for the other three groups.

In the first years of arrival in the host country (i.e. from 0 to 5 years) the people who came as refugees, for family reunification reasons or study, have more or less the same chances of employment. The chances of employment for the people who came to study in the host country are significantly increased after 5 years. This may happen mostly because when one studies in the host country is learning the host country's language and discipline.

The refugee time-span in Figure 11 is similar to the people who moved into another country for family reunification reasons. For them, in the first 5 years, the employment chances are below 30%, but after this period the percentage is rising to 58% (i.e. after being 10 years resident of the country). There are multiple reasons why it takes so long for these two categories to achieve a higher rate of employment: the latency for the application either for family reunification or for the refugee status (e.g. the process of these applications can be prolonged if there are too many requests at the same time), the language barrier and the cultural barriers.

Furthermore, the rate of the people who moved for employment reasons (Figure 11) is decreasing over the years. This situation may occur due to a series of events (e.g. reach of the pension age, the woman got pregnant and then decided not to come back to work, a medical issue which further led to receiving subsidies from the government, further relocation to a foreign country, death).

In Figure 12 data are collected which correspond to the refugees' job requests in Germany until February 2017. The present data is classified by portraying the countries with the largest number of requests. The greatest job demand is made by the Syrian population. They represent more than half of the total application. The other countries have approximately the same trend. There are registered less than one fifth compared to the total requests from people originally from Syria. The expressed intention of the Syrian refugees to enter the employment market can show that they want to integrate themselves faster in the country. It may suggest that their aim to remain in the country is long-term. However, the big percentage is influenced also by the refugee recognition rate (i.e. 97.4% (Burmann & Valeyatheepillay, 2017)).

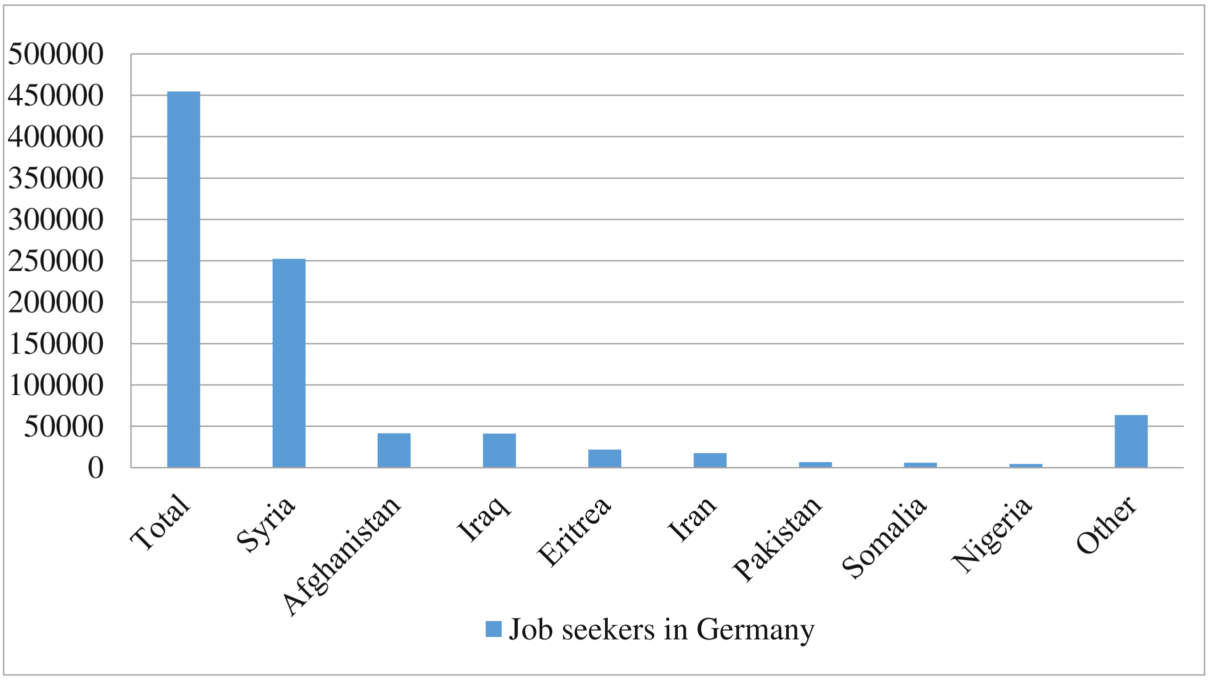

Figure 12 *Persons registered as job seekers and main countries of origin, until February 2017, in Germany.*
Source: (OECD, 2017)

A survey from the German Chamber of Commerce and Industry from 2016 employment showed that refugees were employed by 11% of the respondent companies. Additionally, 10% of these companies included in their business plan hiring refugees for the next two years. This fact shows that German companies are interested to hire refugees.

According to surveys from BAMF, IAB and SOEP from 2016, the persons who arrived in 2013 have a higher chance of employment (i.e. 31%) than the one who arrived in 2016 (6%). For those who arrived in 2014, the employment rate registered in 2016 reaches 22% and for those who arrived in 2015, the employment rate registered in 2016 is 10%. This shows an incremental growth in the rate of employment proportionate to the length of stay in the country. It is presumably connected to the duration of asylum/refugee protection procedures.

In addition to the surveys, IAB forecasts that every second refugee will have a job within five years.[24] This statement is significant for the present thesis because by having a fixed income the refugees' demand for long-term housing can grow considerably. In this way, the refugees have higher chances of getting other types of accommodation than what the government provides.

The overall rate of asylum/refugee applicants who gets protection (which implies a preliminary right of residence) in Germany is also worth mentioning: 71.4% in 2016 for 2015 and 42.1% in 2017 for 2016[25].

The group of people who generate the demand for housing is already getting shape with the information revealed by the upper figures. To summarize all the illustrated facts and figures, it is again underlined that the target group of the present thesis is composed of refugees with protected status, who, after the finalization of the asylum/refugee protection procedures, are entitled to employment.

Therefore, using the categories from Figure 6 as a basis, the demographic profile of the refugees is further described. The profile is assembled by the two groups analyzed in Figure 6: males and females aged between 18-34 years old and between 35-64 years old. As highlighted by the graph, starting from 2009 to 2018, they display approximately the same trend with respect to the number of arrivals, slightly fluctuating and reaching a peak in 2015. Correspondingly, starting with 2015 they make around 68% of the total arrivals, and it drops

[24] http://www.spiegel.de/international/germany/integrating-refugees-in-germany-an-update-a-1147053.html
[25] UNHCR

slowly reaching 53% in 2018 (2016 – 64%, 2017 – 56%). The chances to get quicker employment and learning faster the language is higher for the group of age 18-34 (around 83% of total applicants from 2015-2018). Moreover, 47% of the refugees that enrolled in German language classes had at least performed university studies in their countries before arriving in Germany (Fourier et al., 2018).

Considering the refugees' evolution on a time-scale up to 20 years (Figure 11), the group of males and females aged between 14-17 years old must be added to the group of interest of the present thesis to provide a model of influence considering a more comprehensive time span. They represent around 10% of the refugee/asylum applicants (in 2015-2018). Together with the first two groups considered (18-34 years and 35-64 years of age), they make a total of about 70% of all refugees registered, a considerable percentage that can influence the housing market in Germany in the long term.

Nevertheless, the impact of the refugees on the housing market happens since the beginning. During the initial accommodation, refugees do not have employment, but they take benefit from the provided housing, therefore, they contribute to the demand. It is clear that at first, they obtain cheaper accommodation, having access to a narrower sector of the housing market.

The profile of the refugees is created to understand what is the appropriate housing supply that has to be met to fulfil the housing demand. For instance, the big portion of refugees represented by alone men in the employment age creates demand especially to single rooms or small one-room apartments. However, after they are granted one of the protection statuses and get permission to reside in the country, they can apply for family reunification, as they have the right to do it (e.g. even if the family reunification process lasts a long time, several cases are eventually successful[26]). In the case of family reunification, the refugee housing needs can be shifted from one room apartment to bigger apartments where the reunified family can live.

[26] UNHCR

3.3. The government, legislation and its impact on the housing market

Generally, a government has the responsibility to elicit laws, regulation and other important instruments, to establish procedures and implement policies in dealing with asylum seekers and refugees globally and locally. Each political decision taken, depending on the scale of the event, may have consequences that can overcome any expectation. For instance, recalling Germany's public decision of opening the borders to accept refugees from non-European countries in 2015, it represented a strong pull factor that generated more migration. It created also a dynamic situation in which both regional governments and other stakeholders had to adapt accordingly to handle the situation in the best way possible.

Pull factors are generated and controlled by the governments by imposing regulations, border control, deciding the benefits that refugees receive and restricting settlement opportunities that one could receive after the arrival in the country. The results of the policies which were put into effect in Germany during the last refugees' crisis are of greater interest since they affected overall the present context.

In the next section, the effects of applied policies and policy constraints are examined.

3.3.1. Laws regarding refugees

Hereafter the most important policies that describe the rights of refugees both internationally and within the German territory are summarized. The status of a refugee is stipulated in the 1951 Refugee Convention and its 1967 Protocol which is called also the Geneva Refugee Convention. Its agreements should be applied throughout all the State parties that signed the convention.

'*The 1951 Refugee Convention and its 1967 Protocol as well as other legal texts, such as the 1969 OAU Refugee Convention, remain the cornerstone of modern refugee protection. One of the most fundamental principles laid down by international law is that refugees should not be expelled or returned to situations where their life and freedom would be under threat*' (UNHCR). The 1951 Refugee Convention and its 1967 Protocol are the documents signed by 144 State parties, where it is defined exactly how to proceed in order to keep safe the people that flee their country as a result of persecution, war, armed conflicts, or have their life in extreme danger. In *Annex 1* the most important aspects of these documents concerning refugees are listed and in the following lines are summarized the relevant information for the present thesis.

An important aspect to be considered is that a refugee cannot receive permanent protection in a host country. The protection must end either through voluntary repatriation or a permanent integration in the host country (i.e. naturalization). The people who are excluded from any kind of protection are the ones who committed a crime or acts against the United Nations.

Refugees have multiple rights in the host country (e.g. freedom of religion, access to the labour market, housing, education, to be issued identity and travel documents) but also duties (e.g. conform to laws and regulations of the host country, maintain public order). More exactly, they have access to the same rights as any of the citizens of the country.

In addition to the given regulations, there is one more of great interest for the current analysis: '*establishing the criteria and mechanism for determining the Member State responsible for examining an asylum application lodged in one of the Member States by a third-country national*'. It is called the Dublin Regulation[27]. This Regulation determines the responsible State for examining a fair asylum application. Even if in the European countries the asylum procedures are different, this particular Regulation aims to offer to the refugees the same conditions under the same common standards around all the European Member States. Additionally, this regulation points out that the application for any protection status has to be processed in the first country where the refugees arrive.

According to the 1951 Refugee Convention, the refugee right to be accommodated in the host country is stipulated as it follows: '*As regards housing, the Contracting States, in so far as the matter is regulated by law or regulations or is subject to the control of public authorities, shall accord to refugees lawfully staying in their territory treatment as favourable as possible, in any event, not less favourable than that accorded to aliens generally in the same circumstances.*'

Germany follows the Asylum Act document. It includes a series of procedures and policies for refugees. They are adapted in every Federal Land in a Land Reception Act (i.e. this document has as basis the Asylum Act with slight modifications regarding the different

[27] http://www.unhcr.org/4a9d13d59.pdf

approach of the refugees' reception), and Asylum-Seekers Benefits Act which shows the benefits that every refugee may obtain and under which condition.

3.3.2. Asylum procedure in Germany according to the Asylum Act

According to the *Federal Office for Migration and Refugees* (BAMF), the people who arrive in Germany to receive asylum, have to cover a series of steps, as reported in *Annex 2* and summarized in the following lines. The procedures of registration are the following: *regular* (i.e. prioritized examination and fast-track processing), *Dublin* (i.e. indicate whether the asylum procedure is the responsibility of another state), *for admissibility* (i.e. to ascertain if one is admissible or not), *border* (done at the border of the country and in 5 airports: Frankfurt am Main, Berlin, Düsseldorf, Hamburg, and Munich) and *accelerated procedure* (i.e. performed in a week in a special reception centre for asylum seekers from safe countries of origin, e.g. Ghana, Senegal, Serbia, FYROM, Bosnia-Herzegovina, Albania, Kosovo, Montenegro). The last procedure is for the ones who misled the authorities with false documents or hide important documents, hide their identity, have filled already another application for asylum in another country or have made a false one delay the procedure, refused to be fingerprinted, or threaten the public security and order (Michael Kalkmann, 2016).

As described in *Annex 2* the steps of the asylum procedure in Germany are as follows. First, one should register with the Border Police, at the airport or on the territory through BAMF, in order to receive the official document as proof of arrival, where all the personal data is stored. Second, an application of asylum is filled, for receiving a certificate of permission to reside. This document replaces the first one received as proof of arrival.

The BAMF, based on the German Asylum Act (Asylgesetz), decides the fate of the applicant after the personal interview, the analysis of existing documents and other known evidence.

People are distributed through the Lands, in rural and urban districts, by the EASY quota system (see *Annex 3*). Königstein key or Initial Distribution of Asylum Seekers of the Federation-Länder Commission for Educational Planning and Research Promotion (also called EASY quota system – BAMF) assigns the refugees according to the following criterion: the number of refugees assigned to each Land corresponds to 2/3 of its tax revenue +1/3 of the number its inhabitants (Michael Kalkmann, 2016). Some of the Federal Lands are even establishing their quota or county-internal distribution key (e.g. in Brandenburg), concerning temporary or permanent accommodation, different from the general EASY quota system (see *Annex 3*).

Applicants who receive the entitlement to asylum/refugee protection status can receive a three-year residence permit. Applicants who received subsidiary protection can receive a one-year residence permit which can be extended afterwards for two more years. A settlement permit could be received after three or five years from the arrival in the country (i.e. in these 5 years is included the time required for the asylum procedure). The requirements for the settlement permit are: sufficient knowledge of the language, secure living (i.e. have permanent employment), demonstrated integration achievements, vocational training, and a criminal background check.

The accommodation process of the refugees in Germany unwraps as follows. At the arrival, the person is placed in a reception facility (see *Annex 4*), set by each Land where the application for protection has been filled. There, the person is obliged to stay up to 3 months. Nevertheless, the residence rule (i.e. the obligation to reside in the reception centre) could end when that person has found itself in one of the following situations: is moving to another reception centre or new accommodation, has been granted any type of protection, is marrying or establishing a civil partnership within the country, is receiving a deportation warning, or from public health, security and order reasons. After the permanence in the reception facility, generally, refugees are moved into a follow-up or collective accommodation, without any timeline set of the period designated to residing in that specific accommodation. However, when the person is granted any of the protected statuses or has proved that has found another accommodation that doesn't imply additional costs for the authorities, the stay there is ended. In terms of any type of relocation, the Federal Office must be informed and get approval from it.

Every refugee at his/her arrival, upon registration, is assigned to a certain residence Land, until the procedure for obtaining a protection status is completed. Leaving the assigned Land could be made under some certain circumstances as follows: when an urgent public interest applies, or one intends to take up employment, or has a necessity of school/advanced occupational training/state-state recognized University/comparable educational establishment attendance, or one receives asylum or international protection. These permissions are granted without delay by authorized representatives: UNHCR or other organizations. The Foreigner Land Authority or municipality could grant permission to reside anywhere within the Land.

3.3.3. Accommodation and financial aspects regulated in the Asylum Act

'*Accommodation for asylum seekers is provided within an interplay between uniform national regulation and conducting of the asylum procedure and the reception of asylum seekers by the Federal Lander* ' (Müller, 2013). Under the Asylum Act, the most important aspects regarding accommodation and distribution (Chapter 5, Section 44-61) are summarized in *Annex. 4* and presenter hereafter.

Each stakeholder (e.g. Federation, Federal Office for Migration and Refugees, Federal Länder, Federal Ministry of the Interior and non-state actors), through distributing their tasks, set various types of accommodation for asylum seekers/refugees. The main types of accommodation are:

- reception facilities;
- follow-up or collective accommodation;
- local accommodation;
- facilities for vulnerable groups (e.g. unaccompanied minors, traumatized persons seeking protection, etc.).

As mentioned, the asylum seekers/refugees are first received in the reception facilities. Then, they are placed in collective or local accommodation. Although the rules for the reception facilities are regulated across the country, the process for follow-up accommodation could be different in each Land (i.e. are divided regarding the executive responsibility or the operational tasks) (see *Annex 5*).

In any case, the Federal Lands are responsible for the reception, accommodation, provision of benefits to cover vital needs, accommodation cost support and other benefits according to the Asylum Act. Consequently, municipalities are in charge of establishing, maintaining and operating the accommodation facilities. Nevertheless, in some cases, these operations are outsourced to private providers (e.g. in Hessen) (see *Annex 5*).

The living conditions for refugees in reception facilities and collective accommodation are characterized by overcrowding and lack of privacy, limited space for living and other activities, little equipment for recreation, no isolated quiet space for children, or bathroom sharing (e.g. generally, one shower is available up to 12 persons). Separated allocation inside the reception centres is done where there is enough space. For instance, most municipalities follow the same rule. They place single women and families in separate buildings or separate wings of the same building for privacy/cultural reasons.

For each Federal Land, the responsible authorities for the reception facilities are assigned (see *Annex 6.*). Some municipalities included also additional requirements for building collective facilities (e.g. Bavaria, Berlin, Brandenburg, Thuringia) concerning the type, size, and equipment, requirements for operation, location, and infrastructure and for qualification level of the care staff. Besides, they suggested also different requirements for the minimum space offered. In Baden-Württemberg, only 4.5 m^2 are regulated for the sleeping space per person, whilst in other Lands like Berlin, Brandenburg, Saxony or Thuringia is 6 m^2. In big cities like Berlin, the minimum surface recommended for children up to age 6 is 4 m^2, whilst single rooms have to have a minimum of 9 m^2. The rooms can accommodate up to 5 or 6 residents and in some cases, people have to be also separated by sex (e.g. Mecklenburg-West Pomerania, Saxony, Bavaria) (see *Annex 6*). All in all, for the reception facilities, the government and municipalities are the ones who decide the type of accommodation, appearance, and which amenities they must possess.

From the financial point of view, during their stay, the asylum/refugee applicant receives a monthly income regulated under Asylum-Seekers Benefits Act. They have also access to the labour market through employment agencies and job centres. However, while staying in a reception centre, people are not allowed to take up paid employment. Only after the three months or after they leave the reception centres, an asylum/refugee applicant could take up employment if the Federal Employment agency grants the permission.

Regarding the financial aspect, the responsibility is divided through Federal Lands, the government, and non-governmental organizations. Additionally, the regulation regarding financial allowance is stipulated in Asylum-Seekers Benefits Act.

Figure 13 is showing the number of people who received standard benefits in Germany over the period from 2005 to 2015 (e.g. small household goods (i.e. dishes, detergent, etc.)), school supplies, student travel costs, extra-curricular learning support, extra-curricular memberships, passport costs, more costs for pregnant women, single parents, interpreting costs for therapeutic purposes, rehabilitation services, etc.). The graph indicates that beginning with

2005 until 2010, there is a moderate reduction of people who receive benefits, while from 2011 their number starts to rise until 2015 where it reaches a considerable peak, arriving at 975000 at the end of the year. Comparing this number with the previous year, a 169% increase is registered, which is recorded as a relevant growth. This increase is, obviously going hand in hand with the growth of the total number of refugees.

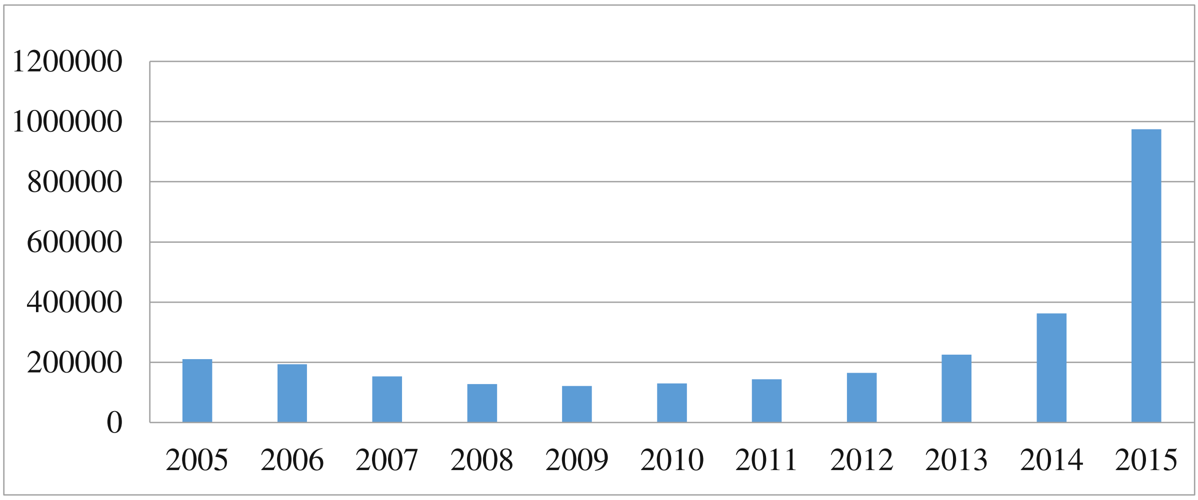

Figure 13 *Recipients of standard benefits - Act on Benefits for Asylum Seekers in Germany*
Source: Statistisches Bundesamt, Wiesbaden 2016

Asylum/refugee applicants receive a minimum monthly income for regular needs (see *Annex 4*) (e.g. accommodation, heating, household articles, energy, etc.) and for personal needs (e.g. transportation, leisure activities, further education, phone, etc.). Between 15% to 30% of the costs are supported by municipalities, whilst the remaining amount is paid by the Federal Land funds. However, in Bavaria, Berlin, Bremen, and Hamburg, the Federal Land is providing the accommodation directly, therefore the funding system is different, with no need for further funds (Müller, 2013).

3.3.4. Political decisions and the government influence

The policies regarding the procedures towards the refugees were set at the international level through Dublin Regulation and the 1951 Refugee Convention and its 1967 Protocol. Despite being signed by the countries in the consortium and the agreement to follow the rules, the decisions taken by a leader of a powerful country part from the consortium can change the direction of the refugees. The relevant example is represented when Merkel declared '*Refugees*

Welcome' in the summer of 2015 and that '*we will make it*' (*Wir schaffen das!*[28]). This political statement and the fact that Germany invoked the '*sovereignty clause*'[29] suspended the Dublin Regulation (i.e. which requires asylum seekers to lodge a request in the first country of arrival). As a result, such a rule (i.e. the enforcement of the Dublin Regulation) was not applied to the refugees for a given period of time. It allowed refugees to pass freely through several countries (heading to Germany), and not to register in the first European country they arrived in (e.g. Italy, Greece, Spain). This particular situation exemplifies the strength of a political decision as it started a large migration flux across numerous other European countries (e.g. Greece, Macedonia, Serbia, Croatia, Hungary, Slovenia, Austria). Thus, such government decisions impacted the size of the migration wave.

This particular situation generated an unplanned migration which reached become the biggest since the 2nd World War (or also referred to as *the world's largest humanitarian crisis since World War II* (ECHO, 2015)). Even if the EU leaders were not prepared for such a response, the countries that had a bigger number of migrant intakes could benefit from such mass migration. As the governments are in charge of integrating the migrants in the country, opportunities like additional demographic diversity, solution for an ageing population, or future employment competitiveness can be seen as benefits.

At present, this condition (i.e. refugees moving freely across countries) is not valid any longer and the Dublin Regulation is re-established. Now, refugees who register in the first country of arrival and afterwards leave to another can be subject to deportation. This means that the refugees are sent back to the arrival country (i.e. where they first registered) if the governments from both countries (arrival and second host country) decide to apply the Dublin Regulation (e.g. Spain is the first EU country to sign the agreement that has as scope sending back the asylum applicants in the first country they already filled for asylum[30]).

As previously highlighted in the sub-chapter about the history of refugees, Germany has been accustomed to welcoming migrants which compensated for a deficiency of manual labourers in the post-war decades (e.g. Turkish -guest workers- and later migrants from Eastern Europe and the Middle East were added). Together with policies for integration, the government is able to control and exert its influence on the demand for housing of the refugees.

[28] https://www.zeit.de/2015/38/angela-merkel-fluechtlinge-krisenkanzlerin/seite-4
[29] On 24th August 2015, Germany, in accordance with Dublin III Regulation (No. 604/2013) invoked the sovereignty clause suspending the Dublin procedure for humanitarian reasons (ECRE, 2015).
[30] https://www.dw.com/en/angela-merkel-in-spain-for-talks-on-refugees-migrants/a-45046161

They could be able to sustain or to stop this demand by allowing the migration wave to grow or to diminish its intensity. A successful integration may target the following four big areas: employment, education, housing, and health.

Correspondingly, a successful integration could help to maintain the housing demand (e.g. through addressing key points of education and language training process implementation, cultural belonging, rights, and citizenship).

In Germany, the government influences the housing market through all laid regulations concerning refugees. It is in charge of refugee's distribution through the established quotas or redistribution among different Federal Lands. Additionally, it sets the accommodation standards for the reception facilities, even if the municipalities from every Federal Land could introduce different rules (i.e. applicable only to that Land) (see *Annex 7*).

The government is the one in charge of granting available housing supply for accommodating all the incomers. At the arrival in the country, the refugees are accommodated in the reception facilities provided by the government, but in the case of scarce housing supply, the government must find a solution by changing the policies. For instance, for building new housing in certain areas, where the availability of buildable land is scarce, the responsible authorities had to make changes inside the land use policy.

Beginning in 2014, the German government introduced additional amendments to the construction planning laws, easing the development of new establishments for accommodating the refugees in industrial estates and in undeveloped areas (Grote, 2018a). These policy changes are of significant importance because they shape the future development of the housing market. The way they are tackled, may keep or not, the balance between the economic competitiveness, environmental sustainability and social inclusion.

For instance, building in undeveloped areas can be both attractive and challenging. Generally, undeveloped land is not zoned for a specific purpose. Therefore, when the government is the developer or the beneficiary of the construction, any legal permissions required are obtained. On one hand, this type of land is less expensive than other areas and the purchase price is low. But on the other hand, housing development requires extensive preparation (e.g. bringing the utilities – water, electricity, sewage – to the parcel, constructing access roads, connecting the area to public transportation) rising the costs. Additionally, these areas are located out of a dense urban area, mostly in rural areas or on the fringe of suburban communities. Without extensive consideration, a big housing development in such areas may develop into a phenomenon called *urban sprawl*. Undeveloped areas may represent a solution for future housing developments, but such expansions need time for assessment to avoid any misuse of the area.

Constructing housing in industrial estates has firstly to be included in the zonal plan of the area. If it is not stipulated, the zonal plan needs new amendments. These changes have to be made by the responsible authorities, but as Germany has a system of multi-level governance (i.e. divided between national, regional and local governments), this may be different among the Federal Lands. In any case, such change has to be considered after a strategic land use planning of the industrial areas, because if the land inherits a new use (i.e. housing), which brings along additional restrictive building policies, any future industrial development of the area may be difficult.

The tax policies placed by the government have always a relevant social impact. The interest of the present research is in particular on policies connected to the housing market, such as land value taxation and property taxation. These policies have a specific impact on land use allocation and on land occupancy.

Taxation impacts directly property values of an area and so the values of both land and housing. However, the government is in charge of managing the taxation on each type of land or property. For instance, in the case of a central area plot, which is for a long period of time undeveloped, the government can issue a higher tax for it, to discourage property or landowners which refuse to sell their land for building homes for refugees and are holding on to their assets for reselling purposes without doing any investment. In this way, it transforms the economic performance of the land. Over time, it may end up that it is more costly to hold on to a land vacantly than developing it.

On the other hand, to sustain the construction of housing for refugees of other developers than the government, a tax reduction for land/property may be favourable. For instance, constructing such buildings on unused land is revitalizing the neighbourhood through the new addition.

In addition to a tax reduction, the government can give subsidies for old housing refurbishment. For instance, in the case of a small district/village/city, giving incentives for refurbishing old buildings for the benefit of the refugees can solve two problems. First, the refugees can be located in good areas, and second, the refurbishment can change the entire aspect of the local community.

People can be influenced by the tax policies regarding buying or renting a property, as property taxes are increasing faster than wages. Even if Germany has low mortgage interest rates for fixed-interest loans (i.e. according to Statista), the percentage of homeowners is only 51.50%[31]. This may be determined by the high-priced properties, additional fees and taxes (e.g. the fees and taxes correspond to a considerable percentage from the total sum of the property: notary's fees, registration fee, real estate agent fee, real estate transfer tax).

Refugees as homeowners are hard to be considered in the first years residing in the country. As previously noted in Figure 12, the employment rate of the refugees in the European Union reaches 40% in the first 5 years of residence. For getting a loan, it is necessary to have stable employment. Thus, for a refugee household, the available housing option in the first years is renting.

For the refugees who want to rent a property on the open housing market, the German tenancy law shows the rights and duties of a tenant. Summarized from (Cornelius & Schmid, 2011) are the relevant criterion from the tenancy law, which can affect the refugees as tenants. They are presented as follows:

- Discrimination is prohibited under the General Act of Equal Treatment (however, it is difficult to measure discrimination done by the landlords towards the refugees);
- The landlord is not allowed to demand a reservation fee over their own residential space;
- The landlord has to maintain the rented property in a suitable condition and make all the repairs (e.g. this is important for refugees because any damages which may occur to the property without their direct (e.g. water leaks) don't imply additional costs);
- In the case of a flat-share, the landlord has to accept the change of several members;
- If for any reason the landlord decides to sell the housing unit, the new owner has to comply with all the rights and duties the former landlord had (e.g. this brings safety to the refugees because they cannot be expelled from the apartment. However, the only condition for the new landlord to renounce to those duties is to occupy personally the apartment);

[31] In 2018. https://tradingeconomics.com/germany/home-ownership-rate

- Termination of a contract done by the landlord is only possible if the tenant has violated the contract, the landlord needs to use the housing unit, and if the landlord intends to use the unit in a different way (e.g. dividing a large dwelling into smaller ones);
- The landlord is prohibited to evict the tenant for hidden purposes such as increasing the rent.

The above-outlined procedures have been regarded as being useful tools for allowing the refugees to enter the open housing market. Disrespecting these rules, or not knowing about their existence (i.e. the refugees may be disinformed), may block the refugees' access to the open housing market.

The residential property prices have increased in the last years (see *Annex 9*) in most of the A-type cities (e.g. Berlin, Dusseldorf, Frankfurt, Hamburg, Cologne, Munich, and Stuttgart[32]) in Germany. As a response to the rise, the government took action by introducing new policies to improve housing affordability. According to IMF, they allocated more capital for supporting the construction of additional social housing. Even so, the number of publicly subsidized housing in Germany is declining more than they are built[33]. This aspect can affect refugees directly, as generally, people with low-income can have access to social housing.

All in all, every decision taken by the government regarding taxes, tax deduction or the introduction of special subsidies programs for enhancing construction affects the housing market. In Germany, there are already four traditional policy instruments regarding housing (e.g. tenancy law *Mietrecht*, housing benefits *Wohngeld*, homeownership subsidy *Eigenheimzulage* and social housing *Sozialer Wohnungsbau*). They represent the core of the housing policies and any substantial modification has effects on the overall housing market.

The importance of continuity in political decisions regarding housing policies has to be sustained even after new elections. Disruptions that can occur in a long process must be avoided. For instance, the current government has introduced in the budget proposal additional housing support for refugees and educational training. This measure is supporting long-term the evolution and integration of refugees. Such a process needs time, therefore, there should be continuity in future governmental decisions.

[32] According to Deutsche Bank Research.
[33] According to The German Economic Institute (IW) in Cologne, 2019.

The media is an important tool of which the governments are becoming more aware of. Nowadays, most of the population receives their information, in this case, the political information, through radio, the Internet and its social media.

For instance, the media is considered as ‘*agenda setters*’, because it chooses which information is worth to broadcast, which news can have more impact to the people if any news is worthy to be discussed in a talk show, or even which news is newsworthy (McCombs, 2004).

The power of the media grew proportionally and it arrived to influence people’s opinions regarding any political situation. The political condition is transformed into perspectives that are adopted literally by the general public (McCombs & Reynolds, 2002). A significant amount of research is concerned with this area. (Sigillo & Sicafuse, 2015) demonstrates that media shapes to a certain extent policy decision and that the media, the public, and the policymakers are interrelated.

The European refugee crisis was and still is a frequent headline of the media. It was followed more intensively since the summer of 2015 - when Merkel opened literally the ‘doors’ to refugees - always with pro and contra arguments. In this case, the media played multiple roles. For instance, social platforms are used to manage the migration wave, to influence the arrival patterns (Brekke, 2004) by transmitting information to the migrants. The preferred countries of destination of the migrants are highlighted in such a way by the media, to increase or decrease their interest in choosing a specific host country (Thielemann, 2003). On the other hand, social platforms are used to help refugees integrate into the host country, organizing volunteers in helping with the refugees, or promoting the government policies which help throughout the integration process.

The outcome is clear that the government is in charge of controlling and supervising the flow of migrants which produces the demand for housing, also through the media. Correspondingly, as shown through every connection made previously between the government, the refugees and the housing markets, the government influences the direction and the amplitude of the refugee waves and regulates through laid policies the housing market. More exactly, the sector which can be the most influenced by the government is the social housing sector.

In the light of reported information, it is conceivable that the government has a holistic influence (see also the model of Figure 14). For instance, the government is the one who decides what to build, the government offices responsible for constructions are developing the project, the planning governmental authorities are giving the permission to their proposals, and the money that refugees are paying for rent is coming also from the government. This is mainly happening while refugees are still connected to governmental subsidies.

Further explanation regarding the degree of influence of the government on the housing market is provided following a refugee's status division over time. This segmentation is expected to result in an improved understanding of the evolution of the refugees within the housing market while presenting the types of housing they can have access to.

Chapter 4 The producers of the influence

4.1 Methodology

The purpose of this section is to introduce the research methodology. The chosen methodology allowed a deeper understanding of the magnitude of the influence that the refugees may exert on the housing market, dealing with all main stakeholders and addressing future possibilities for the housing market development under the circumstances generated by the largest migration group since the 2nd World War.

The methodology selected in this study sought to build a theory for answering the main research question:

"How do the present refugee influx dynamics influence the housing market?"

To receive appropriate results to the addressed problem, firstly an overview of the literature is presented, showing the general reasons behind the migration phenomenon and the theories related to it. From the literature, the theories of migration (i.e. push-pull theory, neoclassical theory and network theory of migration) offer insight into the generated social framework.

A systematic review and meta-analysis of the literature found a strong and significant association between migration and the housing market. Furthermore, the mentioned studies of (Saiz, 2006) (i.e. regarding changes in the housing market following a large amount of migration), (Ottaviano & Peri, 2006) (i.e. a study concentrated on the ownership rates among migrants compared to natives), (Bradely, 1999) (i.e. where it demonstrates that refugees have difficulties to enter the owner-occupied housing market), or the research of (Dibelius, 1999) (i.e. who're results indicate that housing and refugee employment are interrelated) offer inspiration to how to exemplify the connection between the refugees and housing markets.

4.1.1 Study participants

The sample was drawn from the population of refugees who migrated to Germany beginning with 2015. Using the statistics from Eurostat, UNHCR, AIDA, OECD, and BAMF, the profile of the refugees is shaped. The individuals of interest for the purpose of this study consist of males and females who reached working age. They represent an additional housing demand in the country. For shaping the refugee profile, the following attributes are considered:

- demographics;
- country of origin;
- employment connected to the knowledge of the German language;
- employment over-qualification;
- refugees' application for employment;
- rates of employment related to the years of residence in the host country and the registered application for adhering to employment.

4.1.2. Data collecting and data analysis

In addition to the above characteristics, the legal status of the refugees is considered. Most data (e.g. summarized in Annex 1 to Annex 6) related to the legal aspects used in the study have been obtained from the 1951 Refugee Convention, Asylum Act, Land Reception Act[34], Asylum-Seekers Benefits Act and EASY quota system[35]. It helps to distinguish the four-protection status the refugees can receive in Germany (e.g. refugee status, asylum entitlement protection, subsidiary protection, ban on deportation). The data is stored electronically in a database.

The legal framework is indicating under which circumstances the refugees can receive any of these four protection statuses. This is important because the residency of the refugees in the country is connected to the protection status.

Using the legal framework and the fact that refugees' condition can evolve over time, the profile of the refugees is divided into four categories. Each category places the refugees at a given moment in time and helps in shaping an overall model (summarized in Annex 7). The model comprises social, economic, legal and housing attributes of the refugees with respect to the evolution level reached. Furthermore, these divisions are connected to the housing market.

[34] The Asylum Act serves as ground basis of the present document, with slight modifications depending on the policy adopted in each Federal Land.
[35] Königstein key or Initial Distribution of Asylum Seekers

An important component of the present research is housing data collection. 51 case studies of existent refugee housing in Germany are analyzed. Additionally, 22 container homes and 30 modular homes are analyzed. The information withdrawn from the analysis is displayed in Database 1 and Database 2, respectively.

Part of the data from Database 1 is collected from the examples of the German pavilion at the 15th International Architecture Exhibition in 2016 from the Venice Biennale (Cantz, Schmal, Elser, & Scheuermann, 2016). The rest of the data (i.e. valid also for Database 2) is gathered from the publications released by the building authorities of each Federal Land and from the projects published by several construction companies.

The data comprises also building plans which are analyzed regarding concept, form, functionality, and applicability. Using Google Maps and going on-site (when possible), each building is analyzed with respect to the location, neighbourhood, and proximity to public transportation. Furthermore, part of the analyzed variables of each building from the databases are as follows:

- type of building;
- number of units;
- number of residents;
- living space per person;
- home characteristics;
- time-distance to retail areas, city centre, important amenities.

Particularly important in Database 1 is the introduction of the attribute designated residents. It corresponds to the category of people who are allowed to reside in the buildings. Then this characteristic is connected with the four refugees' division performed earlier. In this way which division is connected to the building types (i.e. it shows where can the refugees reside) is identified. Correspondingly, the analysis of the refugees' influence on the housing market is narrowed using the four divisions. Hence, their influence on the housing market can be quantified showing the extent they may reach a different moment in time.

This study used a clustering method, where relevant housing sub-markets derived from the overall housing market are identified. It represents an attempt to construct meaningful and homogeneous housing submarkets (i.e. from the German housing market), where refugees can have access.

The use of constant comparative analysis ensured that systematic comparisons between the housing submarkets and the four refugees' division were made. All the analyses were reduced into a scientific model where the most important attributes of the housing market are dominating. The model was tailored by including also the social framework (i.e. migration, political development, and integration) – which represents the determinant and root component of the present context – and the additional external factors (i.e. land/credit market, income situation and economic cycle) – which are generated by the elements from the social framework.

4.2. Deriving the factors which produce the influence

From the definition of the influence presented at the beginning of the thesis (Chapter 1.1), it was highlighted that specific entities produce effects (through their behaviours) on the housing market. A series of both direct and indirect effects can be therefore distinguished on the following:

- demand (e.g. for apartments that belong to certain housing segments or new demand due to new unpredictable events)
- supply (e.g. low availability of affordable housing on the market);
- price and value (e.g. for apartments that belong to certain housing segments, from now on generally referred to as price);
- additional economic factors, like:
  - public funding in other sectors (e.g. is shortened by the governmental expenses/subsidies that are re-directed to only one sector – the refugees);
  - competition (e.g. for each housing segment where the access depends on well-established criteria – eventually for the open housing market the criteria re the one of the free markets);
  - income situation of the country, (it will include the refugees starting from a certain stage as it will be illustrated after);
  - mortgages (e.g. the credit markets that allow access to certain individuals);
  - land insufficiency (e.g. scarce availability of land for housing development).

Each of these effects is individually considered in the present sub-chapter. Furthermore, the factors which explain better the context of the current mass-migration (e.g. social factors) and the additional attributes which are influenced by the migration (e.g. economic factors and the land market) are highlighted and analyzed. Each of these factors is then connected to the local housing market in Germany in order to produce quantifiable results.

4.2.1. The Social Framework ("Germany welcomes you")

The push factors (i.e. war and poverty) are driving the migrants to flee towards Germany due to the country's indisputable pull factors (i.e. economic strength, political stability, safe living environment). During the last quarter of 2015, when the borders between the European countries were loose, people were crossing them without any barriers. Once the national governments decided to adopt a stricter approach, the journey to the West became more difficult without an established network (refer to the network theory of migration in Chap. 2), that provided valuable information about how to get to the country, which obstacles they could meet along the way and to whom to ask for help in crossing the borders.

As many refugees were blocked while trespassing the borders of the European countries, black markets were formed. The research from (Samers, 2010) shows that without having knowledge about what to do further in their journey, migrants agree with smugglers to ‘help’ them reach the desired destination. Evidence from the present refugee crisis shows that many refugees who were deprived of their money and belonging and who were not able to pay the requested price were left behind.

In the literature review section, the neoclassical economic theory indicates too that people flee their country due to economic reasons. As shown by the statistics presented in Chapter 3 regarding the structure of the migrants (after 2015), it turns out that among the people who migrated because of war (e.g. from Syria) there are also people who experienced poverty or had low wages in their country (e.g. Turkey, Somalia, Russia, Serbia). Thus, the present category of migrants flees their country of origin with the expectation of a future income that surpasses the current one.

The three theories of migration are reminded in this chapter because by connecting them to the current situation, the basis of the social framework is formed. Among the reasons for migration, from the social framework, three additional factors are presented: integration, segregation, and discrimination. They are strongly interconnected and they have reflected also in the housing market.

Integration is used to assimilate the refugees into mainstream society. The integration of refugees in a new society means agreeing on a shared system of meaning, language, and culture. (Durkheim, 1893) is the first one who explores integration in society. He develops the concepts of mechanical and organic solidarity. Mechanical solidarity can occur at a smaller scale, where the integration of people is happening through the familial networks and at a higher scale where people experience integration through behavioural similarities (i.e. work, education, religion, lifestyle). Organic solidarity is happening in advanced societies, where people base themselves on interdependence bonds between individuals.

Being part of an integration process, the theory of (Durkheim, 1893) is valid in the present context. The theory states that to be able to enter a certain group, its members have to reckon the person's value in order to be considered as being part of the group itself. In addition to it, the individual has also to show the group that he/she is an attractive asset for it.

To be fully integrated into a new society, one has to start to follow the same path and embrace more general values (i.e. respect the laws, culture, religion and general rules of that society). Refugees have therefore to show their interest in learning the culture and the language of the host country to enhance their integration process. Conversely, society and the government have to open all the possibilities of integration to the refugees.

Independently from the housing situation in the country and whether there is enough available housing stock to offer, the refugees have to be accommodated in proper living conditions. Having access to the housing market takes part in the refugees' process of integration.

Nonetheless, the process of refugees' integration is reflected also in the neighbourhood they live in. The behaviour of the residents inside the neighbourhood can impact its neighbours through interaction (Johnston & Pattie, 2011) as neighbours can be considered peers who drive social interaction, spread information or resources (Ellen & Turner, 1997). In addition, empirical research considers that the neighbourhood's environment is influencing to a certain extent the outcomes of its inhabitants. For instance, the social relation which the refugees may develop in a predominantly native neighbourhood can have an outcome in improving the language, acquiring country-specific skills or political opinions.

On the other hand, refugee integration in a neighbourhood can fail when segregation or discrimination occurs. The segregation process could develop actively, where people's behaviour is shaped voluntarily to place people in closed communities, or passively, as a result of a market process in which households are filtered by house prices or rent levels. For instance, even if people are not excluded from an area, poorer households cannot afford to live in a certain place with high rents, hence, they are de facto excluded from that area.

Nevertheless, people can exclude themselves from a certain neighbourhood by personal choice. For instance, people who change completely their environment (i.e. they change country) they establish easier in immigrant communities. They do so because they don't know the language and how to behave in the society of the host country and they may receive help from co-nationals to integrate easier. They tend to choose what they know in order to have a simpler start. They take a voluntary decision to start their new journey in a safer environment, rather than going to a completely new neighbourhood where they could probably experience discrimination for unknown reasons which eventually may lead to segregation.

A study (Auspurg, Schneck, & Hinz, 2019) performed over a period between 1973 to 2015 in the United States, Canada, and Europe, that wanted to quantify the presence of discrimination in the housing market, reached the conclusion that discrimination still plays a decisive factor in the housing market (also for Germany). It showed that foreigners who have surnames that don't sound like German (e.g. most experiments in Germany were tested signalizing Turkish names) are at a disadvantage when submitting an application to getting invited to see and rent an apartment.

The study was performed around some of the important cities from Germany and the level of discrimination registered among them was slightly the same. This means that the challenge of the refugees of finding a home on the rental housing market in Germany is going to be laborious, as their name differs greatly from the German ones. However, from experimental evidence, people's preferences do change. To foster the change the government's involvement in the matter is important (e.g. through demonstration, support, lobbying, etc.).

In addition, even if discrimination is seen as a key problem of social integration for minorities related to the housing market (Yinger, 1998), it is also an issue in general economic matters, since discrimination may result in both large economic inefficiencies (e.g. low labour mobility and high unemployment) and unfair individual outcomes.

4.2.2. Additional economic factors

This sub-chapter seeks to address the lateral economic elements relevant for this study, in terms of public funding and competition (more in general it will be addressed the economic cycle), the income situation, the mortgage availability and the land market.

The economy of one country is populated by households, firms, construction firms, banks, equity funds, the government and a central bank (Erlingsson et al., 2014). Correspondingly, the economic cycle[36] is the natural fluctuation of the economy between the period of expansion and contraction. Furthermore, the economic cycle is composed of various

[36] https://www.investopedia.com/terms/e/economic-cycle.asp

factors (e.g. gross domestic product (GDP), interest rates, total employment, and consumer spending).

The possibility of the government, businesses, and households to take credits for investment purposes is significantly important. For instance, banks provide loans, in this case, to producers (e.g. consumption good producers) and to construction companies to finance their project developments, whilst the households are taking mortgages to pay the housing units produced by the construction companies. In this way, a cycle that works interdependently is created.

However, to be able to take up a loan, people have to be employed. Employment is linked to economic growth, therefore stable employment and reduced fear of unemployment steer one's desire to buy an asset. In addition, people's confidence in taking up a mortgage can be a strong decisional factor for buying.

Banks have constraints on capital requests, to be able to control the quantity of money they hand over. For each part involved there are risks and consequences.

Moreover, interest rates play an important role in taking up housing loans. For instance, lower interest rates push further the demand for housing whilst high-interest rates diminish it. In other words, the ease of getting a mortgage makes more people buy a house and when the banks don't offer a good option for mortgages, it favours the rental sector.

Each dwelling offers a different set of features to its residents and also the price may vary over time. This price transformation (i.e. which can fluctuate dramatically) is referred to as a bubble and depend on the market's elasticity (i.e. consumption goes up and prices go down) and inelasticity (i.e. the reverse of market elasticity). Each of this modification has a ground reason behind, hence, researchers have studied booms and housing bubbles over history and pointed out that they may be driven by external events. For instance, (Shiller, 2005) explains the existence of speculative mania phenomenon where people are acting due to an external event or state announcement (e.g. when the connection between the Great Lakes system with the Mississippi River system via the Chicago River was published, it generated high attraction of land buyers, thus creating the land boom of the 1830s).

Even if not every housing market boom has a clear interpretation (e.g. noticed in the period of a city creation), the more recent housing market modification (i.e. 2008-2009) was correlated to mortgage borrowing. Banks required low deposits, they borrowed people large sums which totaled more than their income, and when afterwards, the banks struggled to raise funds to lend the money on the market.

The increase in population and booming economy is increasing the housing demand in Germany. In recent years prices and rents have been rising, in line with the strong economic performance and low-interest rates. There are however regional differences. The price increases are most pronounced in the largest cities and in university cities, where people are struggling to get an apartment (e.g. especially the small apartments for one person are desired). In depopulating areas such as in Eastern Germany, the housing market is confronted with vacancies and prices and rent declines (see Annex 10).

A considerable sudden change in the size of the population like the arrival of the refugees is determining alterations of the prices in the housing market because the demand for housing is increasing. Still, everything is connected to land availability of constructing new buildings and developing accommodation settlements for the refugees. Therefore, the next sub-chapter is set out to present the changes produced by the refugees on the land market and land use.

4.2.2.1 The land market

A dedicated section is worth to be addressed to exemplify the connection of the wave of refugees to the natural element which lays at the basis of each construction development: land. Moreover, there are the external effects produced on each element encompassed in the land market (i.e. land use, land ownership, zoning, planning policies).

When an influx of broad immigration is not foreseen, neither are the consequential increase in the demand for housing. When nothing is planned and there is no precedent situation to rely on, it can bring chaos. The demand for land increases as the population, the number of households and their incomes grow. The supply of land is limited, hence, the actual challenges occur not in small villages or developing cities, but when it has to be assigned new land for development within a big metropole, especially in cities with limited natural boundaries (e.g. Bremen, Hamburg).

In the preceding sub-chapter (Chapter 3.3.4. and (Grote, 2018a)), it was introduced the fact that for being able to build new settlements for refugees in Germany, the planning laws were changed. Correspondingly, the use of the land (i.e. individual parcels) has changed from agricultural to residential, as many refugee establishments are now situated on former agricultural land (see Database 1). The choice of changing the use (i.e. 'use' is the utility of the parcel) of the agricultural land is because the price of land in agricultural use is the lowest (e.g. the price is determined by the agricultural policies).

This conversion was influenced also by the majority of refugee housing developers. They take part in the governmental housing associations (see Database 1 - the highest percentage used for developing refugee housing is from public land). Usually, the price of the land is a high percentage of the entire investment. By having the possibility to pay less amount for it, the housing associations can reduce in this way the total cost of the development.

In any case, even if the government made this policy modification regarding the use of land, the available land is limited. Therefore, another option for the developers of refugee housing is referring to landowners to buy or lend the land use. There are, however, certain locations where the plots are privately owned and the private owners can behave differently. (Neutze, 1987) depicts three possible ways of holding onto land.

First of all, some owners are looking to the future prices of the land, looking for the maximization of their profit, speculating that the prices may rise due to population increase and development of the area. Second, is the uncertainty of the future regarding the most profitable form of development (Titman, 1985) and until it's not clarified, the owners are in a stand-by position with their land. Third, is the attachment to the site (Evans, 1983).

There is a strong possibility that private owners have based their decision of not selling their land for the development of refugee housing based on these three principles (e.g. see Database 1 – the low percentage of private land used for the development of refugee housing).

Nevertheless, the ones who chose to sell the land or its use, presumably realized that the investor is solid (i.e. the government) and the development finalization is certain. Additionally, some owners sold the use of the land for a long period of time (e.g. in this way, the owners can receive an allowance over the years for the terrain and on top of that, if they decide to sell the land, an additional payment).

The designation of areas of development, or more clearly, the physical separation of land uses (i.e. zoning) is set by the planning authorities, classifying spaces according to the function or use to which they are put. Although zoning is clearly defined by the planning authorities, the market forces and the consumer demand (e.g. in this case, the refugees) are forcing a change in legislation for being able to construct buildings for refugees, which have a residential use, in areas like industrial estates and undeveloped areas (see Database 1 and 2).

The justification of government intervention may lie in the limits of political ability. So far there aren't any other residents to complain that residential use is mixed with industrial use and the fact that these new residential areas are for the use of refugees, leaves open the argument that there is no reason for not developing in the area, as the resources of the land in residential areas are scarce. In this way, the responsible authorities may not forbid the possibility of having any additional use in the same area in the future.

A further motive could be fiscal zoning. Although land-use planning could be seen as the maximization of economic welfare by allowing in certain areas land uses which generate high property tax (Evans, 2004), the planning authorities, in this case, may have thought of doing the reverse. The presumption here is that since industrial properties may generate low demand for services, the property tax paid for the refugees housing in these areas will be as low as for the industrial parcels. As the government (i.e. the municipality's offices) is the one who pays for the development and the municipality's construction offices are the owners of the establishment, the tax has to be bearable.

In this context, land-use planning seeks to act upon such uses, to serve multiple ends. The political intervention in the land use planning is significant as it was made possible by the adaptation of new land use to the existing one, by allowing the construction of refugee homes in industrial and undeveloped areas. This was an important aspect to illustrate in the present thesis because it shows clearly that the need created by the refugees (i.e. the construction of establishments) is influencing the land market, which is a significant component within the housing market.

Having introduced the social framework and the additional external factors, a model, defined to summarize which are the main factors that generate an influence on the housing market and how they are connected to each other is presented hereafter. This model serves as a reference for the structure of the analysis.

4.3. The model to assess the influence

To be capable of performing an adequate analysis of these complex circumstances, a model that represents the fundament of the research is developed. It aims at finding whether the refugees are influencing the housing market and to which extent. The model reported in Figure 14 evaluates the impact of the refugees on the housing market through a complex series of influences anchored to the classical supply-demand chain.

Each component of the model has its own different complexity; thus, the model must be read in the following way. The social framework – elements in blue – influences the stakeholders – in green – (e.g. refugees, the government, developers, and owners). Every option they consider and every compromise they find (e.g. flee the country, applying policies to receive the refugees, constructing affordable housing, etc.) is converging into a behaviour. Hence, there are depicted three types of behaviours with respect to the three main categories of stakeholders: B_1 – corresponding to the refugee's way of acting, B_2 – correlated to the government decisions – and B_3 – matching the developer's and owner's attitude towards the housing supply and price.

The context of migration is determined by the push factors as war and poverty. The affected people are placed in a position where they have to make the decision on whether to migrate or not. Hence, through their decision, they are starting to develop a behaviour – B_1 – which may grow or diminish if this it's corroborated by a series of adjacent factors.

The behaviour of the refugees is, for instance, affected also by how integration is used to incorporate them into mainstream society. Integration plays an important role in sustaining indirectly the demand for housing. Avoiding a clash of cultures (e.g. most of the refugees from the analyzed period are coming from non-EU countries and have a different culture compared with the ones of Europe) and the potential problems which may occur during the time of their integration (e.g. segregation, discrimination, inadaptation), is paramount for the years to come regarding how the refugees will be perceived by the society.

The government, developers and owners have to choose their direction of action with respect to the refugees (i.e. accommodation, integration, access to the country, etc.). For example, political development represents the social framework which through the established government exerts a behaviour – B_2 – that serves as pull factors for the refugees.

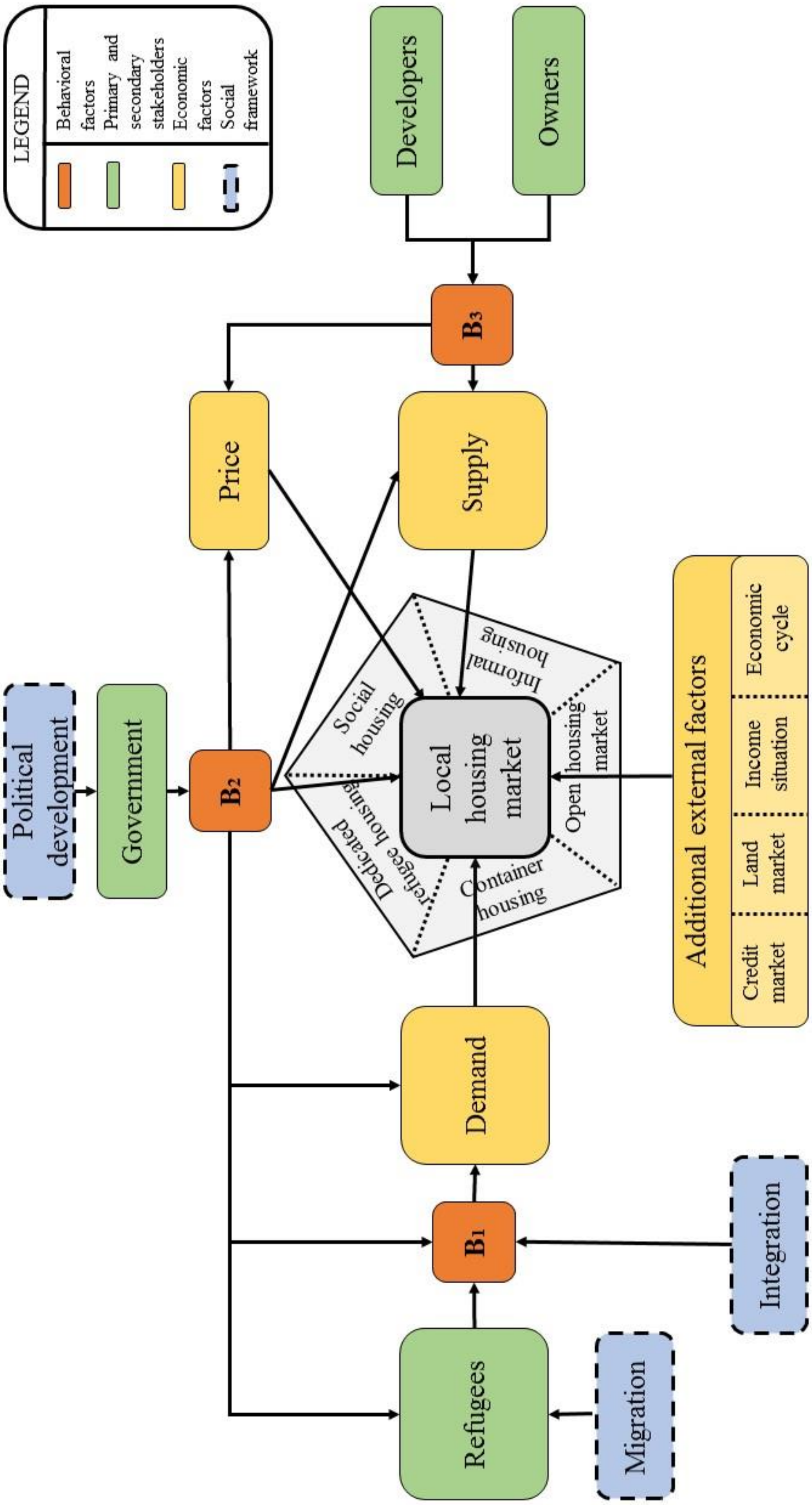

Figure 14 *Topic explanation. The influences on the housing market.*

Through the political decision and the enforced policies, the government is firstly influencing how big is the wave of refugees and how many people the country accepts. Secondly, the government of the potential host country affects their decision – B1 – to migrate or not towards Germany. For example, when Merkel stated in 2015 (as the current influx of refugees started to take form) the famous sentence "Refugees, welcome", for most of them the final destination became Germany. Thirdly, the behaviour of the institution is influencing directly the behaviour of the refugees and whether they will reach to transform themselves into real demand for housing or not.

In the model, the refugees are perceived as secondary stakeholders because they are not taking part directly in the economic process. Their influence on the housing market is incrementally analyzed in the present thesis (Chapter 4.4) starting with their arrival in Germany – when they are settled in emergency accommodation – until they are receiving the protected status (i.e. are considered people with asylum seeker or refugee status – the ones who have the most rights) and after, when they gain employment.

On the contrary, the primary stakeholders (i.e. the government, developers and owners), through their decisions – B2 and B3 – are in charge of managing the existing housing stock, producing new additions to it and establishing whether to grant access to the refugees to a specific housing sector. They also set and affect the price of the housing that gets on the market, which in turn, influences directly the local housing market.

The way of acting of the government is directly spreading influence on the local housing market together with the additional external factors (credit market, land market, income situation, economic cycle) and their effects. The credit market represents a highly important additional factor that is applied to numerous situations as lending capital for buying an asset. When there are too many fluctuations in the market, it becomes more difficult to establish a loan agreement and the possibility of purchasing a housing asset may become lower or inexistent. Of course, this depends also on the income situation of every household in the country. All of these features are connected to the economic cycle of a country, more exactly to the natural fluctuation of the economy between periods of expansion and contraction.

Land use is significantly essential too. The land is accommodating the main human activities therefore its use is highly important because it determines its functional structure (e.g. housing, work, leisure, infrastructure, nature protection, heritage, etc.). In this particular case, land use represents the main factor that allows the construction of housing for refugees.

Through land use regulation are being solved the quantitative questions about how much land should be allocated for the construction of refugee housing, whether the market condition allows the land to be allocated for the construction, which location is better, which technologies are proper to be used when developing the projects and also the temporal aspects of the stages of planning and construction. Each of these factors is considered further in the analysis.

The arrows connecting all the terms illustrated in the model have particular importance because they detail all the inter-connections and show the causality of the effects. The effects are generated originally by the primary and secondary stakeholders. Through the identified behaviours, such effects are cascaded to more effects that eventually converge into the local housing market definition. These effects, summoned to the ones generated by the additional external factors, compose the overall influence on the local housing market. Therefore, it is deemed relevant to assign a weighting to each effect produced by the stakeholders (physical entities) and by all economic factors as identified in the model. The weight of the effects is quantified in the last part of the present thesis in chapter 5.8. by assigning to each effect a low, medium and high quantifier. Such quantification is related moreover to the evolution of the refugees' status over time, having this an important role. As a consequence, the effects and the resulting weighting (thus the influence) changes over time.

The model additionally aims at aiding the understanding of the links and the effects related to each decision undertaken by each stakeholder and therefore to help the decisional processes.

Departing from the hypothesis that not all the refugees are producing the same effect on the local housing market (e.g. as their status – from the entrance to the country until receiving the protected status – is evolving over time), it was concluded that a local housing market segmentation through a series of structural and sectoral attributes was needed and beneficial for a deeper analysis reported afterwards in the present thesis. By analyzing the profile of the refugees, the legislation connected to them and the state of the art of the housing stock, several submarkets that refugees may have access to were detected:

- informal housing;
- container housing;
- dedicated refugee housing;
- social housing;
- open housing market.

Informal housing represents emergency shelters, tents or reception centres. They are the places where at the arrival in the country the refugees were first sheltered.

Container housing is the adjacent type of housing which necessity emerged because of the lack of follow-up accommodation to offer to the refugees. The dedicated refugee housing is the additional housing stock constructed for their only use (see Database 1), but giving access also to other categories of people. The social housing sector portrays the so-called affordable housing, which in Germany is characterized as being a shrinking sector. Ultimately, the open housing market or regular housing market represents the sector where hypothetically everyone has access to. The influence of the refugees is to be analyzed through each mentioned submarket.

4.4. Influence over time and the differentiation of stages the refugees go through

The section of the present thesis, where the rules and laws applied to the refugees were analyzed (Chapter 3.3.), pointed out that the status of a refugee transforms over time. It is connected to the application procedures of the available protected statuses for the refugees (e.g. asylum protection, refugee protection, subsidiary protection and a ban on deportation). At a given moment in time, the refugees can have different accountability, regarding the protection status they are in. Therefore, in the present sub-chapter, the refugees take part in four groups that aim to understand better what is the starting level from which they can produce an influence on the housing market.

Correspondingly, the refugees are divided into four different groups according to their legal status in Germany. These groups are regarded as stages. To every stage, a given profile based on various aspects (e.g. legislation, accommodation, finance, employment, education, etc.) is assigned.

At the arrival in the country, a refugee has first to register and then a decision on which type of protection can be applied is made. Getting a protection status requires time to be processed and has different steps to run through. From the four protection statuses, in the present sub-chapter, the applicants who get subsidiary protection and a ban on deportation are neglected because they represent a considerable small group, they receive a residence permit for one year only and have fewer chances to get a settlement permit.

Based on these criteria the data gathered data in Annex 1, 2, 3, 5 and 7 offer support in creating the scheme from Figure 15. This scheme must be regarded as a point of reference because it is used further in the analysis to examine the magnitude of the influence of each stage to the housing market. Figure 15 complements the model presented in Figure 14.

Through analyzing all the legislation, data, and additional policies regarding the refugees from the previous sub-chapters and from the data presented in Annex 1, 2, 3, 5 and 7, it has been noticed that not all the refugees produce a direct influence on the housing market and the degree of influence is connected the level they reached at a given period of time.

The status of a refugee does not remain the same after the arrival in the host country. First, it evolves depending on how fast the responsible authorities are processing their

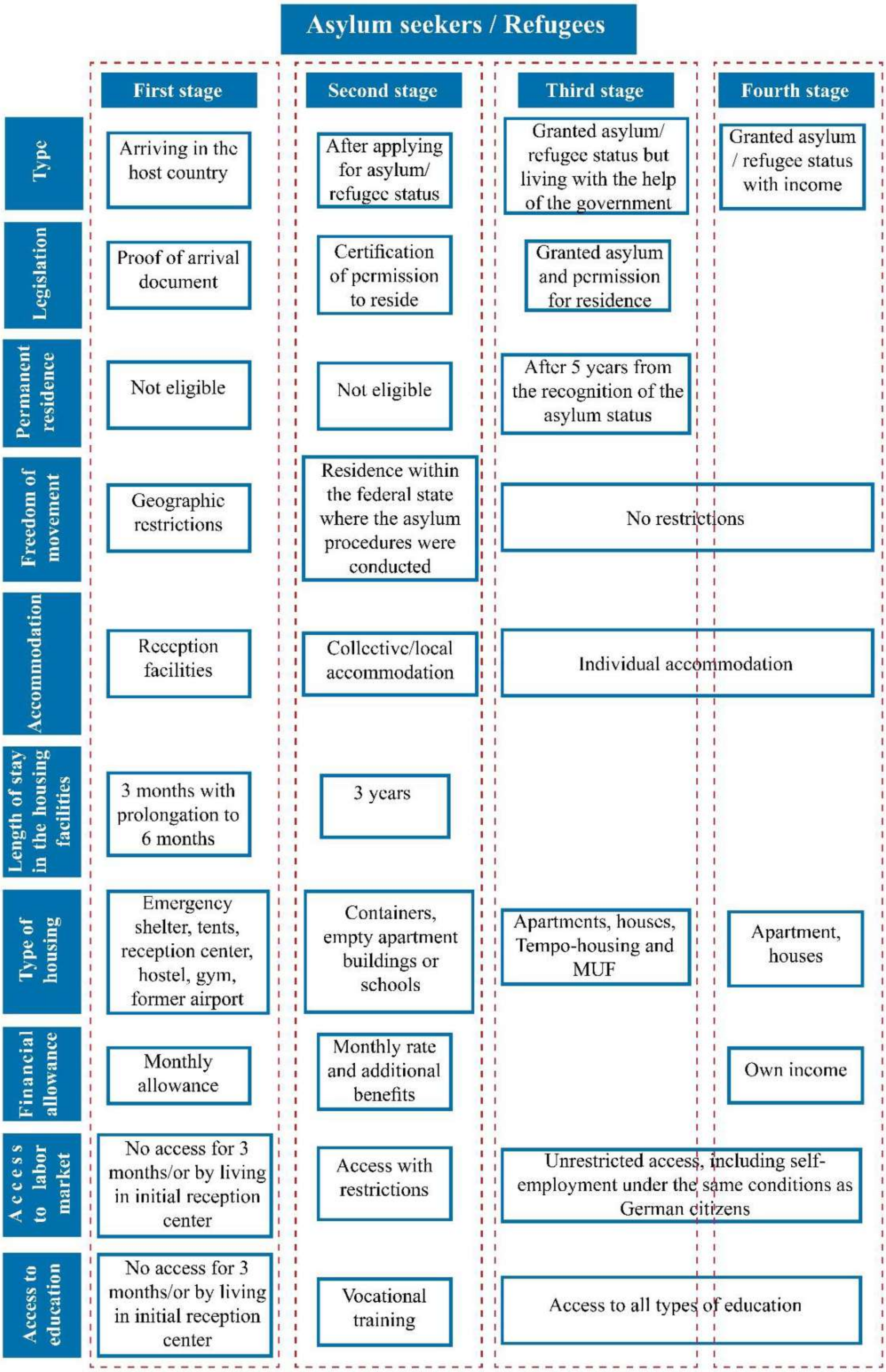

Figure 15 *The four stages of refugee/asylum seekers*

application. Second, the refugee's responsibility is to adapt to the rules of the host country and to integrate themselves through learning the country's language, enrolling in an education or vocational training and enter the labour market.

The classification of the stages is made as follows. In the **first stage (S1)** are refugees who just arrived in the host country. At this moment, they have limited rights. With reference to the law, after the registration one receives only the proof of arrival document and the obligation to stay in the reception centre for three months with an extension of up to 6 months. The duration of stay in the reception centres may change depending on the laws enforced by the government. Reception facilities are the only accommodation facilities in which the refugees are allowed to live. These could be emergency shelters, tents, reception centres, hostels, gyms or former airports. Allocation to a specific reception facility is decided according to the current capacities at the moment of arrival. Choosing the location of these reception centres depends on how many people are arriving at the same time and of the decision taken at the government level.

Refugees who are belonging to the first group don't have access to the labour market for a period of three months or as long as they still live in the initial reception centre. They receive a monthly allowance and other benefits (e.g. food, clothing). Moreover, one has no access to any type of education as long as living in the initial reception centre.

A preliminary judgment based on the information highlighted for the first stage is that the influence exerted by the refugees on the housing market is low. In this stage, the refugees cannot move to an accommodation they prefer. They are in fact distributed in the initial settlements by the municipalities. The municipalities assigned by the government are in charge of finding these settlements and in some cases, building them. Although the will of refugees in **S1** doesn't play any role, they nevertheless represent a demand for housing. The fulfilment of this demand doesn't necessarily have to be found in the existing housing market, as many of the refugees are placed in tents or empty schools or former airports.

For this stage (**S1**), the government is the one which takes every decision and correspondingly, the one which can influence the housing market. It's doing so by choosing the land where to build the reception facilities, by establishing where to allocate the reception facilities around the country and the districts, or which empty housing can be assigned to the refugees. Furthermore, by building ad-hoc reception facilities in certain neighbourhoods which concentrates a high amount of people is having an impact on the whole area. The length of time these facilities are still standing, they can drag down the value of the surrounded buildings.

A refugee in the **second stage (S2)** is considered after filling in the necessary forms to apply for protection. After this step, one receives the certification of permission to reside, which replaces the document received in the first stage.

As for accommodation, people are settled in collective or local accommodation, which could be formerly empty apartment blocks, housing containers, apartments, former schools, with permission to stay there for up to three years. However, people in this stage are not free to move from a Federal Land to another, because they are tied to the one where the asylum procedures were conducted.

Since August 2016 in some Federal Lands, people are obliged to remain even in the local area where the asylum procedures are in progress of finalization, for up to three years. This condition could be lifted if the refugee has strong reasons to leave the area (e.g. family, education or employment-related reasons). In addition, location-related residence regulation could be lifted any time when a person who is entitled to protection, his, or her spouse or a minor child is employed for at least 15 hours per week and earns a certain gross income (as from 2016: 712 EUR) or is studying and undergoing vocational training.

In this group, refugees have a higher monthly rate for a single adult than the first stage and can receive also other financial benefits upon request (e.g. in case of illness, pregnancy, and birth, education, membership, travel, etc.). Furthermore, access to vocational training is permitted only by first obtaining an employment permit and access to education is also permitted.

The accommodation difference between the first two stages is that for stage **S2**, the authorities get housing for the refugees from different segments of the housing market such as container market and open housing market. Therefore, this stage (**S2**) is still controlled to a certain extent by the government. However, the refugees can receive permission for taking their own accommodation arrangements. They first have to find a housing option on the open housing market and then make the landlord wait until it is presented to the responsible office for review. In any case, the review time length is not fixed, thus it may last more time than the landlord is offering, also because there is a high demand on the housing market.

The **third stage (S3)** is referring to the people who were granted any of the two protection statuses: asylum or refugee protection and is living with the help of the government (i.e. has no income and receives subsidies).

The documents that one receives at this stage are granted asylum/refugee protection and the permission of residence. The permanent residence is in general received after five years from the recognition of any of these statuses.

In this stage (**S3**), the person has no geographic restrictions in terms of free movement between the Federal Lands (e.g. outside the country is still not permitted) and is accommodated in individual accommodation such as apartments, houses or different apartment buildings, specially created for asylum seekers. It receives the same amount of money and has the same rights to subsidies as the person from the previous group (**S2**), but has unrestricted access to the labour market, including self-employment under the same conditions as German citizens. They are granted access to all types of education, under the same conditions as German citizens.

Starting with the present stage (**S3**), the refugees influence directly segments from the housing market like the social housing market, the dedicated housing market for refugees or the open housing market. They can take upon accommodation, therefore they are added to the overall demand for housing as any German citizen.

In the last stage, **stage four (S4)**, is the person whom not only it has been granted asylum, but also is not living with the help of the government and has its own revenue. There is no restriction in moving through the Federal Lands, accessing the labour market or education. Every access (e.g. education, employment) could be made under the same conditions as German citizens. The accommodation is individual in apartments or houses.

The fourth stage represents the housing demand on the open housing market and social housing market.

In addition to the rules presented along the four stages, the following exceptions are presented. The conditions to achieve permanent residence (obtain a settlement permit) are only fulfilled by **S4** (e.g. sustain a secure cost of living, knowledge of the language, demonstrate integration achievements, vocational training, criminal background check). The access to the humanitarian organization's help is granted for all of them, except for **S1**, where is under restriction and is being tight to the approval of the reception centre.

Having said that **S1** produces only an indirect influence on the housing market, for the other three stages, more detailed conclusions will be given at the end of the entire analysis, because in the next chapter the influences produced on each sector of the housing market are examined, concentrating on the factors illustrated in the topic explanation from Figure 14.

Database 1 and 2 are offering support in building and outlining the nature of the influences.

Chapter 5 Effects spotted on the housing market composition

5.1. General overview

So far in the present thesis, the discussion was concerned with the introduction of the current context regarding the migration of non-European citizens towards Europe, the social framework and the migrants' connection with the housing market. By determining the profile of the refugees and establishing the real demand for housing, the particular influence on the housing market can be now assessed.

Basing the following analysis on the results produced so far, on the profile of the refugees and the two housing databases (i.e. Database 1 and Database 2 – reported in Annex 13), the next task is to try to divide the housing market in an optimal way. A housing market segmentation is needed in order to identify the specific sectors that are influenced by the refugees.

This chapter examines five segments (submarkets) of the housing market:

- Informal housing;
- Container housing;
- Dedicated refugee housing;
- Social housing;
- Open-housing market.

The housing submarkets are defined using information from the case studies and the enacted laws regarding the refugees. All the information reviewed is clustered in order to form homogeneous segments and give a comprehensive procedure for constructing, testing and analyzing the housing submarkets influenced by the refugees.

At the end of Chapter 4, the four stages that refugees go through were determined. In the present chapter, the stages of refugees are connected to the housing submarkets. This method is applied so that the results of the refugees' influence on the housing market in Germany are narrowed to the exact submarkets that register any relevant change.

5.2. Housing market segmentation

This section reviews selected related literature dealing with housing submarket division, highlighting the way a housing submarket is achieved in the literature. By using the insight gained from the previous studies and applying it to the four-refugee division determined previously, the housing submarkets in Germany are determined.

5.2.1. Related literature on housing submarkets division

The initial use of the term ‘segmented market’ is in the field of marketing, where a product is differentiated by its producers in order to spot the desires of demanders sub-groups. The same principle is applied to the housing market by researchers, each of them combining several elements, tailored to better answer their inquiries.

First of all, an understanding of housing may prove to be important for how the submarkets divisions are further analyzed. Housing has a unique nature characterized by (O'Sullivan, 2004) through five factors:

- heterogeneity of the housing stock (they are different in size, location, age, floor plan, interior features, and utilities);
- immobility (houses cannot be moved from a location to another);
- durability (most of them with the proper maintenance last for many years);
- high purchase costs (it is good with high monetary value);
- high relocation costs (normally households are forced to undergo big changes when they move).

Relevant research from (C. Jones, Leishman, & Watkins, 2004) characterizes the core concept of a housing submarket by comparing housing stocks from different groups from an overall area, dividing them through certain criteria (e.g. costs and information constraints). The results lead to changes in prices and structure quality applied to household migration patterns.

In the literature, several researchers combine more characteristics and techniques related to each core group. Some claim that the housing market is segmented with respect to the size, location, and quality of a dwelling. For instance, some individuals are searching for dwellings of a size above or below a certain dimension. Thus, a sub-market is formed corresponding to this criterion. In the same way, individuals may search houses flexible to their needs (e.g. in high-quality districts, in close proximity to the job location or a school, etc.) and adaptable to their way of living or income (e.g. modern or old houses). In the same way, many other housing submarkets can be created.

The work in this sector is varied, therefore, in addition to the previous techniques for housing market division presented, the following attributes are important, as they inspired the subsequent analysis. Thus, a basic bundle characteristic used by researchers to divide the housing market is:

- spatial (e.g. administrative boundaries)
- structural (e.g. dwelling types or a number of bedrooms)
- sectoral (e.g. neighbourhood aspects)
- by demand factors (e.g. income and race)

This division will be used in the present analysis. The inspiration behind these four groups has been drawn researchers to use different identification schemes for defining housing submarkets. (see (Maclennan & Tu, 1996), (Ball & Kirwan, 1977), and (Allen, 1995))

Of particular relevance to the present research is the work of (Goodman & Thibodeau, 1998) which proposes to define housing markets in geographic areas where the price of housing is constant and individual housing characteristics are available for purchase. A hierarchical model is used to explain that the size of a dwelling is eventually connected with the school quality within a district (e.g. they consider properties within neighbourhoods, neighbourhoods within schools' zones). The good quality of the amenities from a neighbourhood, such as schools or kindergartens, attracts people with families, who require more space to accommodate each member. Conversely, young professionals or couples, have different accommodation preferences that match their lifestyle (e.g. in the proximity of public transportation, close to the city centre, gyms).

Another significant method that inspired the following analysis was adopted by (Bourassa, 1999). The research delineated groups of individuals (e.g. buyers or sellers) that are restricted to enter the market of a particular geographic area. In this way, the housing submarkets were established.

The restriction for entering a specific submarket of the housing market could happen through various reasons such as racial reasons (e.g. different preferences from the side of the buyer, seller or even the real estate agent regarding the person who makes the inquiry), personal preferences upon neighbourhoods or housing, or housing affordability (e.g. not having the whole money and having to depend on getting a mortgage in order to buy the house)

Additionally, (Maclennan & Tu, 1996) strengthens the importance of the housing division as follows: 'If a housing system, in any cross-section study, comprises a series of sub-markets with different degrees of disequilibrium rather than a unitary, coherent system, then conventional city-wide hedonic and demand function estimates may be misspecified'.

The systematic review depicted in the previous lines presents that the housing market can be delineated in different ways. The key is to distinguish the relevant factors related to what exactly the desired outcome has to be and what is seeking to be investigated. In the present context, introducing segmented housing markets is fundamental for researching which housing submarkets the refugees have access to and which submarket can be influenced by their actions. This argument will be addressed in the next section of the present chapter, which proceeds with applying to the refugee's behaviour the different methods used by the researchers outlined in the upper review, adding external factors tailored to this situation.

5.2.2. Defining housing submarkets in the present context

This section outlines the specific methods used to divide the housing market for the present context, according to the four-group identified above.

To narrow the research, the spatial factor used for the analysis is the geographic restriction. Thus, the analysis is performed in Germany.

The source of the data is Database 1 and 2 where the case studies on housing stock for refugees are collected. The attributes of the housing stock are highly important because by clustering the results of the case studies, the housing submarkets can be depicted more easily. The variable which weighted in the submarkets identification is the type of building. Four types of residential accommodation/units are identified:

- Ad-hoc accommodation (e.g. emergency shelter, tents, reception center);
- Container housing units;
- Housing units built for the use of refugees (e.g. modular housing);

- Houses or apartment units (i.e. from which some of them are social housing units).

Each of these units is characterized further by delineating the building method, floor area, layout type, construction costs or the number of units of that specific building constructed.

The demand factor is given by the refugees; hence, the housing submarkets are strictly limited to this group. The number of refugee households is portrayed through the determined profile from Chapter 3. The household size refers to one member for a big portion of the total number of refugees registered (i.e. alone men in the employment age). The target age corresponds to 14 -64 years old (encompassing85% of all the refugees registered).

The refugees are potentially representing part of the labour force. The employment/unemployment of the refugees determines the influence on the housing market, as well as the taxes or the subsidies they may pay or receive. In shaping the demand, variable household income is considered. For instance, the income of a household is increasing if additional subsidies are received, so it is their demand for housing quality and their possibility to enter a certain housing sector.

In addition to these variables, the condition under which refugees can obtain real estate financing (e.g. through institutional factors like credit or mortgage regulation) determines their affiliation to any housing submarket.

Since the status of the refugees is evolving over time, simultaneously, also their accommodation possibilities are progressing. Correspondingly, it could be hypothesized that a significant correlation exists in the fact that at a certain moment in their growth, the refugees may be prevented to enter a particular housing submarket. Therefore, by associating the four stages to the analyzed housing stock (the classifications are driven by the physical characteristics of the housing units from Database 1 and 2), the following housing submarkets are delineated:

- Informal housing (e.g. normally corresponding to the first stage only);
- Container housing (e.g. normally corresponding to the second stage only);
- Dedicated refugee housing (e.g. may refer to all the stages);
- Social housing (e.g. may refer to stage 3 and four);
- Open housing market (e.g. may refer to stages 3 and four).

To sum up, this section has identified five segments (submarkets) of the housing market, which represent the main areas covered by the present research. The nature and characteristics of each segmentation are dynamic in response to the varying demand; hence, each submarket is analyzed in detail hereafter.

5.3. Informal housing market

First and foremost, in the present thesis, informal housing is not referring to housing settlements that took form illegally or are not in compliance with the German planning and building regulation. In the present context, the informal housing market is developing to provide shelter when the rapid growth of the population is registered. In 2015 the influx of refugees started to increase, in Germany being registered more than 1 million people (see Figure 2).

While facing a limited housing stock, shortage in other affordable housing sectors and tight development restriction, informal settlements remain to fulfil the accommodation needs in the quickest time possible.

Informal housing is weighted toward the lower end of the housing market (Wegmann & Mawhorter, 2017), as a result of the poor and unsafe living condition and registered trend in overpopulation. Additionally, the relevant body of work in this area considers the informal housing sector as a 'temporary dysfunction caused by rapid growth and imbalances in the distribution of resources and income' (Gilbert & Ward, 1982).

5.3.1. Methodology

Limited information about the informal housing market exists in Germany, therefore desktop research is conducted. Interviews, articles and reports from German local news, literature, AIDA[37] and BAMF are collected to set up a better understanding of the current sector. Each relevant data was considered and then reasoned, in order to offer as many insights as possible about a sector of the housing market which was less taken into a consideration and which apparently has considerably evolved.

The attention in the present subchapter is given to particular subjects that take part in the informal market sector: informal housing (e.g. tents, emergency shelters), informal renting (e.g. sub-tenants) and the informal market of brokers. All these aspects are considered for the German informal housing market.

[37] AIDA – Asylum Information Database

The refugees considered for the current housing sector refer to the first stage from the refugee division.

5.3.2. Size, characteristics, and type of the sector

In Germany, a considerable quantity of informal housing settlements is placed due to the arrival of a large number of refugees that requested asylum/refugee protection. As a response to the lack of vacant affordable housing stock, the government allocated tents and emergency shelters to host the refugees.

Even if in some parts of Germany (e.g. especially in type A city) vacant land for constructing residential buildings is scarce, thanks to changes in policies, informal settlements were placed on empty land. Most of these establishments are located next to big cities or in small towns within a short distance to the next big city (i.e. A cities and B cities[38]), while others are located in rural areas isolated from any type of facilities (e.g. supermarkets, hospitals, etc.).

The informal housing market is addressing to narrow clientele (e.g. homeless people, people who are living with government subsidies, refugees). The size of the present sector is not of big amplitude, reaching its peak when the most arrivals of refugees were registered. Basically, this sector is developed specifically for coping with this type of situation and it expanded during the time needed for processing the refugees' application. Moreover, the supply of informal settlements has increased along with the rising demand (i.e. a higher influx of refugees) and, hence, the stock has expanded.

Since the available affordable housing stock is limited, the government geared up places like former airport, gyms, barracks, warehouses or schools, with matrasses, beds or cubicles (see Database 1). The cubicles are installed in big spaces to provide the refugees with little privacy even if large numbers of people are accommodated under the same roof. Even if the government set a bunch of regulation on accommodation standards regarding the living space per person under these conditions, the spaces in certain Federal Lands were packed with people (see Annex 6). Some of the initial reception centres have a capacity of several hundred places.

[38] Classification by market type; e.g. A-type: major cities of international a national importance (Berlin, Düsseldorf, Frankfurt am Main, Hamburg. Cologne, Munich, Stuttgart), with larger property markets in all segments, B-type: bigger cities of national and regional importance (Bonn, Dortmund, Essen, Hannover, Mannheim, etc.) Source: Definition by bulwiengesa AG

From the examples presented here, it can be seen that informal settlements are characterized by overpopulation. High population density is not bringing many benefits to any area in which these accommodations are located. They are lowering the value of the housing units from the neighbourhood, as these establishments are being defined by low-quality standards. This may explain why many of them are located in isolated rural areas in D-type cities[39], where the market prices are already lower.

There is no available standard for the initial reception centres, therefore the Federal Lands can develop them as they see suitable. The service provision for this type of facilities is basic (e.g. electricity, water, food, and bathroom facilities. For newly built centres, the amenities are modern, whilst for refurbished barracks, unsanitary conditions are reported[40]. The access to medical facilities is available on-site, but for the high number of people accommodated is not enough.

The sharing services is among a high number of people. For instance, in some Federal Lands, up to 12 people can share a shower. In addition, even if among the Federal Lands there is the policy to accommodate women, children and vulnerable people in separate buildings, due to overcrowding situation, this cannot always be achieved.

The safety of any type of informal housing can be poor. Plenty of people could find themselves in vulnerable situations. Cases registered by (Foroutan, Hamann, El-Kayed, & Jorek, 2017b) indicated that refugees were victims of assaults, discrimination and open racism.

5.3.3. Dynamics of the informal housing market

The informal housing market has different dynamics in comparison with the other sectors of the housing market because it's a segment which takes form as a result of a need that has to be fulfilled. Available accommodation cannot be constructed before such situation is occurring because forced migration cannot be foreseen. For instance, the primary stakeholder in this segment is the government. In this stage of arrival, the refugees are under the government's responsibility, while investors are not interested in this segment of the market.

[39] Smaller cities, with regional or local focus and lower market activity; Source: Definition by bulwiengesa AG
[40] Süddeutsche Zeitung, ''Die Regierung muss hier sofort einschreiten'', 26 March 2019, available in German at: https://bit.ly/2OGa40d.

For instance, as a response to the refugees' needs, the representants of the governmental services in Hamburg created a product which has direct applicability to the need and is focused on the goal (i.e. accommodating the refugees). They developed a tent (e.g. Domo Tent[41]) built to last up to 10 years. Its modules could be linked to form a bigger unit that accommodates more people. It is designed to give the refugees a flexible housing solution which complies with the German construction regulation. Due to the extended life-span, this option could be an answer for the scarce affordable housing solutions that are built yearly (see Annex 11).

Although the permanence in such initial accommodations should be for a short period of time, due to lack of information about their rights and the scarce availability of affordable rental housing on the open housing market, refugees can remain in this type of settlements for a long period of time.

The deficiency registered in terms of environmental safety and the quality of services of the reception centres makes the refugees revise their housing option quite suddenly, even on the black markets. Most of them understand that there is no legal protection if they choose to refer to the informal market of brokers, but landlord discrimination, low affordable housing stock (e.g. which is not only available for the refugees but includes every people with a low-income situation), low knowledge of the local language and the improper living situation within the initial accommodations make them take these high risks.

Taking advantage of these circumstances, considerable informal network expansion is forming. These informal business organizations are mostly based on trust and they expand through the word of mouth, as no one can verify if the brokers really can find accommodation. Hence, many people are becoming specialized in trading apartments on the black market and not every time the promised accommodation is fulfilled.

The so-called agents are using the less experienced refugees and their situation, demanding very high commissions (i.e. which can vary depending on the surface of the apartment) together with advanced payment. Many times, that deposit is for apartments inhabited from other households[42]. Even if refugees may never end up to getting that apartment, they are forced to do high sacrifices and sell all their belongings to be able to pay the agent's

[41] http://www.morethanshelters.org
[42]https://www.tagesspiegel.de/berlin/wohnraummangel-in-berlin-wie-fluechtlinge-bei-der-wohnungssuche-abgezockt-werden/20413364.html

fee.[43] Consequently, in informal environments, the rental housing types offered on the black market are apartments, rooms (e.g. with or without shared bathroom) and a part of a room (e.g. bed, couch).

On the strength of more prolific factors registered in urban areas (e.g. higher demand, the low available supply of any kind of housing, high density in emergency shelters, less affordable housing option) the black market can easily expand. Even if agreements and access to the chain of brokers are carried out by the word of mouth, support from the housing companies with available affordable housing exists. There are registered cases where housing units are taken out from the official housing stock and let through the black market by certain employees[44].

Another type of rental arrangements that takes part in the informal housing market sector is sub-letting. Basically, people who live in rented accommodation decide to rent out part of their rented space (e.g. extra bedroom, living room, couch or mattress) under specific reasons (e.g. share maintenance costs, make extra income). Even if this is common practice also on the open housing market, in this context, everything is illegal and these spaces come with additional inconveniences as overcrowding, lack of space and privacy.

Yet, due to the absence of clear information about what is happening inside the current housing sector, the variety of landlords and rental housing types cannot be identified.

5.3.4. Concluding remarks

Due to the prolongation of the asylum/refugee protection procedures, the refugees can be tight for a long period to their initial accommodation. Therefore, the settlements represented by the informal housing market can be a response to the lack of affordable housing existing on the German open housing market. Part of the informal housing sector and evolving from the unfulfilled housing demand is represented by the informal black markets, whose formation is also due to the long procedures put in place by the governments.

[43] http://www.spiegel.de/panorama/gesellschaft/fluechtlingsheim-am-grenzweg-wie-schwer-fluechtlinge-eine-wohnung-finden-a-1153763.html
[44] https://www.deutschlandfunk.de/das-geschaeft-der-schwarzmakler-wie-fluechtlinge-am.724.de.html?dram:article_id=374158

In this way, for the refugees who tried and failed to get an accommodation in any other housing sector (i.e. open housing market, social housing, dedicated housing for refugees), the black informal housing market represent an alternative solution. Although the housing tenure security in this sector cannot be guaranteed, the refugees are forced nevertheless to take the risks. The higher the demand is, the more this sector tends to enlarge as a consequence of the obstructed path of accessing any other affordable housing sectors. Since in type-A cities broader employment opportunities exists, the refugees are converging to these areas. Thus, the black informal housing markets are more likely to spread in larger cities.

5.4. Container market

Containers are generally used for shipping goods around the globe. They were invented specifically for this purpose, to contain retail items to be transported. Since the transportation path to the destination they may follow can be diverse (i.e. by sea or by land), the containers are built to resist harsh environments and weather changes.

Containers are used also in architecture. Turning containers in living spaces is referred to as cargotecture. For instance, the container's shape permits the creation of various structures that can fit multiple uses: housing, schools, offices, or studios.

Changing the use of a container from a cargo box into a habitable space, or choosing to upcycle shipping containers for home building purposes, brings along both technological and social challenges.

The rigid design of the boxes doesn't permit many cuts and openings without having solved the technical issues which may appear regarding the structure of the establishment. To be a cheap and fast solution for temporary homes, the complexity of the established container typologies has to be basic. The sophisticated design is creating additional costs and takes more time to be built.

On the other hand, from a social point of view, these modular habitats have to encompass proper living conditions and adequate living space per person. Having a standard dimension, containers cannot fulfil the necessary space for one person with only one unit. That's why it is required more than one container to build proper housing. Every additional container brings up the construction costs because they require openings for doors and windows, which are done with special equipment.

The key benefit of these establishments is the time of construction, which is shorter than one of a conventional building. Because of scarcely available housing stock in Germany and the necessity of quick accommodation of the people who were arriving in high numbers in 2015, container housing was highly adopted around the country as a follow-up accommodation.

Refugees influenced on a high scale the development of this sector of the market which at the moment still represents a viable solution of housing for the people who did not find yet the possibility to move up onto the ladder for another type of housing. This situation is met especially in big cities like Berlin, Hamburg or Munich where the vacancy rate is very low (e.g. 1.2 %, 0.6 %, 0.2 % respectively – report from Deutsche Bank in 2018 – see Annex 9).

Under these circumstances, the difficulty to find a place to live is challenging for everyone, even if the construction permits for new dwellings are on the rise (see Annex 9). The large volume of demand for housing triggered important changes in the structure and organization of the housing market.

5.4.1. Size and type of the sector

Typically, around the globe, container homes are highly used as an adjacent accommodation solution for victims of natural disasters. They don't represent the best idea of housing where to start a new life as many people consider them a social barrier. (Balogun, 2018) research on the subject highlighted that people have an established mindset with respect to container homes, that is, they perceive them as a housing solution for poor people. However, other types of container homes with a great variety of structures are the alternative, such as the stacked formation of metal boxes homes created by architects, or prefabricated containers.

Germany has not introduced container homes for a long time. Their use is shaping up and growing since the mass-arrival of the refugees in 2015. Container homes represent a response to the present context apart from the reception centres. It is a solution that can be implemented in a shorter time compared to using the traditional building method. Therefore, containers are built to give refugees individual living space and to move them from the reception centre or emergency shelters where their application is first processed.[45]

Containers are considered as a viable housing option because of the plurality of features they have. They are easy and quick to assemble, eco-friendly (e.g. after their use they can be upcycled), built to resist in harsh environments, and the purchase cost of the unit module is relatively low. In addition, containers can be easily dismantled and move to another location and have lower maintenance costs.

However, they cannot offer the same condition as a conventional house because of their lack of flexibility. For instance, relevant research by (Balogun, 2018) on alternative housing solution in Lagos, Nigeria, reaches the conclusion that container homes can arrive at the same costs or even higher in comparison with the costs of conventional buildings when similar standards are required to be attained.

Nevertheless, the German authorities choose as a housing option for the refugees, container homes. Tempohome or 'temporary home' is a residential container system with a

[45] http://berlin-hilft.com/2016/07/16/faq-zu-tempohomes-was-ist-das-wie-sehen-sie-aus-was-ist-geplant/

lifecycle of 5 years built on the basis of the special building permit for refugee dwellings (§246 subclause 8 bis 10 BGB, Until 31.12.2019)[46]. The word 'tempo' indicates that the present type of housing is intended to be of temporary use. The authorities use them as follow-up accommodation, i.e. to host the refugees after their permanence in the reception facilities.

5.4.2. Methodology

The methodology relied on data collection of 30 container home settlements from Berlin which were specially built for accommodating the refugees. The analyzed data is gathered in Database 2. The total number of cases gathered in Database 2, could accommodate up to 15000 people.

Data collection of the refugees' settlements location is gathered from Landesamt für Flüchtlingsangelegenheiten (LAF) Berlin. Each plot is evaluated with respect to ownership, location, distance to public transportation, amenities that plots have around, distance to the city centre, district, and surface. They are classified afterwards by the site surface. The aim of the present analysis is to evaluate the state of art of the container homes for refugees and the existing living condition in this type of accommodation. The refugees from stage 2 division are the users linked to the present housing sector.

5.4.3. Description of container homes for refugees

Containers are manufactured in standard dimensions (i.e. 240x600x270 cm) and according to DIN ISO 6346, published on November 1995[47] are available in multiple types (e.g. general-purpose container, bulk container, named cargo container, thermal container, open-top container, platform container, tank container air/surface container). Afterwards, they are manufactured into housing.

Tempohomes are implemented by state actors pointed by the government and are owned by the state of Berlin. They are used as reception centres and follow-up accommodation.

[46] http://www.bauwelt.de/themen/bauten/Modulare-Unterkuenfte-Fluechtlinge-Containerdoerfer-Berlin-2624356.html
[47] https://www.iso.org/standard/20453.html

Their transportation to the site is facile because they already comply with the rules of shipping, having regulated dimensions.

Container housing saves time in comparison to a conventional construction building. They have already erected walls, floor, and roof which doesn't require multiple additional expenditures for any improvements which help to turn containers into habitable houses, especially when the climate allows it. For instance, they are not adequate for all types of climates, as for cold climates there is necessary proper insulation that enhances the thermal performance, as the entire structure is made from metal.

The Tempohomes established in Berlin and distributed evenly between the districts (see Database 2) follow the same pattern. There are, however, slight modifications regarding the shape and area of the plot they are assigned. The stack arrangements are adapted to the site by increasing or decreasing the number of residential units.

Generally, the distribution of buildings on each plot is as follows: one administrative building (e.g. which encompasses offices for consultancy, personnel and storage rooms, a space for afterschool activities, a room with computers, one multi-use purpose room, and workshops room), one supply building, one building at the entrance and a number of residential buildings (e.g. as many as the plot allows it). Moreover, on average each site could fit around 8 residential buildings which comprise up to 64 housing units.

The aesthetics of the containers used in Berlin is characterized by a white metal box that may be used in multiple combinations. Stacking the boxes together (i.e. housing unit) is creating a durable structural system due to the panels made from steel. Figure 16 presents the example of a housing unit: 3 containers with each dimension of 240x600x270 cm which accommodates from 4 up to 8 people. Basically, in the case of accommodating 8 people in 45 m^2, the living space per person is less than 4 m^2. In each location are accommodated up to 500 people.

The units are divided into three zones: night area, kitchen area, and bathroom. They are equipped with an incorporated small kitchen, bathroom with shower, beds, wardrobes, chairs, and tables. The housing units are laid on the ground floor and each of them has the possibility of a private entrance.

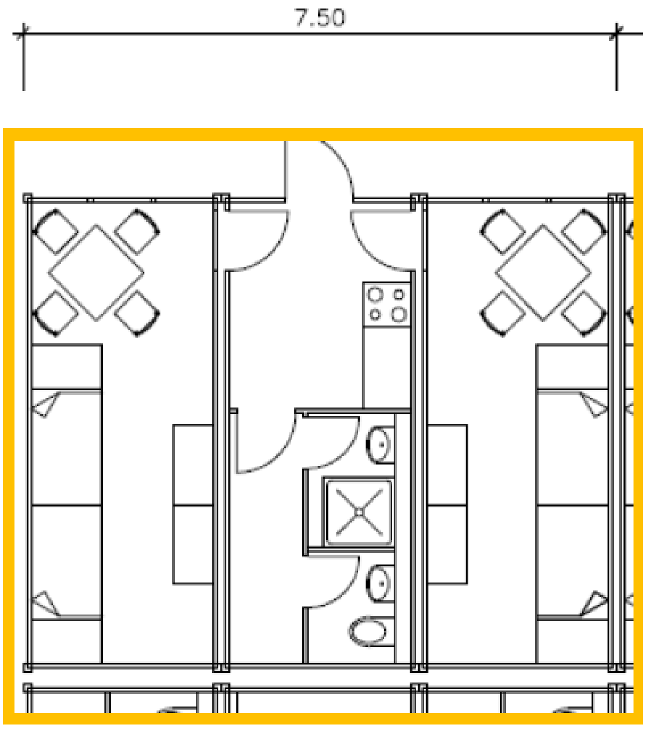

Figure 16 *Tempohome: 3 containers=1 module/house for 4 to 8 people*
Source: Senatsverwaltung für Gesundheit und Soziales, July 2016

To every plot, there are assigned green spaces and spaces for leisure activities. In the outside areas, there are organized spaces for children to play with all the necessary equipment and recreational areas for the residents. All these spaces are done according to the quality requirements provided by Landesamt für Flüchtlingsangelegenheiten (LAF) and the State Office of Health and Social Affairs Berlin.

The container homes established for Berlin are taken as an example because they offer insights about the adjacent fast solution for accommodating refugees. Having a low available housing stock in the country with fewer properties available for the use of refugees, this sector of the housing market is enlarged, to be able to fulfil the growing demand. It is perceived as short-term accommodation as the approved lifespan of the settlements is only for 5 years.

The graphic from Figure 17 is based on the analysis of the information collected in Database 2. It is characterized by two attributes of the container homes; i.e. distance to the city centre (e.g. < 5m to > 10 km) and ownership status of the land where the container homes are built (e.g. private, public), in relation to the surface of the parcels where the container homes are built (e.g. from plots less than 5000 sqm to more than 100 000).

The results of the figure suggest that the available land for building container housing in Berlin is more than 10 kilometres farther from the city centre. Mostly the plots are located at the periphery of the city districts. On the other hand, the percentage of the properties located under 5 km distance from the city centre is dominated by the second group (i.e. with surfaces up to 10000 sqm). However, it has a low percentage in comparison with the other two groups.

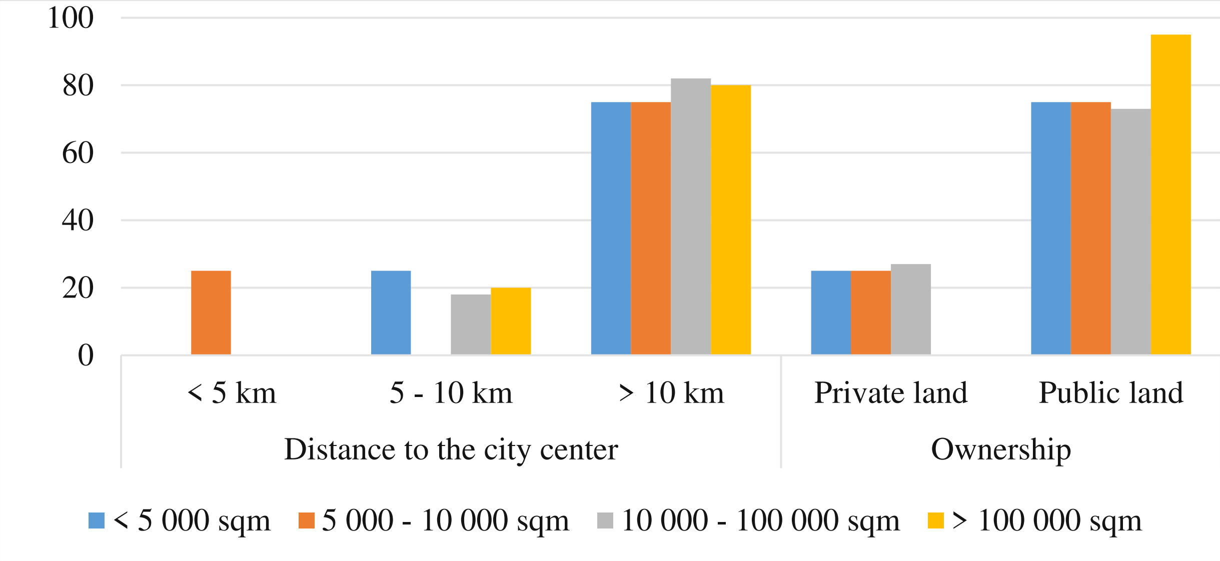

Figure 17 *Characteristics of container homes from Berlin, in percentage*
Source: Database 2

The land used for constructing the Tempohomes is both private and public. Correspondingly, the private land available for building Tempohomes has lower percentages with respect to the available public land.

The description and analysis of these settlements are performed to exemplify the characteristics which form the new type of housing which meets the immediate housing needs for the refugees. It shows also the state of art of particular reception centre and follow-up accommodation.

5.4.4. Submarket dynamics

The dynamics of the present housing submarket are based on changes in the supply and demand level. The speed of growth of the request of container homes is done by the demand represented through the increasing number of refugees and the incapacity of accommodating them in another location. In this way, the necessity of finding new and fast housing solutions is created. Correspondingly, a decrease in demand is lowering the growth of the sector.

Different aspects are characterizing the overall picture to determine if this sector will still stand after lowering the incoming number of refugees or their eventual relocation:

- The product: Tempohomes as a reference;
- Financial and timing dynamics;

- The customer: the government;
- The user: the refugees.

Previously, it was analyzed the state of art of the Tempohomes settlements. Using them at maximum capacity is clearly not a solution to properly live. Not only because of the overcrowding situation but also due to the quality of life which the units are offering. For instance, the units are made of steel and during the summer people could experience intense heat which could be unbearable for each person who lives there if they don't have alternative ventilation. On the other hand, alternative ventilation drives the costs up and the intended fact that they should represent a cheap housing alternative could be surpassed.

Nevertheless, Tempohomes have a good response to the customers (i.e. refugees) immediate needs, that is, to have a roof over the head.

Secondly, there are the financial and timing dynamics. These two aspects are connected because the interest of the government is to find a product which fits the need of the customer, is low-cost and fast to construct, and the rent is low (i.e. the rents for each refugee is paid by the offices indicated by each municipality).

The benefits brought by this product into solving temporary the situation (i.e. accommodate the refugees) are balancing higher than any potential urban development and socio-spatial factors that are influenced by the emplacement of the container homes on the empty sites. It makes sense when container homes are used as emergency shelters, but when they are used for a longer period of time, the marketability of the entire area could decrease. Containers cannot fit in any neighbourhood. Equally, the appearance of a container is worsening quicker than one of a conventional building, especially without proper maintenance.

Each market has its own lifecycle. Before the arrival of the refugees, no much attention was given to the container homes. At the present moment, many companies have followed the demand and many architects were responding to it, by finding a fast and adequate solution for housing through container homes. Even if the timing was appropriate for developing these housing steel boxes, the market shrinkage will eventually produce when the operation period of three years is ending (i.e. depending on the start of operation of each accommodation, up to 2021).

People who live in follow-up accommodation are assigned to container homes by a municipality office. Since 2015 numerous refugees arrived and many cities were forced to place lots of container homes to fulfil quickly the demand for accommodation, therefore they were spending a large amount of money at once. For each person living in a container, it was set a rent in which refugees (i.e. with income), Job Centers or other municipality offices are paying.

For living in a container home, the price per person in one month was originally set, for instance, in Hamburg, to 141 euros per month. In order to recover part of the money spent when building the accommodation for the refugees in 2015 and to cover the costs for social work and security, the municipality raised, beginning with 2018, the total renting sum to reach up to four times the original rent (587 euro per person) [48]. For the refugees who don't have any income, the government (i.e. governmental offices, Job Centers) pays that sum. Based on these circumstances, living in a container housing could result as expensive or in some cases even more expensive than living in a flat.

Currently, many refugees who have already received a protected status and they have the legal right to move from the follow-up accommodation, still live in these establishments. The scarce availability of apartments on the open housing market makes it problematic to 'jump' in another housing sector. Until a solution to this situation is met, the interest in these establishments will not lower.

It is assumed, however, that the withdrawal of the refugees from this sector will happen, but slower than expected. Many companies saw the opportunity and improved the housing steel box, offering appealing stacking architectural homes. Many of them were marketed as being the first-housing option[49], before affording to live in a traditional housing building.

The present segment of the housing market is niched mainly on refugees and people which are open to cheaper unconventional housing solutions (rare cases). The access to the users (i.e. refugees) is simple, because the government is the one who decides what, where and how many container housing units they can afford to build. It's a decision based on lowering the capital risk because, in the end, the municipalities are the ones who have to pay the rent.

[48] https://www.zeit.de/2018/03/unterkuenfte-fluechtlinge-kosten-sozialarbeit-wachdienst
[49] https://www.containerhomes.gr/copy-of-home

5.4.5. Concluding remarks

This sector of the housing market gained momentum due to the refugees' arrival. It evolves and improves its quality with the growing necessity given by the incoming refugees, adjusting also to different uses and purchase power.

The product given by the present sector has significant value because it reduces waste since many units were upcycled. On the other hand, due to the short operational time, the containers can enter again in the unused cycle. It is a matter which the decision-makers have to tackle, being a considerably important situation to solve in the forthcoming years as the operational permission of these settlements is given for a determined period of time.

There is the possibility that the refugees, in the upcoming years, are contributing to the increase of homeless people due to the short operational time and low vacancies in the rental housing sector (e.g. if the operational time of the container homes is surpassing 5 years and the authorities still did not find additional solution to relocate the people). In such cases the decision-makers could prolong the operational time for the settlements which still maintain an acceptable quality, to offer themselves more time to solve the vacancy issues.

Additionally, even if container home construction was primarily adopted because of the shortest assembling time, it is a housing solution that doesn’t enhance the refugees' integration. Refugees are placed in big settlements where they only interact with each other and less with the local settled population.

5.5. Dedicated refugee housing in Germany

The space where an individual is living, in a city or a rural area, has a major influence on his/her evolution. Everyone should benefit from appropriate living conditions. This argument is paramount in determining the available housing stock for the refugees in Germany.

The present sub-chapter introduces the current state of the art of the existing housing for the refugees in Germany. Data samples regarding physical attributes, quality, location and neighbourhood attributes of various housing from different parts of Germany are collected. All the data gathered is used to develop case studies of 51 properties specific for refugees.

Thus, the next sections of the present sub-chapter proceed with a relevant analysis of the housing attributes of the dedicated stock for the refugees gathered in Database 1. Afterwards, the stages of the refugees are connected to the findings from the database and examine each of their influences. This is followed by a section that comprises the analysis of the available housing in Berlin. Generally, in Berlin, the availability of housing is low whilst the demand reaches high levels.

5.5.1. Analyzing the housing stock dedicated to the refugees in Germany

The link between a newly constructed building and the neighbourhood where the building is located is described by the neighbourhood effect (O'Sullivan, 2004). For instance, house price changes within a neighbourhood may be caused by multiple factors (e.g. socioeconomic factors like resident income, public services provided like school, church, hospital, external factors as crime rate or traffic noise).

The research of (Carroll, 1996) on housing price modification highlighted that the value of a property increases if it’s located next to important amenities.

On the other hand, the value one property decreases when is located in the proximity of air or noise pollution. (Palmquist, 1992) demonstrates that by doubling the noise on the highway, the value of the housing prices located close to that specific highway decreased by 4.8 per cent. In addition to this study, (Mieszkowski, 1978) studies the changes produced by the noise levels to properties located close to airports. The results here imply that considerable sales price discounts of the properties are registered.

The studies presented in the previous lines provide insight into the fact that each property within a neighbourhood is sensitive to any external variable and the marketability of the property depends on these factors. The housing stock that is analyzed and portrayed in Database 1 is determined by new buildings having as designated residents the refugees. The insertion of each of these buildings in the neighbourhoods can create additional effects to the established properties (e.g. driving the prices, depopulating the area, lowering the quality of the existing amenities).

The government took the decision to construct, renovate or convert housing for the use of refugees. By inserting new housing addition to the urban fabric has the scope to maximize the accessibility for the intended users and trying to achieve a neighbourhood revitalization where is needed. In this context, from Database 1, the following variables of the properties are extracted and analyzed hereafter:

- Location;
- Neighbourhood;
- Proximity to public transportation and retail;
- Building method;
- Lifespan;
- Additional attributes (e.g. bike parking, parking, site improvements, sports areas);
- Consideration of construction costs and construction subsidies;
- Stakeholders.

Each of them is further examined to describe the structure of the buildings which are part of the housing stock designated to the refugees.

5.5.1.1. Location and neighbourhood

The first variable examined is the location of each property related to a new addition, refurbishment or conversion of the housing stock designated for the refugees. Each building is assigned to one of the following four groups: villages, towns, cities or district of a big city. These four groups are divided by the number of inhabitants as follows: village (up to 10000), town (10000 – 100000), city (> 100000) and the district of a big city (>400000). Moreover, a further distinction is made, based on the characteristics of the location. Three major types of location are identified: agrarian, residential and mixed-use.

As portrayed in Figure 18, the preferred location dedicated to build or refurbish a property for the use of refugees is within a mixed-use neighbourhood. From all the four groups, the highest percentage of properties located in the mixed-use neighbourhood is recorded in the group ‘town’.

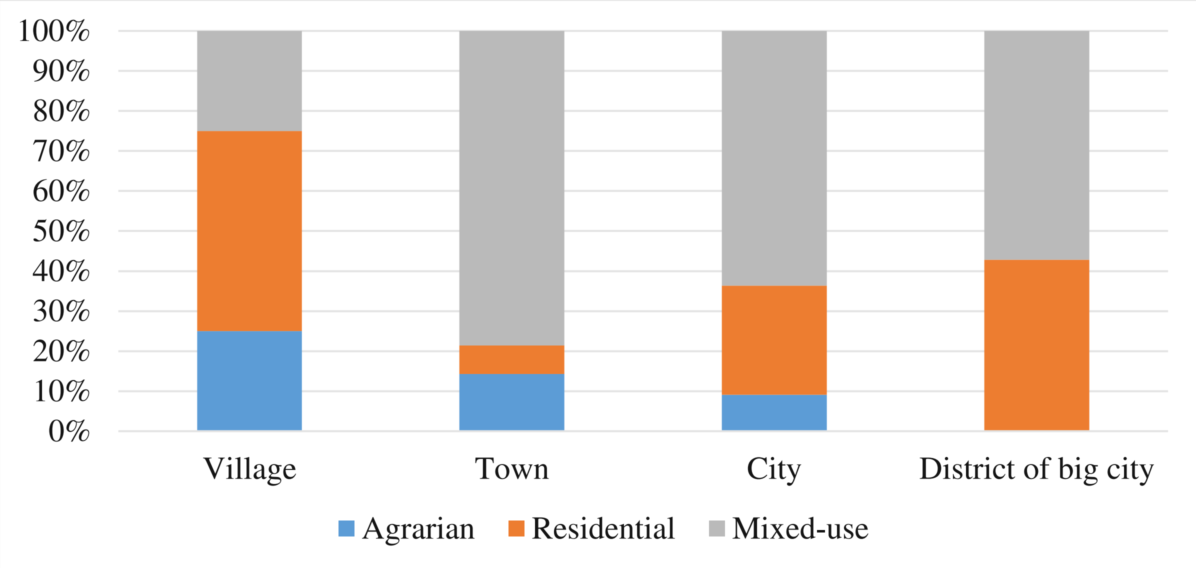

Figure 18 *Neighborhood location and its type, in Germany*
Source: Database 1

The choice for having a large portion of the housing stock in mixed-use neighbourhoods is valuable for the refugees because these areas are characterized by relevant variety and vitality in the urban fabric. Since nowadays towns are fast developing into cities, it’s much easier to streamline a future use of a land/area from a mixed-use neighbourhood due to regulation restriction from a residential area. In this sense, the larger portion of mixed-used allocated to the group ‘town’ appears fully logical. A winning factor of proper management of well compatible mixed uses could also allow to reduce the need for travel, conserve energy or reduce pollution.

The dominant use in the group ‘village’ is residential. On one side, by introducing new buildings in this location which bring along a considerable amount of people, it can allow to re-vitalize established communities which are continuously shrinking, due to the migration of younger people to the other three groups. On the other side, the concentration of a big number of people in areas that are not supported by extra facilities and the fact that in villages the communities are closed and rarely accept people outside their circle of acquaintances, facilitate the formation of gate communities.

Contrarily, the probability of having mixed-income communities in the mixed-use neighbourhood is higher because there are encountered more economic forces behind, generated by the array of uses in the area. This factor may help to break down the barrier between closed communities and refugees-only community because the households are diverse.

Furthermore, in the 'district of a big city' group, an equilibrium between the location within a residential and mixed-use neighbourhood is registered.

The location in the agrarian neighbourhoods has registered low percentages in all the groups (in 'district of a big city' there are even no recorded properties) whilst the highest percentage is registered in the group 'village'. Locating new housing in an agricultural neighbourhood was possible by changing the legislation. As a consequence of this policy change, results from the case studies indicate that multiple properties located in villages and in agrarian neighbourhoods are established at the outer boundary of the village. In this case, the potential benefit is represented by the future expansion of the residential areas of the village, but on the other hand, the available land for agricultural purposes is shrinking.

5.5.1.2. Proximity to public transportation and retail

Infrastructure, from roads to electricity lines, is a very important aspect. Without it, no community could function. (B. Jones, 1979) considers that a country with a good infrastructure network can easily begin to locate proper industries, commerce or begin certain activities which are producing goods. For this reason, the connection of each neighbourhood where the housing units for the refugees are located are analyzed with respect to the proximity to public transportation and retail areas.

In the previous section, it is established that a property registers an increase/decrease in its value when is located close to important amenities. In the same way, the properties values are affected by their proximity to public transportation and retail areas. Based on this criterion, the properties from the database are analyzed and the results are illustrated in Figure 19.

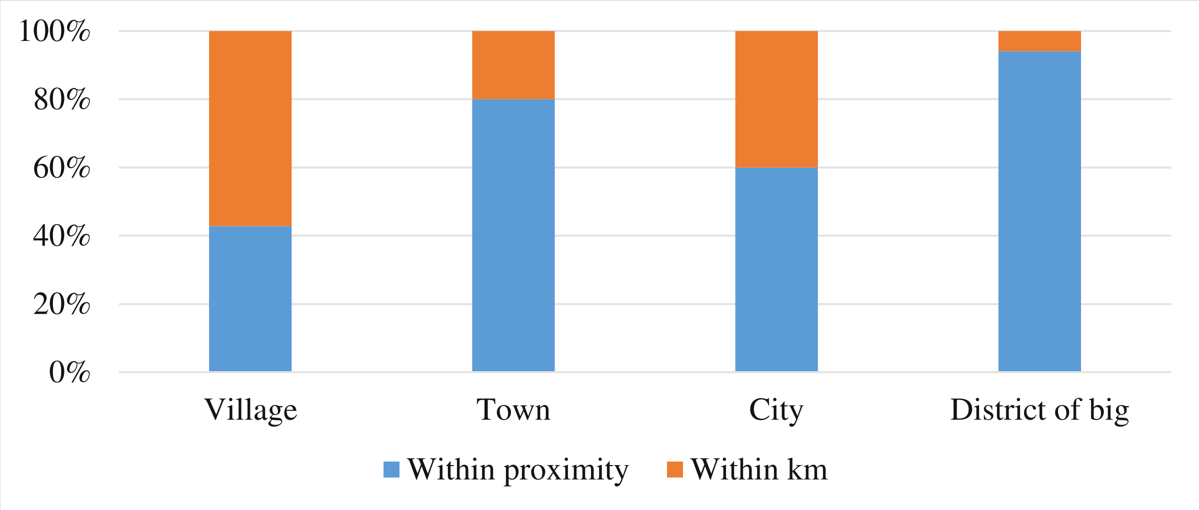

Figure 19 *Location of the properties with respect to public transportation and retail*
Source: Database 1

The properties analyzed regarding the proximity to public transportation services are divided into two categories: located within proximity (i.e. walking distance) and located within some kilometres (use of the car necessary). The majority of the units constructed for the refugees are located in the proximity of transportation and retail facilities, with the highest percentage (i.e. above 95%) registered in the group 'district of the big city'. This is also because, generally, big cities have better infrastructure and variated amenities in comparison with the other groups. Furthermore, two other groups (i.e. city and town) register more than 60% properties located within proximity of public transportation and retail. Only in the group village, this balance is reverted with up to 60% of properties not located within a walking distance from public transportation services and retail.

It has to be considered that the properties analyzed are only dedicated to the refugees, who initially cannot afford a car, hence the connection to the urban mass-transit system increases their mobility.

In general, by allocating new housing units for the refugees, it may help to introduce new transit alignments that may support regional growth. Every new addition within an area could raise both its environmental quality and quality of life for the inhabitants when the subsequent measures are followed: proximity to stations (i.e. additional metro, tram or bus stops) determine fewer people using the car, investment on public transit allows the system to work better (e.g. reducing the time between the busses), or giving more value to the travel time by introducing subsidized transit.

5.5.1.4. Building methods

The building method attribute is offering insight into the quality of the designated housing for the refugees, which later on becomes part of the overall housing stock. Using the same division of the four location groups (i.e. village, town, city, district of the big city) is illustrated the building method through which each housing unit was constructed. The results are presented in Figure 20.

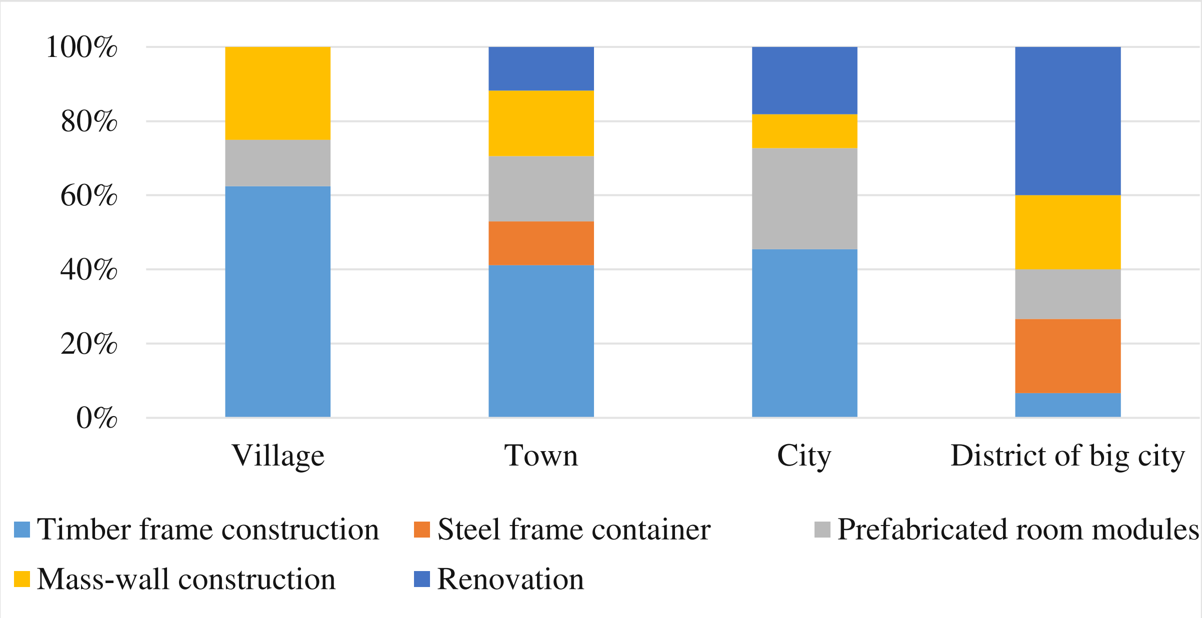

Figure 20 *Building method for the housing stock within Germany*
Source: Database 1

The data shows that there is a high preference for the timber frame construction in villages and towns. This choice could be because of the shorter constructing time which created an advantage at the peak of the arrival of the high number of refugees as they had to be quickly accommodated.

On the other hand, the option for steel frame containers is the lowest in the preferences, as they have the shortest lifespan. All containers have a life duration of 5 years and after the termination of this period, they have to be removed from the plots because this is the maximum limit registered in the construction permit.

In the 'district of a big city' group, particular attention is given to the renovation of old buildings which may be used now as a home for refugees. Every city and big city has several buildings which have outdated or damaged structures and a decadent appearance. Initiating a process of improving and modernizing old buildings which afterwards are assigned to the refugees could bring them back to life and ensure the continuous occupation of the property. Nevertheless, this may be a success if later on they are properly maintained.

5.5.1.5. Lifespan

The lifespan of a building is a considerably important attribute, as the housing market is dominated by existing units and since a low percentage of newly constructed buildings is added yearly (see Annex 11). A house can last for a longer period with careful maintenance and periodic modernization. A building can become no longer relevant when the building materials and other attributes as context or technology are outdated. For instance, (Lehman, 2008) considers that through the adaptability of its composition, a building's lifespan could be extended.

In this context, Figure 21 illustrates the lifespan (e.g. through three groups: 5 years, 10-20 years, and >20 to unlimited time) of the properties from Database 1, analyzed through their building method perspective. The lifespan of these properties was connected to the building method to understand which buildings can stand the test of time (i.e. with a higher lifespan). This is important because a considerable amount of the buildings is built with loans and government subsidies that bonds the developers to the designated users (i.e. refugees) until their loans are repaid, therefore, these buildings will be assigned to the overall housing stock for housing.

The chart in Figure 21 depicts that both timber frame construction and mass-wall construction buildings register high percentages lifespan, with more than 20 years, whilst the steel frame containers have the lowest lifespan; i.e. 5 years.

The governments issued an extra policy to change the use of a building (e.g. from office/hotel to housing). In addition, a large amount of the properties analyzed in the database are constructed with a layout that permits a future reconfiguration of the interior partition. Future use for some buildings is already planned, after the period of accommodating refugees is terminated (e.g. social housing, student dormitories, kindergarten, homeless shelter, offices, building part of a community college, hostel, or music school). In this way, over the years, these buildings can have other users than refugees. In order for it to happen, the lifespan of these buildings should be high.

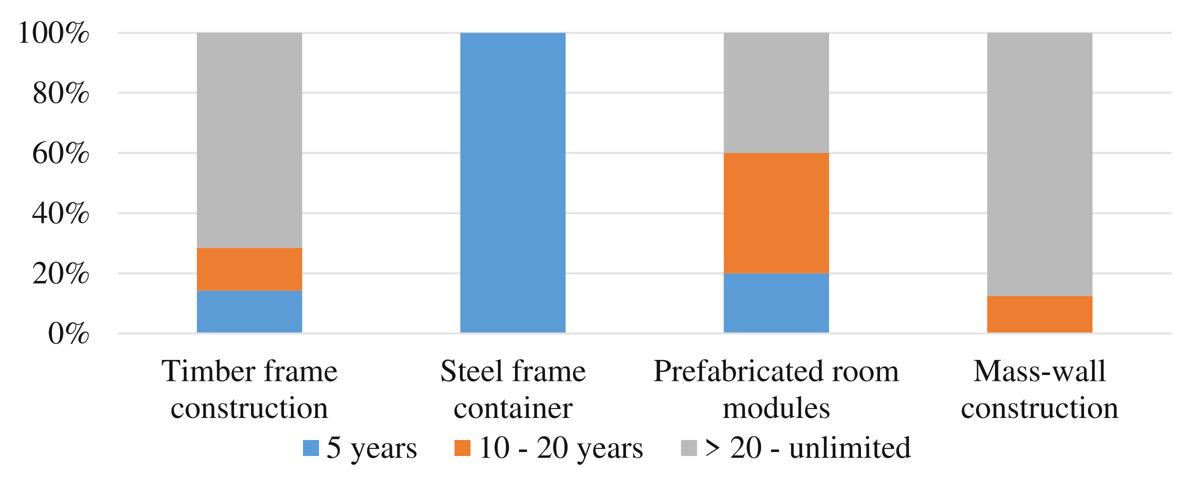

Figure 21 *The lifespan for the housing stock within Germany*
Source: Database 1

Relevant examples from the case studies highlight that the housing units located near the Frankfurt-Hahn airport, have already a planned future use: hostel, office or social housing. In this case, the choice of future use is obvious (i.e. hostel) because the airport generates enough demand for overnight stays (e.g. due to the extraordinary situation) which in this way, it could be translated into profits.

Another proper example is the construction of housing units in a university neighbourhood and later on transforming them into student dormitories. Any of these further choices become effective after ending the considered period allowed to the refugees (i.e. for the buildings that took a loan and subsidies from the government, the duration is established at the moment of setting up the credit contract).

5.5.1.6. Additional attributes

The land where a property is constructed has to reach, in most cases, its 'highest and best' use (i.e. the goal of every real estate development (McDonald & McMillen, 2011)). Each additional variable assigned to any property from the case studies can help in reaching this outcome. Therefore, Figure 22 offers a snapshot of the housing attributes which characterize the housing stock of Database 1. Additional attributes like car or bike parking, site improvements (e.g. garden, green areas, courtyards, etc.) and sports areas (e.g. basketball or volleyball court, playgrounds, etc.) are considered in relation to the four groups (i.e. village, town, city, district of a big city).

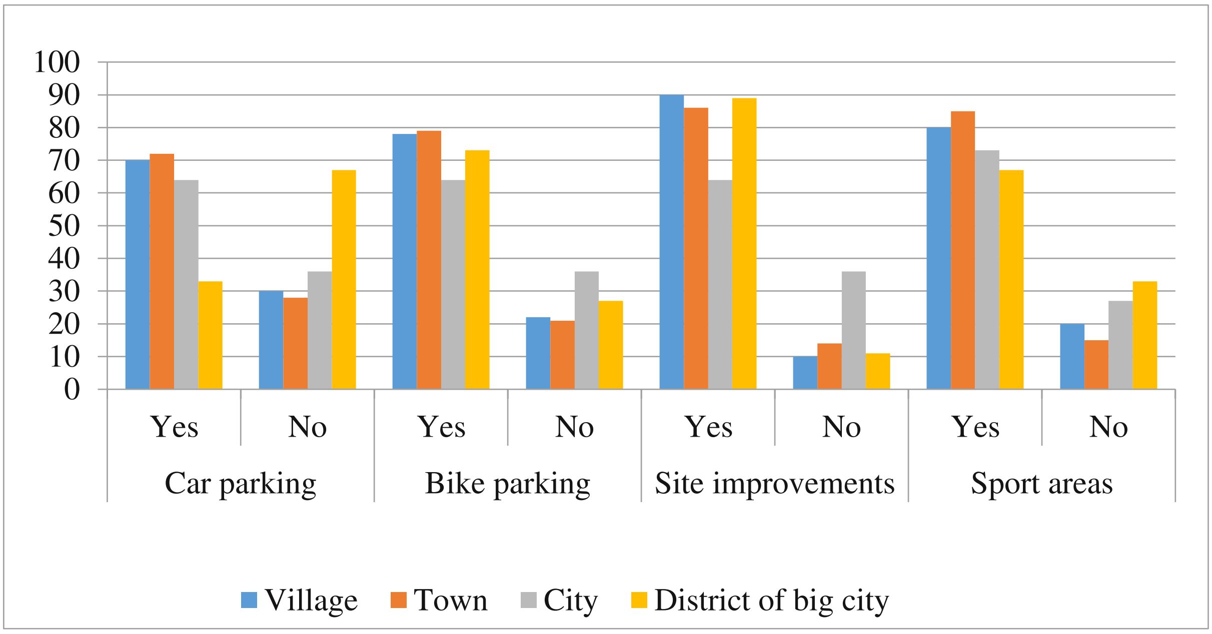

Figure 22 *Attributes of the housing stock within Germany, in percentage*
Source: Database 1

A variety of transportation option is given to the refugees by introducing car and bike parking attributes to the properties and connection to public transportation. Relevant from the graph is that 60% of the properties have all the four attributes and above 80% of them received site improvements like green areas and sports areas.

Additionally, cities and district of big cities groups registered the highest percentage of properties which receive no additional amenities. The price of the land in cities and districts of big cities is higher than in towns and villages and big empty parcels are hard to be found. Therefore, it's more likely that the developers are building only housing units without any additional improvement because they are taking advantage of existing public spaces with green areas or sports parks.

Generally, households value goods according to their characteristics and by having multiple existing attributes (i.e. site improvements, bike and car parking, sports areas, well-equipped buildings). These values make the properties more attractive, therefore in the long term, the properties with the highest percentage of additional attributes become the most valuable addition to the existing housing stock.

By choosing to invest in additional amenities and not only into the sole building, but developers are also giving to the refugees more reasons to choose to migrate to Germany. In other words, if the properties have more attributes which can offer to the people proper condition to live, they can be considered as pull factors which make people confront multiple situations in order to clinch the opportunity to reach those condition.

5.5.1.7. The government contribution to housing units for the refugees

Generally, consumers make choices based on their preferences and the budget constraints they face when they choose their place to live. However, the refugees are not making their housing choices in the same way, because at the beginning of their journey in the host country they are receiving a financial allowance from the government and have a residential restriction. However, their housing choices can change when they have later stable employment.

Until stable employment can materialize, the government is funding different programs (e.g. programs which supports construction, conversion, acquisition, modernization and equipping the refugee accommodation[50]) which aim to provide refugees with affordable housing.

Due to the high numbers of refugees, the government decided to raise the funds allocated to social housing[51]. They are offering special credits (KfW - Kreditanstalt für Wiederaufbau) to developers and they encourage local municipalities to implement their own aiding Land programs (e.g. in Hessen WIBank – Wirtschafts- und Infrastrukturbank[52] – is offering loans for building refugee housing units on a fixed interest rate for up to 30 years). The offered loans are available under multiple demands regarding the type of activity the developer wants to expand. For instance, what is considered important for the present research is that when a building is subsidized, its rental occupancy is tight to the period of the loan. In other words, as long the developer has to repay the loan, the property cannot be rented (i.e. to other people than the refugees) or sold to other parties. Additionally, the intended rent/m^2 that the developer wants to receive from the tenants has to be specified in the loan contract, before

[50] https://www.bundesregierung.de/breg-de/aktuelles/wohnungsbau-auch-fuer-fluechtlinge-357044
[51] Aiming to arrive at a total of two billion euros per year in 2020. ©Bundesregierung
[52] https://umwelt.hessen.de/klima-stadt/foerderprogramme-wohnungsbau

the construction project is starting. Moreover, the community from the neighbourhood where the new units are going to be built has to give their acceptance for the construction.

In the case of existing buildings, for performing an action of renovation or reconverting, governmental programs that can subsidize up to 85% of the total costs exists. In this way, the developers are engaged to participate in refurbishing part of the housing stock. In addition to these measures, the government is involving developers into buying existing second-hand real estate (i.e. with a minimum living area of an apartment of 40 m^2 and bigger, to be suitable for the selected households). The developers can benefit from low-interest loans for refurbishment under the condition that the users of these buildings take part from a group of support (e.g. families with children, families with members with disabilities, refugees).

5.5.1.8. Stakeholders

A big migratory phenomenon and the re-settlement of such a large number of people implicate various stakeholders. In the previous chapter, the government was described as the primary stakeholder and main decision-maker in this context. The government determines the number of people who come in the country, the initial housing settlements, the financial allowances for the refugees and takes every decision regarding the legislation. Besides, the government adopts policies concerning the refugees' integration in the country.

In addition, the government can influence any stakeholder's decision of choosing to develop housing units for refugees, by introducing policies and housing subsidies. Furthermore, by building a good overall picture of refugees' integration in the country the government could offer security to the small landlords and engage them to open access to the refugees in their properties.

Database 1 is offering support on analyzing the influence of the stakeholders, revealing the extent of their contribution to the outcome of the property development process. The presence of additional stakeholders (i.e. apart from the government) such as private developers, private companies, humanitarian aid association or ONG's is having a substantial impact on the further development of the housing market too.

In the present context, the main actors that play an active role in the progress of each development (e.g. planners, architects, building contractors, agents, engineers, etc.) are not considered. The focus is on the stakeholders that take part in the decision-making process of a building investment for the refugees.

The stakeholders for the dedicated refugee housing are divided into four groups: government, private person, private company and humanitarian aid association and NGO's. The results obtained from the database highlighted in Figure 23, suggests the clear implication of the government in building housing units for refugees. The high percentage (i.e. 61%) solidifies the previous conclusion that the government (e.g. the German government has multi-level governance; i.e. together with the responsible authorities from each Federal Land) is influencing the housing market.

Figure 23 *Stakeholders from designated refugee housing stock*
Source: Database 1

The implication of the private companies in building refugees housing units it's noticed through the relatively high percentage (29%) registered. The governmental subsidies on the matter can be a reason for such a high percentage recorded. By allocating subsidies for constructing refugees housing units until 2020, this number can easily rise.

5.5.1.9. Wrap-up about the dedicated housing stock for refugees

The above lines have highlighted the most important information depicted from the case studies of the designated housing stock for refugees.

Locational attributes have shown that mixed-use neighbourhoods are preferred for the development of refugee housing units over residential and agrarian, in all the four groups except 'village' where residential neighbourhoods are favoured. Such areas (i.e. mixed-use) have higher possibilities of potential employers, educational and health facilities to be located nearby the properties designated for the refugees.

The physical attributes examined (i.e. building method and lifespan of the building) suggest that the majority of the units are built to last (i.e. timber frame construction and mass-wall construction are the preferred methods). Special consideration is given to renovation in 'district of the big city'. The highest rate of renovated units is met by this group.

Each housing unit (new or renovated) is located within proximity (i.e. walking distance) to public transportation and retail areas, except in for villages, where the use of a car becomes mandatory, thus representing an issue for the refugees. These characteristics together with the additional attributes can drive the value of the property up. For the estates with a longer lifespan, future trades on the market are potentially viable, therefore, the list of examined variables may be corroborated with other additional second-order variables which can formulate the bid of the building (e.g. quality of local schools, crime rate in the area, heavy traffic on nearby streets, distance to employment).

The government plays an important role in this sector by funding various construction programs which are engaging also other developers to participate in refurbishing and constructing new buildings for the refugees. By introducing the commitment policy in the credit contract (i.e. until repaying the credit taken, refugees have to reside in the building) the government determines developers to respect that condition, therefore steering the stakeholders into producing affordable housing stock.

However, once the tight agreement is over, developers can decide that the use of the property should be changed (due to particular purposes independently of the refugees). Therefore, it is a matter of time for each of the properties built with the government subsidies to be able to be re-assigned to the open housing market sector. This means that refugees can rely on a time-constrained staying in such buildings, determined by the commitment policy agreed between the developers and the government. The residency period is connected with the developer's decision after the credit repayment. This is valid to the extent to which developers are not defying the German tenancy law.

5.5.2. Connecting the case studies with the refugees' division in stages

Communities are acting as networks and local social systems. Their importance lies in the connectivity between the people. Social relationships take form by getting out from each other's comfort zone and building a connection with those who are willing to share experiences and learn from people that surround them. The interaction enables people to emerge in communities, as well as committing themselves to each other. According to this, a big scale housing development which brings a large number of new additional residents shall consider that those have to be integrated into the existing community.

An overall outlook on the case studies highlights that the buildings for the dedicated housing stock are constructed for refugees who find themselves in a different stage of evolution. Recalling the refugees' division determined in the previous chapter (i.e. the four stages), they are assigned to the examined properties, to infer the influence of each stage.

To measure how the effect is produced, relevant factors (i.e. structural and sectoral attributes) from the dedicated housing stock for refugees (Database 1) are extracted. Each variable is inserted into a table which corresponds to the determined refugee stage. Furthermore, the connection between the designated residents of the properties gathered in Database 1 and the main characteristics which influence this sector are examined. The results are portrayed in the expanded model (Figure 24) presented hereafter in the chapter. The model is valid only for the dedicated housing sector for refugees, subject of the present subchapter.

Table 1 summarizes the housing attributes for the first stage of refugees (just arrived in the country; residing in the reception facilities) as follows. The buildings that operate as reception facilities are characterized by a simple layout comprising rooms arrayed along a long corridor with common kitchen and bathroom facilities, with a minimum living space for a person of 3.5 m^2. They are constructed from a timber frame. The choice of the building method is employed due to the increased speed of execution. Furthermore, the primary stakeholder is the government. For the housing units development, the government is choosing agrarian neighbourhoods located far from the retail areas or important amenities.

The results from Table 1 illustrate that this group receives poor accommodation. Due to the short period of operation, most of these facilities cannot be converted and then assigned to the overall housing stock, because most of them are represented by ad-hoc accommodation.

The facilities for the first stage of refugees belong to the informal housing market sector, a segment that is already analyzed in the previous section.

Table 1 Dedicated refugee housing: housing attributes for the first stage of refugees

Structural attributes	
Type of building	1-3 stories building
Building method	• Timber frame construction (80%) • Prefabricate concrete modules (20%)
Home characteristics	• Rooms along corridors with common kitchen and bathroom facilities • Apartments with kitchen and bathroom facilities
Living space/person	3.5 m^2-11.2 m^2
Car parking	17% of them
Bike parking	80% of them
Playground	60% of them
Other site improvements	Green areas, terrace, play courts
Sectoral attributes	
Neighbourhood aspects	Agrarian/mixed-use
Linkage to amenities	3-6 km to the city centre
Time-distance to retail areas	15-30 minutes of walking distance

Source: Database 1 and Annex 4.

The characteristics of the buildings developed for the second stage of refugees (i.e. people who did an asylum application and are sheltered in follow-up accommodation) are portrayed in Table 2. This type of accommodation is established because the reception facilities were not sufficient to fulfil the demand registered by the high influx of people. It is a provisory solution with a limited period of time of operation.

A particularly high percentage of this group (S2) received a repartition in container homes, therefore, they produce an influence on the container housing market sector (a segment which was already analyzed). What is important to be mentioned is that the minimum living space per person is increasing to 7 m^2. It is double in comparison with the living space in the reception facilities whilst, being located in mixed-use neighbourhoods, the time-distance parameters from the properties to retail areas and important amenities have shortened with respect to the first stage group. Besides of container homes, a considerable percentage (31%) are is designated to timber frame buildings (which has, in general, a longer lifespan than the containers).

Table 2 Dedicated refugee housing: housing attributes for the second stage of refugees

Structural attributes	
Type of building	1-3 stories building
Building method	Timber frame construction (31%), containers (69%)
Home characteristics	• Rooms along corridors with common kitchen and bathroom facilities • Apartments with kitchen and bathroom facilities
Living space/person	7.0 m^2-18.6 m^2
Car parking	64% of them
Bike parking	57% of them
Playground	71% of them
Other site improvements	Green areas, play courts
Sectoral attributes	
Neighbourhood aspects	Residential or mixed-use
Linkage to amenities	2-4 km to the village/town centre
Time-distance to retail areas	In the surrounding area till up to 18 minutes walking distance

Source: Database 1 and Annex 4.

To reduce the investment in new housing, the responsible office in each Federal Lands is using for a certain period of time buildings that are not necessarily designated for housing (e.g. offices). Mostly, these are empty buildings (e.g. which were on the market for a long period of time and not rented) converted to accommodate people. Hence, whilst those empty buildings were generating economic losses due to maintenance and taxation duties, now, during the time the refugees are hosted there, they register economic gain because on each person the municipality is receiving a monthly rental payment from the government.

Being a refugee in the third stage refers to having received the protection status, but still living with governmental subsidies. For this group, it is easier to move to another type of accommodation as it has no restriction of movement around the Federal Lands. They are allowed to enter the rental sector from the social housing market and free-market housing, but still, they have the possibility to remain in the dedicated housing for refugees (i.e. the follow-up accommodations). In addition, stage four has all the rights of all citizens.

The statistics presented in Chapter 3 regarding the portrayal of the demand for housing showed that the percentage of young and single people who arrived in Germany is higher than the one of people with families. Based on this fact, there are spotted in Table 3 significant home characteristics modification (i.e. with respect to the other two stages) regarding the number of

of the apartments (e.g. 5-room apartment proper for big families), but also the insertion of a large number of one-room apartments. In addition, the layout of the buildings is done to accommodate different family clusters and the minimum living space for one person is increasing in comparison with the last two stages up to 10.6 m^2.

Table 3 Dedicated refugee housing: housing attributes for the second and third stage of refugees

	Structural attributes
Type of building	1-5 story building
Building method	• timber frame construction (43%) • mass-wall construction (36%) • conversion/refurbishment (21%)
Home characteristics	• single rooms with common facilities • 1 room-5 room apartments with all the facilities inside
Living space/person	10.6 m^2-21.5 m^2
Car parking	67% of them
Bike parking	86% of them
Playground	57% of them
Other site improvements	Green areas, play courts
	Sectoral attributes
Neighbourhood aspects	Residential or mixed-use
Linkage to amenities	2-4 km to the village/town centre
Time-distance to retail areas	In the surrounding area till up to 30 minutes walking distance

Source: Database 1 and Annex 4.

Beginning with this stage the government is participating less in constructing, converting and refurbishing buildings for the use of the refugees, while stakeholders like private owners and private developers are engaging themselves more. Most of them are doing it with the credit loans received from the government.

Analyzing the attributes from Table 4, it is noticed that containers are out of the accommodation solution for this stage, in favour of mass-wall construction, conversion and refurbishment. The minimum living space per person has increased to 12 m^2 with respect to the other groups. In addition, for this group, most of the properties are located within walking distance from retail areas and important amenities.

Having no information about any loan agreement for constructing the buildings from Database 1, it cannot be specified when these buildings are not linked any longer to the tenant arrangement (i.e. to host refugees). Therefore, for the purpose of the present research it is assumed that these buildings are part from the dedicated refugees housing market for up to 30 years (i.e. this is the maximum period for a loan agreement; however, it can be always shorter).

Table 4 Dedicated refugee housing: housing attributes for the third and fourth stage of refugees

	Structural attributes
Type of building	2-8 story building
Building method	• timber frame construction (25 %) • mass-wall construction (38%) • conversion/refurbishment (38%)
Home characteristics	2 room-5 room apartments with all the facilities inside
Living space/person	12 m^2-54 m^2
Car parking	60% of them
Bike parking	93% of them
Playground	33% of them
Other site improvements	Green areas, play courts
	Sectoral attributes
Neighbourhood aspects	Residential or mixed-use
Linkage to amenities	Within walking distance and 3 km to the village/town centre or important amenities of the district
Time-distance to retail areas	In the surrounding area till up to 15 minutes walking distance

Source: Database 1 and Annex 4.

The same reasoning is made also for the buildings that are constructed for the fourth stage of refugees (i.e. people with protected status and employment, taking no subsidies from the government).

During the information analyzed in the first section of the present sub-chapter (i.e. the analysis of the main categories of factors that define the dedicated housing stock for refugees) the main characteristics of the dedicated housing stock for refugees are identified (i.e. location, neighbourhood, type of building, lifespan, building method, construction costs, stakeholders, proximity to public transportation and retail and additional attributes).

Each of these categories consists of additional sub-categories (e.g. each sub-category was addressed in the first section of the present sub-chapter; for instance, for the neighborhood: agrarian, mixed-use, residential). They all take part in the construction process of residential housing units for refugees.

Then, each of the four stages of the refugees is connected with the dedicated housing stock (i.e. the association made in Table 1, 2, 3, and 4). Basically, by doing this, it is identified the housing units where the groups belong (e.g. S1 belongs to reception facilities). The examination performed earlier together with this distribution determines where (the sub-category) the groups produce an impact. The results are assembled into a model (Figure 24).

The model consists of big circles which include the main categories, together with their sub-categories. The sub-categories are divided into four colours. The colours represent the four stages assigned to the refugees.

For the purpose of offering a quantitative influence, the circles are divided into portions with respect to the level of implication in the sub-category (e.g. in a sub-category it can be present only one division of refugee (e.g. S1), two, three, all of them or none).

Thus, considerable results from Figure 24 are presented further.

The government is the primary and singular stakeholder that builds the dedicated housing units for the first stage. It is involved also for building housing units for the other three groups but in lower percentages. On the other hand, the decision of the other stakeholders to develop construction projects for refugees seems to be influenced by the stage in which refugees are settled. Their level of implication is different.

For instance, no stakeholder (i.e. private person, private company Humanitarian aid association and NGO's) is building housing units for the first stage, whilst for the second stage, the percentage is low. The interest seems to be on the last two stages. These people represent the ones who receive the maximum financial subsidies since they gained protected status and have full employment possibilities. In this way, the developers are sure that they can get the maximum economic gain, which in the case of the first two stages, is not possible, because the rent has to be lower than the average on the market.

Only new buildings, from the housing stock developed by the stakeholders, include the four stages of refugees, however, with low percentages for the first stage. The second stage follows with a considerable percentage.

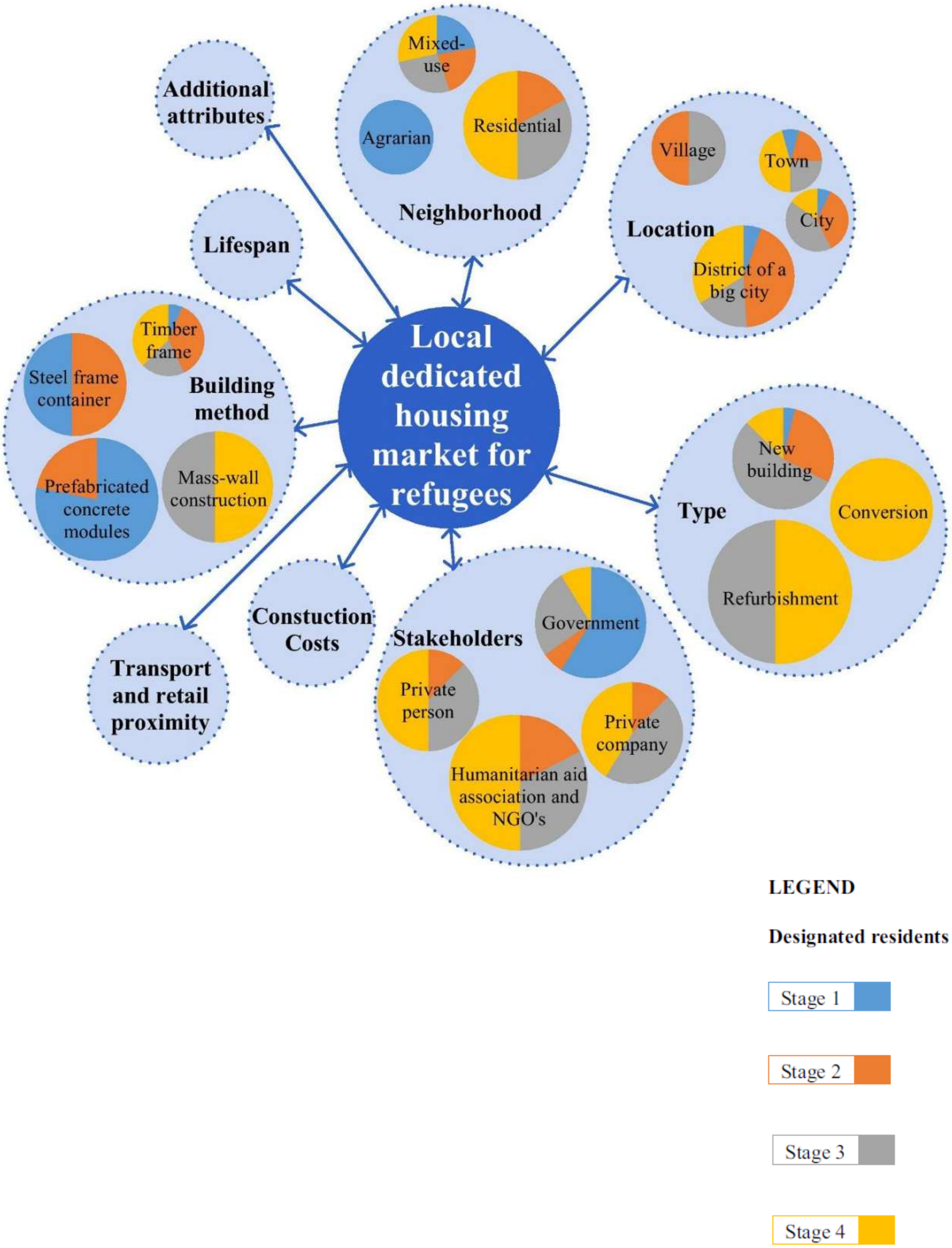

Figure 24 *Connection between the designated residents and the main characteristics which influence the housing markets.*

Source: Analysis performed on the housing Database 1

Considering the fact that in some buildings two consecutive stages can be allocated, the last two stages (stage 3 and 4) are definitely dominating, not only in the construction of new buildings but also in the refurbishment and conversion.

It is identified also that the choice for the building method of new buildings is connected to the stages. For instance, for units which do not have to last for more than 5 years, are chosen containers. Generally, these units belong to the first and second stage. However, for constructing reception facilities that are used for a longer period of time, prefabricated concrete modules are used. This method is faster than mass-wall construction method (used in equal percentages for the third and fourth stage) and it lasts more than the steel-frame containers. It is adopted only for the first two stages because it has the minimum accommodation requirements and it’s easy to be replicated on any parcel.

The location of these residential units is considered important because the refugees are going to populate areas of which future marketability is influenced. Therefore, villages receive as residents only stage two and three, whilst the other 3 groups (e.g. town, city, district of a big city) have residents from all the stages. The first stage is having a small percentage in the three groups, because normally, after a short period in reception facilities, they have to move in follow-up accommodation (stage 2). These two stages together represent half of the units constructed in district of a big city group, whilst in city and town, their percentage drop. In these two groups, stage three and four are dominant with more than half of the units.

On a narrower scale, the community where people live is shaping the neighbourhood. Therefore, the first group makes a high impact on agrarian neighbourhoods, since is the only one that has units located there. Stage one is present also in a mixed-use neighbourhood with a lower percentage than in agrarian. What is noticeable here, is that all the groups belong to this neighbourhood with almost an equal share. The residential neighbourhood is dominated by the fourth group with almost half of the units, followed by the third stage and the second one (which registers the lowest percentage).

Considering all the above, a significant conclusion is that stakeholders are not constructing for each group of refugees in the same way. The first two stages are underprivileged with respect to the third and the fourth. The living standards in the accommodation for these two stages is lower than the other two. For instance, the third and the fourth stage benefit from the same accommodation arrangements as any other citizen can find on the open housing market, whilst the first two stages are tight to the initial accommodation types (i.e. reception facilities and follow-up accommodation, respectively) until the legal procedures are processed.

Correspondingly, this section outlines one of the key results of the analysis. The first and second stage of refugees doesn't influence the housing market directly, because they don't take any decision on the accommodation they reside in. They are allocated in those units by the responsible authorities. Until reaching the third stage, the government is taking all the important decisions for the refugees in the first two stages (e.g. enforce rules and policies from accommodation to the employment rights).

As a result, the only way the first two stages exert an influence on the housing market is by creating a demand which determines the stakeholders to act for building housing to fulfil it. This demand is then impacting the land market, whereas these housing units have first to find empty plots to be constructed.

Since in the type A German cities, the situation in finding low-priced buildable land is scarce, the interest of each stakeholder is in contributing to units that remain in the overall housing stock. This finding is supported by the results in *Figure 24*, where it is noticed the preference for building for the third and fourth stages.

In addition, as noted previously, some stakeholders can take loans for building units for refugees that are connected to a user rental agreement (e.g. the rents are kept under the median housing rent of the market, for the refugees). Upon the termination of this contract, the buildings are passed to the overall housing stock, therefore, the stakeholders are expanding in this way their housing portfolio. Afterwards, the units are not tight any longer to a rental agreement.

The dedicated housing stock for the refugees, through its analysis, is giving insight also to which other segments of the housing market the refugees can access and under which circumstances. For instance, by moving out of the follow-up accommodation (stage two), the refugees from the next two stages can have access to social housing and the open housing market. These two sectors are further analyzed, to understand to what extent the refugees can influence them.

To sum up, the insights given by these sections, the evolution of the refugees between stages is significantly important. After three to five years from the arrival in the country, the refugees from stage one and stage two group, are converted into stage three and stage four group, respectively. In other words, it is only a matter of time for all the refugees to produce an influence on the open housing market. Time is the most important attribute to be considered by the government and investors.

5.5.3. The influence of asylum seekers in urban areas. Case study: dedicated housing for refugees in Berlin

Recent academic studies are showing that in Germany, refugees are settling mostly in big cities, due to more numerous working opportunities and because the probability of having already established connections is higher. They are heading to where they find a relative or a conational who could help them integrate. This c process happens for decades, trained by pull factors related to wages (neoclassical economic theory).

Besides, the research from (Muth, 1971) about people's migration to big cities, points out relevant information about the dynamics on the labour market: 60% to 70% of newly created jobs in urban areas are taken by migrants and every migrant generates another additional job. Hence, this finding suggests that economic growth and migration are interrelated and mutually interdependent.

In the present context, a simple phenomenon is happening and increasing in its magnitude: refugees who have the right to freely move within Germany (basically the ones who reached stage three and four), change their residence from villages and towns, where they were originally assigned, to big cities.

The allocation of refugees around the country done by the EASY quota, doesn't take into account the population density in the cities. According to (Michael Kalkmann, 2016) the EASY quota assigns the number of refugees in relation to 2/3 tax revenue + 1/3 number of inhabitants from a Federal Land. As a result, three German city-states: Berlin, Bremen, and Hamburg which have limited geographic boundaries, may face challenges of establishing cost-efficient housing for refugees (Katz B., 2016). This statement suggests that the named cities don't have enough available buildable land and that the influx of refugees becomes difficult to accommodate due to the scarce existing housing stock available.

The present study takes an example the situation from Berlin. The refugees are generally attracted by this city also as a result of its history of great acceptance of migrants and the ethnic diversity registered. Moreover, predominantly since last years, Berlin became popular among the younger population (under 40). Yearly, an increase of around 50 000 people is registered. [53] This situation is identified also by the high rents and scarcely available housing.

Even if the application for asylum-seeker/refugee status has dropped significantly since 2015 (Figure 25), they represent 2.14% of the total population in Berlin (which in 2016 was 3.52 million). The number of applications registered here is the highest recorded in any city in Germany.

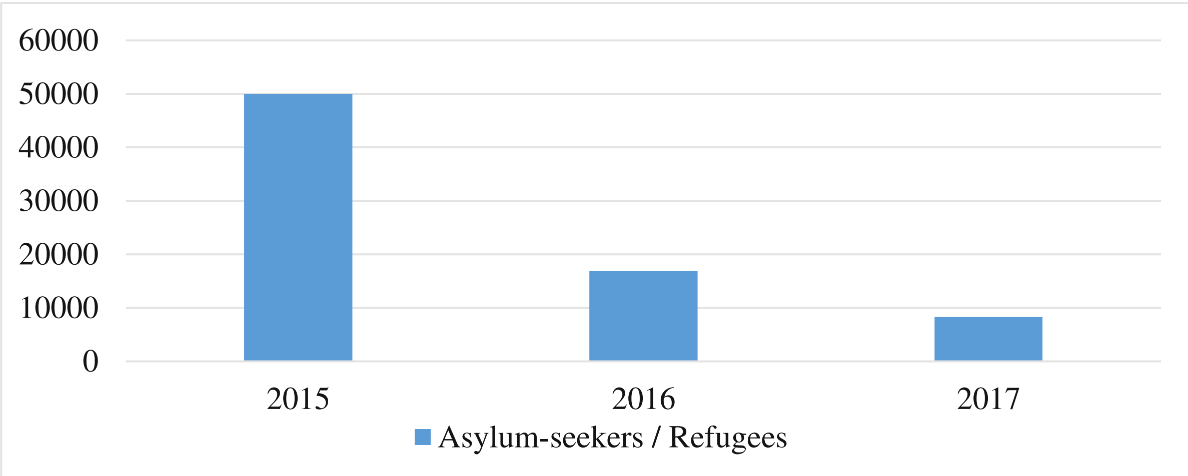

Figure 25 *Asylum-seeker / refugee application per year in Berlin*
Source: LAF Berlin - EASY-Zugangsstatistik

Berlin is bringing up the perfect example of how the refugees are influencing the housing market here. It has a low vacancy rate (see *Annex 10*), it has registered a rising demand for housing, the population density is high, and the finished dwellings compared to the building permits issued is less than half. They are, however, still far from enough to fulfil the demand (see *Annex 10*). Hence, the demand created by the refugees brings up supplementary challenges that need to be tackled.

[53] http://www.stadtentwicklung.berlin.de/planen/bevoelkerungsprognose/

5.5.3.1. Overview

One of the quick solutions that the responsible authorities implemented in Berlin was to host refugees in the hangars of the former airport Berlin-Tempelhof. This facility operated as an arrival centre. The hangars are large, tall and inside them, small boxes are placed. The boxes have no ceiling in order to receive light and let the air circulate. This emergency shelter takes part in the informal housing sector (stage one). For some refugees, this shelter served as a home for up to three years[54], whilst most of them moved to other establishments.

To offer different living possibilities to the refugees, two solutions like *Tempohousing* or MUF (Modulare Unterkunft für Flüchtlinge - modular accommodation for refugees) are adopted in Berlin. These solutions are developed by the Senatsverwaltung für Finanzen of Berlin as a response to the refugees that live in community facilities, emergency accommodation, gyms or other temporary accommodation (i.e. all of these examples take part from the informal housing sector).

In *Database 2*, are gathered the chosen sites (i.e. MUF – 22 case studies and Tempohomes – 30 case studies) from Berlin districts for developing the two types of accommodation for refugees. Even if Tempohomes consists of housing solution built especially for the refugees, its analysis is addressed in the sub-chapter about the container housing market.

Therefore, in the present work, the plots proposed by Senatsverwaltung für Finanzen of Berlin for building MUF are examined, in order to elicit responses on how the sites were chosen, the amenities which they have around, or about their similarities.

The plots are divided by their surface, to understand the size of the development but also the impact they may have on the neighbourhood, once the development is finished. Every plot is analyzed in terms of:

- location;
- distance to the city centre;
- proximity to means of transportation;
- significant amenities which surround the proposed development site.

[54] https://www.washingtonpost.com/world/inside-an-enormous-abandoned-airport-in-berlin-thats-coming-back-to-life/2018/03/16/65ca90a6-2642-11e8-b79d-f3d931db7f68_story.html

To help with the analysis, housing market reports from Berlin for 2018 from Berlin Hyp & CBRE and Deutsche Bank (see *Annex 10*), are used to gather information about the actual supply and demand in Berlin's districts, the rents and property prices, and the population density. These data are used to perform an analysis which can suggest the influence that can be produced on the housing market of a big city.

5.5.3.2. Characteristics of modular housing (MUF)

Figure 26 *Ground floor MUF module:3 family/group homes and 1 for disabled person*
Source: Senatsverwaltung für Stadtentwicklung und Umwelt Berlin, March 2016

MUF or modular accommodation for refugees consists of prefabricated housing estates divided into high-quality modules with high sound insulation. They have equal standing as traditionally built homes and can reach a lifespan of a minimum of 80 years. This type of MUF has standard dimensions of 18.70 m x 18.45 m. They can be organized in a variety of configuration and styles. In the present context, they have composed of one ground floor and 4 upper floors.

The internal areas can be divided into repeated section, or they are segmented in such a way that permits further rearrangements. The ground floor (Figure 26) is divided into 3 housing units suitable for families or groups, 1 housing unit for disabled persons, a common area for kids and an office for social work. The housing units have each 41 m^2, comprising two sleeping areas, a living area with a small open kitchen and a bathroom with shower. In addition, on this floor, there is also a shared kitchen, a shared room, and three deposit rooms.

On each plot, it is assigned also a one-story reception building with porter, doctor's office, washing room, shared room and offices for staff members. The outside area of the site

Figure 27 Upper floors of MUF's module: *7 standard rooms of 16 m² and 1 standard room of 11 m²*
Source: Senatsverwaltung für Stadtentwicklung und Umwelt Berlin, March 2016

is offering different activities for all age groups which include playgrounds, sports grounds, meeting spaces, and benches.[55]

In the upper floors, Figure 27, the modules are divided slightly different with respect to the ground floor: shared bathrooms with shower and a dressing room in the centre of the layout, for men and women and 7 standard rooms of 16 m^2, which accommodates 2 people, and one single room of 11 m^2. Two rooms of 16 m^2 may be connected through a door when and if is needed.

The duration of execution for this type of buildings is around 46 weeks, planning inclusive, which is longer than the time needed for constructing Tempohomes (i.e. container homes). The length of time needed depends on the plot's surface, its boundaries and the way the modules are adapted to it. The modules can accommodate a minimum of 200 places and up to 450-500 places for refugees. The benefit of these modules is that they can be adapted to the number of people that have to be accommodated, therefore it can be decided from the planning stage how many floors a unit can have, in line with the construction regulation of the area where the development is placed.

The modular interior design is versatile and allows the further transformation of the inner plan arrangements. The government is proposing that when or if the buildings are not needed any longer to accommodate refugees, they could be transformed into student accommodations, retirement homes, or cheap rental housing. This strategy indicates that while developing housing for the refugees, the government is trying to solve also other issues where

[55] Landesamt für Flüchtlingsangelegenheiten

the availability of housing is limited. Nevertheless, at the same time, it adds valuable buildings to the public housing stock which can support future demands.

5.5.3.3. Examination of modular housing (MUF)

The way an urban area expands and how it evolves in the hands of its users it's gaining more importance especially when the planned development doesn't fulfil the expectation of the outcome. Therefore, since MUF is developed in very large areas, each attribute that characterizes the development determines a change in the area. For this reason, characteristics regarding MUF, like distance to the city centre, land ownership (i.e. if the plots used for development are on private or public land) and proximity to public transportation are highlighted in Figure 28.

The general observation from the figure is that a large portion of the plots used to build MUF in Berlin is located in a mixed-use development area and in an established residential area. These settlements are located more than 10 km away from the city centre on plots having the surface up to 100 000 m^2.

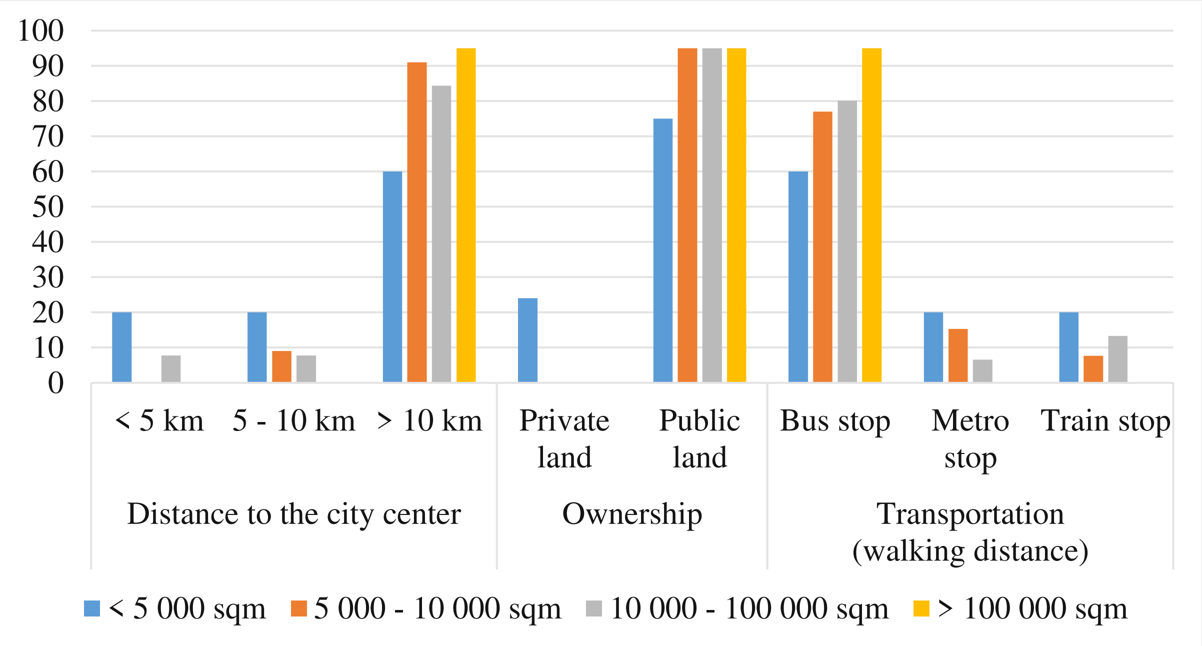

Figure 28 *Characteristics of MUF from Berlin, in percentage*
Source: Database 2

The consequences brought by building MUF on larger plots is that it's concentrating a large number of refugees outside the city. If the development is not sustained by proper infrastructure, new bus stops or tram stops, or by supplementary busses to fulfil the new demand, the development may not be successful. In addition, the commuting time to areas of employment (e.g. the areas with the lowest unemployment rate are the ones close to the city centre: Charlottenburg - Wilmersdorf and Friedrichshain - Kreutzberg with 1% and 2%, respectively[56]) can generate additional costs for the refugees which they may not afford.

Additionally, big structures may not work in the long run, mostly because allocating a large number of people in an outer area is opposite of integration. However, if the infrastructure is not highly developed in that specific area, or other types of services that sustain such development are scarce (e.g. retail, employment), the refugees can begin to relocate (due to several reasons and also because for refugees who are allocated in these areas their legal status allows it). As a response to this situation, the area has to attract other tenants/businesses in order not to remain with unused and lifeless buildings which could easily be transformed in ghost parts of the city.

The graph from Figure 28 is showing also that to develop MUF, public land is used in detriment of private land. To shelter a large number of refugees, these properties have to be constructed on larger plots and generally, private owners don't own big plots. For instance, the surfaces used to develop MUF on private land is less than 5000 m^2.

Since the owner of MUF is the municipality, it makes sense to find available public land in its own portfolio. By acquiring private land from the open market, the end costs of MUF development is higher. Moreover, there is the possibility that also from economic reasons the refugees are being located outside the city limits (the prices of the land are considerably lower).

Figure 28 provides insight into the public transportation connected to the plots. Generally, all the sites are connected within walking distance to a bus stop. However, there is registered a low percentage in the areas with MUF developments that are better connected to the transportation infrastructure (e.g. metro and train stop). These plots are usually closer to the city.

Once again, the government, in this case, Berlin's municipality, is controlling the development for the refugee housing in the city, and they are influencing the overall housing market through the decision they take with respect to the location of the developments.

The effect produced by the refugees who are settled in MUF is on a small scale. However, by using the information from Figure 25, it turns out that the occupiers of MUF are

[56] Berlin Hyp & CBRE housing market report in 2018

representing only 8% of the refugees who arrived in Berlin. The rest are still settled in reception facilities, container homes and other emergency settlements that responded to the elevated market demand.

Since the refugees' legal status is evolving with time they cannot reside for a longer time in those establishments as they have the legal right of proper accommodation. Eventually, the housing sector they may turn to is the open housing market, where Berlin registered low vacancy for affordable housing. Therefore, the rest 92% of refugees who are not located in MUF can certainly produce an additional effect on the housing market in Berlin, which is already experiencing changes due to the influx of foreigners.

The Deutsche Bank housing market report from 2018[57] suggests that also due to the dynamic labour market registered in Berlin, fewer properties for renting are available and that the asking rents in peripheral locations are increasing.

Generally, the structure of a city evolves over time and so does its urban spatial structure, therefore, inserting new housing establishments around the city is affecting the overall neighbourhood life. Since the neighbourhoods are suffering transformational changes at a certain level (i.e. depends on the scale of the developments) so does the city. Furthermore, for the refugees who have already a protected status, it's a matter of time until they could take employment. In this way, they are added to the active population of the city, which constitutes the drivers of the city. As a result, refugees are influencing the housing market in a city by influencing the factors that drive that city.

[57] See Annex 11

5.6. Social housing

When speaking about social housing, different branches of human sciences like the economy, sociology and politics are touched.

The economy is in charge of the prices and the market formation and determines the place of social housing in the overall housing supply.

Sociology plays an important role in choosing the persons entitled to be housed and accomplish the needs that social housing has to fulfil (i.e. security, integration, sustainable family life and professional work, good housing quality, etc.) while sustaining the philosophical basis on which it developed.

At the political level, the decisions of the government regarding the development of this sector are significantly important. The way they keep the interaction between actors and leaders in the political decision-making process either grows or diminish the prosperity of the sector.

5.6.1. Brief History

Social housing has a strong history behind and evolved over time differently across the countries. For example, in the period of rapid industrialization, the first initiators of social housing around Europe were the private stakeholders (e.g. companies, factory owners and philanthropists). They spotted the necessity of maximizing their profits by building housing for the working class close to factories.

During World War, I and further on, the government of the Netherlands offered subsidies to stimulate housing construction of high architectural quality – for that time – destinated to uplift the morale and material situation of the overall population. On the other hand, in France in the same period, companies were still providing housing for their workers, whilst the government was sending officers to collect the rent, inspect the properties and distribute the social subsidies.

These countries allowed access of the people in the social sector if they were members of specific political parties – in France –, or members of certain unions (e.g. from schools, neighbourhood centres, cultural organizations, Catholics, Protestants, etc.) – in the

Netherlands. In this way, the government created a community where people were at the same level and had the same views.

After World War II started the 'golden age of social housing'. Technical innovations (seen also as instruments of social change) helped to build this status of social housing. They reduced costs and building time. The outcome consisted of the construction of different types of housing, well furnished, characterized by accessibility, functionality, and uniformity, providing residents with cheap and good quality products. These housing units were also appealing to middle-class workers since they had also other features. For instance, in Germany, the housing units offered childcare in every estate. In this way, they changed the family's dynamics and increased job mobility.

While in countries like Austria the access to social housing of the foreigners was forbidden, France and the Netherlands allowed immigrants from former colonies to take up social housing.

At that time, at the European level, the government was the pillar of the social housing spreading, but later it started to gradually withdraw from it. In this context, the housing sector became more individualized as a result of the decentralization of responsibilities. Correspondingly, the government changed the overall policies offering personal subsidies like housing allowances and tax deductions. In this way, the private social housing organizations started to become more powerful, contributing also to the design of the local environment and the quality of the neighbourhood.

This situation evolved nowadays, where the social housing sector has shrunk considerably (in Germany too). Therefore, according to (Lévy-Vroelant, Reinprecht, & Wassenberg, 2008), now social housing has to deal with location issues (i.e. where is the most appropriate location to build new housing – for instance, earlier in the days, industrial areas were suitable, due to the connection to the working class, and later on in city suburbs) and functional issues (i.e. fostering social mix).

5.6.2. Housing allowances

Germany's social practices have developed two paths regarding housing subsidies. One part of the system is concentrating on offering support to vulnerable people (i.e. housing allowances for paying the rent) and the other is granting investors (e.g. addressed to all types of landlords (Boelhouwer, 1999)) social housing subsidies through different programs. According to (OECD, 2016)[58] the social housing sector is defined by having subsidized housing or social housing promotion (i.e. allows the stakeholders to acquire, build or modernize private housing) and by offering housing allowances (i.e. Wohngeld). Moreover, people (e.g. with less income than 12 000 euro/year; this amount can variate through federal states) can apply also to a special certificate (i.e. Wohnberechtigungsschein) which allows them to rent a state-subsidized apartment (e.g. with rents under the local average).

Housing allowances are offered to vulnerable households and special groups (e.g. refugees, asylum seekers, disabled, mentally challenged, etc.). The eligible persons are determined by the size of the household, their annual income and the amount of rent or mortgage payment that qualifies for support. However, the procedures may be different across the federal states, because each of them is determining their own condition for who has to be the recipient of housing allowances. Following the same procedure, the refugees are receiving additional housing allowances (see Chapter 3.5).

Similarly, the subsidies given to the stakeholders (i.e. municipalities, cooperatives, private landlords, commercial developers, and investors) who want to perform construction activities for low-income households are also different across federal states. Generally, the funding programs are characterized by low-interest building loans given to any developer that has a property or that carries out a new construction project that needs to be subsidized. The loans correspond to a percentage of the total costs of the building (e.g. up to 80%). On top of the credit loan, a number of federal states could offer also a grant, despite the nature of the development and provision of building land at a low cost.[59] By receiving these types of subsidies, the developments are bounded to social status (i.e. allocation obligations and a determined price) for a specific time.

[58] OECD Affordable Housing Database – http://oe.cd/ahd and OECD - Social Policy Division - Directorate of Employment, Labor and Social Affairs

[59] https://www.vergleich.de/wohnungsbaufoerderung.html; http://www.foerderdatenbank.de/Foerder-DB/Navigation/Foerderrecherche/suche.html?get=views;document&doc=9839

5.6.3. Ownership and stakeholders

For years, the stakeholders which owned social housing dwellings in Germany were diverse. They consisted of co-operatives, municipal and state-owned housing companies (e.g. post, railways, etc.), large institutional companies (e.g. insurance companies, banks) and private landlords. Thus, social housing was never state-owned but was based on a partly state-subsidized market model, described as a public-private partnership structure of funding. In return, the houses had to be used with controlled rents for a period established by the level of the subsidy. The situation has changed after 1990 when a big amount of dwellings lost their social status, even if these types of housing were always seen as very valuable assets not to be sold. The sector is progressively shrinking.

There were two reasons for losing the social status of the dwellings. First, the private owners were increasing the rents according to the changes occurred in the housing market (de facto pulling their properties out from the social housing sector) and second, the decision of the government to sell the publicly-owned housing to investors (e.g. the ThyssenKrupp housing whose 48000 dwellings were sold to Morgan Stanley/Corpus) (Stephens, Elsinga, & Knorr-Siedow, 2008). (Kofner, 2017) affirms that in 2017 in Germany around three-fifths of the social rental housing stock have private owners.

Choosing to privatize a big part of the sector brought along negative effects. The government and the housing associations, renouncing to this housing stock, missed the possibility to directly steer a proper urban social balancing through the allocation of social houses.

In this context, while the appearance of many of the privatized social dwellings is worsening due to lack of maintenance, others are being refurbished and upgraded as a reason to grow the rents. In this way, according to (Stephens et al., 2008) the dwellings are more difficult to be accessed by residents with low income, hence, forcing the ones who are still residing there to move and therefore, producing social segregation. Consequently, when acting in this way, the newly private stakeholders may prevent access to social housing to certain households, like refugees.

At the same time, private investors (especially the international investors) are introducing small amounts of new housing to the social housing stock because they don't have the same interest in building a large amount of affordable housing to satisfy the continuous demand, as housing associations managed by the government have. The private investors don't generally take good care about the selection of the households that are being accommodated inside their buildings, because their main goal is to achieve the highest returns possible, regardless of the social problems that may arise for the new tenants. A control on the actions of the private investors by the local communities and authorities is therefore necessary. This control may be exerted through governmental subsidies. If the subsidies don't come with any constraints regarding rental agreements or future tenants, the developers can nevertheless rent to whoever they consider.

5.6.4. Size of the sector

Social housing has been since a long time significantly important in the German housing market also because it was a way of educating the society, being a prime political issue to be addressed. As soon as most of the social housing sector has been privatized, the private rental sector became gradually the most important housing sector. The trend is kept until today.

According to a study from (BPD, 2016) of approximately 41 million households, it turned out that 45% of properties in Germany are owner-occupied, 50% live in rented housing and around 5% in social housing.

Yearly, the number of apartments which are losing their social status is greater than the ones built for social purposes (Kofner, 2017). This is shown also by the numbers from Figure 29 regarding the social housing sector in Germany, which suggests that the availability of this type of housing is constantly shrinking, reaching in 2018 to 1.15 million dwellings. Not only refugees are of course entitled to get housing in the present sector, but also other households (e.g. low-income households) are.

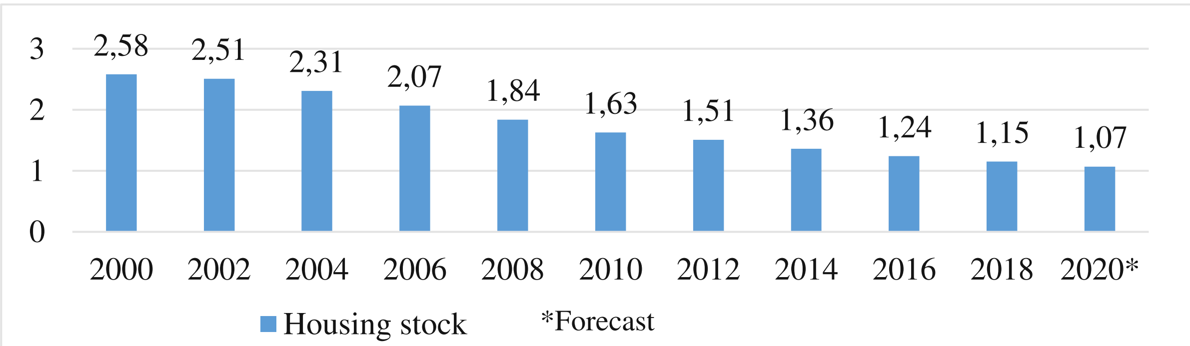

Figure 29 *Evolution of social housing sector in Germany, in millions*
Source: Statista, 2018

Hence, the refugees must compete with them in order to get to rent an apartment with social status. Moreover, the forecast from the Federal Working Group on Homelessness (Bundesarbeitsgemeinschaft Wohnungslosenhilfe) supports the statistics from Figure 29. The number of dwellings from the social housing stock will continue to fall within 2020 at around 1.07 million.

5.6.5. Other characteristics of the sector

The German government is still trying to keep a good standard by imposing size limits for publicly funded social housing (e.g. 1 or 1,5 room apartment:40 sqm, 2-room apartment 54 sqm, 3-room apartment: 70 sqm, 4-room apartment 82 sqm, 1 additional room: +11 sqm[60]) and generally, the rent prices for social dwellings in new buildings can be set between € 5 to 9 per square meter, depending on the region.

In Germany, part of the private-rented sector serves also as social housing. When a stakeholder decides to take on the governmental subsidies either to construct, modernize or refurbish a building, it becomes tight to a contract (e.g. in the contract it can be specified the number of apartments which are for social use). The contract expires when the loan is repaid, typically 10-15 years, therefore the social status can be considered temporary. When the loans are paid back, the apartments lose their social status and can be let free to any tenant independent of their income (Kofner, 2017).

Even if affordable housing is defined as ‘housing which is deemed affordable to those with a median household income or below as rated by the national government or a local government by a recognized housing affordability index’ (Wikipedia), a reference is made in the present housing sector since it comprises also the percentage of housing rent at a reduced/subsidized price.

The housing tenure of affordable housing (whose percentages are in line with the study from (BPD, 2016)) portrayed in Figure 30 is characterized by a high percentage of private rental housing at the market price. However, what is important in this section is the value: rent through subsidies allocation (4.4%). This percentage represents the share that belongs to the

[60] Stadt und Land Wohnbauten-Gesellschaft MbH; http://www.foerderdatenbank.de/Foerder-DB/Navigation/Foerderrecherche/suche.html?get=views;document&doc=9839

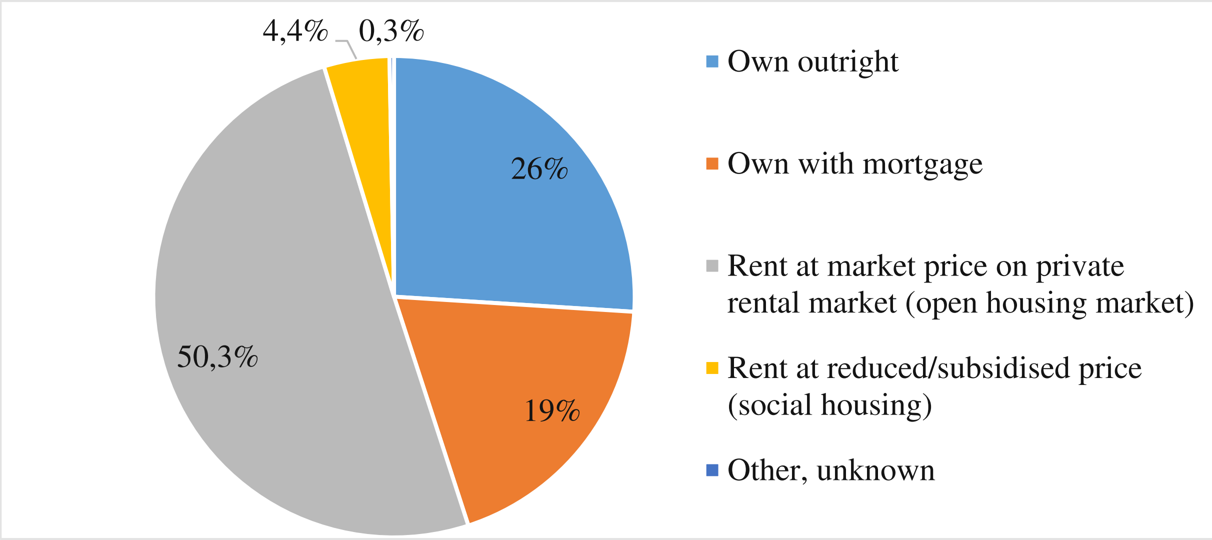

Figure 30 *Affordable housing: housing tenure distribution, 2014*

Source: OECD - Affordable Housing Database

social housing sector and is related to the construction of new subsidized dwellings, which can be diminished once the contractual constraints are lifted. Therefore, 4.4% represents the housing stock which can fluctuate through two sectors of the housing market: social housing market and open housing market. The movement between the sectors depends on the decision of private landlords, whether to keep the social status of the housing unit or not. This decision is most of the time clear and driven by a financial profit, especially in times where the demand is so high that the prices surge rapidly.

The concept of affordable housing is logically antithetic to the general trend, for the recent years, of having drastically increased housing costs in Germany (exemplified by the high percentage of affordable housing rented at market price i.e. 50.3 %; affordable housing should be dedicated for people with an income under the median average, therefore rented under the market price). On this aspect, the government implemented policies of controlling the rent increases (e.g. rent index; a system of local comparison rents). Nevertheless, the general rent control in the private rental sector cannot be completely regulated, for instance, it doesn't apply to 'extensively modernized' and newly constructed dwellings (OECD QuASH, 2016). This topic is expanded in the open housing market subchapter because affordable housing takes part from the open housing market sector too.

5.6.6. Demographics of social tenants

The present section addresses to the beneficiaries of the social housing in Germany (i.e. social tenants).

A relevant study for the present research from the German Institute of Economy from Köln analyses the tenants of social housing from two perspectives. First, it connects the tenants to the income and the location of the house (e.g. either in an urban or rural area). The related results are elaborated in Figure 31.

Second, the tenants are analyzed regarding their employment status and different levels of income intakes (i.e. above/under the levels allowed by the social housing sector; Figure 32). The results from these two figures show that around 54% of the total households live in social housing despite having an income above the median earnings. Only about 46 % of households living in state-subsidized homes actually have less than 60 % of the median income and thus, count as poor.

Figure 31 indicates that there is no relevant difference between the urban and rural areas, the percentages in both areas seem to be almost the same. Only in the 70 to 80% group are higher differences registered. Moreover, considerably important are the registered cases in which the households (7.7%) have an income with 100% more than the average.

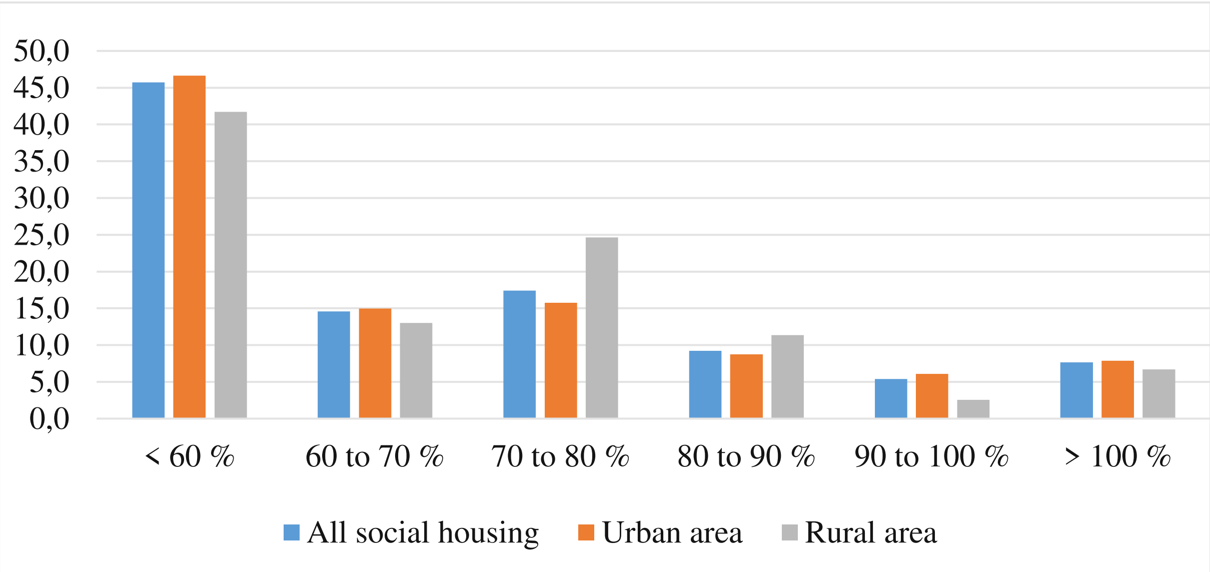

Figure 31 *Share of households in social housing with regard to their income, according to the middle-income, in percentage, 2016*
Source: SOEP, Institut der Deutschen Wirtschaft Köln

These numbers clearly suggest that the social housing sector is not dedicated only to vulnerable people and special groups and it indicates a misallocation tendency (Werner, 2019).

It seems that some households benefit from this situation as no regulation is implemented in checking if the recipients of the housing have changed their income status over the years (Institut der Deutschen Wirtschaft Köln, 2016). Living in a house where the rent is subsidized can represent a lifetime occasion for some people, rather than a temporary solution how social housing is intended to be (residing inside the housing unit until the economic situation of the household is improving).

The graph from Figure 32 offers information about tenants with different employment status that have access to the social housing sector, with incomes within/over the limits allowed by the social housing sector. For instance, even if most tenants are not employed, the graph shows that full-time workers have the highest proportion of households whose income exceeds 60% of the median income. They occupy approximately 10% more social housing units in comparison with full-time workers who have an income under the poverty line.

In addition to the insights provided by the graph in Figure 32, (Schier & Voigtländer, 2016) infers that the German social system, unlike others, still permits the permanence in social housing even if the overall income situation of the household has changed.

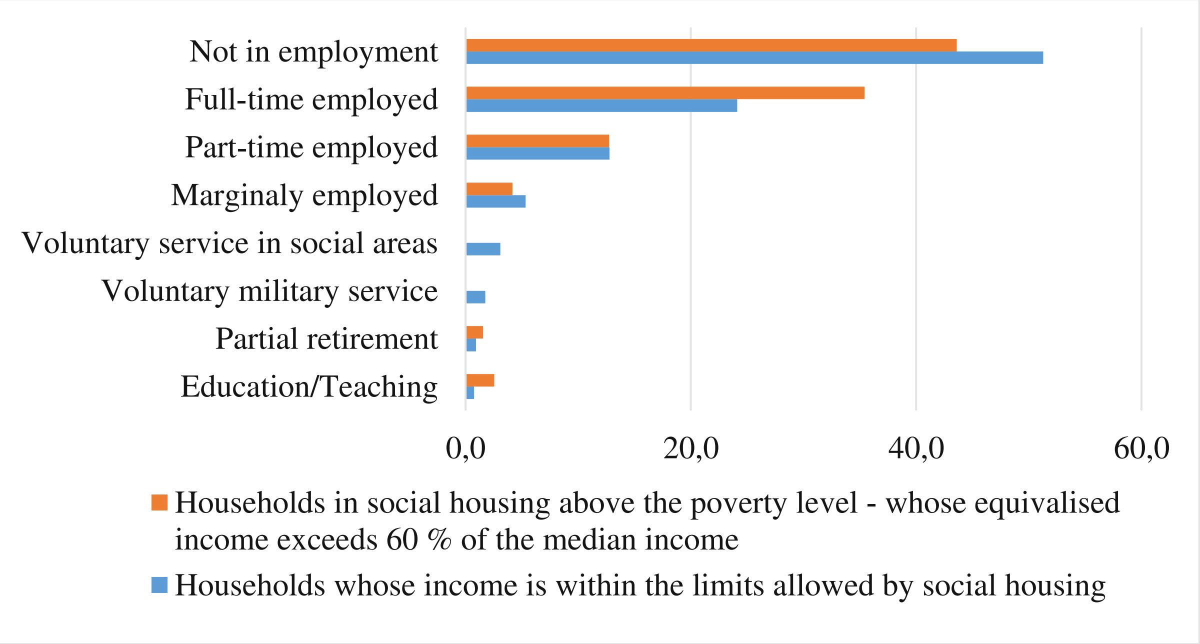

Figure 32 *Employment status of tenants of social housing, in percentage, 2016*
Source: Institut der Deutschen Wirtschaft Köln

Supplementary studies reported that up to 40% of social housing residents are earning income above the social security allowances[61](Werner, 2019).

Therefore, Figure 31 and Figure 32 clearly indicate a high percentage of social housing misallocation, where the occupancy is represented by people with a better income situation than what can be guaranteed for refugees by the government in the first three stages.

As presented above, generally, low-income households are adhering to social housing. The heterogeneous character of the created social housing system has had a strong capacity for adaptation and innovation along the years being dominated by several actors at the same time. While back to the old days the government and other actors were having a convergence of interests by building social housing for the workforce, now the stakeholders could come together to fulfil the demand for housing created by a large number of refugees, if they are driven by a common strong interest.

Even if, the social housing market is mainly dominated by the renting sector, it is worth mentioning that a small portion is available for purchase on the social housing market.

The strong connection refugees had with their home may be transferred to the will of having their own property in the host country, where they want to feel belonging. Nevertheless, the cases of intention for purchase of a house are considered seldom among refugees (especially for the first three stages).

Still, Germany's system of 'social housing promotion' (Wohnraumförderung) offers subsidies for families with children who decide to purchase private housing units (CECODHAS, 2013). A high number of people who arrived in Germany was represented by alone refugees, hence, they are excluded from receiving any subsidies for buying a housing unit. The only option for them remains mortgage credit.

To get the idea if for a refugee household there is the possibility to receive a mortgage credit, it has been conducted a survey that was sent to several branch offices of the most important banks in Germany. The survey questions are displayed in Annex 8.

When the questionnaire was first addressed to the central headquarters of the banks, they specified that this is a matter in which each branch office has to decide. However, there are no results to be detailed because the bank subsidiaries refused to answer to any question

[61] https://www.welt.de/finanzen/immobilien/article147256158/Gutverdiener-nehmen-Beduerftigen-Sozialwohnungen-weg.html

related to the possibility of giving a mortgage to the refugees. This may indicate that they did not encounter this situation, or they don't have a general policy to solve it.

5.6.7. Concluding remarks

In the present sector, the housing associations of the Federal Lands are the primary stakeholders. By introducing programs of social housing promotion, Federal Lands offers the possibility to the investors to take various subsidies for construction activities and at the same time, bind them to contracts that allocate the buildings or several dwellings, for a defined period, to the social housing stock. The behaviour of the developers cannot be forecasted; hence, it is unclear if those estates can be for the use of the refugees in the future. Since the housing units will be tight no longer to a contract, they will be free to rent on the open housing market. In any case, each action that the developers may take can be performed only under the German tenancy law.

Housing association doesn't verify if the income of a household has changed over time, as the law doesn't indicate to do this. As a result, up to 54% of families are living in social housing even if their revenue is above the median earnings, blocking potential legitimate tenants like refugees to take upon the housing units. This fact is producing an imbalance in housing allocation as theoretically social housing is meant to help to accommodate people whose access on the open housing market is precluded. This situation represents a market failure because people are not adequately housed according to their income.

For instance, the number of applications for refugee protection and asylum seeker status in 2016 sole (see Figure 4) was more than 1.25 million and in 2017 arrived at 1.4 million. 71.4% in 2016 and 63.2% in 2017 (according to AIDA and BAMF) have been granted protection status in the first instance.

Making a simple calculation, it turns out that about 1.77 million of people (considered only for two years and counting only the first instance approved applications) are seeking for an accommodation on a market sector offering 1.07 million housing units from which already a fair amount of them is already occupied by other people.

To sum up, the social housing stock, which is continuously shrinking, cannot be enough to fulfil the demand of refugees, low-income households (i.e. which can have access to publicly funded social housing via the yearly income limits implemented by the government (e.g. Wohnberechtigungsschein)) or no-income households and sick or handicapped people. Consequently, the refugees have to turn to additional sectors of the housing market to which they can have access to because one it's not enough to satisfy the whole demand.

5.7. Open housing market

A free market or open market is a system based on supply and demand with little or no government control, where voluntary exchanges are made between buyers and sellers. These exchanges are, nevertheless, occurring under several regulations (e.g. taxation, fixed exchange rates, licensing requirements, regulation, the prohibition of specific exchanges, etc.). Without any of these regulations, the transaction could be possible only on the black market (Investopedia, 2018).

By applying this general definition to the open housing market, it helps to understand how this sector works. Exchanging properties in the free housing market are done in the same manner, through transactions between two parties and under the same rules applied in the general free-market system (general exchange of goods).

In the present thesis, the open housing market[62] is considered as being the regular housing market, accessible to the largest part of the entire population, and therefore, making it the largest sector among the submarkets considered so far.

5.7.1. Refugee's access to the current sector

Social media created awareness and moral responsibility through the population to help the refugees. Through many actions of crowdfunding, where all the people can donate a small amount of money, there was created first in Germany in November 2014 a platform called 'refugee-welcome'[63] which helped people to find accommodation on the open housing market or to match natives with refugees in shared flats. As the situation evolved, the platform became international.

Basically, people are working as volunteers and are searching for accommodation for refugees on the free housing market or are asking people to register on the platform their flats or any additional room they can rent. Through this platform, people are also trying to collect donations for paying the accommodation of the refugees. This takes place more in other countries, as in Germany, in most of the cases, the government is paying for the rent. According

[62] In the present thesis, open housing market is named also free-market housing or regular housing market.
[63] https://www.fluechtlinge-willkommen.de/

to the platform's statistics[64] from 2015, people who were offering a room in shared flats had the biggest percentage.

In general, is difficult to obtain specific data for understanding whether the refugees can access the housing market because the responsible offices of the municipalities refuse to give out information about the type of accommodation refugees are entitled to during their application process.

The research performed by BBSR (Bundesinstitut für Bau-, Stadt- und Raumforschung) in collaboration with BBR (Bundesamt für Bauwessen und Raumordnung) met the same difficulties (they received few data for research purposes). The present thesis uses nevertheless the research of BBSR and BBR as a basis for the evaluations reported further.

The data gathered from the research (of BBR and BBSR, 2017) are presented in Figure 33. In the figure, are portrayed the three types of housing (e.g. shared accommodation, housing let by municipality, and self-rented accommodation) to which the refugees have access while their application to refugee/asylum protection is processed.

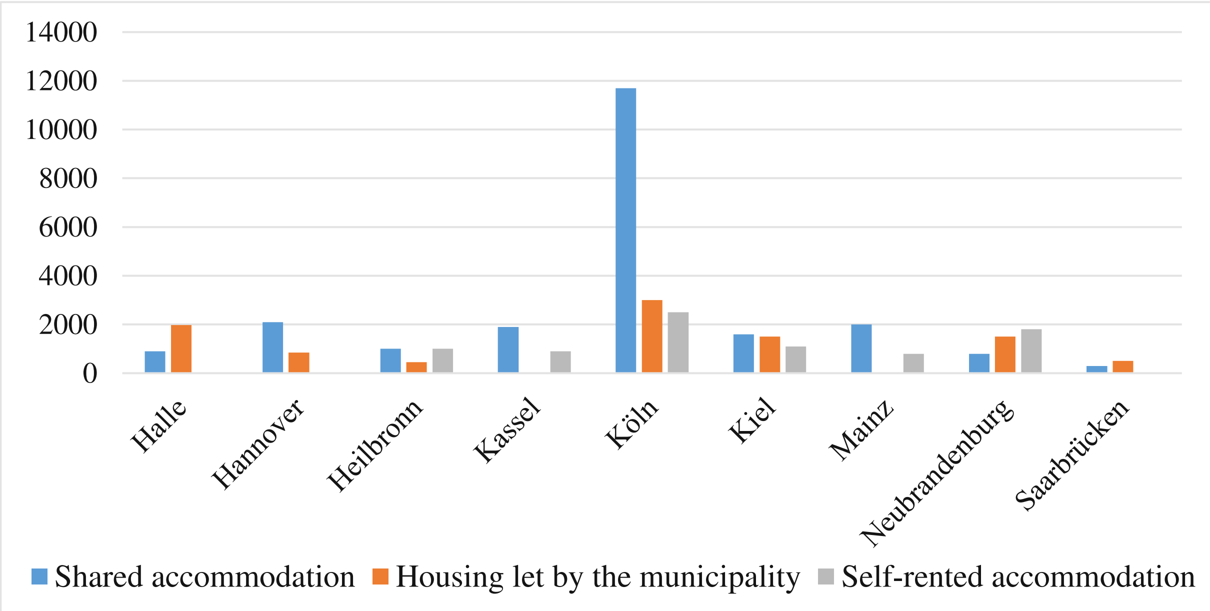

Figure 33 *Number of refugees in different type of accommodation, during the application process*
Source: BBSR, 2017

The importance of this graphic for the present housing sector is given by the variable regarding self-rented accommodation. This suggests that even if the refugee protection is not yet determined, they have access to the open housing market. Although the percentage is small,

[64] http://www.fluechtlinge-willkommen.de/wp-content/downloads/FW_Pressekonferenz_Factsheet_ENGL.pdf

it is highly important because it shows that the refugees from stage 3 (under the process of getting protection status) can also have access to this sector. After the application process is completed, the numbers can increase.

In addition, the results from the study of BBSR, and BBR[65] regarding the integration of the refugees into the free-housing market show that this can be successful. For instance, in rural areas, the percentages registered for accommodating refugees were very high due to the housing availability offers. However, this is not entirely a success (even if the refugees had a place to live) because important amenities are not around (e.g. hospital, school, retail stores). As a result, they are dependent on public transportation and have to travel long distances to reach integration courses, doctors, retail stores or friends.

5.7.2. Does the law allow refugees to access the open housing market?

According to (Dahl & Góralczyk, 2017) the government introduced new policies in August 2016 (e.g. regarding benefits, labour market integration, and the residence obligation) valid for three years which permits recognized refugees to enter the regular housing market but prohibits them to converge in the same area.

Refugees that still receive subsidies from the government can search for an apartment on the open housing market and rent it. They just have to follow a simple procedure imposed by the government and applied by each Federal Land in their manner.

In a few words, they have to present to the responsible authority the type of housing they have found on the open market and then receive permission to get it. They submit the offer received from the landlord comprising information about the housing location, size, equipment, and price. Afterwards, the responsible office is performing an evaluation of the offer and is granting the approval only if the following condition is met: the rent is not higher than the average rent calculated through the rent index calculation and the size of the rental unit is according to the set of criteria set by the responsible authority. Hence, if the housing unit is complying with the regulation within the rent index and the lease contract from the landlord is approved, the subsidies for the apartment are granted.

[65] https://www.bbsr.bund.de/BBSR/DE/FP/ReFo/Wohnungswesen/2017/integration-fluechtlinge/01-start.html?nn=439538&notFirst=true&docId=1453808

Consequently, refugees receive their housing allowance regarding the average rent index from the list of representative rents of the location in which the accommodation is placed. Simply put, the rent of that apartment is calculated applying a rent index concluded into a list of local reference rents (i.e. *Mietspiegel*). The rent index is an overview of the regular housing market net rents. It is calculated[66] over a four-year period and determined by the average of new contract prices and rent increases of the existing contracts. Basically, the housing unit that refugees want to let is compared first with others of the same quality in order to figure out if the unit is situated in the established margins.

Generally, apartments are different in terms of size, location and quality of furnishing, therefore their rents vary. The rent index gives the market price to an apartment with respect to its sectoral attributes and other standard structural categories (e.g. the year it was built, number of rooms, type of floor, the existence of a terrace, etc.). Yet, it is important to specify that the rent index is a rental regulation that aims to balance the desire of landlords to speculate the prices they would ask on their apartment. It limits the increases to no more than 20% once in a three-year period. Additionally, equally important is that the rent index is not applied to newly constructed rental units and rental units that have been renovated (Umwelt, 2017). This particular fact gives landlords the possibility to increase the price of the rent with above the 20% limit, even for existing contracts.

What is important to notice is that the rent index cannot be applied to all the properties or all the rooms from the property (e.g. social housing properties, a living space for temporary use, a shared kitchen or bathroom of several tenants, living space in youth residences, or other buildings like offices or showrooms which are not rented as residential purposes). As a result, municipalities are setting an average net rental price per square meter of properties throughout different districts of the city, comprised in a publication, in order to offer a transparent view on the rental market (Wissenschaftsstadt, 2018).

Another important issue to be addressed is that in Germany, for renting an apartment, it has to be paid a deposit, usually up to three months of the monthly rent. This sum may be paid also by the governmental office if any other possibility could not be met[67]. Nevertheless, in each federal state, the procedure may slightly vary, some of the offices not offering these

[66] In the legislation (i.e. German civil code – Bürgerliches Gesetzbuch (BGB)) is described how one could calculate this rent index.
[67] https://www.berlin.de/ba-friedrichshain-kreuzberg/politik-und-verwaltung/aemter/amt-fuer-buergerdienste/wohnungsamt/artikel.398595.php

benefits. In this case, refugees who cannot pay the requested deposit are excluded from entering the open housing market sector if they don't find any other solution to pay.

Given all of the above, all the refugees who reached the point of leaving the follow-up accommodation are allowed by the law to get an apartment on the open housing market. There are, however, external factors that can put refugees many obstacles in renting an apartment (e.g. discrimination, misunderstanding their legal situation, broker's fee). All of them are examined in the following section.

5.7.3. Restraining the access to the open housing market through external factors

In many cities around Germany, the simple procedure to rent an apartment on the regular housing market is becoming very difficult mostly in urban areas and in university cities as a result of strong housing demand. For refugees to get an apartment could be very challenging, mainly when they depend on the housing allowances.

For instance, having to submit the offer of the apartment they found to the competent authority for approving it, makes it more difficult. This method could take a lot of time, which can cost refugees the loss of the apartment. Since there is a lot of demand for small apartments[68] (which is often the target for refugees as most of them came alone without family – see Figure 4) the landlords may decide not to wait for them to check with the responsible authority, as they find immediately a replacement (especially in type A and type B cities).

Furthermore, the competent authority could refuse the apartment offers brought by refugees months in a row (e.g. if the apartment's rent is higher than the rent index or it doesn't have the particular specification the competent office requires, the refugees have to bring additional specification to demonstrate why they believe that apartment is appropriate for renting). Any of these bureaucratic hurdles produce discouragement to the refugees who are still tight to the shared accommodation until they find one accommodation the officers agree upon. On these grounds, after a long period of trying to get an apartment legally and being

[68] A small-scale landlord declared (for the purpose of the present analysis) that they receive for a 40 square meter apartment more than 300 requests. This is registered in a university city.

continuously refused, many refugees could give in to take an apartment on the black market (as noted in the analysis of the informal housing market – subchapter 5.3).

Small-scale landlords are the dominating stakeholders of the rental sector. Their decision to wait for the refugees to present the apartment to the responsible office could increase their acceptance to the present sector but landlords are raising up a series of reasons to politely refuse to give to the refugees their apartment (i.e. language barriers, unclear documents, not being familiar with their documents, the remaining time connected to the refugees' permission to reside or improper use of the facility). Hiding discrimination through formality's failure and misunderstandings is not uncommon.

Nevertheless, professional landlords are also offering part of their housing stock for the use of the refugees but the number of low-cost accommodations is deficient and refugees have to put themselves on a waiting list, especially in crowded metropoles. As a result, refugees may have to wait more than 6 months to receive proper shelter on the open housing market sector. With reference to the study from (Bensch, BBSR, & BBR, 2016) this waiting time has an upward trend.

In dense areas with high demand, refugees have little choice of the neighborhood on the requests they fill up. Even if some require in the application sheet to receive an apartment close to daycare or schools, they may not receive it if these facilities are located in areas with low vacancy rates.

Another difficulty encountered by the refugees is dealing with real estate brokers. Generally, it is common practice in Germany for landlords to allow the real estate agents to manage the lease of their apartment. Hence, a large percentage of the housing comprised in the present sector is handled by real estate agents who deal with the search of the right tenant for the property.

The difficulty for the refugees comes when they have to pay the commission of the agent. As of June 2015, a new tenancy law (Bestellerprinzip; i.e. orderer principle) was introduced to deal with the dilemma of who has to pay the commission fee for the real estate agent. Thus, who orders the service, has to pay for it (this rule applies only to residential property).

Generally, this fee counts up to three rental fee months. Therefore, as long as the refugees receive the housing allowances from the government and they have no additional income, it can be hard to pay the agent's fee if ultimately it is decided that they are the ones who have to pay it. Recalling that it has to be paid also the deposit for the housing unit, the refugee will eventually need to pay up to 6 months of the monthly fee in advance to get that apartment. This is literally hard to achieve.

In addition to all of the above, the government's choice to privatize the social housing stock to foreign investors is creating the proper environment for the gentrification process to ascend. Basing on speculative activities (i.e. purchase, repair, sell) (Aalbers, 2016), landlords aim to increase revenue streams through increasing rent. Even if by doing so the landlords could alleviate the process of ghettoization of some neighborhoods by putting mixed households together, the available stock for a low-income household is shrinking.

5.7.4. Private rental sector

One of the impressive characteristics of the German housing market is the size of the Private Rental Sector which is nearly 55% of the total housing stock, according to IWU[69] (Institut Wohnen und Umwelt). It is one of the largest shares registered in the European Union.

German stability and its economic development cycle attracted stakeholders to invest in the rental sector. They consider it a low-investment risk sector with stable yields. On this ground, small-scale landlords have become with time important investors in the German rental market, dominating the professional landlords' side, as shown in Figure 34. This is a result of the tax system which perceives rental housing as an investment. In a few words, according to (Boer & Bitetti, 2014) it provides depreciation allowances, mortgage interest tax relief deduction of maintenance costs and the possibility to deduct losses from the income tax base. Therefore, the small-scale landlords are having an important role to play with respect to growing the acceptance rate of the refugees to the regular housing market. Their high percentage is having a significant influence on this matter.

[69] http://www.rentalcal.eu/the-german-rental-market

International investors take advantage of the privatization of the social housing sector and they purchase blocks of dwellings from Germany's social housing stock. They take part in the professional landlords share, as the right chart pie Figure 34 is highlighting. The broad variety of professional landlords (e.g. rental condominium association, corporate housing company, public housing company, housing cooperatives, other corporate ownership, other nonprofit institutional ownership) is determined by the 2011 census data (Statistisches Bundesamt). The data from the 2011 census relates to the percentage of professional landlords registered in 2017, therefore the results presented in the right pie chart are percentages that can variate with between 5% and 10%.

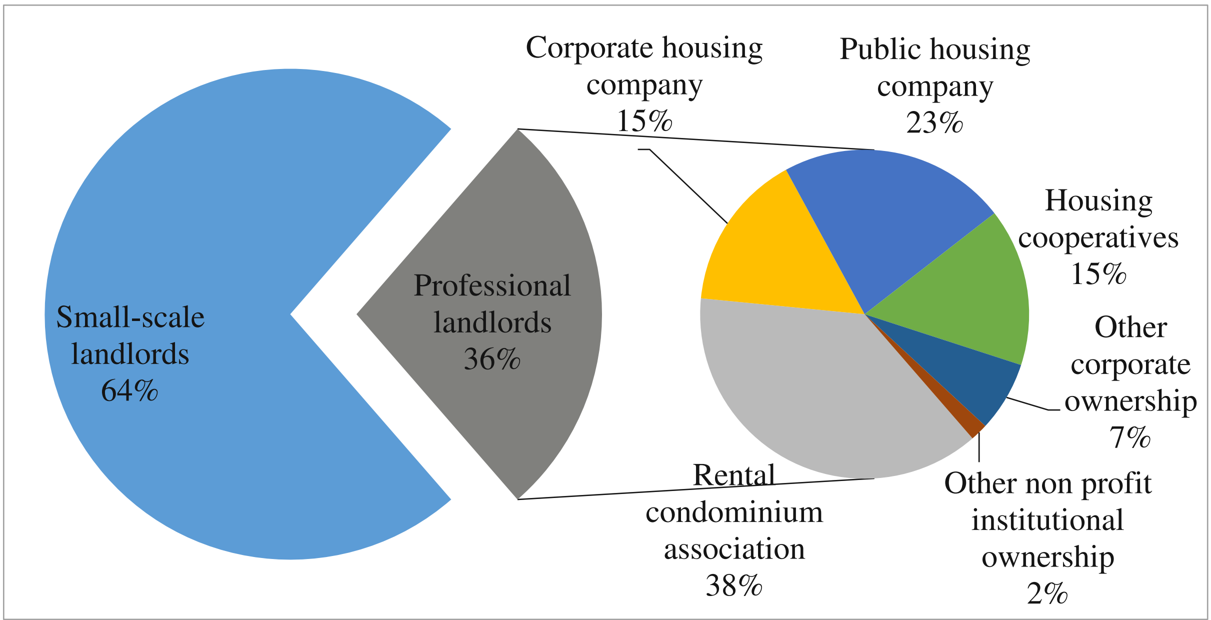

Figure 34 *Owners of the rental sector on the open housing market, 2017*

Source: GDW (Federal Association of German Housing and Real Estate Companies e. V.) and Statistisches Bundesamt census data 2011

A very important aspect regarding the private rental sector is the tenancy law. In Germany, this law is balanced throughout the stakeholders, but the rental protection is strong for the tenant. For instance, if the occupant complies with the duties that are agreed upon in the contract and pays the rent in time, it is almost impossible for the landlord to end the contract. However, if the landlords find justifiable arguments to cancel it, the tenant doesn't need to move out if one of these reasons is met: doesn't have any adequate alternatives, pregnancy, low income, disability, infirmity or upcoming exams (Boer & Bitetti, 2014).

This particular aspect (i.e. security of tenure) gives refugees more trust in the system, as they can rely on the fact that they cannot be evicted if they follow the agreements from the lease contract. Additionally, the rental contracts are in general concluded for an indefinite time, therefore, the possibility of renting in the long-term is high.

The population of Germany is around 80 million after the census performed in 2014. From the total, around 20% (approx. 16 million) of the population has a migration background. Therefore, based on these numbers, statistical data (DESTATIS) regarding the type of use of dwellings (e.g. owner-occupied and rented) for all the residents in Germany and for the people with a migrant status are portrayed in Figure 35 and Figure 36, respectively. The balance between owner-occupied dwellings and rented dwellings is divided by migration background (with or without). These statistics are used to illustrate the degree of affiliation of the migrants in this sector, aiming to make an analogy to the future the refugees may have.

As a result, the graph in Figure 35 indicates that the higher proportion of owner-occupied dwellings is for the group without a migrant background (approx. 55%) whilst the dominance in the rental sector is shown by the group which has a migrant background (approx. 65%).

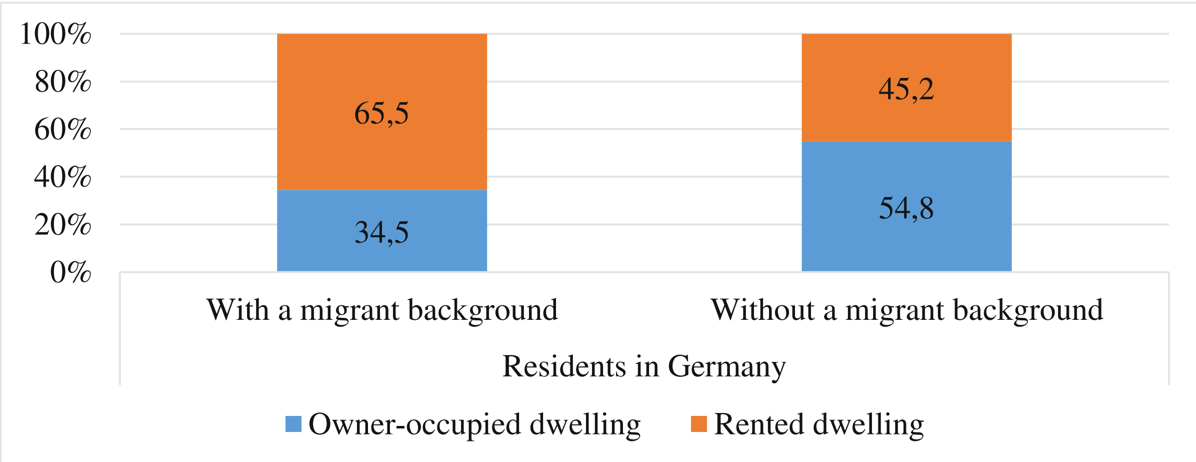

Figure 35 *Type of dwelling use and migration background on open housing market of the entire population, in Germany*
Source: DESTATIS, 2014

Focusing on the approx. 16 million people with a migration background, the other two groups are differentiated: foreigners (e.g. immigrants) and Germans (e.g. foreign nationals born in Germany, naturalized citizens) with or without a migration experience on their own. The data are centralized in Figure 36.

The results from the figure suggest that foreigners from both groups have the largest percentage of rented dwellings, while German nationals with migration experience still have better rates with respect to owning a dwelling.

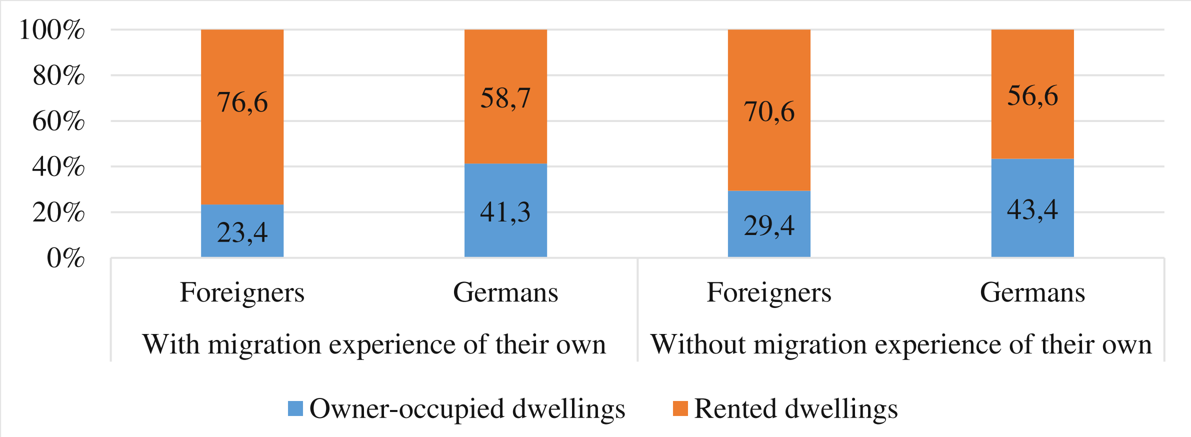

Figure 36 *Type of dwelling use of the percentage of people with migration background on open housing market*
Source: DESTATIS, 2014

Thus, these two figures (Figure 35 and Figure 36) reveal that migrants can own a dwelling but given to the high percentage they take up rental properties, it is fairly realistic to suppose that also refugees will rent. To achieve financial stability, in order to afford to buy a property in a new country as a refugee, may require a longer period of time.

Furthermore, giving the example of the German citizen (for buying a house and receiving a mortgage credit), it has to put aside a deposit of value between 20-30% from the total cost of the property (BPD, 2016). These considerations have to be read together with Figure 11 (chapter 3.2), which showed that every five years the refugees employment situation is improving and only after 20 years of being in the country they normally arrive at the same level of the other people.

Moreover, even if past research suggests that in the long-term, housing ownership is cheaper than renting (because the transaction costs are speeded out over time (McDonald & McMillen, 2011)), it seems that people with a migration background have really huge barriers in undergoing to this process, since their owner-occupied dwelling share is low.

Furthermore, past research (Häussermann & Siebel, 1996), states that once migrants (e.g. independently to the reason of migration) are settling to the host country, at the beginning many decide to send part of their income to their relatives that remained in the sending country. To be able to accomplish this, they take the cheapest accommodation they find on the market. However, while residing for many years in the host country, their housing preferences can shift, becoming more similar to the ones of the natives.

Yet, the refugees can only in few cases opt for owning a house in the host country due to their necessity to access a mortgage. Although the interest rate is low, German banks don't offer the credits so easily. (Ross & Yinger, 2002) documented the existence of discrimination for accessing mortgage credit and illustrated that it cannot be justified by rational underwriting standards. Regardless of the fact that discrimination cannot be justified by quantifying it, the refugees are more likely to encounter this behavior if they try to take a mortgage. As highlighted earlier in the social housing market subchapter (subchapter 5.6), the questionnaire sent to the banks (to understand if the refugees can receive a loan) was not successfully finalized as they refused to answer. Among the reasons presented previously in the subchapter 5.6. (i.e. the banks did not encounter this situation often or they don't have a general policy to solve it) this refusal may indicate also an act of discrimination.

To sum up, the primary interest of the refugees is cheap accommodation and the financial possibilities allow them initially to rent and not to buy, especially if they send part of their income to their families that reside in the sending country. Thus, is more likely that the ownership sector is not so tangible for the refugees, especially in the beginning, even if culturally they are driven by the will of owning a house.

As a result, the dominant form of tenure for the refugees is rental housing, hence, the next section examines the possibility of three types of households, in terms of financial position, to access properties that belong to groups from the open housing market.

5.7.5. Subsectors classification

Relevant research on the integration of the refugees into the open housing market of the Institute for Urban Research and Structural Policy (IfS) and the Leibniz Institute for Spatial Social Research (IRS) suggests that refugees are impacting on long-term the open housing market in the following way. The refugees from shared accommodation are moving to regular apartments, increasing the demand on already a scarce supply sector. From this perspective, the present housing sector is examined by performing and additional segmentation aiming to identify distinct groups of housing stock to which refugees have access. A further segmenting improves the accuracy of the prediction.

Like every other housing sector, the open housing market sector can be divided into multiple other sub-sectors, according to certain characteristics. In this case, the the attribute considered is the transactional value of the property on the market.

Since residential properties are characterized by heterogeneity, the trade of the distinct assets is performed in separate market segments. For instance, in the present case, the different price dynamics of the properties determine the division. Hence, to simplify the analysis, three subsectors are depicted according to the value of the assets: high-price properties (i.e. luxury housing), mid-price properties, and low-price properties (i.e. affordable housing).

5.7.5.1. Housing for higher income groups

High transaction costs are placing any residential property in the luxury sector. The number of these transaction and the demand determine the size of the sector. Considering that the prices of such assets have big fluctuations and are not characterized by a fixed general price range, are examined further the highest deals for freehold apartments on the German housing market which comprise data (selling price) from the type A cities (i.e. Berlin, München, Hamburg, Frankfurt, Düsseldorf, Stuttgart, and Köln). Thus, in Figure 37 are portrayed the prices/square meters of properties sold in the first half year of 2017 (according to Engel & Völkers).

The German luxury market is dominated by continuous growth and demand, having a relatively small size with a low number of wealthy buyers, according to research from Engel & Völkers. Figure 37 is showing that the prices for premium apartments differ with respect to the city in which they are located (e.g. from 14,300 euro/m^2 in Frankfurt to 28,400 euro/m^2 in Hamburg). These dynamic cities show the high potential of luxury housing development and that the housing stock could reach significantly above-average price growth per square meter. This is applicable also for the rental luxury sector.

As previously mentioned, housing markets can be classified through housing and neighborhood type. These attributes can be also used to determine the property appraisal which is setting the transactional value for the property. Generally, these types of assets are in exclusive neighborhoods with a unique location and great views, being characterized by having outstanding architecture and high-quality equipment.

Consequently, given all the aspects listed with reference to the luxury housing sector, not many people have the financial power to be able to purchase or rent any of these housing assets. Having refugees as potential owners or tenants in this sector is definitely excluded, not only because of high priced homes but also due to the closed group of buyers.

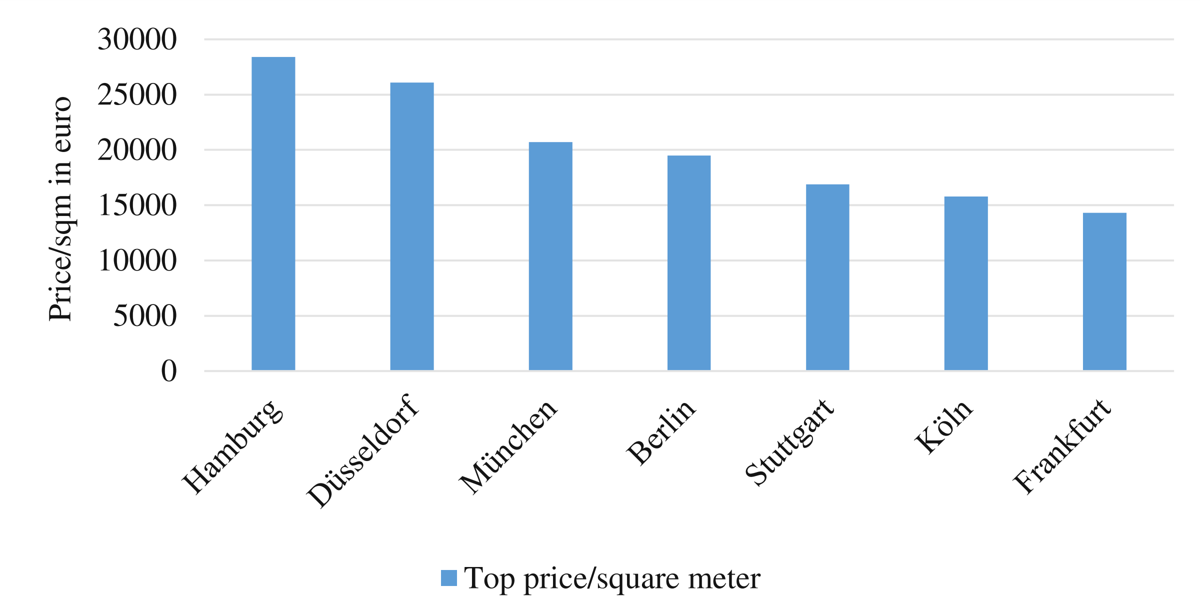

Figure 37 *Top prices per square meter for luxury apartments, in the first half-year of 2017*
Source: Engel & Völkers, 2017

In addition, the employment evolution of a refugee is very lent (e.g. according to the employment rate over the years from Figure 11, chapter 3.2). Moreover, these houses are most of the times given to brokers which in turn promote them to a certain type of households from their portfolio (i.e. wealthy people), as they can decide to whom to present the house. Hence, much reasoning is not needed to realize that the refugees cannot access luxury housing sector.

5.7.5.2. Housing for middle-income groups and lower-income groups

These two groups are examined in the same section because there is a fine line between them that is crossed in the neighborhoods which introduce mixed-income households or mixed-tenure housing into an existing lower-income neighborhood. However, without a controlled insertion of middle-income households into such neighborhoods a gentrification process may start (i.e. the transformation of neighborhoods of low values to higher values). Later on, this can be a reason for displacement of lower-income households to other areas (e.g. because of higher rents, mortgages, and property taxes).

Nevertheless, the behavior of each household is difficult to predict, but, generally, middle-income households connect themselves to market-driven housing, acting with respect to the changes occurred in the housing market, whilst low-income households are connected to the governmental policies regarding the construction of new subsidized dwellings, and concentrating themselves on finding outside areas where the price of the market for housing is lower.

In the context of the present thesis, household is referred to a family formed by refugees. Initially, refugees are taking part from the low-income group, therefore, they have access to the affordable housing on the open housing market, a right given also by the German law. The profile of the demand of housing, as explained previously, is done initially by alone persons and later on after receiving protection status and applying for family reunification[70], the household is evolving, enhancing its financial position if all the members of the household are getting employment (thus, having stable income).

The new family member (through family reunification policy) who comes to Germany has to follow the same path as their peers to get employment. Therefore, it is important to mention that the period for getting employment is connected to the time the person needs to learn German[71] (e.g. Figure 9 – chapter 3.2 – has indicated that the chances for the refugees of getting employment are growing with respect to the level of German), since the permission of residence is received because one of the family members (who has a protection status) have it already.

Nevertheless, if the application for family reunification is filled within three months from the receiving date of the protection status document, there is no further need to provide proof of covering the living expenses for the family members who will join.[72] In this case, the period for the entire household to reach employment can be shorter.

Anyway, probably not many refugees are aware that this rule exists, therefore, most probably many are going to surpass the limit of three months. In this case, the time needed for family reunification and for the possibility to cross the limit to a middle-income household (achieved when all the members are working) is prolongated. However, a survey from IAB showed that since 2015, one in four refugees got employment. They forecasted that half of the refugees will have a place to work in 5 years.[73]

[70] (BAMF, 2018): A person who received a protection status can apply within three months from the date the status has been granted. Then, '*family members of persons entitled to protection also receive asylum*.' Correspondingly, the family members are having the same legal framework.
[71] According to the German Language Academy, to achieve B1, a person needs approximate 300 hours of lessons, generally this is achieved in about 12 months.
[72] https://www.berlin.de/willkommenszentrum/en/arrival/asylum-process/
[73] https://www.thelocal.de/20180531/one-in-every-four-refugees-now-has-a-job-study-finds

In that event, (Michael Kalkmann, 2018) suggest that the average duration of receiving a protection status in Q3 of 2017 is of 10 months and Syrian applicants register the lowest duration of 6.1 months. Based on these facts, there are depicted two scenarios regarding the possibility of a refugee household to achieve middle-income status.

Firstly, if the person (that has already a protection status) fills the family reunification application in time and the family member (after the arrival in the country) is able to learn German in the minimum required hours (i.e. 300 hours), roughly 25 months have to pass until it can get also employment.

Secondly, if the person who got a protection status misses the timeline of family reunification application, the process of becoming a mid-income household is prolongating. In any case, the financial situation of the household could improve yearly, depending on the type of employment they get. Correspondingly, this is the only way to surpass the low-income group, to have the whole family working towards achieving a better living situation.

In these circumstances, the access of the refugees to middle-income housing is tight to multiple factors connected to the household financial evolution. Immediate access to this part of the open housing sector cannot occur due to the duration of the legal and educational processes which refugees have to go through. Nevertheless, the evolution of the household depends certainly also on social factors (e.g. integration in the society).

It has to be held in close regard that in the present sector, housing for low-income households or affordable housing doesn't mean social housing. The difference between affordable housing and social housing is linked to tenancy arrangements (e.g. the housing units have social status due to the governmental subsidies taken for building them). For instance, people who are eligible for affordable housing are not necessarily eligible also for social housing. This is valid also for the reverse.

Additionally, Job Centers and the responsible authorities for granting financial allowances for the refugees are calculating the monthly housing subsidies on the local housing market (i.e. regarding the rent index – Mietspiegel). Therefore, the present thesis considers the minimum price, when is referred to affordable housing (e.g. in a university city the net rent for a one-room apartment of 35 m^2 is 10.11 euro/m^2, without expenses (Wissenschaftsstadt, 2018)).

Past research has indicated that persons of foreign-origin often end up paying significantly more than native Germans for the same housing stock (Kapphan, 1995).

Moreover, people with a migrant background take properties with less living space available than natives (e.g. 32.8 m^2 and 47.7 m^2, respectively) and they pay more per square meter than natives (e.g. 7.26 euro/m^2 and 6.69 euro/m^2, respectively)[74].

On these grounds, in *Annex 11* is presented an analysis which calculates the rent affordability of three potential net monthly incomes of refugees' households:

- 570 euro (is the minimum wage available for the refugees for 15 working hours per month);
- 1100 euro (is the minimum full-time wage in Germany);
- 2300 euro (is the median full-time wage in Germany).

The first two incomes are taken as example to illustrate the low-income households and the last one is taken for middle-income households. Next, there are considered five types of refugees' households:

- one-person household;
- two-person household;
- lone parent (assumed to be working) with minimum 1 minor child;
- couples with minimum 1 minor child when both adults are working (in this case, all the income possibilities are calculated);
- couples with minimum 1 minor child when only one is working.

To calculate the rent affordability two types of living spaces are used:

- the minimum is 15 m^2 per person (assumption valid for both adults and children) and it is multiplied with respect to the number of persons that comprises the household;
- the average floor area per each typology of household, data taken from the latest statistic data in Germany (Source: DESTATIS, 2014).

Based on the established minimum and average floor area[75], it was calculated the monthly rent according to the rent index (Wissenschaftsstadt, 2018). These rents are taken into account without any further expenses (e.g. Kaltmiete – rent excluding service charges). Supplementary

[74] Source: DESTATIS
https://www.destatis.de/DE/PresseService/Presse/Pressemitteilungen/2017/01/PD17_009_122.html

[75] The floor area for 1-person household (min - 15 m^2/ average – 54.7 m^2), for two person household (min - 30 m^2/ average – 73.8 m^2) for 1 parent and 1 minor child (min - 30 m^2/ average – 57.8 m^2) and for 2 parents and 1 minor child (min - 45 m^2/ average – 71.7 m^2). – see Annex 11

consideration to the calculation is that no financial contribution from the government (subsidies) nor child allowances are included. Specifically, child subsidies (i.e. Kindergeld) are a right by law, but they cannot be received automatically if the household doesn't apply for receiving them.

The results of this examination are presented in Figure 38 and Figure 39.

Initially, in *Figure 38* only three variables are presented (e.g. 1-person household, a lone parent with 1 minor, and couple with 1 minor child) because they are defined by the same specification, that is, only one person is working. However, the type of dwelling they can rent is different among each group, according to the statistical data and to the law. Therefore, in order to compare the results of the calculation, it is defined the threshold by connecting the minimum wage with the minimum rental space for one person which represents 25% of the expenses. What is above this line is considered that is not affordable.

Consequently, alone refugees can have difficulties to support the rental payment of an dwelling with minimum living space if their income is low and they don't benefit from any other subsidies. To be able to take a rental unit with the median living space recorded in Germany, they must reach the level of middle payment. This is valid for all types of households portrayed in Figure 38.

Figure 38 *Rent affordability comparison between 1-person household and lone parent with one minor, calculation when one person is working*
Source: Annex 11

If these households reach to have a middle income, all the groups can take up average rents, despite couples with 1 minor child where only one person is working. In this case, they surpass the threshold with 2%. Moreover, this group is excluded also from taking an average rent with a part-time income without getting any of the subsidies, as the percentage they have to pay is more than their income, that is, 107%. Then, for a lone parent with a minor child gaining the minimum income, 30% of it has to go on renting the minimum defined unit (30 m^2). If the same situation is applied to the couples with 1 minor child, the rent they have to pay is 37% of their income.

As a result, for the households where only one person is working is difficult to cope with the rental housing costs, even if the rental space is the minimum they can get. Furthermore, these households can get an average rent on the open housing market if their revenue doesn't go above the minimum income. However, they have to pay from 44% to 55% from their revenue to be able to do that. Additionally, they have to pay also the operating costs (Kaltmiete) which can arrive at approx. 20% from the rent.

Figure 39 is highlighting the last two household groups which correspond to 2-person household and couples with 1 minor child, where both of the persons from the household are working. For the calculation, each income related combination was made as follows: both are working part-time, then part-time with minimum wage, part-time with median wage, both minimum wage, minimum wage and median wage, and both median wages. As performed for the previous figure, the established threshold is established regarding households with the minimum wage in the minimum dwelling surface they can rent (30 m^2). The percentage of affordability is 19%. What is above this share is not considered affordable.

What stands out immediately from the graph is that when both people from the household is having part-time jobs, the rental cost is above the limit for minimum space. Regarding the accommodation with minimum space (45 m^2), couples with 1 minor child are surpassing the limit only in two cases: when both are having part-time jobs and one is having a minimum wage and the other is having a part-time job. Furthermore, to be able to take upon dwellings with average floor space two groups of households are immediately above the defined threshold (part-time + med. wage), whilst other three groups are surpassing it with a greater ratio (both part-time, part-time + min. wage, both min wage).

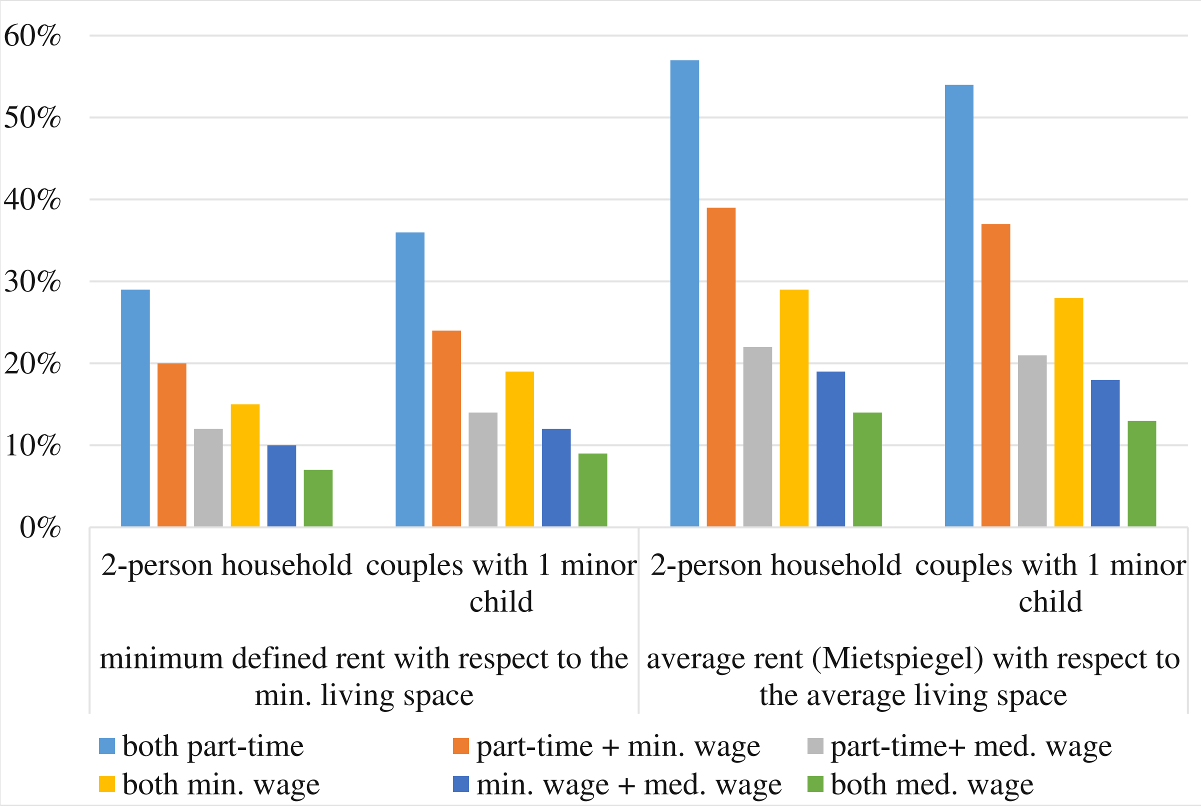

Figure 39 *Rent affordability comparison between 2-person household and couples/spouses with 1 minor child, calculation when both persons are working, all income possibilities*
Source: Annex 11

Reasoning upon the results from this examination and comparing the two figures, it turns out that for refugees households where only one person is working, in each case (1-person household, lone parent with 1 minor child, couples with 1 minor child where 1 person works) the rental expenses are higher than the threshold (25%) except for the households who earn a median wage. Therefore, in these cases, for low-income refugees' households, it is more difficult to take upon rental dwellings with the average living space (the household has to have a medium-income). On the other hand, for the refugees households where both work the only option to not surpass the threshold is to take part from a medium income household (all except both part-time and part-time + min. wage).

According to the examination made so far, for the upcoming years, the refugees take part from the low-income household groups. Considering that the greater majority of refugees are alone households, initially, the influence they exert on the open housing market is on small dwellings or rooms of 15 m^2. By taking accommodation that has an average space, they reach to pay up to 44% of their income.

In large metropoles and university cities where the demand for small apartments is very high[76], is difficult for refugees to enter the open housing market sector. Therefore, the low-income lone refugees households can compete with students if they want to get an apartment in this sector, as, initially, they are searching for a similar type of accommodation. As a result, there is a primitive integration on the regular housing market also because there is not enough supply.

Correspondingly, on the open housing market refugees are getting accommodation with respect to the market's behavior. As the open housing market is modeled after the private sector and the marketization strategies are oriented towards increasing rent levels and in turn offering high-quality units, the refugees are turning their attention to the lower end of the sector, on the lowest rents they can get. In other words, they have to act with respect to the changes in the market, 'lower end' meaning that in order to balance the income and the expenses, they have to locate themselves outside the city, out of the 'boiling pit' with high rents. Additionally, the asking rent in the A-type cities is increasing due to the population influx into the cities, therefore, cheaper rents are not to be found here, even if undoubtedly the attraction of the refugees to the employment sector it is there.

Besides, changes in the refugee household status given unforeseen events (e.g. loss of job, separation or divorce, illness, the death of a partner) lead to housing insecurity for low-income households which are unable to pay the rental commitment. This may happen also in the owning sector when a housing unit is purchased with credit and then, the household under the same unforeseen events is not able to meet the financial commitment of paying that mortgage. In any of these two situation, households will be forced to move and given the lack of affordable housing, these conditions are transforming into pressure. The stakeholder's monetization power and the competitivity that exists in the market can be a reason for the housing insecurity, weight which low-income household is feeling. Nevertheless, if it's not handled properly, the uncertainties are leading to eviction, therefore, creating homeless people.

[76] After a quick survey on how hard is to find an apartment in a university city, an owner of several apartments answered that they receive minimum 300 requests when they advertise apartments between 40 to 50 square meters.

Relevant evidence from BAG(Bundesarbeitsgemeinschaft Federal Association of Non-Statutory Welfare Services (Wohnungslosenhilfe, 2017) indicates that in Germany is registered an upward trend towards the numbers of homeless people. The numbers in Figure 40 are highlighting that beginning in 2016, refugees are also contributing.

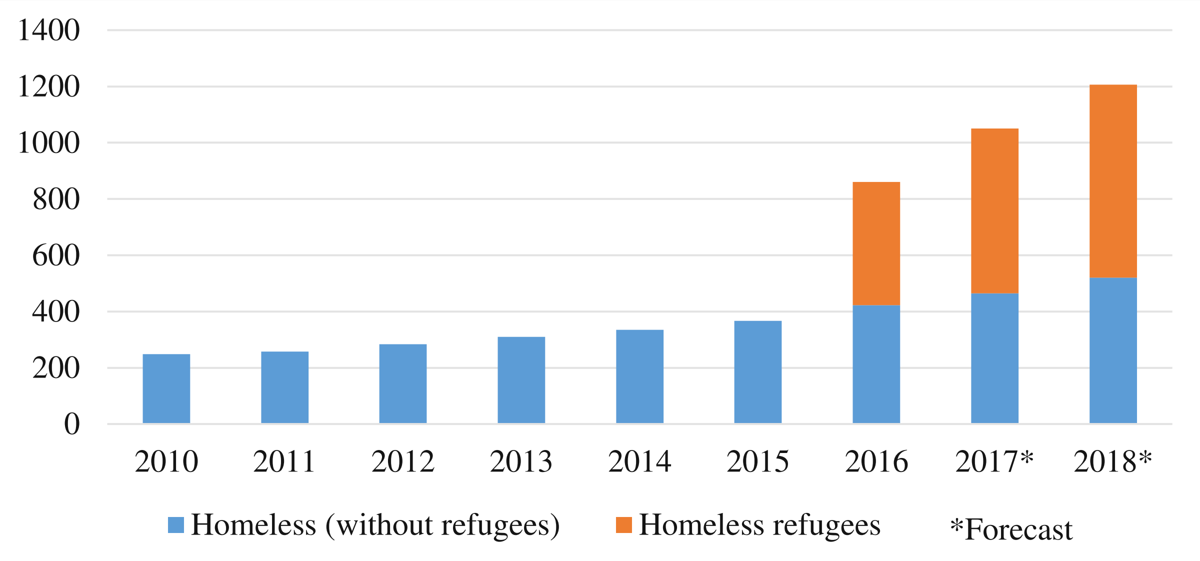

Figure 40 *Estimation and forecast of the number of homeless people, in thousand, 2018*
Source: BAG (Wohnungslosenhilfe, 2017)

The situation is impressive because in just one-year refugees amounted over 420 000 and the trend is significantly increasing, according to the forecast. Basically, recalling the calculation made in subchapter 5.6.7. regarding the first instance of approved refugee/asylum applications from 2016 and 2017 (where the total number arrived to 1.77 million refugees), it turns out that already almost 24% from the total of person arrived in the country, are homeless.

This fact suggests that refugees are already facing housing insecurities in the open housing market, that the affordable housing is not fulfilling the demand, and that the policies taken at social level are not enough to prevent refugees to remain homeless. In these situations, the refugees are disadvantaged in the housing market and a multi-scalar intervention from the government side is highly needed.

5.7.6. Concluding remarks

The present subchapter tried to assess the refugees position with respect to their access to the open housing market. From the legal point of view, the refugees are entitled to enter the sector since they are assigned to the follow-up accommodation. Additionally, the government is trying to enhance the acceptance to the sector of the recognized refugees by introducing dedicated policies. However, additional factors (e.g. discrimination, agent's fee, low vacancy) and landlords can make this process hard. The approach of small-scale landlords with respect to the refugees has a great implication as the private rental sector is paramount, as shown before.

The division of the sector into the luxury housing market, middle-income housing, and low-income housing brought forward the highest exposure of the sector: low-income housing. More exactly, shared rooms up to 15 m^2 and small-size apartments up to 45 m^2, will be most sought after.

Average-sized apartments (size according to DESTATIS) consist also a possibility for the refugees but only if additional subsidies are taken. Moreover, while the refugees cannot access the luxury housing market, for entering the middle-income housing sector, the household has to have stable employment and continuous evolution of the financial income, reaching the middle-income level. For achieving this situation, years of permanent employment are needed.

The arrival of the refugees has become a crucial topic to perform research. Deutsche Bundesbank was interested to understand the effect of a large inflow of refugees on real estate prices and rents. Therefore, it conducted an analysis[77] doing a model simulation on the macroeconomic impact refugees immigration has on the German housing market. Comparing the simulation results between future changes in the housing market with and without any refugee inflow, they realized that, due the refugees inflow, the prices of housing (both on buying and renting) will increase with about 0.5% over a two-year period and 1.5 % over ten years. Moreover, similar simulations using the European Commission's QUEST model were performed, which reached very much alike results (Dahl & Góralczyk, 2017). Consequently, higher demand for housing is registered, therefore there must be created additional supply to fulfill the demand.

Additionally, based on the examination performed in the present sub-chapter and to the mentioned research from Deutsche Bundesbank, the influence of the refugees households on the open housing market is expected to be reflected initially mostly on the small-size

[77] Using estimates of the impact of socioeconomic and demographic variables on house prices as well as estimates of the expected development of GDP per capita, the population figure, refugee migration and the supply of housing per inhabitant in line with the latest macroeconomic projections for the German economy. Deutsche Bundesbank (2016), Monthly Report February. Deutsche Bundesbank, Frankfurt am Main.

apartments and shared rooms. They are creating a very strong demand in a sector which is already experiencing shortage with respect to these types of accommodation. Consequently, the rents for these types of accommodation may rise higher than the resulted percentage of the Deutsche Bundesbank research, generating a financial impact for the other people who are interested (e.g. students, a lone parent, young professionals, low-income households).

As a result, the changes that the refugees households bring in the present sector can generate further events and impact also other persons and attributes which are connected to it, as a relatively large population is forced to search for adequate accommodation in a limited available portion of the open housing market.

5.8. Weighting the influence

Chapter 4.3 introduced the *model of influences* (Figure 14) which laid the basis for answering the research question of the present thesis. The model initially illustrated the social framework (i.e. migration, integration, political development) that become the engine of these interconnections determining the primary and secondary stakeholders (i.e. refugees, government, developers and owners) to produce a behaviour that reached out to contribute to influence the housing market. Moreover, in the following lines, to each effect produced by these entities a weighting is assigned. The weighting is measured through a scale from low to high, which corresponds to the intensity of the effects produced by each factor, following the four stages the refugees go through. The weighting is summarized in Figure 41.

The graphic shows that, in the first stage, since the refugees do not have access to housing without any aid, the government offers high support by taking every decision regarding them, hence, producing the highest effects to the housing market (e.g. placement in housing establishments, choosing the location of the placement, political decisions, nature of the subsidies, subsidies amount, engaging other stakeholders to contribute to erecting housing, changing policies). Any accommodation type is out of refugees' individual reach because the government provides them with the accommodation available on the market (e.g. tents, ad-hoc accommodation, former schools), therefore in this case the effects of the refugees on the housing market are of low impact. However, in the graph, it was assigned a middle quantifier for the indirect effect they produce on the government choices (because the government is responsible for them and act on their behalf). On the other hand, the owners and developers have low interest in providing housing for the refugees, hence their impact in stage one is considerably low.

As the refugees reach stage two, they are moved to the so-called "follow-up accommodation" (this happens if the spaces are available, otherwise, the refugees remain in their initial accommodations), where due to the lack of freedom of movement (as long as their documents are processed), they are stuck for a relevant period. Thus, the government exerts a high effect also in this stage, although to be considered slightly lower than in the first stage because through certain political decisions they allow a limited number of refugees to have the possibility to move throughout the country, in another type of accommodation, thanks to employment or educational reasons. Given these reasons, the refugees are starting to produce low direct effects in stage two. Following the same reasoning as for the first stage, their effect is considered in the graph as middle.

As soon as a small portion of the refugees is allowed to move throughout the country, as it starts to happen in stage two yet under a regime of *controlled movements*, the owners and developers start slowly to introduce housing available for the refugees. Most of the times, it has been shown that the prejudices/misunderstandings that individual owners manifest regarding the refugees, make it difficult to close a rental agreement (see chapter 5.7.4). The developers start to contour more substantially at earlier stages an interest due to the subsidies the government is providing to refurbish/build dwellings and allow them to be rented by the refugees. However, the impact produced by the developers in this stage is also deemed still low, because the legal status of the refugees is not concluded in stage two and the involvement of the developers, although more relevant than one of the owners, is related mainly to a longterm investment, which comes also with substantial risks (e.g. a big number of refugees could not receive the right of permanence in the country, therefore, the demand could not be fulfilled).

As refugees gain more rights starting with stage three (e.g. granted asylum/refugee status), the effects they provoke start to become less indirect (e.g. the government supports them with allowances, but they are free to move and find also individual accommodation). This makes the interest of developers and owners grow. The government's input and thus effects are lowering directly on the refugees, but remain overall at a medium level because they are considered translated onto the developers who deem to construct dedicated housing for refugees (e.g. because they notice that the available affordable housing or social housing is considerably low and refugees have difficulties in getting accommodation) for which subsidies are introduced. There is an identified gap between the effects of the developers (i.e. low) and owners (i.e. middle) in stage three (i.e. the owners in stage three have a higher impact compared to the developers). This is explained because the owners have higher freedom in assigning the dwellings than the developers, for which the responsible authority's approval regarding the compliance of the apartments (that the refugees have found on the open market) is required, following a set guideline. Additionally, it shall be considered that the owners produce a particular effect (that cannot be exerted by the developers) when they choose to exclude the refugees deliberately. This is not always due to discrimination or lack of trust and it must be considered that since the housing availability in Germany is scarce, the owners normally receive a high number of demands. Therefore, waiting for many days for an answer from the authority's side, who must approve the rental that the owner is offering, is not advantageous for the owners.

Reaching stage four, the government's influence is eventually lowering, because the refugees in this stage have their income due to fixed employment and are not connected to the governmental allowances any longer. However, the effects produced by the government in this phase still must be considered, since subsidies for developers who build housing for refugees (fewer than in the prior stage) or additional revenue for the refugees that have a source of income lower than the established threshold are provided. Additionally, the government is also regulating the social sector, and this determines the possibilities of access of the refugees to this sector. Indirectly, through policies changes, the government can ease the access of the refugees to employment, therefore, can increase their access to the housing market. Each of these effects is produced at a lower scale concentrated on a narrowed group, thus, in stage four, the governments' impact is depicted as low.

In stage four the developers' effect is considerably higher than in the previous stages. The effect they produce here is connected to how high is the value of the subsidies/loan taken and how many years are bounded to repaying the loan (e.g. developers can take a subsidized loan to build additional housing, which obliges the developers to rent part/entire dwelling to the refugees as long as they have to repay the loan, hence, once the loan is paid they may choose not to rent any longer to the refugees). If the developers take less/no subsidies from the government, fewer dwellings are dedicated to the refugees and the rest are for the large public (e.g. the dwelling prices for the large public can be slightly higher than the ones from the open market, therefore the refugees can be excluded from renting them, as their income stabilizes over time). Moreover, the refugees could be excluded from the start if the developers choose to build specific types and sizes of apartments (e.g. initially they need small-sized apartments as shown in Chapter 5.7.5.). Given the behavioural changes of the developers, their impact is presented as a medium one. On the other hand, the impact of owners is considered lower than in stage three (i.e. depicted as low), because in stage four the refugees can show to the owners the proof of stable employment and they do not have to wait for the authorities for the approval of the apartment.

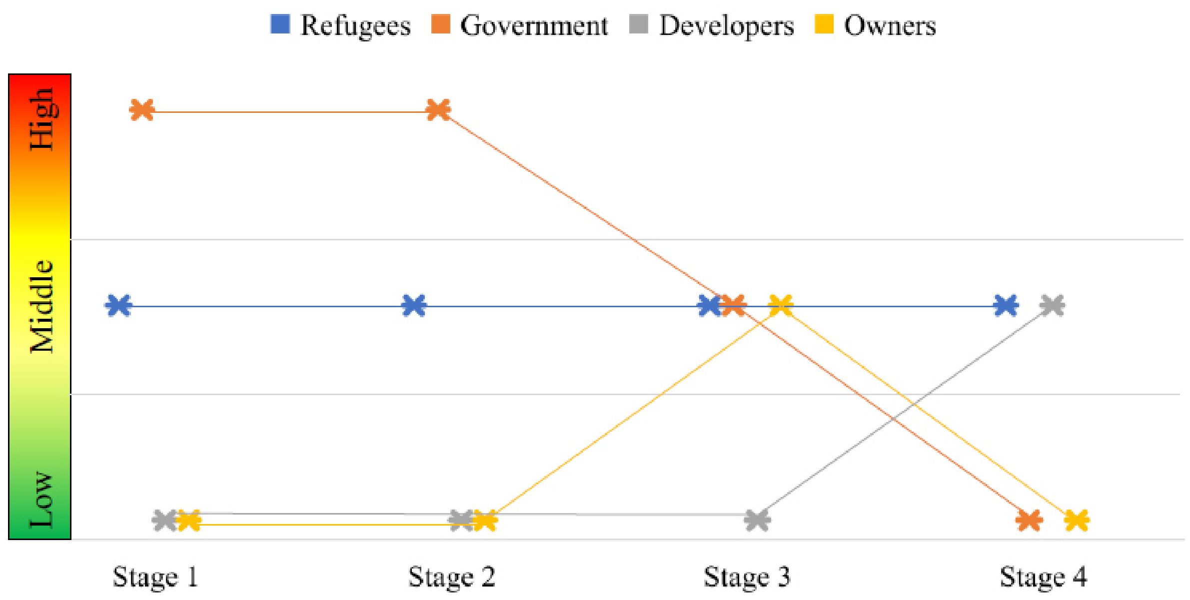

Figure 41 *The weighting of the effects exerted by the stakeholders*

Additionally, a second figure (Figure 42) illustrates the effects generated, as a result of the behaviours of the stakeholders, from all economic factors, as identified in the model in paragraph 4.3, on the housing market. It is important to corroborate the analysis reported in Figure 41 with the one of Figure 42, because the economic factors are, as a matter of fact, the ones that shape the housing market. The overall influence can be extrapolated only by reading Figure 41 and Figure 42 together.

The demand for housing in stage one is without any doubt high because of the large number of refugees that are arriving and because of the governmental decisions that are alluring these people to the country. The refugees produce a high demand which has strong effects (impact marked as high in Figure 42) on the housing market where the supply is considerably low, as the official authorities do not have available accommodation to offer and they have to often provide with extraordinary measures (i.e. temporary ad-hoc accommodation). In these conditions, the supply is producing a high impact too on the housing market because of its scarcity. The effects of the lack of supply make the responsible authorities introduce as settlements certain establishments that take part from different real estate sectors (e.g. former schools, unused airport, hostels).

The prices are influenced by the government, developers, and owners throughout the four stages and since their behaviour is changing among the four stages, the price effects are also different. Even if usually the price is interconnected to the demand and the supply, in the first and second stage, the price exerts a low influence on the housing market as the housing is subsidized by the government and is composed of low-value amenities.

Even if in the second stage the demand for housing remains high (although less than in the first stage as the application of some refugees can be denied or others can be redistributed to further countries), the impact produced is considered lower, therefore medium, because a stagnation period is identified. The asylum/refugee recognition procedures take longer and without a specific reason to go out from the initial accommodation, they remain there (e.g. their application can be rejected and if they can decide to do an appeal, they will prolongate their stay in the follow-up accommodation). The effect of the supply instead remains high with the government that is the primary stakeholder who contributes to the housing array of accommodation possibilities and the effect produced is similar to the first stage.

As refugees gain more rights, starting with stage 3, the interest of developers and owners grows. Therefore, because of their contribution, the supply of housing is growing and consequently the effect produced by the supply lowers. Similarly, the demand for housing is lowering, because the number of refugees who are granted asylum/refugee status is also lower with respect to the previous stages. However, the impact produced by the demand is considered medium, because effects are commencing to be generated on the housing sectors the refugees start to have access to (the lists to receive social housing are getting bigger and the processing approval time is prolonged). Even if beginning with this stage, the refugees can access more segments of the housing market and have a dedicated pool of housing where they can be placed, the availability of this type of housing remains low and the effect produced by this situation results in the creation of the black markets. The refugees in this phase still depend on the government subsidies to rent a house and due to the owners' refusal/lack of affordable housing available, they turn to the informal networks or their co-nationals and rent overpriced rooms/apartments. Given these reasons, the supply's effect is overall marked as medium. This trend is being kept also in stage four because the refugees in stage four compete for the same type of apartments with all people who have access to the same sectors as the refugees.

Usually, the prices of the housing units are high when the demand is high, and the supply is low. However, even if the supply is low, the influence of the price on the housing market in stage three is still low because the responsible authorities are paying the housing allowances to the refugees (they respect the established guidelines which are in line with the housing prices of the area but do not surpass the threshold agreed by the *Mietspiegel* – chapter

5.7.2). However, the behaviour of the owners has also an indirect impact on the price, because, the prices the responsible authorities are offering as allowance for the refugees are made public, and the owners can relate their price to them, or put them slightly higher, therefore, “forcing” the responsible authorities to match their prices.

On the other hand, the price is exerting a medium impact in stage four. Here the refugees are employed, thus, have their revenue. However, it was shown in the thesis through statistics (Chapter 5.7.5) that the refugees remain for a longer period in the category of people with low income. Therefore, if the housing prices are increasing, for them at an individual household level it can be a dramatic impact (e.g. exclude them from the open housing market due to competition). Furthermore, given the fact that the refugees initially seek out small apartments/rooms, the prices for these are increasing especially in big cities where the refugees are targeting to move due to higher chances of employment and established migrant networks.

The impact that demand has on the housing market is directly proportional to the number of refugees requesting housing and the supply of affordable housing. In the long run, as the refugees will eventually receive the settlement permit and increase the income possibilities, the demand is producing an incremental effect on the housing market. Moreover, once the refugees receive the settlement permit, they will be added to the overall population that produces a housing demand. Additionally, as the refugees in stage four have main access to the social housing sector and the open housing sector, the competition (e.g. all the people that are having access to these sectors and are targeting the same apartment types as the refugees) is reflecting also on the demand. For these reasons, the demand is depicted as high in stage four.

The additional factors are to be treated separately and considered to produce among all four stages the same impact on the housing market, which is low because there are elements that always exist in the background and are not dependent upon any behaviour of the stakeholders. These elements are adapting to the times, to the evolution of the situation, to how the country is performing and to what is the income around the country related to the population’s age. The economic cycle of a country is always a factor that attracts more immigration. Concerning the land market, in Germany there is scarce land for building new housing and the land market is highly controlled, allowing a specific amount of land to be developed for specific purposes. However, it was also showed that given extreme circumstances the government allowed the transition of the agrarian land to be used for building housing for refugees (Chapter 4.2.3). Furthermore, the credit markets evolve also concerning the purchasing power of the people, in this case, of the refugees. The income situation of the refugees is evolving, and it needs a long time until becomes stable, therefore it is unlikely for the refugees at the initial stages to take mortgages that can afterwards produce an effect on the housing market. The only noticeable effects in the short to medium term are produced by the developers which make mortgages connected to subsidies in order to build housing for the refugees.

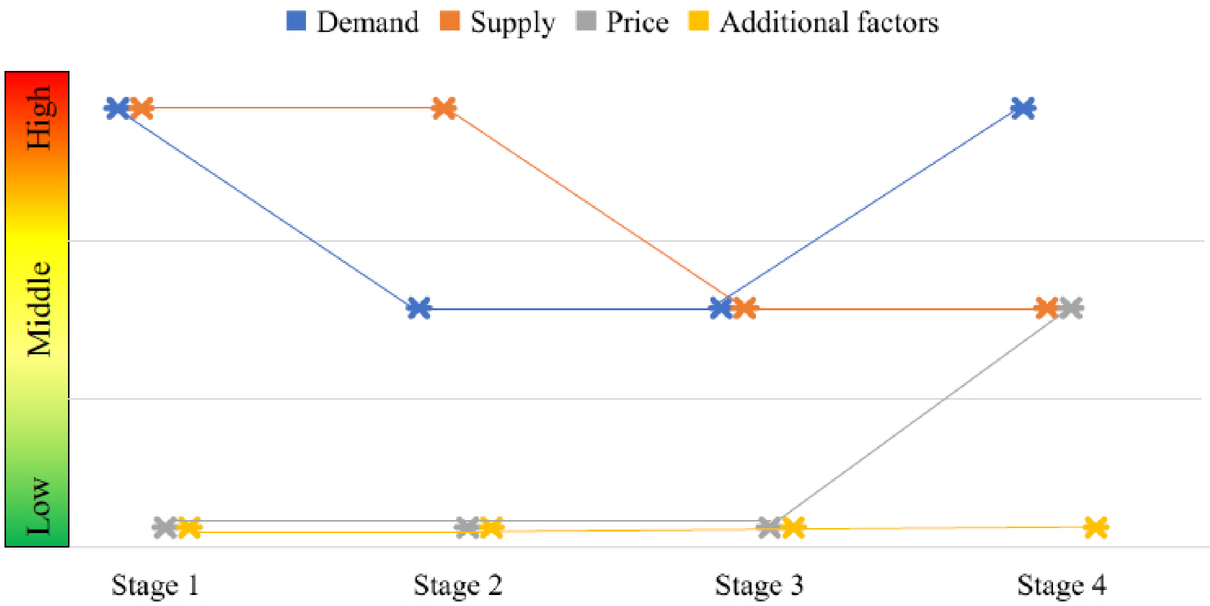

Figure 42 *The weighting of the influences exerted by the economic factors on the housing market in the present context.*

The weighting performed shows clearly what happens in the four stages, how the elements are interconnected, which chances their effects produce and how complex each term is while adapting to a series of behaviours. This is done to help improve decisions and to make the stakeholders realize that each decision they take, has effects that reach various levels. It is underlined that the weighting is purely the result of the author's elaboration based on the analyses and models built.

Chapter 6 Conclusions

The present thesis has elaborated on theoretical evidence about migration models (push-pull factors, network theory and neoclassical economic theory) and has considered how the behaviour of refugees (e.g. starting with 2015, from the largest humanitarian migration crisis since the Second World War (ECHO, 2015)) impacts the local housing market in Germany. The presence and, more importantly, the behaviour of each stakeholder involved in the evolution of the refugees in the German housing market has been examined. In accordance with these statements, the unplanned influx of refugees that began in 2015 gave rise to forces that impacted particular features of the housing market (e.g. urban planning, land market, construction, architecture) and additional external factors (e.g. credit market, economic cycle, income status). Each of these factors and attributes, in turn, influenced the housing market.

All of the examinations performed in the present thesis led to the conclusion that refugees influence the housing market through a series of direct and indirect factors. Correspondingly, research calculations (Bundesbank, 2016) indicated that due to the present refugees' migration inflow, increases in rents and house values up to 1% are registered in areas where more refugees are accommodated.

Before outlining the results of the study, I would like to briefly return to the problem defining the research. A large number of people from non-European countries fled to Germany as a result of civil strife, war and poverty in their countries. The German government was not prepared to welcome such a large number of people (a net migration of 1.77 million people, as detailed in chapter 5.6.), especially when the availability of affordable housing units in the country was already scarce. Therefore, the refugees were sheltered in the cheapest housing solutions available such as emergency centres/camps (e.g. reception centres, tents, former schools, barracks), with large numbers of people clustered in the same area. The result was that these areas were degrading, overcrowded and sometimes dangerous (Christides & Kuntz, 2017; Meaker, 2018), hindering refugee integration.

For the purpose of this study, most of the data used to establish the demographic profile of the refugees were obtained from SoKo Data (BAMF/OECD) and Eurostat (see chapter 3.2.).

The total number of refugees (total applicants for any of the protected statuses accepted in the first instance decisions–BAMF) to Germany between 2015 and 2017 represents approximately 2.3% of the total current population of Germany (around 82.79 million in 2018). This percentage predominantly comprises young people (more than 80% are under 35 years old, as detailed in chapter 3.2.) and more than half are men. Only a relatively small number of refugees had a university background before arriving in Germany (17.8% of those registered in 2015), while fewer have no formal schooling (7.2% of those registered in 2015, as detailed in chapter 3.2.). The number of enrolled refugees in German universities increased ten-fold between 2015 and 2019 (10 000 students in 2019 compared to barely 1000 in 2015 (Berger, 2019)). Syrians represent the largest groups of students, according to Destatis. Syria is also ranked sixth among the most important countries of origin of foreign students in Germany (Fourier et al., 2018)).

While entering the German labour market is strictly connected to one's level of education, German language skills also play a huge role. Therefore, refugees increase their prospects for employment in Germany when they overcome any linguistic barrier. For instance, 64% of refugees' with an intermediate or a fluent level of German are employed (see chapter 3.2.), and the employment rate drastically reduces in step with German proficiency. It was also evident refugees with higher education and stronger German language skills were able to attain employment that better matched their skills. Still, the overall percentage of employed refugees in Germany who took jobs below their qualifications levels was significantly higher at approximately 58% (see chapter 3.2.). In general, the number of full-time employed refugees is registering, similarly to refugee enrolment in university courses, a growing trend (e.g. between October 2017 and October 2018, this figure grew by 47% (Klaus & Kriegbaum, 2018)).

The profile of the refugees highlights the key factors driving their influence on the housing market. Therefore, the profile of the refugees in Germany was summarized to portray the people who represent the additional present demand for housing in Germany. Their decisions about undertaking language studies, higher education and/or employment determines the degree of their integration into German society. If their integration is successful, they may enhance the composition and age structure that influence the housing market.

Still, a refugee's legal status always evolves from the moment they arrive in the country. To account for this, the present research differentiated the stages that refugees go through (summarized in Figure 15, chapter 4.4.). This helped narrow down the refugees able to influence the housing market, detect the distinctive type of housing they were offered by the government and establish the housing sectors (e.g. informal housing market, container housing market, dedicated housing for refugees, social housing and open housing market) they can presumably enter (with help of the responsible authorities, volunteers, humanitarian organization or by self-settlement).

The refugees in the first stage (i.e. initial arrival; proof of arrival document; tight to first accommodation—emergency shelters, tents, reception centres) have limited rights. They cannot choose their own accommodations or enter the labour market; the government makes every decision for them in these areas. In this case, they cannot exert any influence on the housing market. The government is the primary stakeholder (e.g. secondary stakeholders include humanitarian aid and charitable associations (Grote, 2018b)) able to influence at a high level the housing market in this stage.

First of all, by distributing refugees around the country through the EASY quota (e.g. initial distribution quota of the asylum seekers/refugees; see chapter 3.3.2.), governmental bodies decide the area/city where the refugees should be located. Given that enough places for accommodating refugees were not available (just as during the current refugee crisis), new reception centres and tents were built or installed. Consequently, the government and other responsible authorities also influence the land market in using large portions of land to build reception centres or other facilities for refugees.

The housing establishments that fulfil the needs of refugees from the first stage represent the so-called "informal housing sector". This sector is formed by the specific demand for reception centres of different types (e.g. tents, barracks and former airports) in a short time. While this was the original intention, nowadays many reception centres remain in use because of the low apartment vacancy rate in some cities, such as Munich (Meaker, 2018). The high demand for these establishments, in this case, was originally created by politicians who allowed for the wave of the refugees to be enlarged (see chapter 3.3.4.) and therefore needed a quick solution to shelter the incomers.

On the grounds that, initially, according to the rules for the refugees regarding the length of staying in the reception centres stipulated by the law (up to 6 months) and the fact that many refugees are still residing in their initial accommodations, another side of the informal market sector is developing: the black market (a sector that evolves until the fourth stage, see chapter 5.3.). This is the result of the housing shortage and of the fact that housing prices on the open housing market are rising in relation the population growth (according to a Deutsche Bank report (Möbert, 2018)).

By examining the refugees' first stage, a clear and preliminary key factor is evident: policies and other political decisions made about refugees in this stage strongly influence the housing market. The process starts as soon as the refugees are received by the hosting country. Although it can be said that refugees in the first stage do not directly influence the housing market, they produce indirectly a medium impact (see Figure 41) because they trigger the government to undertake different housing decisions on their behalf. The responsible authorities' decisions modulate the overall influence. Meanwhile, refugees in the second stage (i.e. when refugees have a certificate of permission to reside but are not yet free to move throughout Federal Lands—a certificate that can be lifted under several circumstances (see chapter 3.3.); when refugees live with financial allowances and when follow-up accommodation is required) have both an indirect and a direct influence on the housing market.

First of all, this group moves from their initial accommodations with the help of authorities. The responsible offices in charge of asylum/refugee procedures can offer other types of accommodation (e.g. empty estates, apartments or housing containers) if available. On these grounds, responsible offices rent or buy housing containers for the refugees' use. Another housing segment for the use of refugees (i.e. container housing market; see chapter 5.4.) was therefore established, although it represented a quick solution with a short operational life (i.e. 5 years). In this sense, refugees in the second stage, similar to those in the first stage, only indirectly influence the housing market and, again, the political decisions for the assignment to container homes are paramount in influencing the housing market because they manage the demand for this type of accommodation.

Second, in stage two, the direct influence that the refugees can exert on the housing market is possible only when they can move around the Federal Lands (e.g. due to employment and education). In these cases, they either wait to be placed by the responsible authorities in any follow-up accommodation unit from the existing portfolios of the social housing sector and the open housing market (although these are mostly only housing units from the governmental housing association; see chapters 5.6. and 5.7.). One last possibility is to take the matter into their own hands by searching for an apartment in the open housing market. This is termed "self-settlement" (this gains momentum in stage three – it represents a settlement among the local community without direct official input) and is permitted at this stage if the refugees can give a solid reason for this decision, such as one related to employment and/or education, as detailed in chapter 3.3.3. Entering the open housing sector from the second stage is very hard. For instance, if the refugees do not have any solid reason to move, then they are tied to their assigned accommodation until the asylum/refugee protection procedures are finalized. Even when they are entitled to move, the responsible offices must approve their financial allowance for housing and the apartment itself (normally the revision/approval of a housing unit takes a lot of time, which may cause the refugee to lose the selected accommodation, as detailed in chapter 5.7.). Furthermore, getting a dwelling in the open housing market is made difficult by many small-scale landlords' prejudices against renting an apartment to a refugee (see chapter 5.7.4.) (Auspurg et al., 2019).

These circumstances are largely also met in the third stage (i.e. granted protected status; living with governmental financial allowances; no geographic restriction among the Federal Land; living in individual accommodation; without own income). The third stage is the first one in which refugees allowed by law without special permission to enjoy self-settlement. In this stage, small-scale landlords are more accepting of refugees as potential tenants since at this stage they have official documents of protection (i.e. asylum/refugee protection), which come with a residence permit for up to 3 years which can be prolonged (see 3.3.2). Therefore, as long as the refugees can overcome any barriers they encounter (e.g. discrimination, long waiting time for lease approval by the responsible authorities) and attain a lease for themselves, they can directly influence the open housing market in stage three.

Governmental housing associations build housing units exclusively for refugees, and thus the third stage is also home to another sector of the housing market: dedicated housing for refugees. Dedicated housing is linked to the general social housing sector, to which refugees—along with low- and no-income earners and sick and handicapped people—have access. A database (i.e. Database 1) of these types of units was created and analysed. Due to the scarcity of buildable land, the data made evident that the government licensed building on spaces where it was previously not permitted; today, some dedicated refugee housing developments are constructed on former agricultural land or in undeveloped areas ((Grote, 2018b); see chapter 5.5.). Thus, during this stage, the government continues to influence the housing market through the decisions they are taking towards the refugees producing medium effects.

At the same time, starting with this third stage, the government's involvement lessens, producing lower effects, and other stakeholders (e.g. small landlords, private companies) increasingly build housing units for refugees. To secure the refugees’ stay inside these establishments, the government and the responsible offices introduced a clause to the loans and subsidies they gave to private company or individuals, stating that part, or, the entire building should have a special social status (i.e. should be dedicated to refugees) until the loan is repaid (while the time-frame is decided at contract closure, it can be up to 30 years; see chapter 5.6.). Thus, the government handles indirectly the construction of the dedicated housing stock.

Other stakeholders (e.g. small landlords, private companies) who choose to build dedicated housing for refugees also influence the housing market by making new additions to a sector that already has a very strong shortage (note, for example, that this sector is forecasted in 2020 to fall to 1.07 million units for the overall social housing, Figure 29; see chapter 5.6.4.) that fails to fulfil the demand for housing created by a large number of refugees. On the other hand, the refugees’ stay in these establishments depends on the time frame of the contract or the fact that the stakeholders can change the use of the building for any reasons independent of the refugees (e.g. modernization). Up until this point, landlords do not defy the German tenancy law; refugees can only be later “forced” to move from these establishments. For these reasons, the refugees have little influence at this stage on the dedicated housing sector. This is valid also in the fourth stage (e.g. granted any form of protection; has own income; no subsidies; no restriction in moving through the Federal Lands, access to employment/education like any other German citizen) when refugees can get housing units in this sector.

Additional results evidence refugee influence in stages three and four on the general social housing sector. Apart from the housing deficiency forecasted for this sector (Figure 29), the housing association that owns most of the social housing units were not privatized, have to rent part of these units to other citizens that are entitled to receive them (e.g. low-income people, sick or handicapped people, households with no income). For this reason, refugees have signalled a long queue time (e.g. more than 6 months in big cities (Bensch et al., 2016)) for getting an apartment in this housing sector. This is also frequently the result of a lack of verification over the years as to whether the income of a household initially entitled to a social dwelling changed over time (e.g. 54% of households live in social housing even if their revenue exceeds median earnings (Institut der Deutschen Wirtschaft Köln, 2016); see chapter 5.6.6.). Misallocation of such units constitutes a barrier for refugees in stages three and four against entering the social housing sector. In this sense, housing associations play an important role and influence this sector as greatly as the government. Overall, the shortage of social housing, together with its misallocation, forced the government to quickly build as much dedicated housing for refugees as possible in previous years and thus clearly impacted housing's quality and future usage.

On the grounds that fourth stage refugees are entitled to employment, an analysis was performed in the present work that took into account different scenarios with three potential monthly incomes across five groups of refugee households and different housing unit typologies to determine the highest exposure of the open housing market sector (see chapter 5.7.5.), that most directly and largely influenced by refugees. Given the fact that more than 80% of refugees registered are young and that every year university enrolment refugees' rates are increasing, the predominant demand in this sector is constituted by a 1-person household. One of the results of the analysis is that in Germany at large, the 1-person refugee household working part-time without government subsidies has to pay 48% of his/her income for a rental unit with minimum space (i.e. 15 m^2) and 84% for an average space (i.e. 54.7 m^2). Once the refugee reaches the next income group (i.e. 1100 euro according to the established scenarios) the 1-person household emerges under the established threshold (i.e. 25% of total income) for minimum rental space and must reach the median income group to get an average rental space.

Accordingly, a refugee's influence on the open housing market increases as they evolve towards a median income. In doing so, they are dependent on the most important factor: time. Since refugees in stage four have access to employment, they presumably start with a part-time income and therefore, initially, at least, 15 m^2 rooms/apartments are sought after. Then, in time (refugees in the European Union need up to 20 years to reach approximately the same employment rate as those who migrated due to other reasons, see Figure 11), they can create demand and afford bigger living spaces. Therefore, initially, refugees influence a small segment of the housing market—that is, low-income housing—alongside analogous competitors (e.g. students). To enter the middle-income housing sector, the 1-person household has to have stable employment and their financial level must continuously evolve.

The refugees in stage four have the legal right of family reunification ((Angenendt et al., 2018); see chapter 3.3.); however, most of the time the procedures are lengthy and success limited. Still, in an extended time frame, to produce a demand for larger housing units, the refugees depend on policy changes that ease the family reunification procedures. Thus, political decisions about this matter may enlarge the array of housing units that future refugees may need.

This study performed a detailed investigation of the influence of refugees on the housing market in a big city (namely, Berlin, home to the highest number of asylum/refugee applications, according to LAF Berlin[78] in 2017). Refugees are attracted to big cities because they offer employment possibilities and the high probability of resident co-nationals who can help them to integrate (Berlin is a multicultural city, highly popular among young people, detailed in 5.5.3.). Taking up data about the current housing alternatives introduced in Berlin (e.g. container homes, MUF—modular forms of housing for refugees), the analysis found that, generally, the municipality highly influences the housing market by accommodating refugees on the city's outskirts and developing big housing areas dedicated to refugees. Nevertheless, past experience and observations from the present research suggest the need to create and expand housing units for refugees in mixed-use neighbourhoods to prevent segregation, which strongly can impact the housing stock value of not only the affected area but also the surroundings. Refugees integrate most quickly in mixed-used neighbourhoods because they are not characterized by closed communities that tend to refuse to integrate new locals.

Apart from the influence on the housing market generated by the current dynamics of Berlin's refugees, it is also helpful to note that the population increase is generating investment opportunities, the need for buildable land and the demand for housing. According to the analysis performed, the short- to mid-term focus shall be on rental investments, and especially on dwellings that can be easily reconverted from small apartments to large ones. There is a need for smart planning which fulfils the increasing need for small apartments both in the short- and mid-term. Moreover, the cultural need expressed by refugees of owning a property has to be held in close regard for future developments and affordable investments, as well as for its influence on the loan market.

Smart urban planning with a focus on revitalizing neighbourhoods and preventing ghettos has to be of interest to local authorities that endorse new developments; this dissertation reveals that the influx of refugees to Germany generated further housing development and investment opportunities due to the incentives the government is offering. To optimize the development of the housing market, government policies must always cope with emerging needs, must always consider the refugee's influence over time (e.g. as demonstrated through the differentiation of the stages). While the support programs laid by the government have to be up to date, the government must also implement control over speculation over subsidies and

[78] Landesamt für Flüchtlingsangelegenheiten - State Office for Refugee Affairs Berlin (LAF)

profits. Furthermore, in each country, the allocation of housing for refugees is treated at the national level; however, this situation could also be tackled effectively by the European Union delineating well-defined policies that could help its Member States manage the exodus of refugees by spreading them among the European countries.

All in all, the main objective of this research was to provide an understanding of the particular influence refugees have had on Germany's housing market since 2015 and through this, help to improve the decisions of each stakeholder involved in this process. The time factor is fundamental because it is connected to the evolution of the refugees in the housing market. The explanation of the refugees' influences is aided by the model presented in Figure 14 and the weighting of the effects produced by each term in the model highlighted in Figure 41 and Figure 42. Thus, it was shown that the effects produced by the refugees' influx, their composition, their will, and their culture is reaching medium levels throughout the four stages, producing direct effects on the demand and affecting the behaviour of the governmental bodies while taking decisions on their behalf and for their interest/integration. The governmental decisions are fundamental because, as underlined, they emerge at different social and economic scales and reach to affect everyone in the large housing demand/supply chain (begins with students and low-income earners).

When assessing the overall influence with the means provided in the present work, its relevance appears surprising. Many factors are identified, and the influence determined by the dynamics involved with the migratory event of a large mass of refugees can contribute to shaping any local housing market.

Additionally, the results of the analysis performed in the present research have been focused on creating an overall framework and models which may be applied independently to any country. The primary aim of the thesis was, despite any quantitative indication about the current influence generated by refugees on Germany's housing market, to produce a comprehensive system that shows the best methodologies for accounting for each interacting force to properly assess any analogous present and future problems that the housing market will have to face.

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Annexes

Annex 1. Rules according to 1951 Refugee Convention and its 1967 Protocol

Refugee regulations	**Details**
Permanent protection	Finishes through: • voluntary repatriation; • integration in the host country due permanent stay.
Excluded protection	To people who: • have committed a crime (e.g. against peace, humanity, war, non-political crime); • are guilty for acts against United Nations.
Refugees have rights	Rights: • freedom of religion (Art. 4); • to join non-profit making associations, including trade unions (Art. 15); • to access the courts (Art. 16); • to work (Art. 17-19); • housing (Art. 21); • education (Art. 22); • to access social security system public relief (Art. 23); • freedom of movement within the territory (Art. 26); • to be issued identity and travel documents (Art. 27- 28); • not to be expelled, except strictly conditions (Art. 32);
Duties in host country	Duties: • conform to laws and regulations; • maintain public order.
Illegal entry in the Contracting States	The States shall not impose penalties or apply other restrictions than the necessary ones; Refugees are requested to present themselves to the authorities to register. (Art. 31)
Principle of non-refoulment	It is prohibited to return a refugee to the territory from where he has fled, due to international law rules.

Annex 2. Asylum procedure regulated in the Asylum Act

Categories		Description
Types of procedures		• Regular procedure: - prioritized examination - fast-track processing • Dublin procedure[79] • Admissibility procedure • Border procedure[80] • Accelerated procedure[81]
Steps	Registration	• report to a state organization in order to register at a Personalization Infrastructure Component.
Steps	Proof of arrival	• it is received after the registration; • official document as a proof of arrival (ankunftsnachweis); •in the document it is stored personal data of applicant.
Steps	Permission to reside	• after filling the application for asylum, people receive a certificate of their permission to reside (Aufhaltsgestattung); • this is replacing the proof of arrival document; •if needed, an interpreter is provided to understand better the procedures and all the information received are in their native language.
Steps	Reception facility	• set by the Länder; • Federal Ministry of the Interior has to inform on newly applicants monthly and to be aware of the space available.
Steps	Residence obligation in a reception centre	•is tied for three months by the first location where the applicant was filing the application for asylum; • after could be expanded to cover the entire country; • could end in the following conditions, whether the person: is moving to another reception centre or new accommodation, has been granted asylum status or international protection, is marrying or establishing a civil partnership within the host country, is receiving a deportation warning, or from public health, security and order reasons.
Steps	Follow-up /collective accommodation	• this follows after the stay in a reception centre; • the stay here could end when the person is granted asylum, or he/she has proved that has found another accommodation which will not imply further costs for the authorities.
Distribution		•people are distributed through the EASY quota system (Königstein key=2/3 tax revenue+1/3 number of inhabitants[82]) - Initial Distribution of Asylum Seekers - see Tab. 3.

[79] Is carried to indicate whether the asylum procedure is the responsibility of another state.

[80] It is done at the border of the country and in 5 airports (e.g. Frankfurt am Main, Berlin, Düsseldorf, Hamburg and Munich).

[81] Is carried out in a week for asylum seekers from safe countries of origin (e.g. Ghana, Senegal, Serbia, FYROM, Bosnia-Herzegovina, Albania, Kosovo, Montenegro), for the ones who misled the authorities with false documents or hide important documents, hide their identity, have filled already another application for asylum or have made a false one to delay the procedure, refuse to be fingerprinted, or they threaten the public security and order.(Kalkmann, 2016)

[82](Kalkmann, 2016)

Fate of the applicant	• is decided by the Federal Office for Migration and Refugees on the basis of the German Asylum Act (Asylgesetz), after the personal interview, and analysis of documents and other evidence;
Accommodation	•municipal administration is deciding for further accommodation, the follow-up accommodation, whether to be located in collective or private apartments.
Relocation	•when a relocation or changing of an address occurs, the Federal Office must be informed.
Financial aspect	•during their stay, the asylum applicants receive a monthly income regulated in Asylum-Seekers Benefits Act (Asylbewerberleistungsgesets).
Labor market	• access through employment agencies; •access through job centers.
Application denied	• the notice of intention to deport together with the answer are received; •people that receive this notification could go to appeal.
Asylum status	• applicants who receive the asylum status receive a 3 year residence permit; •applicants who received subsidiary protection status, receive a one year residence permit which can be extended for more years.
Settlement permit	• could be received after 5 years; • includes also the time of the asylum procedure; •the applicant has to have good knowledge of the language and could make a secure living.
Access to NGO's	• dependent on the place of residence;
Sources	**Asylum Act** (2016). Federal Ministry of Justice and Consumer Protection in cooperation with juris GmbH, Saarbrücken **-** in the version promulgated on 2 September 2008 (Federal Law Gazette I, p. 1798), last amended by Article 2 of the Act of March 2016 (Federal Law Gazette I, p. 394) **Michael Kalkmann**(2016). Country Report: Germany. AIDA Asylum Information Database. ECRE (European Council of Refugees and Exiles)

Annex 3. EASY quota system (Initial Distribution of Asylum Seekers), 2018, BAMF

Bundesland	**Quote**
Baden - Wuerttemberg	13,01651%
Bavaria	15,55039%
Berlin	5,09267%
Brandenburg	3,02571%
Bremen	0,95115%
Hamburg	2,55847%
Hesse	7,36424%
Mecklenburg - West Promerania	2,00161%
Lower Saxony	9,36559%
North Rhine - Westphalia	21,14355%
Rhineland - Palatinate	4,83466%
Saarland	1,20344%
Saxony	5,02467%
Saxony - Anhalt	2,77158%
Schleswig - Holstein	3,41725%
Thuringia	2,67851%

Annex 4. Accommodation aspects under Asylum Act and asylum seekers Benefits Act

Categories	**Description**
Stakeholders	• **Federation** - responsible for framework legislation; • **Federal Office for Migration and Refugees:** - responsible for implementing the asylum procedure; - operates as the central agency for coordination (receives updates of newly comers, who left and how much space is still available); - acts as national administration office for European Funds in the areas of refugees, integration and return. • **Federal Länder** - responsible for administrative implementation; • **Federal Ministry of the Interior** - responsible for informing of newly comers, actual status, prospective regarding trend and need of accommodation; • **non-state actors** (e.g. non-governmental organizations, church welfare associations, etc.) : - offer procedural and social advice; - help asylum seekers who are no longer obliged to reside in a reception facility and vulnerable groups; - provide financial and social care; - co-financed by the European Refugee Fund.

Federal Lander's responsibilities (Asylum Seekers Benefits Act)	• reception; • accommodation; • provision of benefits to cover vital needs of refugees; • other benefits according to the Asylum Act; • support the costs of accommodation.		
Responsible for housing	• LaGeSo (State Office for Health and Social Affairs) – department responsible for new accommodations; • State controlled housing companies; • Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (financial support for housing); • National and regional associations (e.g. GdW national and BBU regional).		
Main types of accommodation	Reception facilities	Collective accommodation	Local accommodation
Regulated in	Section 44 of Asylum procedure Act (Asylvergahrengesetz)	Asylum procedure Act (Asylvergahrengesetz)	
Accommodation arrangements	Federal Lands	Available supplies (spaces) in each Federal Land[83]	
Location	Close or in big cities[84], in smaller cities[85], in small towns with a certain distance from the next city[86], isolated rural area[87]	Generally located within the area of the municipality where their asylum application is processed.	
Living conditions	• Separate allocation[88]; • shared bathrooms[89]; • external companies hired for cleaning, and catering.	• Situations of overcrowding and lack of privacy; • Limited space; • not enough equipment for recreation for children; • no separate quiet space for children	
Period of stay	min 6 weeks - up to 3 months	• till the person is granted asylum; • has found another accommodation with no additional costs;	

[83]This is happening when the application to the asylum is exceeding the period of their stay in the reception centers. It is explained better in the section 53 subs. 1 of the Asylum procedure Act, which says that "*foreigners who have filed an asylum application and are not or no longer required to live in a reception facility, should, as a rule, be housed in collective accommodation*".

[84]e.g. Berlin, Munic, Bielefeld, Dortmund, Karlsruhe, etc.

[85]e.g. Eisenhüttenstadt, Neumünster, Halberstadt,etc.

[86]e.g. Eisenberg near Jena, Lebach near Saarbrücken

[87]e.g. Nostorf-Horst, 10 km from the next small town.

[88] Where is space available, most municipalities follow the rule of placing single woman and families in separate buildings or wings of the buildings.

[89] Generally, one shower is available up to 12 persons, but in some facilities situations of overcrowded are encountered.

		• has been granted international protection.[90]
Establishing/ designing accommodation	Federal Länder	Federal Länder and municipalities
Executive responsibility	• operated by Federal Land • Offices of Federal Office for Migration and Refugees where the applications are processed[91] • intermediate accommodation authority of the Federal Lander[92]	Municipalities and Federal States[93]
Leaving the assigned residence area	• if an urgent public interest applies; • one intends to take up employment; • this person has a necessity of school/advanced occupational training/state-state recognized University/comparable educational establishment attendance;[94] • one receives asylum or international protection; • the foreigner Land authority or municipality could grant the permission to reside anywhere within the Land.	
Financial aspects	• Funded on Federal Länder responsibility, the Government, non-governmental organizations; • Regulated also in Asylum-Seekers Benefits Act.	
	Monthly amount for regular needs (e.g. accommodation, heating, household articles, energy, etc.) + personal needs: (e.g. transportation, leisure activities, further education, phone etc.)[95] - 187+145=332 eur - adults who live as single person in an apartment or young person without parents;[96] • 168+131=299 eur - adults who live in a host institution; • 150+116=266 eur - disabled adults; • 165+93=258 eur - children from 7 to 14 years old; • 76+189=265 eur - youngsters from 15 to 18 years old; • 125+81=206 eur - children up to 6 years old.	

[90]All these rules shall apply also for their family members.
[91]The formalities are made by the same authority, thus it could shorten the processes (e.g. if to a person the asylum is not granted, the formalities are quicker)
[92] e.g. Interior, Integration, or Social Ministry of the Federal Land
[93]except Bavaria and the city states. They are operating the facilities themselves.
[94]Permission granted without delay by authorized representatives, United Nations High Commissioner for Refugees or other organizations
[95]These are the rules from which the financial aid is starting. Further there could be added more packages which are not included in the standard requirements, according to one needs (e.g. small household goods (dishes, detergent, etc), school supplies, student travel costs, extra-curricular learning support, extra-curricular memberships, passport costs, more costs for pregnant woman, single parents, interpreting costs for therapeutic purposes, rehabilitation services, etc.)
[96]This sum is not received in the reception centers.

Sources	**Asylum Act** (2016). Federal Ministry of Justice and Consumer Protection in cooperation with juris GmbH, Saarbrücken - in the version promulgated on 2 September 2008 (Federal Law Gazette I, p. 1798), last amended by Article 2 of the Act of March 2016 (Federal Law Gazette I, p. 394) **Asylum-seekers Benefits Act** (Asylbewerberleistungsgesetz) (2017) http://www.lwl.org/ks-download/downloads/AK%20Migration/asylbLG.pdf **Müller, Andreas** (2013). The Organisation of Reception Facilities for Asylum Seekers in Germany, Working Paper 55 of the Research Section of the Federal Office. Nuremberg: Federal Office for Migration and Refugees. **Michael Kalkmann** (2016). Country Report: Germany. AIDA Asylum Information Database. ECRE (European Council of Refugees and Exiles) IFHP Refugee Housing Programme (2015). Housing Refugees Report.

Annex 5. Follow-up accommodation (collective and local) in all 16 German Federal States.

Federal Land	Process of follow-up accommodation
Baden-Wüttenberg	• in rural districts the district commissions are organizing the reception while in urban districts, city administrations; • following the designed accommodation stipulated in Reception Act (e.g. in collective facilities - section 6 subs.1 of the Reception Act),or in some cases with slightly changes with the consent of the competent Regional Commissioner's Office; • executive responsibility for accommodation is provided by lower reception authorities (e.g. city and rural districts) (section 6 subs. 3 of the Reception Act).
Bavaria	• type of accommodation regulated by Land law; • all persons are accommodated in collective facilities, except the extraordinary cases (e.g. illness, pregnancy, or people who could support themselves or their family on daily needs)(Art. 4 par. 1 of the Reception Act); • operated by administrative regions (Art. 4 par. 2 of the Reception Act); • generally, tasks are not assigned to local authorities. Exceptions are made in the case that it's impossible to accommodate asylum seekers in regular accommodations (Art. 6 par. 1 of the Reception Act).
Brandenburg	• executive responsibility assigned to rural and urban districts (section 1 subs. 1 of the Reception Act), carried out in local self-administration; • accommodation in collective facilities;

	• the districts could determine their own quota (country-internal distribution key) for temporary or permanent accommodation (section 2 subs. 8 of Brandenburg Land Reception Act) • collective facilities operated by welfare associations and private providers (section 4 subs. 3 of Brandenburg Land Reception Act).
Hessen	• executive responsibility for accommodation is assigned to local authorities (section 1 subs. 1 No. 1 of the Land Reception Act); • the local authorities could have the possibility to assign tasks to a third-party assistance.
Mecklenburg - West Pomerania	• the rural and urban districts are in charge of receiving the asylum seekers and the adjacent tasks(section 4 subs. 1 in conjunction with section 1 subs. 1 a) of the Reception Act); • a third party assistance could only be used to operate the collective accommodation facilities (section 4 subs. 2 of the Reception Act).
Lower Saxony	• rural and urban districts implement the Asylum Seekers Benefits Act and the accommodation related tasks (section 2 subs. 1 and 2 of the Reception Act).
North Rhine - Westphalia	• municipalities are responsible for the accommodation related tasks (section 1 subs. 1 of Reception Act); • municipalities are advised by the superior Land agencies (section 6 subs.1, 3 and 4 of Reception Act).
Rhineland Palatinate	• the districts, cities, the non-unionized municipalities, the federation and local communities are in charge of accommodation related tasks (compulsory tasks of self-administration) (section 1 subs. 1 of Rhineland Palatinate Reception Act); • the district administration could allocate the asylum seekers to the cities, unions or associations, while the local authority administration could assign the asylum seekers to the local communities (section 1 subs. 2 of Rhineland Palatinate Reception Act).
Saarland	• as a state mandate, municipalities are obliged to receive asylum seekers (section 1 subs. 1 and 2 State Immigrant Admission Law (LAG) Saarland); • local authorities are responsible for providing accommodation (generally in private residences).
Saxony	• accommodation provided by rural and urban districts (section 2 subs. 1 and 2 of Saxon Reception Act).
Saxony - Anhalt	• accommodation provided by rural and urban districts (section 1 subs. 1 of Saxony-Anhalt Reception Act); • Land authorities with rural and urban districts could operate the collective accommodation (section 1 subs. 6 of Saxony-Anhalt Reception Act).
Schleswig - Holstein	• Land authorities assign the responsibility to local authorities (Land Reception Act).
Thuringia	• rural and urban districts are responsible of accommodation (section 1 of the Thuringian Refugee Reception Act);

	• collective accommodation facilities could be established by the Land authorities (section 2 subs. 2 of the Reception Act); • the operation of collective accommodation could be assigned to 3rd parties (section 2 subs. 1 and 2 of the Reception Act).
Berlin	• the Land is responsible for the follow-up accommodation with 3rd non-state parties (e.g. the Berlin Land Office of Health and Social Affairs is responsible for the establishment, operation, occupation and closure of initial reception facilities and collective accommodation facilities, as well as for procuring home and residential places for asylum seekers [...] through contracts with third parties (Annex 1 No. 13 to section 2 subs. 1 of the Act Establishing Land Offices); • as a rule asylum seekers are accommodated in houses or flats where accommodation in a house or flat is cheaper than collective accommodation in the individual case, if there is no obligation to live in a reception facility and if the right to benefits is not to be restricted in accordance with section 1a of the Asylum Seekers Benefits Act (No. 1 subs 1 of the Implementation Regulations on the Renting of Housing by Beneficiaries in accordance with the Asylum Seekers Benefits Act).
Bremen	• responsible for accommodation is the Senator for Social Affairs, Children, Youth and Women whom assigns asylum seekers to urban municipalities Bremen and Bremerhaven; • for the urban municipality Bremerhaven responsible for accommodation is the Social Affairs Office of Bremerhaven municipal commitee.
Hamburg	• responsible for accommodation is the Authority of the Interior and Sport;

Sources from Web:

http://www.asylumineurope.org/reports/country/germany/reception-conditions/access-forms-reception-conditions/conditions-reception accessed on 11.02.2017
https://bravors.brandenburg.de/gesetze/laufng_2016 accessed on 11.02.2017
http://landesrecht.rlp.de/jportal/?quelle=jlink&query=AufnG+RP+%C2%A7+4&psml=bsrlpprod.psml accessed on 12.02.2017
http://www.saarland.de/dokumente/thema_soziales/2FAQ_Englisch_WEB2(1).pdf accessed on 10.02.2017
https://www.revosax.sachsen.de/vorschrift/9524-Saechsisches-Fluechtlingsaufnahmegesetz accessed on 13.02.2017
http://www.landesrecht.sachsen-anhalt.de/jportal/portal/t/3e/page/bssahprod.psml/action/portlets.jw.MainAction;jsessionid=84B230FE3E0258548EB3A241067AB230.jp21?p1=1&eventSubmit_doNavigate=searchInSubtreeTOC&showdoccase=1&doc.hl=0&doc.id=jlr-AufnGSTV7P1&doc.part=S&toc.poskey=#focuspoint accessed on 13.02.2017
http://landesrecht.thueringen.de/jportal/portal/t/5l/page/bsthueprod.psml/action/portlets.jw.MainAction?p1=3&eventSubmit_doNavigate=searchInSubtreeTOC&showdoccase=1&doc.hl=0&doc.id=jlr-FlAufGTHV6P2&doc.part=S&toc.poskey=#focuspoint accessed on 11.02.2017

https://www.berlin.de/sen/soziales/berliner-sozialrecht/land/av/av_wohnen.html accessed on 11.02.2017
http://www.gesetze-im-internet.de/asylblg/ accessed on 11.02.2017

Sources from publications:

Asylum Act (2016). Federal Ministry of Justice and Consumer Protection in cooperation with juris GmbH, Saarbrücken - in the version promulgated on 2 September 2008 (Federal Law Gazette I, p. 1798), last amended by Article 2 of the Act of March 2016 (Federal Law Gazette I, p. 394)
Müller, Andreas (2013). The Organisation of Reception Facilities for Asylum Seekers in Germany, Working Paper 55 of the Research Section of the Federal Office. Nuremberg: Federal Office for Migration and Refugees.

Annex 6. Accommodation facilities regulated in Lands where data was available

Source: Survey among the Länder via the Working Party of the Länder on Refugees and Integration (BAMF)

	Requirements for collective facilities	**Requirements for living rooms/ bedrooms and minimum space**	**Requirements for operation**	**Requirements for location and infrastructure**	**Requirements for qualification of the care staff**
Baden-Württemberg section 6 subs. 1 of the Refugee Reception Act	No	4.5 m^2 living/sleeping space per person	No	No	No
Bavaria guidelines on the type, size, and equipment of collective accommodation facilities for asylum seekers	Yes	7 m^2 living/sleeping space per person; no more than 4 (max. 6) residents per room; separation of the sexes; family rooms	Yes	Yes	Yes
Berlin	Yes	Single rooms min. 9 m^2; 6m^2 living/sleeping space per person; children aged up to 6 min 4 m^2 living space	Yes	No	Yes (for centre managers and social workers)
Brandenburg	Yes	6 m^2 living/sleeping space per person	Yes	No	Yes

Mecklenburg-West Pomerania Guideline on the operation of collective accommodation/ soc. care of residents 9/2000; Collective Accommodation Facility Ordinance 7/2001	Yes	6 m^2 living/sleeping space per person; no more than 6 residents per room; separation of the sexes	Yes	Yes	Yes
Saxony Administrative Ordinance on Accommodation and Social Care 6/2009	Recommenda-tion	Recommendation: 6 m^2 living/sleeping space per person; no more than 5 residents per room; separation of the sexes	Yes	Recommendati on	Yes (for centre managers)
Thuringia Thuringian Collective Accommodation and Social Care Ordinance 5/2010	Yes	6 m^2 living/sleeping space per person	Yes	Yes	Yes

Annex 7. The four stages of asylum seekers and refugees

Source: Database 1

Types / Categories	Asylum Seeker S1	Asylum applicant S2	Asylum granted person without income	Asylum granted person - with income
Description	First stage: arriving in the host country	Second stage: after applying for asylum	Third stage: a person with granted asylum but living with the help of government subsidies	Fourth stage: a person with granted asylum, but living without the help of the government, with revenue
Legislation	Proof of arrival document	Certification of permission to reside	Granted asylum and permission for residence	
Permanent residence	-	-	After 5 years from the	

			recognition of the asylum status[97]	
Conditions to achieve permanent residence	-	-	• Sustain themselves a secure cost of living; • Knowing the language; • Demonstrate integration achievements; • Vocational training; • Criminal background check.	
Freedom of movement	Geographic restriction [98]	Residence within the Federal state where the asylum procedures were conducted. [99]	No restrictions	
Access granted to humanitarian organizations	Difficult [100]	Yes	Yes	Yes
Distribution of accommodation	Reception facilities	Collective/local accommodation	Individual accommodation	Individual accommodation
Length of stay in the provided accommodation	Up to 3 months but can be extended to 6 months	Not specified but up to 3 years		
Type of accommodation	Emergency shelter, tents, reception center, hostels, gyms, former airports[101]	Formerly empty apartment blocks, housing containers[102],	Apartments, houses, Tempohousing and MUF (Modulare Unterkunft für Flüchtlinge - modular	Apartments, houses

[97] Since August 2016, the rule has been changed. Before people were receiving permanent of residence after 3 years of staying in the country.
[98] One is obliged to stay in the reception centre up to 6 months. The one who come from safe countries have to stay till the procedure of asylum is finished.
[99] Since August 2016, they are generally obliged. This obligation remains in force up to three years. However, it could be lifted on certain conditions. (e.g. family reasons, education, employment). This rule is not applied in all Federal States.
[100] Depends which reception centre granted them an access. Normally, they have fixed hours access. Moreover, for people with residence obligation is more difficult.
[101] Big problems with accommodation were registered in big cities. For example, in Berlin, at the end of 2016, people were still living in the hanger of former Tempelhof airport, because there were too many requests for accommodation and not enough places available elsewhere. This facility was announced to be closed in autumn 2017. http://www.rbb-online.de/politik/beitrag/2017/02/fluechtlingsunterkunft-tempelhof-soll-im-sommer-schliessen.html
[102] Depends a lot on the situation from each land regarding the number of persons that need accommodation.

		apartments[103], former schools	accommodation for refugees	
Financial allowance	The monthly rate of 135 euro for a single adult	The monthly rate of 351 euro for a single adult. Additional receive other benefits upon application.[104]		Own income
Access to labor market	No access to the labor market for a period of three months and as long as they still live in the initial reception center[105]	Access to labor market with restrictions[106]	Unrestricted access, including self-employment under the same conditions as German citizens	
Access to education	No access to the regular school system as long as they still live in the initial reception center	Access to vocational training[107]	• Vocational training; • School; • University.[108]	

Source: Author own elaboration

Annex 8. Survey questionnaire to Banks in Germany regarding mortgage credits for refugees

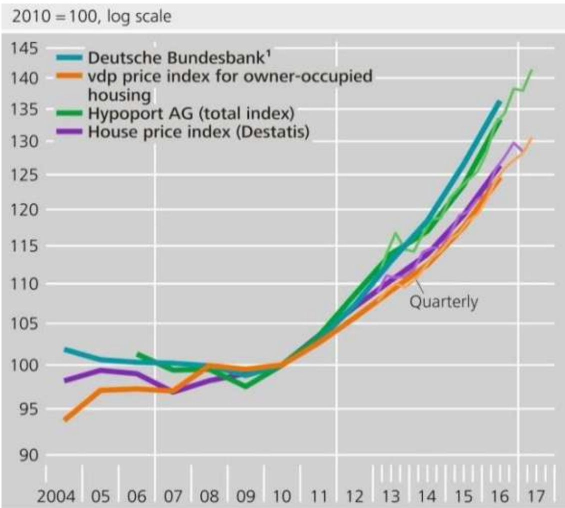
1. Do you offer a mortgage credit for people with refugee or asylum seeker status (i.e. assuming that the person is employed)?
2. On which terms?
3. Do they need to do a down payment in order to receive the credit?

[103] In some municipalities, asylum seekers could be granted the permission to search and rent the apartments on their own.
[104] e.g. in case of illness, pregnancy and birth, education, membership, travel, etc.
[105] Regulated in November 2014. Prior to this, till September 2013, asylum seekers were not allowed to access the labor market for a period of 9 months. Before this, they had to wait 1 year.
[106] Self-employment is not allowed for the entire time-line in which the asylum procedure is processed. After the stay in the first reception center, asylum seekers first have to apply for employment permit, prove that they have a job offer, providing every detail to the authorities, and the approval of the employer that they will be employed when they will receive the working permit. Moreover, after 15 months job centers start an examination (priority review) in order to find out whether another person who has permit of residence or German nationality is better fit to that job. However, this examination was suspended in August 2016 for 3 years in many parts of the country but in 23 regions it remains.
[107] This is tight to obtaining first an employment permit.
[108] Access to all types of education if they prove they have the skills, under the same conditions as German citizens.

4. Do you have special terms (e.g. lower rates) for people with refugee or asylum seeker status when you grant a mortgage credit?
5. Can a person with refugee or asylum seeker status apply to receive a credit for personal use (e.g. buying a car, motorcycle, etc.)?

Annex 9. German housing market - data collected

Residential property prices in Germany

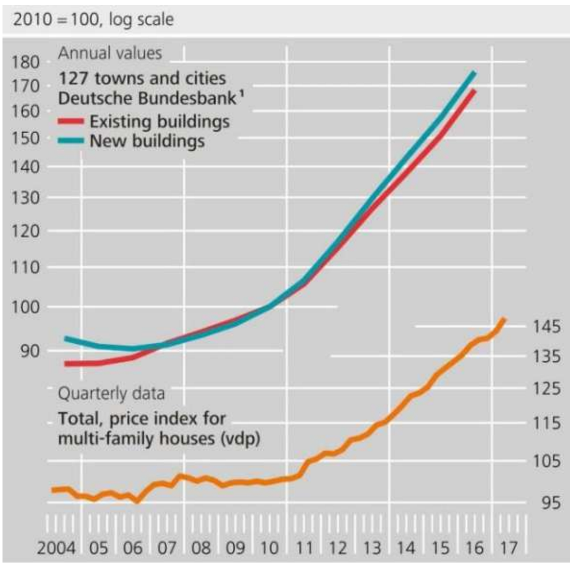


1 Transaction-weighted. Bundesbank calculations based on price data provided by bulwiengesa AG.
Deutsche Bundesbank

Residencial property prices in German town and cities

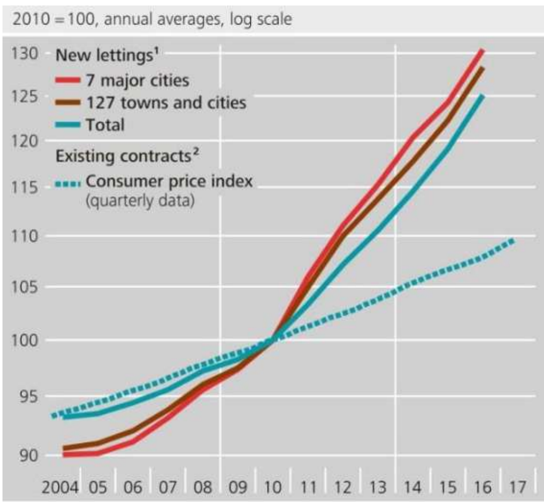
* Transaction-weighted. Bundesbank calculations based on price data provided by bulwiengesa AG. 1 Berlin, Dusseldorf, Frankfurt, Hamburg, Cologne, Munich and Stuttgart.
Deutsche Bundesbank

Prices for rental housing in Germany



1 Bundesbank calculations based on data provided by bulwiengesa AG.
Deutsche Bundesbank

Rents for apartments in Germany



1 Transaction-weighted. Bundesbank calculations based on data provided by bulwiengesa AG. 2 Source: Federal Statistical Office (Destatis), to some extent including new lettings.
Deutsche Bundesbank

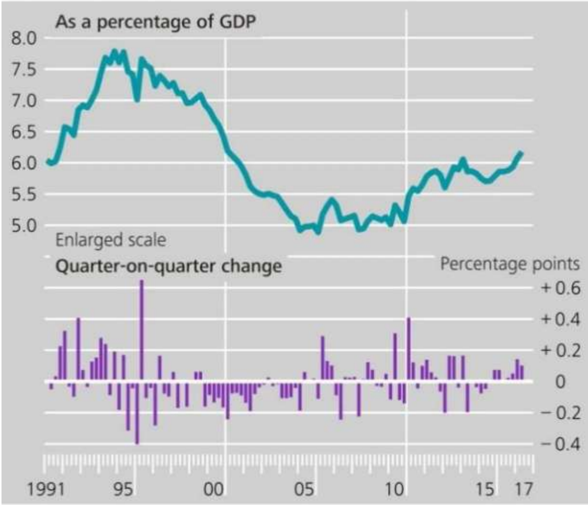
Building permits and completed housing units in Germany

Thousand apartments, log scale

Source of unadjusted figures: Federal Statistical Office. * In residential and non-residential buildings. Including construction work on existing buildings. **1** Seasonally adjusted.
Deutsche Bundesbank

Housing investment in Germany

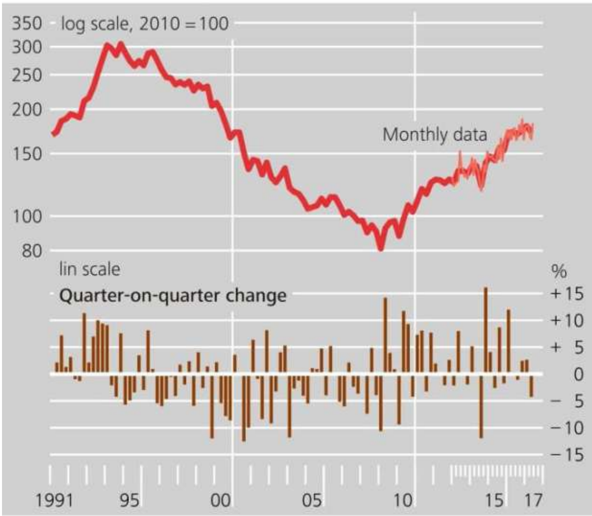
Seasonally adjusted



Source of unadjusted figures: Federal Statistical Office. * Quarterly calculations of gross investment at current prices according to national accounts.
Deutsche Bundesbank

New orders for housing construction in the main construction sector in Germany

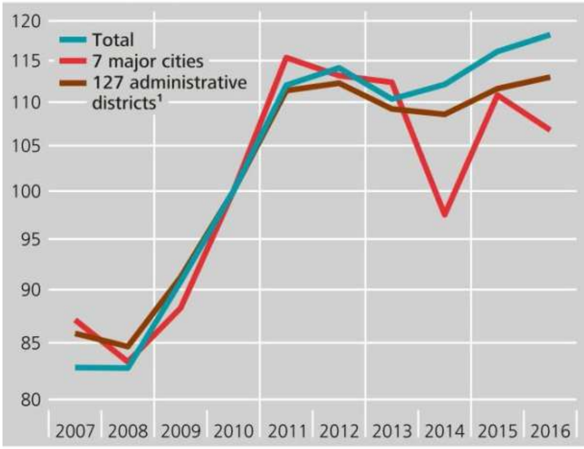
Quarterly data, seasonally adjusted, at constant price



Source of unadjusted figures: Federal Statistical Office.
Deutsche Bundesbank

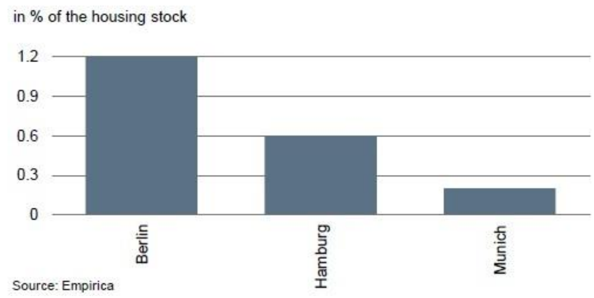
Number of transactions for apartments in Germany

2010 = 100, log scale



Source: Extrapolation provided by vdpResearch GmbH on the basis of data from surveyor committees. **1** Regional coverage not entirely comparable with residential property prices for 127 towns and cities from bulwiengesa AG.
Deutsche Bundesbank

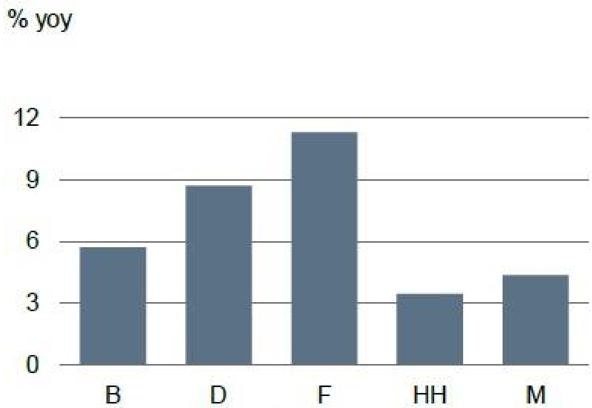
2015 Marketable vacancy rates



2009-2016 apartment prices, existing

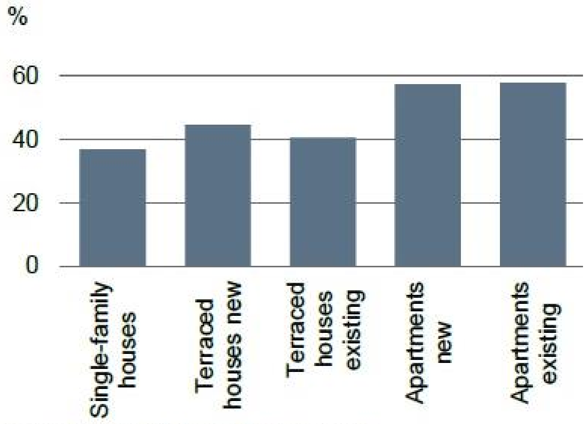
Sources: riwis, Deutsche Bank Research

2016 prices of single-family houses



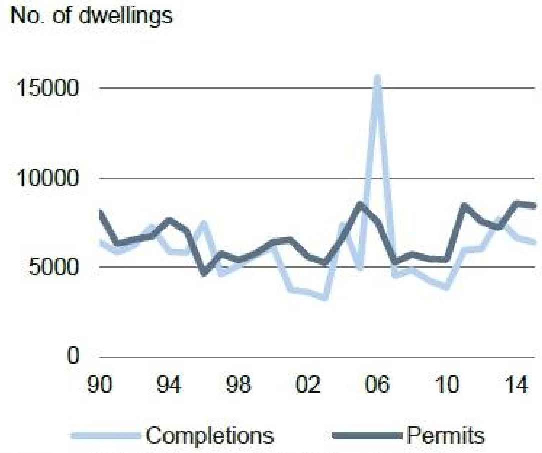
Sources: riwis, Deutsche Bank Research

2009-2016 house and apartment prices



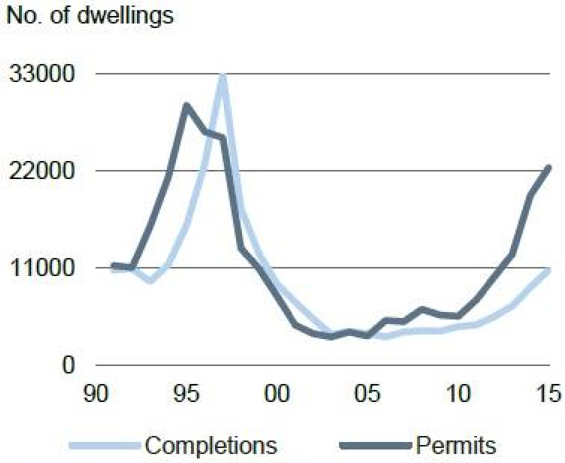
Sources: riwis, Deutsche Bank Research

Munich: Housing market



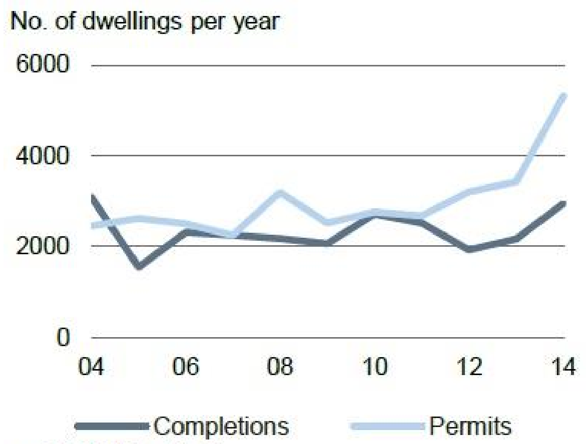
Sources: riwis, National Statistical Office, Deutsche Bank Research

Berlin: Housing market



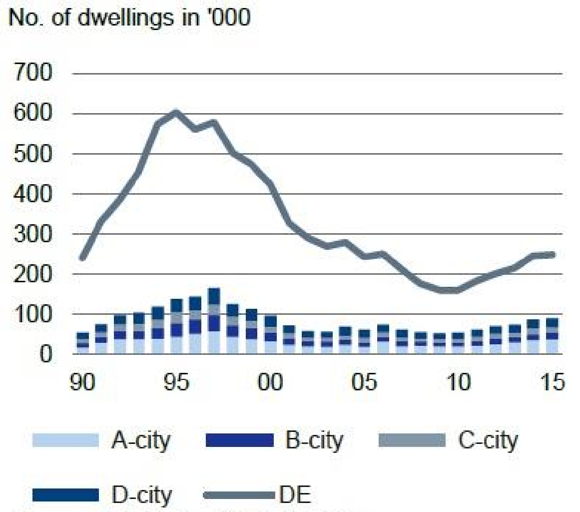
Sources: riwis, National Statistical Office, Deutsche Bank Research

Frankfurt: Housing market	Completions

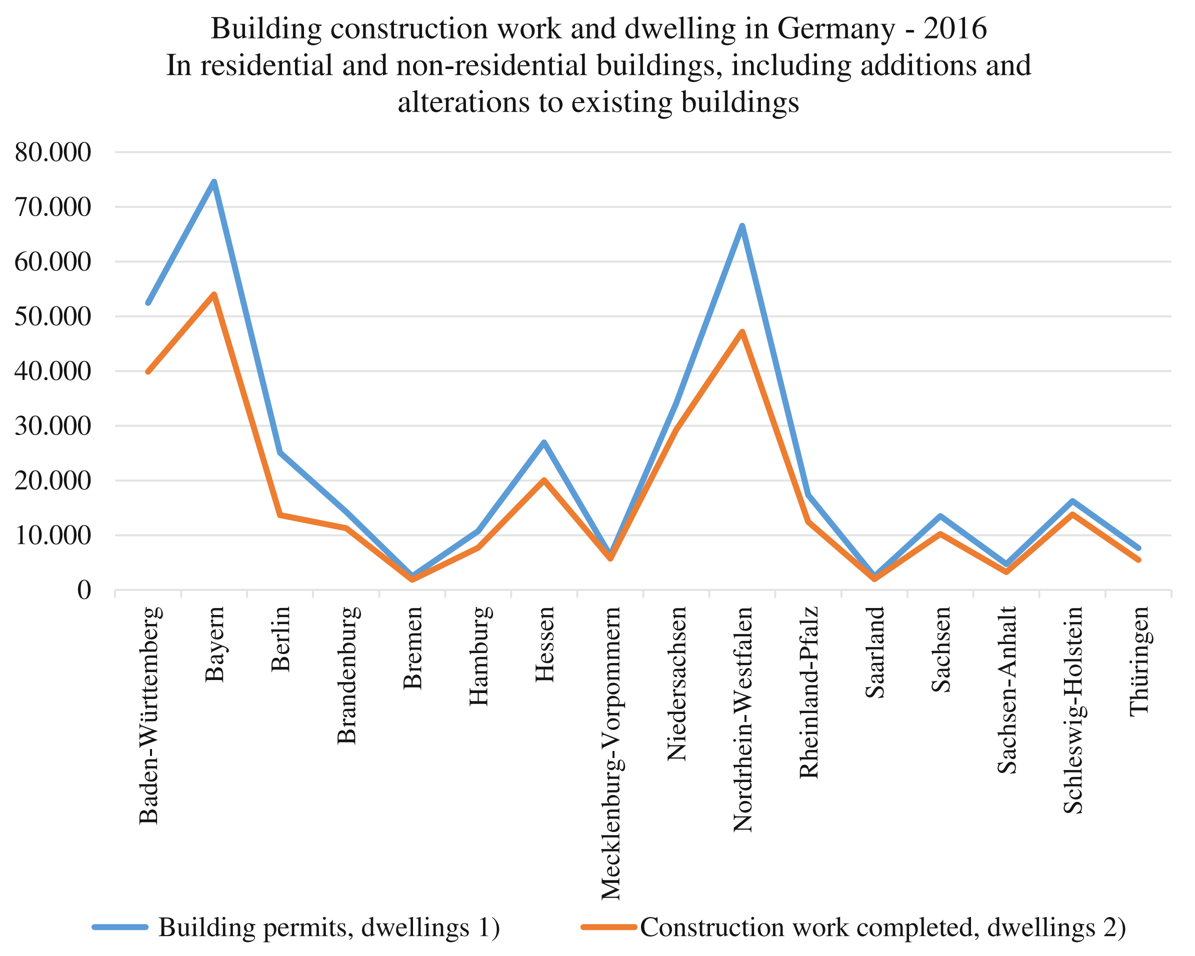


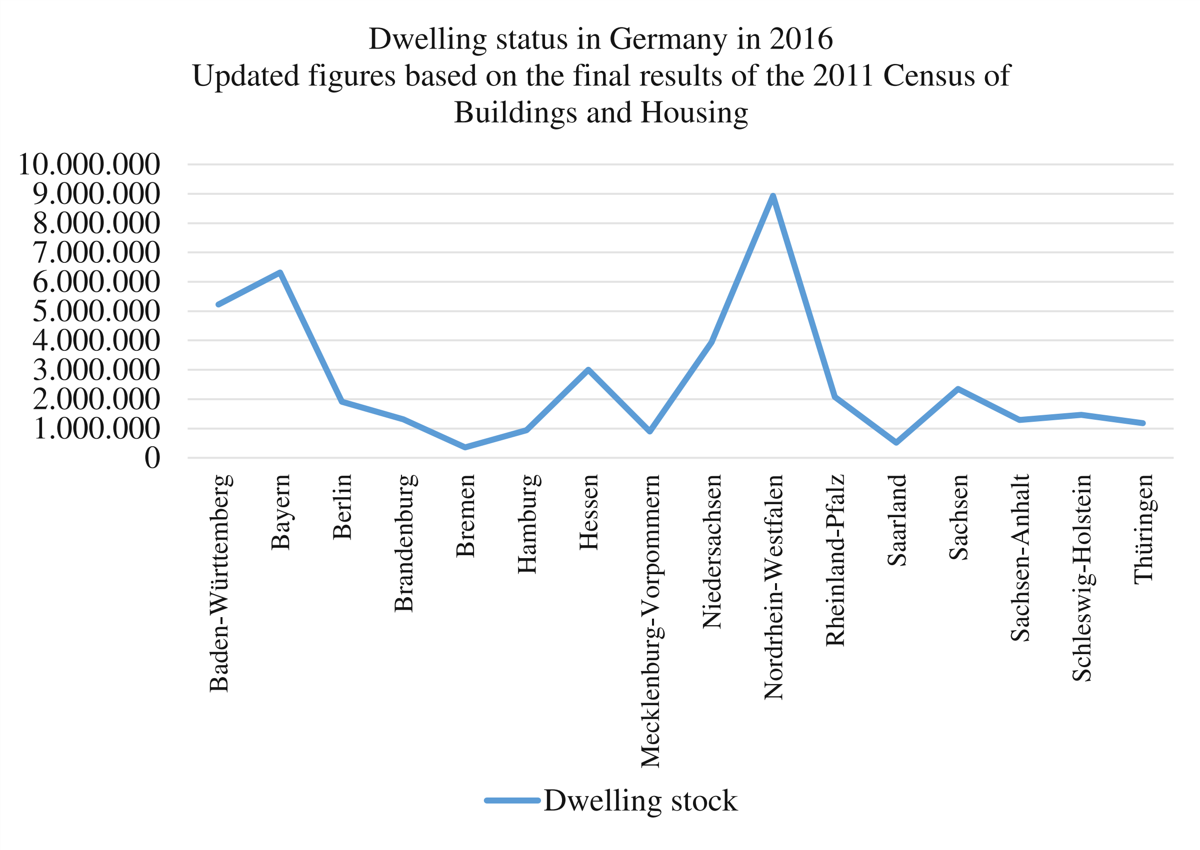
as of 2014 (latest data)

Sources: Frankfurter Wohnungsmarktberichte, Deutsche Bank Research

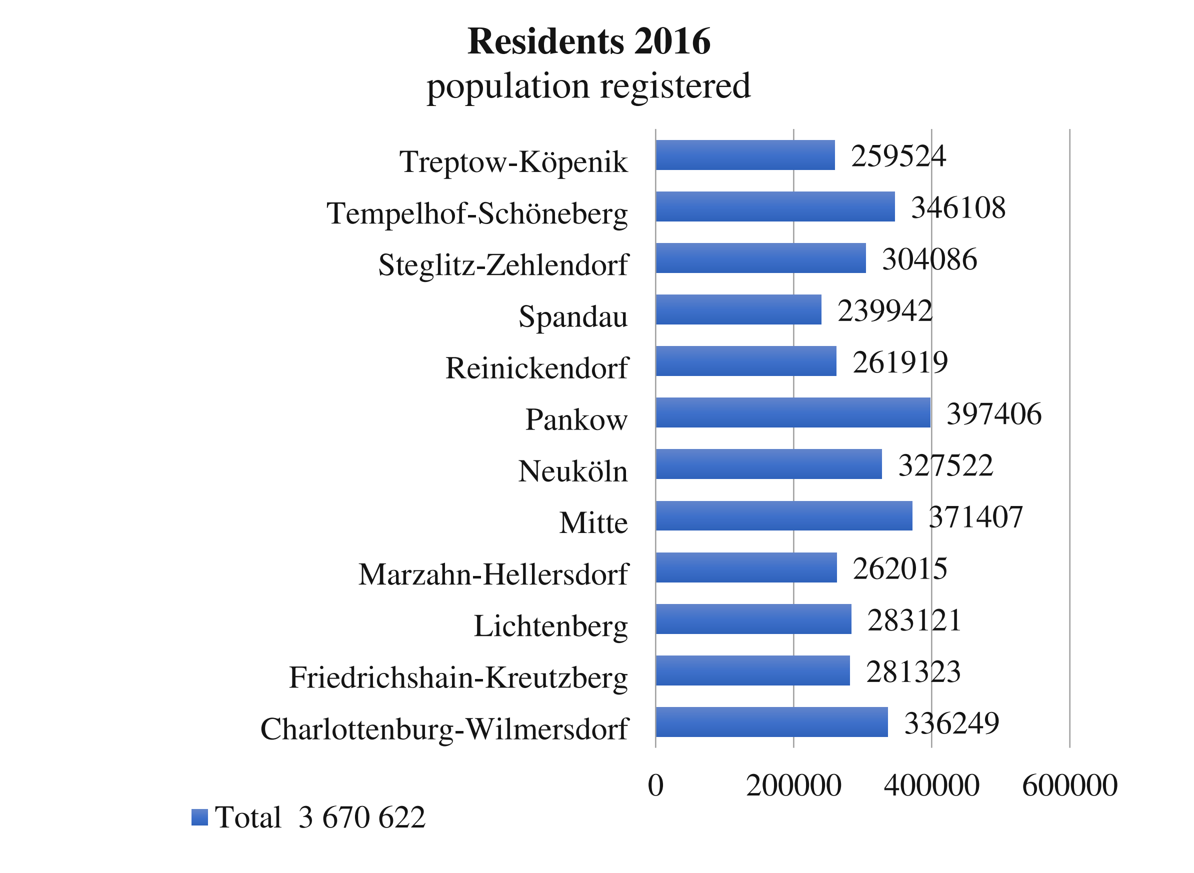


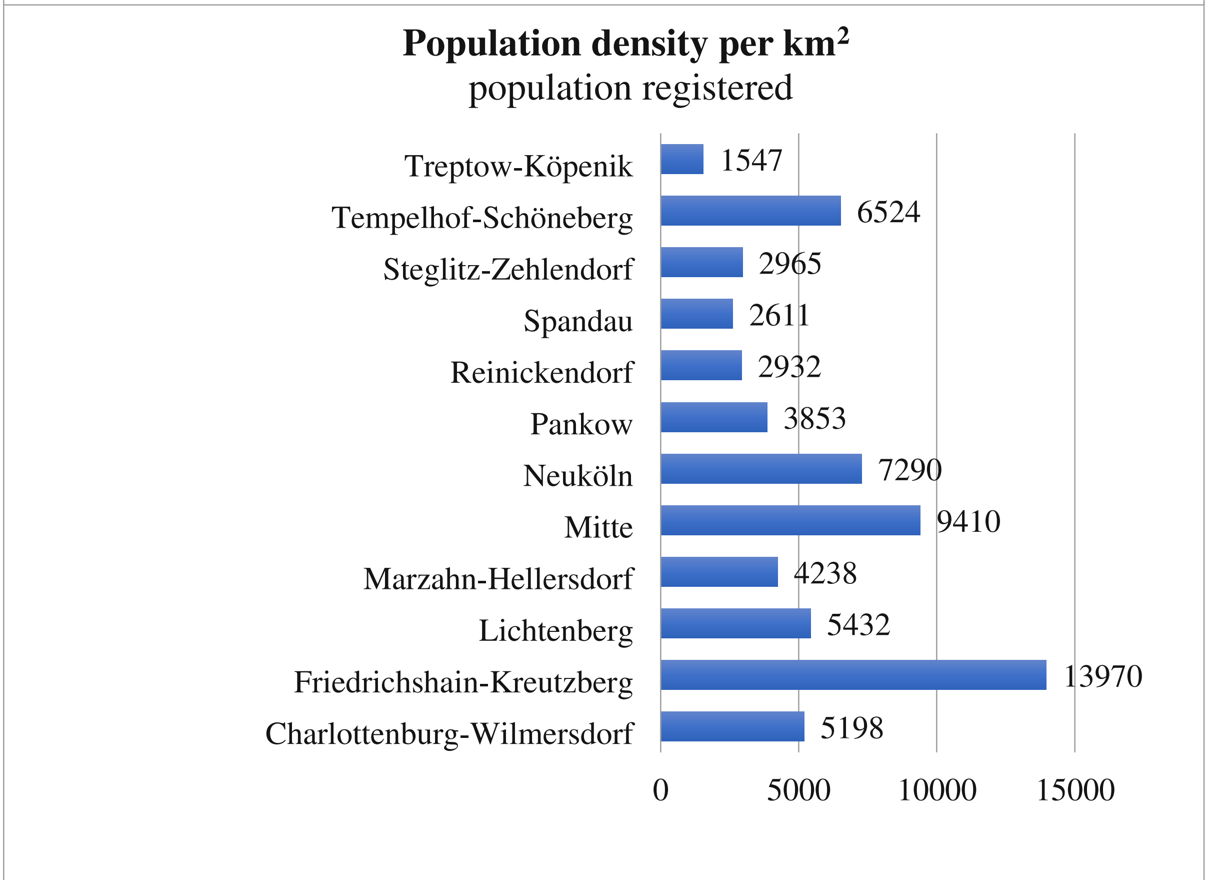
Sources: riwis, National Statistical Office, Deutsche Bank Research



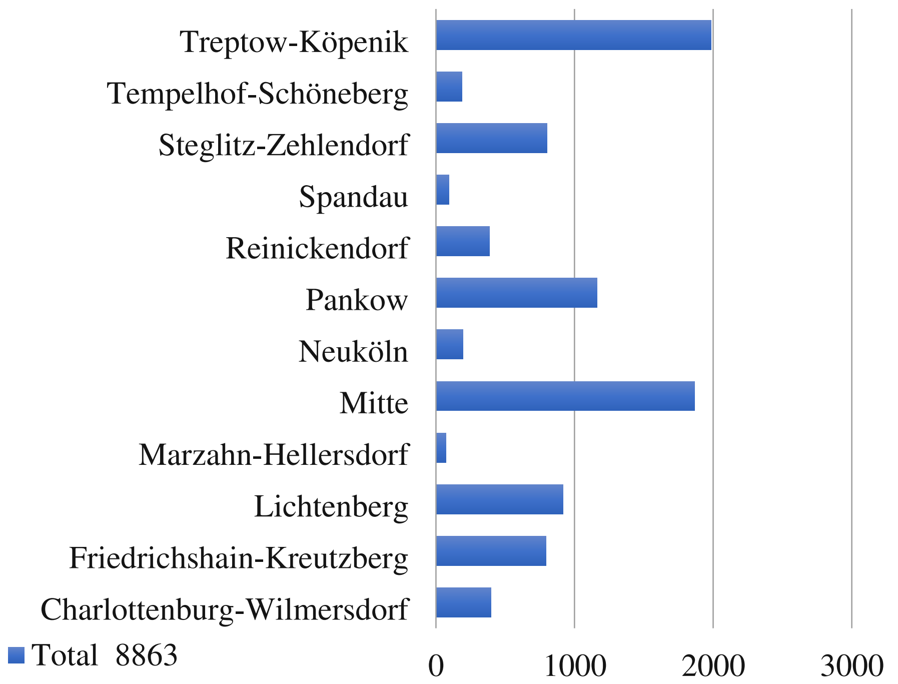

Dwelling status in Germany in 2016
Updated figures based on the final results of the 2011 Census of Buildings and Housing
10.000.000
9.000.000
8.000.000
7.000.000
6.000.000
5.000.000
4.000.000
3.000.000
2.000.000
1.000.000
0
Baden-Württemberg
Bayern
Berlin
Brandenburg
Bremen
Hamburg
Hessen
Mecklenburg-Vorpommern
Niedersachsen
Nordrhein-Westfalen
Rheinland-Pfalz
Saarland
Sachsen
Sachsen-Anhalt
Schleswig-Holstein
Thüringen
Dwelling stock

Annex 10. Berlin overview – excerpts from the CBRE Hyp housing report 2018

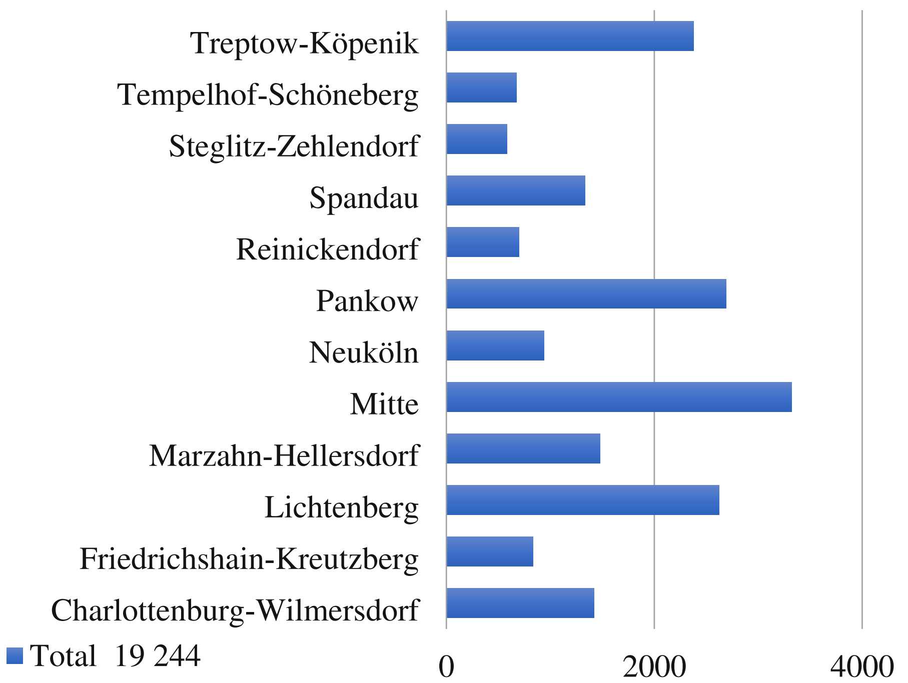




Newly finished apartments 2016
in residential buildings with three or more apartments



Permits for building new apartments 2016
in residential buildings with three or more apartments



Annex 11. Calculation of rent affordability with respect to three income categories for potential refugees' households

No. of persons in household	Minimum income (net)	Minimum floor space of rent (m^2)	Average floor area of rent (m^2) (Source: DESTATIS, 2014)
1-person household		15 m^2	54.7 m^2
		Rent cost € according to Mietspiegel	
		276	479
		Rent % of income	
	570[1]	48%	84%
	1100[2]	25%	44%
	2300[3]	12%	21%
2-persons household [4]		**Minimum floor space of rent (2 persons)**	**Average floor area of rent m^2** (Source: DESTATIS, 2014)
		30 m^2	73.8 m^2
		Rent cost € according to Mietspiegel	
		331	645
		Rent % of income	
	1140	29%	57%
	1670	20%	39%
	2870	12%	22%
	2200	15%	29%
	3400	10%	19%
	4600	7%	14%
Family households			
lone parent with 1 minor child		**Minimum floor space of rent (2 persons)**	**Average floor area of rent m^2** (Source: DESTATIS, 2014)
		30 m^2	57.8 m^2
		Rent cost € according to Mietspiegel	
		331	521
		Rent % of income	
	570	58%	91%
	1100	30%	47%
	2300	14%	23%
couples with 1 minor child [6]		**Minimum floor space of rent (3 persons)**	**Average floor area of rent m^2** (Source: DESTATIS, 2014)
		45 m^2	71.7 m^2
		Rent cost € according to Mietspiegel	
		408	610

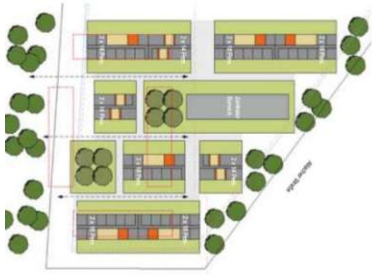
		Rent % of income	
	570	72%	107%
	1100	37%	55%
	2300	18%	27%
couples with 1 minor child [6]		**Minimum floor space of rent m^2 (3 persons)**	**Average floor area of rent m^2** (Source: DESTATIS, 2014)
		45 m^2	71.7 m^2
		Rent cost € according to Mietspiegel	
		408	610
		Rent % of income	
	1140	36%	54%
	1670	24%	37%
	2870	14%	21%
	2200	19%	28%
	3400	12%	18%
	4600	9%	13%

[1] The minimum income for the refugees, if they work the minimum allowed hours to them (15 hours)
[2] Minimum wage per month in Germany
[3] Medium average income per month in Germany
[4] If both households are working, all the possible combination are calculated
[5] When only one person from the couple is working
[6] When both are working, all the possible combination are calculated

Database 1

Source: Author’s own elaboration

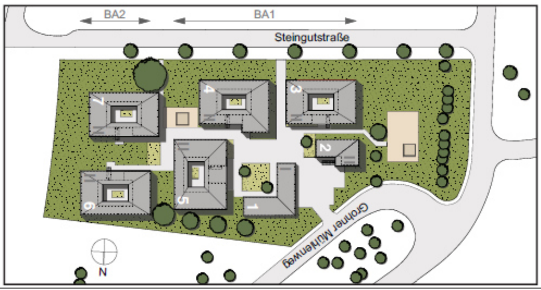
Case study no.	**1**
Name of the city	**Hünfeld**  © Dr. Michael Fladung
Location of the property	An der Grotte 6, outside the village with no houses around
Type of building	Two-story residential building with large container modules
Number of units	2
Total floor area	1,674 m²
Designated residents	Asylum seekers (**S2**)
Number of residents	90
Building’s layout type	Line type with one corridor and one room apartments set on both sides of the corridor
Building method	Timber frame construction
Construction costs	1,018 Euro/m²
Living space/person	18.6 m^2
Site improvements and amenities	Green areas
Parking	no
Key actors	German League for Human Rights, District of Fulda, and DRK Kreisverband
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Rooms for two and three persons with common kitchen and bathroom facilities
Structure of the neighborhood	Mostly agrarian with several unifamilial houses
Linkages to amenities	Walking distance – up to 18 min
Inhabitants	16 082
Time-distance to retail areas	Walking distance – up to 18 min
Transportation	Up to 8 min walking to the train station

Case study no.	2
Name of the city	**München**  © bauwelt
Location of the property	Allacher Strasse in Allach-Untermenzing, situated in extreme northwest of München
Type of building	Two-story residential building with large modules which can accommodate 15 people in one module
Number of units	6 buildings
Total floor area	4.600 m²
Designated residents	Asylum seekers (**S2**)
Number of residents	300
Building's layout type	Line type with one corridor and one room apartments set on both sides of the corridor
Building method	Timber frame construction
Construction costs	1,018 Euro/m²
Living space/person	15.33 m^2
Site improvements and amenities	Green areas and playgrounds
Parking	no
Key actors	The City of Munich
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Rooms for two and three persons with common kitchen and bathroom facilities
Structure of the neighborhood	Mixed-use
Linkages to amenities	Walking distance – up to 18 min
Inhabitants	32 705
Time-distance to retail areas	Walking distance – up to 10 min

Case study no.	3
Name of the city	**Ostfildern/Ruit**  © Markus Guhl
Location of the property	Kirchheimerstrasse, in a village outside Stuttgart
Type of building	Two-story residential building with large modules
Number of units	3 buildings

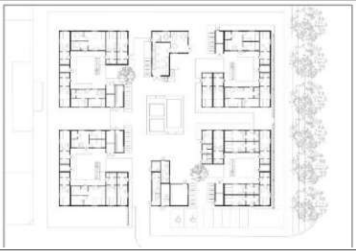
Total floor area	1.000 m²
Designated residents	Refugees with recognized refugee status, mixed residential base including people with no home and low incomes (**S3, S4**)
Number of residents	39
Building's layout type	Rectangle shape buildings with two apartments on the floor
Building method	Timber frame construction (visible wooden ceiling beams)
Construction costs	1,400 Euro/m²
Living space/person	21 m²
Site improvements and amenities	Green areas
Parking	no
Key actors	Sanierungs- und Entwicklungsgesellschaft Ostfildern mbH, City of Ostfildern
Lifespan	40 years
Renting price	unknown
Characteristics of family homes	Two-room apartments with own bathroom and a small kitchen placed on the hallway
Structure of the neighborhood	Residential
Linkages to amenities	Walking distance
Inhabitants	7 869
Time-distance to retail areas	Up to 15 min walking

Case study no.	**4**
Name of the city	**Bremen** **Grohn:** Site plan ©bauwelt

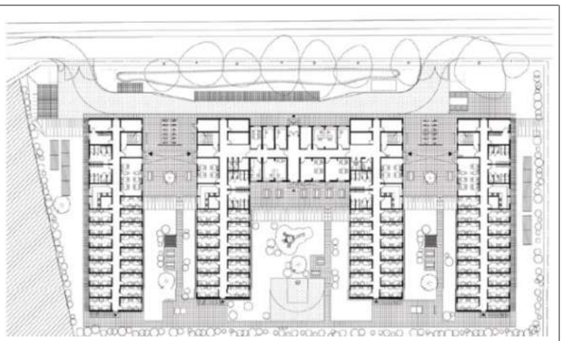


Location of the property	Northen district of Bremen: Bremen-Vegesack, in Steingutstraße 2
Type of building	Container
Number of units	7 buildings
Total floor area	Dimension of one container is 3x3x9 m 2025 m^2
Designated residents	Asylum seekers (**S2**)
Number of residents	162 residents
Building's layout type	L-shape buildings and buildings with inner courtyard arranged in clusters
Building method	Steel frame & metal
Construction costs	Approximate 1,100 Euro/m²
Living space/person	12.5 m²
Site improvements and amenities	Green areas, playgrounds and bike parking
Parking	yes

Key actors	Bremen Senator for Social Affairs, Children, Adolescents, and Women (4 locations)
Lifespan	5 years
Renting price	unknown
Structure of the neighborhood	Mixed-use (residential/industrial, church, university)
Characteristics of family homes	1-2 room apartments
Linkages to amenities	walking distance (Jacobs University)
Population	Bremen-Vegesack district: 34 505
Time-distance to retail areas	walking distance (university)
Transportation	up to 5 minutes walking distance

Case study no.	**5**
Name of the city	**Bremen** **Hemelingen:** Floor plan, ground level ©bauwelt 
Location of the property	In the village Hemelingen, in Arberger Heerstraße, 10 km from the city center of Bremen
Type of building	Container, 2 storz building
Number of units	10 buildings
Total floor area	Dimension of one container is 3x3x9 m 3000 m^2
Designated residents	Asylum seekers (**S2**)
Number of residents	240 residents
Building's layout type	U-shape and L-shape buildings arranged in clusters
Building method	Steel frame & metal
Construction costs	Approximate 1,100 Euro/m²
Living space/person	12.5 m²
Site improvements and amenities	Green areas, playgrounds and bike parking
Parking	yes
Key actors	Bremen Senator for Social Affairs, Children, Adolescents, and Women (4 locations)
Lifespan	5 years
Renting price	unknown
Structure of the neighborhood	mixed-use (residential, agrarian, amusement park, shops)
Characteristics of family homes	1-2 room apartments
Linkages to amenities	walking distance (the closest is a school), the neighbor is Youth Center Hemelingen
Population	Bremen-Hemelingen: 41 545
Time-distance to retail areas	walking distance
Transportation	In front of the buildings

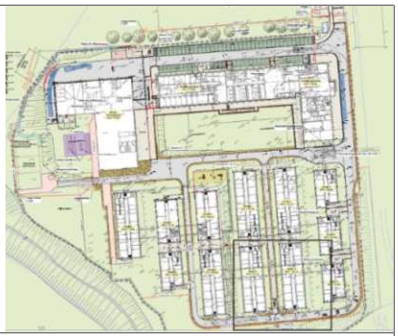
Case study no.	6
Name of the city	**Bremen** Site plan  ©google
Location of the property	District Überseestadt, 3.2 km from the history city center of Bremen, in Nordstraße 349
Type of building	Container
Number of units	8 buildings
Total floor area	Dimension of one container is 3x3x9 m Überseetor: 2250 m^2
Designated residents	Asylum seekers (**S2**)
Number of residents	120
Building's layout type	L-shape buildings and buildings with inner courtyard arranged in clusters
Building method	Steel frame & metal
Construction costs	Approximate 1,100 Euro/m²
Living space/person	12.5 m²
Site improvements and amenities	Green areas, playgrounds and bike parking
Parking	yes
Key actors	Bremen Senator for Social Affairs, Children, Adolescents, and Women (4 locations)
Lifespan	5 years
Renting price	unknown
Structure of the neighborhood	mixed-use
Characteristics of family homes	1-2 room apartments
Linkages to amenities	School on the other side of the street
Population	557 464
Time-distance to retail areas	walking distance
Transportation	up to 2 minutes

Case study no.	7
Name of the city	**München:** Ground floor  ©bauwelt
Type of building	Residential building
Number of units	4
Total floor area	4,820 m²

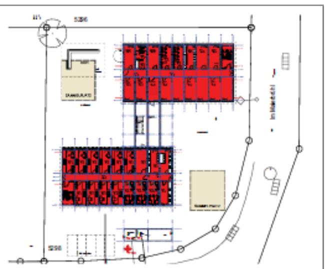
Designated residents	Asylum seekers (**S2**)
Number of residents	300
Building's layout type	interconnected lines of buildings
Building method	Prefabricated wooden room modules
Construction costs	-
Living space/person	16.06 m²
Site improvements and amenities	Playgrounds, green areas, small park, bike parking, terraces
Parking	no
Key actors	Municipal Government, State Capital of Munich, Baureferat Hochbau (Project management)
Lifespan	5-10 years
Renting price	unknown
Characteristics of family homes	Rooms for two people alongside a corridor, with common bathroom and kitchen facilities
Structure of the neighborhood	Residential
Linkages to amenities	-
Inhabitants	-
Time-distance to retail areas	-

Case study no.	**8**
Name of the city	**Hanover:** Site plan  ©bauwelt
Location of the property	Steigerthalstraße, in Linden-Limmer district of Hanover
Type of building	Residential building
Number of units	3 units two-story building * here they construct more-see the database
Total floor area	Approx. 1,700 m²
Designated residents	Asylum seekers, refugees with recognized refugee Status (**S2,S3**)
Number of residents	96
Building's layout type	interconnected lines of buildings
Building method	Prefabricated wooden room modules
Construction costs	1,600 Euro/m²
Living space/person	17 m²
Site improvements and amenities	Courtyard, playground, volleyball court, green areas, bike parking
Parking	no
Key actors	Building Department, State Capital of Hanover
Lifespan	Min. 20 years

Renting price	unknown
Characteristics of family homes	96 single rooms in 3 buildings grouped along a courtyard; 3 room apartment with shared bathroom and kitchen
Structure of the neighborhood	Residential
Linkages to amenities	Walking distance (school, recreation center, police)
Inhabitants	Linden-Limmer district: 44 226
Time-distance to retail areas	Up to 10 min walking distance

Case study no.	**9**
Name of the city	**Essen (Fischlaken):** Site plan  ©bauwelt
Location of property	In Fischlaken, a village close to Essen, in Overhammshof Strasse
Type of building	2 story residential building
Number of units	10
Total floor area	14,500 m²
Designated residents	Asylum seekers (**S1**)
Number of residents	800 (8 buildings with 100 residents each and 4 buildings with 50 residents)
Building's layout type	interconnected lines of buildings
Building method	Prefabricated wooden room modules
Construction costs	35,183,000 Euro
Living space/person	6 m²
Site improvements and amenities	Playground, green areas, bike parking, lounge area, terrace
Parking	no
Structure of the neighborhood	Agrarian, the only buildings around
Key actors	The City of Essen
Lifespan	25 years
Renting price	unknown
Characteristics of family homes	Rooms for one or more person along a corridor with common bathroom and kitchen facilities
Linkages to amenities	1 km to a church
Inhabitants	Fischlaken: 4 838
Time-distance to retail areas	3 km to the closest supermarket
Transportation	Not available in the proximity of the buildings

Case study no.	10
Name of the city	**Freiburg im Breisgau**  © Miguel Babo
Location of property	Gundelfinger Strasse, 4 km from city center
Type of building	3 story residential building and a registration office with administration building
Number of units	5
Total floor area	6.998 m²
Designated residents	Asylum seekers, refugees with recognized refugee status (**S2, S3**)
Number of residents	300 residents
Building's layout type	Line modules not connected
Building method	Prefabricated wooden room modules
Construction costs	1,250 Euro/m²
Living space/person	14.1 m²
Site improvements and amenities	Playground, green areas, bike parking
Parking	yes
Structure of the neighborhood	Mixed-use (industrial, shopping areas, residential)
Key actors	City of Freiburg im Breisgau, Building Management
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Rooms for one or two person along a corridor with common bathroom and kitchen facilities
Linkages to amenities	4 km to the historical city center
Inhabitants	Freiburg im Breisgau: 227 400
Time-distance to retail areas	Up to 10 minutes walking
Transportation	Up to 5 minutes walking distance

Case study no.	11
Name of the city	**Freiburg (Tiengen):** Site plan  © bauwelt
Location of property	Tiengen : im Maierbrühl, east part of the village in the field, 10 minutes walking from the center of the village
Type of building	3-story residential building and a registration office with administration building
Number of units	5

Total floor area	2.150 m²
Designated residents	Asylum seekers, refugees with recognized refugee status (**S2,S3**)
Number of residents	100 residents
Building's layout type	Line shape buildings not connected
Building method	Prefabricated wooden room modules
Construction costs	1,250 Euro/m²
Living space/person	21.5 m²
Site improvements and amenities	Playground, green areas, bike parking
Parking	yes
Structure of the neighborhood	Mixed-use (agrarian, kindergarten, residential)
Key actors	City of Freiburg im Breisgau, Building Management
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Rooms for one or two person along a corridor with common bathroom and kitchen facilities
Linkages to amenities	Across the street a kindergarten
Inhabitants	Tiengen: 22 729
Time-distance to retail areas	Up to 10 minutes walking

Case study no.	**12**
Name of the city	**Langenbach -Freising**  © Reinhard Fiedler
Location of the property	At the edge of the village, on Freisingerstrasse
Type of building	Residential building
Number of units	1
Total floor area	2400 m²
Designated residents	Asylum seekers (**S2**)
Number of residents	78
Building's layout type	One single line module
Building method	Timber frame construction
Construction costs	2,000 Euro/m²
Living space/person	7,5 m²
Site improvements and amenities	Playground, green areas, football field, volleyball court (Usable both for the asylum seekers and locals), bike parking
Parking	yes
Key actors	Adldinger Bauwerk GmbH
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Two-person room

	Two rooms connected to accommodate 4 persons Common areas for bathroom and kitchen facilities
Structure of the neighborhood	Agrarian / single family homes
Linkages to amenities	20 minutes walking distance to the center of the village
Inhabitants	3 886
Time-distance to retail areas	10 minutes walking distance
Further use	kindergarten, homeless shelter, student dormitory, offices, part of a community college or music school

Case study no.	**13**
Name of the city	**Kassel:** Site plan  ©bauwelt
Location of the property	Bunsenstraßen, in district of Nord-Holland
Type of building	Residential building – collective housing and an administration building with multifunctional space
Number of units	2
Total floor area	Approx. 2500 m²
Designated residents	Asylum seekers (**S2**)
Number of residents	182
Building's layout type	U-shape
Building method	Mass-wall construction, floor slabs of reinforced concrete
Construction costs	1,610 Euro/m²
Living space/person	9.7–12.9 m²
Site improvements and amenities	Playground, green areas, bike parking
Parking	no
Structure of the neighborhood	Mixed-use (residential, industrial)
Key actors	GWG Kassel – Gemeinnützige Wohnungsbaugesellschaft der Stadt Kassel mbH
Lifespan	7 years
Renting price	unknown
Characteristics of family homes	One room apartment, two-room apartment or three-room apartment with all the facilities included in the apartment
Linkages to amenities	5 km to the city center
Inhabitants	district of Nord-Holland: 14 984
Time-distance to retail areas	Up to 5 minutes walking distance
Further use	In plan to rent as social housing

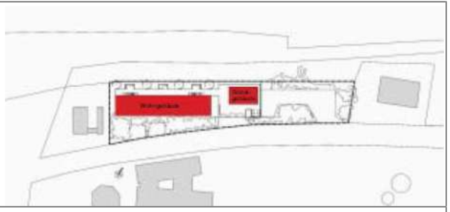
Study case no.	14
Name of the city	**Göttingen:** Site plan  ©bauwelt
Location of the property	Area of Holtenser Landstraße and Europa-Allee
Type of building	3-story residential building and a registration office with administration building
Number of units	3
Total floor area	1.992,57 m²
Designated residents	Asylum seekers
Number of residents	180
Building's layout type	3-story building: Line-shape
Building method	Prefabricated room modules : steel frame
Construction costs	1,503 Euro/m²
Living space/person	11.5 m²
Site improvements and amenities	Playground, green areas, bike parking
Parking	yes
Structure of the neighborhood	Residential
Key actors	City of Göttingen, Department of buildings
Lifespan	5 years
Renting price	unknown
Characteristics of family homes	Two-room apartments; three-room apartments
Linkages to amenities	School in the neighborhood and 2 km from the city center
Inhabitants	117 665
Time-distance to retail areas	12 minutes walking distance
Transportation	5 minutes walking distance

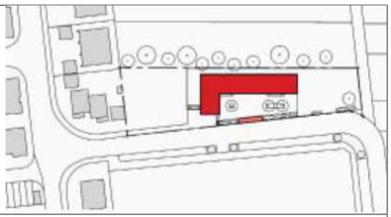
Study case no.	15
Name of the city	**Göttingen:** Site plan  ©Kopietz
Location of the property	Albrecht-Thaer-Weg, near the university clinic, the university sports facility and several student residences
Type of building	4-story residential building and a registration office with administration building
Number of units	3
Total floor area	Approx. 3500 m²
Designated residents	Half of the places for students and half for refugees with recognized refugee status (**S3, S4**)
Number of residents	180

Building's layout type	3-story building: Line-shape
Building method	Prefabricated timber construction
Construction costs	2 700 Euro/m²
Living space/person	Approx. 18 m²
Site improvements and amenities	Playground, green areas, bike parking
Parking	yes
Structure of the neighborhood	Residential, university areas
Key actors	Department of buildings and University Göttingen (the construction will be on a heritage lease property of the university)
Lifespan	5 years
Renting price	unknown
Characteristics of family homes	3 two-room apartments and 48 three-room apartments of 68 m² each
Linkages to amenities	3 km from the city center
Inhabitants	117 665
Time-distance to retail areas	12 minutes walking distance
Further use	Dormitory
Transportation	5 minutes walking distance

Study case no.	**16**
Name of the city	**Halfing** Site plan  ©Aicher Holzhaus
Location of the property	In the village of Halfing
Type of building	2 story building
Number of units	2
Total floor area	1015 m²
Designated residents	Asylum seekers, refugees with recognized refugee status (**S2,S3**)
Number of residents	80
Building's layout type	Line-shape
Building method	Wood frame construction
Construction costs	-
Living space/person	12.7 m²
Site improvements and amenities	Pergola, green areas
Parking	yes
Structure of the neighborhood	residential
Key actors	MAPA Gmbh & CO. KG.
Lifespan	-
Renting price	unknown

Characteristics of family homes	Two-room apartments for 4 persons
Linkages to amenities	Within walking distance
Inhabitants	2840
Time-distance to retail areas	Within walking distance

Study case no	**17**
Name of the city	**Flörsheim am Main:** Site plan  ©bauwelt
Type of building	Two-story residential building + 1-story community house
Number of units	1
Total floor area	973 m²
Designated residents	Asylum seekers (**S2**)
Number of residents	48
Building's layout type	Line-shape
Building method	Container, steel frames
Construction costs	1,503 Euro/m²
Living space/person	Approx. 15 m²
Site improvements and amenities	Playground, green areas, bike parking, central courtyard
Parking	yes
Structure of the neighborhood	Industrial area
Key actors	The Kreisausschuss Main-Taunus-Kreis – Hochbauund Liegenschaftsamt, Hofheim
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Two-room apartment, three-room apartment between 44 m^2 to 66 m^2
Linkages to amenities	walking distance
Inhabitants	20 242
Time-distance to retail areas	Up to 10 minutes walking distance

Study case no	**18**
Name of the city	**Kriftel:** Site plan  ©bauwelt
Location of the property	Raiffenstrasse 6, north part of the city, near the cemetery where there are fields
Type of building	Two-story residential building
Number of units	1
Total floor area	Approx 900 m²

Designated residents	Asylum seekers (family preferences with recognized status) (**S2,S3**)
Number of residents	40
Building's layout type	L-shape
Building method	Container, steel frames
Construction costs	1.4 million euro/ 1555/ m²
Living space/person	Approx. 15 m²
Site improvements and amenities	Playground, green areas, bike parking
Parking	yes
Structure of the neighborhood	Mixed-use (cemetery, residential, agrarian)
Key actors	The Kreisausschuss Main-Taunus-Kreis – Hochbauund Liegenschaftsamt, Hofheim (who leased the plot from a private owner)
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Two-room apartment, three-room apartment between 44 m^2 to 66 m^2
Linkages to amenities	10 minutes walking distance to the museum of School
Inhabitants	Kriftel: 11 176
Time-distance to retail areas	Up to 15 minutes walking distance
Transportation	No public transportation in the proximity

Study case no.	**19**
Name of the city	**Lautzenhausen:** Ground floor  ©bauwelt
Location of the property	Village close to airport Frankfurt-Hahn
Type of building	Three-story residential building
Number of units	1
Total floor area	1485 m²
Designated residents	Refugees, first admittance facility (**S1**)
Number of residents	200
Building's layout type	Line-shape
Building method	Timber frame construction
Construction costs	1,025 Euro/m²
Living space/person	>8 m²
Site improvements and amenities	Ggreen areas
Parking	no
Structure of the neighborhood	Mixed-use (residential, agrarian, industrial)
Key actors	Ministry of finance Rheinland-Pfalz, Mainz
Lifespan	unknown
Renting price	unknown

Characteristics of family homes	Rooms for two people with bathroom and kitchen facilities
Linkages to major employers and amenities	1 km walking to Frankfurt-Hahn airport
Inhabitants	391
Time-distance to retail areas	Within walking distance
Further use planned	Hostel, office, social housing

Case study no.	**20**
Name of the city	**Tübingen**  ©Heiner Holme
Location of the property	Wilhelm-Keil-Straße, 2 km from city center, near the courthouse of Tübingen and a student dormitory
Type of building	Three-story residential building – container
Number of units	3
Total floor area	Approx. 1150 m²
Designated residents	Asylum seekers (**S2**)
Number of residents	96
Building's layout type	Line-shape
Building method	Room modules in steel
Construction costs	1,762 Euro/m²
Living space/person	14.5 m²
Site improvements and amenities	Green areas, playground
Parking	yes
Structure of the neighborhood	Mixed-use (courthouse, university of zoology, residential, train tracks, student dormitory)
Key actors	District council Tübingen
Lifespan	5-10 years
Renting price	unknown
Characteristics of family homes	2- and 3-room apartments
Linkages to amenities	Neighbor – courthouse Tübingen
Inhabitants	89 011
Time-distance to retail areas	10 minutes walking distance
Transportation	15 minutes walking to central station

Case study no.	**21**
Name of the city	**Cologne:** Ground floor  ©bauwelt
Location of the property	Kuckucksweg, Godorf district

Type of building	Two-story residential building
Number of units	1
Total floor area	1150 m²
Designated residents	Refugees with recognized refugee status (**S3**)
Number of residents	68
Building's layout type	Line-shape
Building method	Mass-wall masonry: Perforated bricks, filigree ceilings
Construction costs	1,100 Euro/m²
Living space/person	13,7 m²
Site improvements and amenities	Green areas, bike parking
Parking	yes
Structure of the neighborhood	residential
Key actors	Gebäudewirtschaft der Stadt Köln
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	2-, 3-, 4- and 5-room apartments
Linkages to amenities	Close to an oil refinery
Inhabitants	Godorf district: 2 438
Time-distance to retail areas	Up to 15 minutes walking
Transportation	15 minutes walking till the train station

Case study no.	**22**
Name of the city	**Halberstadt** © Opitz Holzbau 
Location of the property	Outside the city, in the field
Type of building	One-story residential building
Number of units	8
Total floor area	-
Designated residents	Asylum seekers – first admittance (**S1**)
Number of residents	320
Building's layout type	Line-shape
Building method	Timber frame construction
Construction costs	-
Living space/person	6.25 m²
Site improvements and amenities	no
Parking	Green areas
Structure of the neighborhood	Agrarian
Key actors	Bau- und Liegenschaftsmanagement Sachsen-Anhalt
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	Rooms for 4 people

Linkages to amenities	5 km outside the city
Inhabitants	432 224
Time-distance to retail areas	5 km
Transportation	No public transportation in the proximity
Further use	First admittance facility

Case study no.	**23**
Name of the city	**Lindenberg im Allgäu**  ©bauwelt
Type of building	Two-story modular units
Number of units	18
Total floor area	216.86 m²/unit
Designated residents	Asylum seekers (**S2**)
Number of residents	78 residents
Building's layout type	Line-shape
Building method	Mass-wall masonry: Perforated bricks, filigree ceilings
Construction costs	1,700 Euro/m²
Living space/person	7.6 m²
Site improvements and amenities	Green areas, playground
Parking	no
Structure of the neighborhood	Mixed-use
Key actors	Grundwert Bayern GmbH & Co. Lindenberg KG, Munich
Lifespan	5-10 years
Renting price	unknown
Characteristics of family homes	2-room apartments
Linkages to amenities	-
Inhabitants	11 215
Time-distance to retail areas	-

Case study no.	**24**
Name of the city	**Königsbrunn:** Site plan  ©bauwelt
Location of the property	Landsbergerstrasse, 30 minutes walking to the center of the village

Type of building	Two-story residential building
Number of units	20
Total floor area	216.86 m²/unit
Designated residents	Asylum seekers – first admittance (**S1**)
Number of residents	120
Building's layout type	Rectangle-shape
Building method	Wood frame
Construction costs	2,000 Euro/m²
Living space/person	11,2 m²
Site improvements and amenities	Green areas, playground, bike parking
Parking	no
Structure of the neighborhood	Mixed-use (agrarian, industrial, fishing club, residential)
Key actors	GWG Gesellschaft für Wohnungsbau u. Gewerbeansiedlung d. Stadt Königsbrunn mbH, Königsbrunn
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	4- room apartments for 8 people
Linkages to amenities	Fishing club up to 5 minutes walking
Inhabitants	27 514
Time-distance to retail areas	10 minutes walking distance

Case study no.	**25**
Name of the city	**Jestetten**  ©Schanz Architekten
Location of the property	Near train line, 5 minutes walking to the Jestetten train station
Type of building	Three-story residential building
Number of units	1
Total floor area	1.393 m²
Designated residents	Asylum seekers (**S2**)
Number of residents	90
Building's layout type	L-shape
Building method	Mass-wall construction
Construction costs	1,151 Euro/m²
Living space/person	10 m²
Site improvements and amenities	Green areas, playground, bike parking, terrace
Parking	yes
Structure of the neighborhood	Residential

Key actors	GWG Gesellschaft für Wohnungsbau u. Gewerbeansiedlung d. Stadt Königsbrunn mbH, Königsbrunn
Lifespan	30 years
Renting price	unknown
Characteristics of family homes	Rooms for 2 people
Linkages to amenities	Close to a kindergarten
Inhabitants	5 114
Time-distance to retail areas	7 minutes walking distance

Case study no.	**26**
Name of the city	**Berlin – conversion**  ©Nina Röder
Location of the property	Central Berlin
Type of building	3-story residential building – conversion
Number of units	1
Total floor area	875 m² GFA; living space: 575 m²
Designated residents	Asylum seekers, Refugees with recognized refugee status (**S2, S3**)
Number of residents	90
Building's layout type	Old building
Building method	Conversion of a listed building
Construction costs	285 Euro/m²
Living space/person	15.8 m²
Site improvements and amenities	Not specified
Parking	no
Structure of the neighborhood	Central Berlin-mitte Mixed-use
Key actors	Salaground Projekt GmbH
Lifespan	4 years
Renting price	unknown
Characteristics of family homes	3-room apartment with a lounge space
Linkages to amenities	Close to Märkisches Musem
Inhabitants	Berlin-Mitte: 368 122
Time-distance to retail areas	5 minutes walking distance

Case study no.	**27**
Name of the city	**Geretsried**
Location of the property	Adalbert-Stifter-Straße
Type of building	3-story building
Number of units	2

Total floor area	2615 m²
Designated residents	Asylum seekers, Refugees with recognized refugee status (**S2,S3**)
Number of residents	250
Building's layout type	Line-shape
Building method	Wood-frame construction
Construction costs	-
Living space/person	10.4 m²
Site improvements and amenities	Bike parking, playground, green areas
Parking	Yes
Structure of the neighborhood	Agrarian with school facilities
Key actors	Landesamnt Bad Tölz - Wolffratbausen
Lifespan	4 years
Renting price	unknown
Characteristics of family homes	Rooms for up to 5 people with common eating place
Linkages to amenities	Major neighbor: gymnasium middle
Inhabitants	23 338
Time-distance to retail areas	30 minutes walking distance

Case study no.	**28**
Name of the city	**München**  ©Christian Krinninger
Location of the property	Haidhausen
Type of building	5-story residential building
Number of units	1
Total floor area	-
Designated residents	Asylum seekers, Refugees with recognized refugee status (**S2, S3**)
Number of residents	102
Building's layout type	Existing building
Building method	Renovation of a landmark-protected residential building from ca. 1900
Construction costs	-
Living space/person	18 m²
Site improvements and amenities	-
Parking	no
Structure of the neighborhood	Mixed-use (residential, restaurants)
Key actors	Regierung von Oberbayern
Lifespan	unknown
Renting price	unknown

Characteristics of family homes	2-3-room apartment with a lounge space with max. 6 persons
Linkages to amenities	
Population trends of the neighborhood	Middleclass residents, its population is diverse, and the atmosphere is tolerant
Inhabitants	
Time-distance to retail areas	5 minutes walking distance
Further use	

Case study no.	**29**
Name of the city	**Taufkirchen** © FEEL HOME GmbH & Co. KG 
Type of building	2-story residential building/ duplex
Number of units	28
Total floor area	Approx. 198 m^2/duplex
Designated residents	Asylum seekers (**S2**)
Number of residents	224
Building's layout type	Modular
Building method	Timber frame
Construction costs	-
Living space/person	7 m²
Site improvements and amenities	Sidewalks, green areas
Parking	yes
Structure of the neighborhood	Residential
Key actors	FEEL HOME GmbH & Co. KG
Lifespan	10 years
Renting price	unknown
Characteristics of family homes	4 apartments/duplex 1 apartment for up to 8 people
Linkages to amenities	Secondary school, daycare center
Inhabitants	17 998
Time-distance to retail areas	5 minutes from a shopping center
Transportation	5 minutes walking distance

Case study no.	**30**
Name of the city	**Berlin** © Christian T. Joergensen 

Location of the property	Neukölln district, Harzerstrasse
Type of building	5-story residential building
Number of units	8
Total floor area	-
Designated residents	EU citizens (Sinti and Roma people) (**S4**)
Number of residents	600
Building's layout type	Existing building
Building method	Building renovation
Construction costs	-
Living space/person	12 m²
Site improvements and amenities	Courtyard, playground, small park
Parking	no
Structure of the neighborhood	residential
Key actors	Aachener Siedlungs- und Wohnungsgesellschaft mbH (SWG)
Lifespan	10 years
Renting price	4.50 – 7.80 €/m²
Characteristics of family homes	2-room apartment with a lounge space with max. 8 persons
Linkages to amenities	Secondary school, daycare center
Inhabitants	Neukölln district: 322 931
Time-distance to retail areas	Up to 10 minutes walking distance

Case study no.	**31**
Name of the city	**München – conversion**  © Martin Mai
Location of the property	Near München central train station
Type of building	7-story office building transformed into a residential building
Number of units	1
Total floor area	-
Designated residents	Unaccompanied minor asylum seekers (**S2**)
Number of residents	150
Building's layout type	Existing building
Building method	Conversion of an existing office building
Construction costs	approx. 2,900,000 Euro gross
Living space/person	4–6 m²
Site improvements and amenities	Table tennis, benches, courtyard, garden
Parking	no
Structure of the neighborhood	Mixed-use

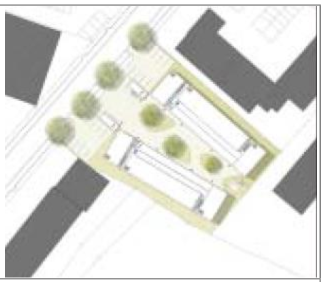
Key actors	Municipal Government, State Capital of Munich (rented)
Lifespan	unknown
Renting price	131 000 euro/month + additional costs (cleaning, etc.)
Characteristics of family homes	apartments
Linkages to amenities	Walking distance to München train station, botanic garden, children musem
Inhabitants	Maxvorstadt district: 46 058
Time-distance to retail areas	Everything is within walking distance
Transportation	Withing walking distance

Case study no.	**32**
Name of the city	**Augsburg-Hochzoll** © Thomas Körner-Wilsdorf 
Location of the property	6 km from the city center, Europadorf
Type of building	2-story residential building
Number of units	New building: 16 Existing buildings: 20
Total floor area	982 m²
Designated residents	Russian Jews, refugee families, and individual asylum seekers with and without income (**S3,S4**)
Number of residents	New building: 48 Existing buildings: 80
Building's layout type	Line-shape
Building method	Mass-wall masonry construction
Construction costs	New buildings: 1,340 Euro/m² Modernization of existing buildings: 1,505 Euro/m²
Living space/person	20,5 m²
Site improvements and amenities	Park, bike parking, common areas, green space
Parking	no
Structure of the neighborhood	residential
Key actors	NGO – Tür-an Tür e.V. Augsburg
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	2-3-room apartment
Linkages to amenities	10 minutes walking to Ausburg-Hochzoll central station
Inhabitants	20 324
Time-distance to retail areas	10 minutes walking distance

Case study no.	**33**
Name of the city	**München – conversion** Ground floor  ©bauwelt
Location of the property	Isarvorstadt district, next to the train line, Thalkirchnerstrasse 112
Type of building	Landmark protected building
Number of units	2
Total floor area	-
Designated residents	Refugees with recognized refugee status (**S3**)
Number of residents	9
Building's layout type	Existing building
Building method	Conversion
Construction costs	-
Living space/person	33 m²
Site improvements and amenities	Green areas
Parking	No
Structure of the neighborhood	Mixed-use
Key actors	State Capital of Munich, Markthallen Munich
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Rooms and 3-room apartments
Linkages to amenities	3 km from the city center
Inhabitants	Isarvorstadt district: 54 913
Time-distance to retail areas	5 minutes walking distance

Case study no.	**34**
Name of the city	**Solingen– renovation**  © Lucius Ladleif
Type of building	4-story residential building
Number of units	1
Total floor area	-

Designated residents	Refugees with recognized refugee status; long-term family residence with income, not intended for individuals (**S3, S4**)
Number of residents	-
Building's layout type	Existing building
Building method	Renovation
Construction costs	641 Euro/m²
Living space/person	12-15 m²
Site improvements and amenities	Terrace
Parking	no
Structure of the neighborhood	Mixed-use (residential, shopping)
Key actors	Private person
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	2-3-room apartment (11 apartments)
Linkages to amenities	-
Inhabitants	156 771
Time-distance to retail areas	10 minutes walking distance

Case study no.	**35**
Name of the city	**Reutlingen** Siteplan  © bauwelt
Location of property	Storlachstrasse
Type of building	3 story building
Number of units	2
Total floor area	3280 m²
Designated residents	Refugees with asylum status (**S3**)
Number of residents	162
Building's layout type	Line-shape
Building method	Timber-frame construction
Construction costs	1,632 Euro/m² GFA (total costs: 5.363.000 Euro)
Living space/person	14 m²
Site improvements and amenities	Green areas, bike parking, playground, terraces
Parking	yes
Structure of the neighborhood	mixed-use
Key actors	GWG Wohnungsgesellschaft Reutlingen mbH
Lifespan	Unknown
Renting price	Unknown

Characteristics of family homes	3-, 4-,5-room apartment for up to 8 people
Linkages to amenities	2 km to city center
Inhabitants	112 452
Time-distance to retail areas	accross the street

Case study no.	**36**
Name of the city	**Kürnbach:** Siteplan  © bauwelt
Location of property	at the exit from the village on Sternenfelser Strasse
Type of building	3 story building
Number of units	4
Total floor area	1700 m²
Designated residents	Refugees with asylum status (**S3**)
Number of residents	66
Building's layout type	Square-shape,
Building method	Mass-wall construction
Construction costs	1,725 Euro/m² GFA (total costs: 2,950,000 Euro)
Living space/person	14 m²
Site improvements and amenities	Green areas, bike parking, playground, terraces
Parking	yes
Structure of the neighborhood	residential
Key actors	Kürnbach: Landratsamt Karlsruhe
Lifespan	Unknown
Renting price	Unknown
Characteristics of family homes	3-, 4-,5-room apartment for up to 8 people
Linkages to amenities	up to 10 minutes walking to the center of the village
Inhabitants	2 353
Time-distance to retail areas	10 minutes walking distance

Case study no.	**37**
Name of the city	**Schwäbisch Gmünd**  © architektur:labor martin hoiker
Location of the property	Oberbettringerstrasse 177, in front of the city government office

Type of building	2-story building
Number of units	5
Total floor area	Approx. 3 500 m^2
Designated residents	Asylum seekers (**S2**)
Number of residents	164
Building's layout type	Cluster buildings
Building method	Timber frame construction on reinforced concrete base plate
Construction costs	1,365 Euro/m²
Living space/person	7 m²
Site improvements and amenities	Park, terraces, courtyard, playground, green areas, bike parking, a single-story communal building
Parking	yes
Structure of the neighborhood	Mixed-use (residential, school, government institutions)
Key actors	Ostalbkreis represented by Mr. Landrat Pavel, Aalen
Lifespan	unknown
Renting price	unknown
Characteristics of family homes	Rooms for 2 people with common facilities
Linkages to amenities	30 minutes to city center
Inhabitants	60 682
Time-distance to retail areas	15 minutes walking distance
Further use	Student dormitory

Case study no.	**38**
Name of the city	**Hanover**  © Olaf Mahlstedt, Hanover
Location of the property	Alteladestrasse, in the University quarter, in Nordstadt district
Type of building	4 story building
Number of units	13
Total floor area	4063 m²
Designated residents	Asylum seekers, refugees with asylum status (**S2, S3**)
Number of residents	59
Building's layout type	Line-shape
Building method	mass-wall construction
Construction costs	1,450 Euro/m²
Living space/person	18 m²
Site improvements and amenities	Green area
Parking	No
Structure of the neighborhood	residential
Key actors	GBH Gesellschaft für Bauen und Wohnen Hanover GmbH

Lifespan	unknown
Renting price	unknown
Characteristics of family homes	4-,5-room apartment
Linkages to amenities	30 minutes to city center
Inhabitants	Nordstadt district: 30 996
Time-distance to retail areas	Across the street

Case study no.	**39**
Name of the city	**Neuss:** Site plan  ©bauwelt
Location of the property	Near Rennbahnpark
Type of facility	Central accommodation facility
Type of building	3 story living modules
Number of units	8
Total floor area	12,000 m²
Designated residents	Asylum seekers, and refugees with recognized refugee status seeking apartments (**S2, S3**)
Number of residents	1 000
Building's layout type	Line-shape
Building method	Modular construction, steel frames, insulated steel panels
Construction costs	2,286 Euro/m²
Living space/person	12 m²
Site improvements and amenities	Green areas, bike parking
Parking	yes
Structure of the neighborhood	Mixed-use (residential, hospital, hotel, park, office buildings)
Key actors	Neusser Bauverein AG, City of Neuss, State of NRW – District Government of Düsseldorf
Lifespan	25 years
Renting price	unknown
Characteristics of family homes	Rooms for up to 4 people
Linkages to amenities	15 minutes
Inhabitants	152 882
Time-distance to retail areas	15 minutes walking distance

Case study no.	40
Name of the city	**Wedel**  ©bauwelt
Type of building	2 story building
Type of facility	Government building with
Number of units	3
Total floor area	680 m²
Designated residents	Asylum seekers, refugees with recognized status (**S2,S3**)
Number of residents	30-43
Building's layout type	U-shape
Building method	Modular building method: Timber panel construction, facade: part plaster, part wood cladding
Construction costs	1,550 Euro/m²
Living space/person	16 m²
Site improvements and amenities	Playground, courtyard, bike parking, green areas
Parking	No
Structure of the neighborhood	Mixed-use (church, shops, mall, restaurants)
Key actors	Government
Lifespan	Unlimited
Renting price	Unknown/ 83 rented apartments
Characteristics of family homes	2-,3-,4-room apartments
Linkages to amenities	10 minutes walking distance from city center
Inhabitants	33 322
Time-distance to retail areas	Across the street

Case study no.	41
Name of the city	**München**  © Stefan Müller-Naumann
Location of the property	Homerstrasse, Dantebad, in the district of Neuhausen-Nymphenburg
Type of building	5-story building (it is built on a former parking lot, leaving the parking at the ground floor)
Number of units	1
Total floor area	4.630 m²
Designated residents	Refugees with recognized status , people with low incomes (**S3,S4**)
Number of residents	129
Building's layout type	Line-shape
Building method	Ground floor: reinforced concrete columns and slabs,

	upper floors: timber frame, solid wood
Construction costs	1.805 Euro/m²
Living space/person	23 m²
Site improvements and amenities	Lounge decks, play area
Parking	yes
Structure of the neighborhood	Mixed-use (stadium, sport facilities, residential, cemetery)
Key actors	Gewofag Wohnen GmbH, Munich
Lifespan	unlimited
Renting price	Up to 500 euro/month
Characteristics of family homes	One room apartments, two and a half room apartments
Linkages to amenities	Across the street is Dantebad, 6 km from city center
Inhabitants	Neuhausen-Nymphenburg district: 99 821
Time-distance to retail areas	10 minutes walking distance

Case study no.	**42**
Name of the city	**Oberhausen – refurbishment**  © Christoph Stark
Type of building	11 story residential building
Number of units	1
Total floor area	-
Designated residents	Asylum seekers, refugees with recognized status, people with low incomes (**S3, S4**)
Number of residents	-
Building's layout type	Line-shape
Building method	Refurbishment by artists, refugees, citizens and craftsmen
Construction costs	1.805 Euro/m²
Living space/person	31 - 54 m²
Site improvements and amenities	-
Parking	no
Structure of the neighborhood	Residential
Key actors	Kitev Oberhausen
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	82 One room apartments, two and a half room apartments
Linkages to amenities	
Inhabitants	212 568
Time-distance to retail areas	5 minutes walking distance

Case study no.	43
Name of the city	**Oberhausen**
Location of the property	10 minutes from Oberhausen central station on Duisburgerstrasse
Type of building	2 story residential building
Number of units	1
Total floor area	Approx. 2500 m^2
Designated residents	Asylum seekers, refugees with recognized status , people with low incomes (**S2,S3,S4**)
Number of residents	200
Building's layout type	U-shape
Building method	Prefabricate concrete
Construction costs	3.8 million Euro 1520/ m²
Living space/person	-
Site improvements and amenities	Garden, playground
Parking	no
Structure of the neighborhood	Mixed-use (residential, shopping area)
Key actors	Oberhausen Gebäude management
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	67 apartments of 33 m^2
Linkages to amenities	3.5 km from the city center
Inhabitants	212 568
Time-distance to retail areas	5 minutes walking distance

Case study no.	44
Name of the city	**Korbach – conversion** © bauwelt 
Type of building	Former office building
Number of units	1
Total floor area	-
Designated residents	Asylum seekers, Refugees with recognized refugee status (**S2,S3**)
Number of residents	30-34
Building's layout type	Line-shape
Building method	refurbishment
Construction costs	800 Euro/m²
Living space/person	12.5–15 m²
Site improvements and amenities	Courtyard, terrace, playground, space for planting crops
Parking	yes

Structure of the neighborhood	Mixed-use
Key actors	Werner Grebe, Korbach
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	Apartments for up to 10 persons
Linkages to amenities	-
Inhabitants	24 071
Time-distance to retail areas	-

Case study no.	**45**
Name of the city	**Berlin**  © bauwelt
Location of the property	Friedrichshain district, Neuebahnofstrasse
Type of building	7 story residential building
Number of units	1
Total floor area	1497 m²
Designated residents	Asylum seekers, Refugees with recognized refugee status (**S2, S3**)
Number of residents	32
Building's layout type	Between two buildings
Building method	Timber frame construction
Construction costs	2100 Euro/m²
Living space/person	13 m²
Site improvements and amenities	Common space and commercial space at the first floor
Parking	no
Structure of the neighborhood	Mixed-use
Key actors	Schwulenberatung Berlin gGmbH
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	Shared apartments for up to 9 people
Linkages to amenities	
Inhabitants	Friedrichshain district: 114 050
Time-distance to retail areas	Up to 10 minutes walking distance

Case study no.	46
Name of the city	**Oranienburg**  © bauwelt
Location of the property	Outside Berlin, in Gartenstrasse
Type of building	4 story residential building
Number of units	1
Total floor area	950 m² (for renting)
Designated residents	• Refugees with recognized refugee status • Mixed resident base of locals and refugees (**S3,S4**)
Number of residents	50
Building's layout type	Between two buildings
Building method	Mass-wall construction: Exposed brick masonry
Construction costs	1858 Euro/m²
Living space/person	18.5 m²
Site improvements and amenities	Bike parking, green areas, garden
Parking	yes
Structure of the neighborhood	Mixed-use (residential, cultural center, park, restaurants)
Key actors	Wohnungsbaugesellschaft Oranienburg
Lifespan	unlimited
Renting price	unknown
Characteristics of family homes	22 apartments One-2 - room apartment
Linkages to amenities	1 km to the castle of Oranienburg
Inhabitants	41 577
Time-distance to retail areas	Up to 5 minutes to shopping center

Case study no.	47
Name of the city	**München – conversion**  ©Johannes Talhof
Location of the property	District of Neuhausen-Nymphenburg Wotanstrasse 88
Type of building	Office building : 8 story building
Number of units	1
Total floor area	3000 m²
Designated residents	• Refugees with recognized refugee status • Mixed resident base of locals and refugees (**S3,S4**)
Number of residents	245

Building's layout type	H-shape
Building method	Conversion of an existing office building
Construction costs	-
Living space/person	10-12 m²
Site improvements and amenities	Bike parking; Ground floor: common areas, lounges, meeting rooms, administrative area
Parking	yes
Structure of the neighborhood	Mixed-use (residential, office)
Key actors	State Capital of Munich, Municipal Department, Buildings and Construction Department
Lifespan	15 years rented
Renting price	unknown
Characteristics of family homes	Mini-apartments of 24 m² for 2 persons Apartments of 48 m² for 4 persons Apartments of 57 m² for 5 persons Shared apartments for 8 persons of 79 m²
Linkages to amenities	10 minutes to the castle of Nymphenburg
Inhabitants	Neuhausen-Nymphenburg district: 90 000
Time-distance to retail areas	Across the street

Case study no.	**48**
Name of the city	**Kronberg**  ©bauwelt
Location of the property	Grüner Weg, am Taunus, in the south of the city, close to Kromberg south train station
Type of building	4 story residential building
Number of units	6
Total floor area	-
Designated residents	Asylum seekers (**S2**)
Number of residents	-
Building's layout type	Square-shape arranged in clusters
Building method	Timber frame construction
Construction costs	1290 Euro/m²
Living space/person	13 m² (subsequent use: 21 m²/person)
Site improvements and amenities	Bike parking, courtyard, green areas
Parking	yes
Structure of the neighborhood	Mixed-use (residential, agrarian)
Key actors	City of Kronberg
Lifespan	unlimited
Renting price	unknown

Characteristics of family homes	From 1-room apartment to up to 5-room apartment
Linkages to amenities	2 km to city center
Inhabitants	18 275
Time-distance to retail areas	5 minutes walking distance

Case study no. 49

Name of the city	**Bielefeld**  ©Wolfgang Rudolf
Location of the property	Heeper Strasse 125
Type of building	3 story residential building
Number of units	1
Total floor area	Approx. 850 m^2
Designated residents	Asylum seekers with recognized status (**S3**)
Number of residents	-
Building's layout type	Square-shape arranged in clusters
Building method	Timber frame construction
Construction costs	Approx. 1.3 million euro
Living space/person	-
Site improvements and amenities	Bike parking
Parking	yes
Structure of the neighborhood	Mixed-use (residential, supermarket)
Key actors	BGW gmbh
Lifespan	20
Renting price	Unknown, rented to the real estate company of the city
Characteristics of family homes	15 apartments of 40 m^2 and 62 m^2
Linkages to amenities	2 km to city center
Inhabitants	336 352
Time-distance to retail areas	5 minutes walking distance
Further use	(after 5 years of renting to the refugees, there will be rented after as social housing)

Case study no.	**50**
Name of the city	**Harburg-Hamburg** Site plan ©bauwelt   ©google
Location of the property	Lewenwerder 16, 21079, Harburg
Type of building	2 story residential building
Number of units	6+9 on the next plot
Total floor area	Approx. 850 m^2
Designated residents	Asylum seekers with recognized status, homeless people, apartments rented to families (**S3, S4**)
Number of residents	110/23 living units
Building's layout type	Square-shape
Building method	Containers-steel frame
Construction costs	2 400 000 euro (for the first 6 units)
Living space/person	15.5/m^2
Site improvements and amenities	Bike parking, green areas, playground, football field, table tennis
Parking	yes
Structure of the neighborhood	Mixed-use (residential, supermarket)
Key actors	f&a fördern und wohnen AöR
Lifespan	Unknown
Renting price	-
Characteristics of family homes	3 room apartment of 60 m^2 and respectively 75 m^2 with kitchen bath and WC
Linkages to amenities	Approx. 8.6 km to Hamburg city center
Inhabitants	District Harburg: 26 098
Time-distance to retail areas	15 minutes walking distance
Transportation	10 minutes walking to S-Bahn station Harburg, and bus stop connected to the property

Case study no.	51
Name of the city	**Godeneltern-Arhweiler** Site plan  ©google
Location of the property	Ahrweiler, 53474 Bad Neuenahr-Ahrweiler
Type of building	one story residential building
Number of units	27
Total floor area	Approx. 30 m^2 / unit
Designated residents	Asylum seekers -first admittance (**S1**)
Number of residents	300
Building's layout type	Square-shape
Building method	Prefabricate concrete containers
Construction costs	Approx. 1 000 euro/m^2
Living space/person	3.5/m^2 in accordance with Humanitarian Charter and Minimum Standards in Humanitarian Response
Site improvements and amenities	Bike parking, green areas, playground, football field, table tennis
Parking	yes
Structure of the neighborhood	Agrarian
Key actors	State of Rheinland-Palatinate
Lifespan	Unknown
Renting price	-
Characteristics of family homes	30 m^2 / unit where it can fit up to 8 people 2 bedrooms with a kitchen and a bathroom
Linkages to amenities	Approx. 30 minutes walking distance to Arhweiler city center, principal neighbor is the Crisis management academy
Inhabitants	78
Time-distance to retail areas	30 minutes walking distance
Transportation	15 minutes walking to the station Bad-Neuenahr-Arhweiler

Temporary home for refugees in Essen. Source: DERWESTEN

Location	District	Maintenance	Capacity/ Number of persons
Alte Bottroper Str. 10	Bergeborbeck	Diakonie	62
Auf'm Bögel 38-42	Haarzopf	Diakonie	113
Buschstraße 42	Steele	Caritas	43
Dahlhauser Str. 185-187	Horst	Caritas	26
Gerhardstraße 3	Schonnebeck	Caritas	26
Grimbergstraße 20-22	Kray	Caritas	127
Im Löwental 19	Werden	Caritas	44
Langenberger Str. 129/131	Überruhr	Diakonie	117
Sartoriusstraße 46	Rellinghausen	Diakonie	59
Wengestraße 5	Schonnebeck	Diakonie	44
Worringstraße 242-246	Burgaltendorf	Diakonie	145
Hülsenbruchstraße	Altenessen	Diakonie	200
Planned: Karl-Meyer-Str. 242	Katernberg	Caritas	70

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Database 2

Source: Author’s own elaboration

Database 2 Proposed MUF (Modulare Unterkunft für Flüchtlinge - modular accommodation for refugees) and Tempohome - container locations for refugee housing in Berlin area

Source: Senatsverwaltung für Finanzen, 2016 and author’s own research

Usage		**Tempohome**						
Descrip-tion		**Plot**	**PLZ**	**District**	**Surface**	**Transportation proximity**	**Surrounding amenities**	**Distance to Berlin city center**
Site surface	< 5000 m^2	Privat	12347	Neukölln	ca. 1.400 m²	-	-	
		Cité Pasteur / Rue Ambroise Pare 3/3a, Rue Ambroise Pare 5/5a	13405	Reinicken-dorf	2.160 m²	Highway to Hamburg, up to 6 minutes by foot to the Kaserne Sudtor bus stop, metro up to 25 minutes by foot	Airport Berlin Tegel, hotel, amusement park, gas station, sport facilities, housing area	Around 12 km
		Walter-Friedländer-Str.	10249	Pankow	ca. 4.600 m²	Up to 5 minutes by foot to Max-Brunnow-Str. bus stop, up to 10 minutes by foot to S-bahn Landsberger Alee	Furniture outlet, supermarket, nursery school, gas station, park,	Around 5 km
	5000 m^2 -10 000 m^2	Allee der Kosmonauten 20-22	10315	Lichten-berg	5.200 m²	Up to 5 min by foot to the closest bus stop	Student house, rehabilitation center, vocational school of electronics, church, hospital, job center, furniture shop, heat power station	Around 10 km

		Frankenholzer Weg (Vorhaltefläche)	12683	Marzahn-Hellersdorf	ca. 6.700 m^2	Up to 5 min on foot to the closest bus stop	Supermarket, ballet school, dance school, theater, house area, gas station, car dealer	Around 12 km
		Privat	10785	Friedrichshain - Kreuzberg	7.255 m^2	-	-	-
		Sebastianstr/Alte-Jacobstr. (Grünfläche)	10179	Mitte	8.000 m^2	Up to 4 min on foot to the closest bus stop and S bahn	Elementary school, restaurants, park, supermarket, hotels, apartment buildings, job center	Around 3 km
	10 000 m^2 -50 000 m^2	Siverstorp-str. 9A	13125	Pankow	10.741 m^2	Up to 4 min on foot to the closest bus stop	Housing area, Berlin Institute for Childhood Pedagogy and Family-Related Childcare, Childcare facilities, supermarket, kindergarten	Around 15 km
		am Ober-hafen 31	13597	Spandau	ca. 12.000 m^2	Up to 5 min on foot to the closest bus stop	Stores, healthcare facilities for elderly people, housing area, sports facilities, industrial sites	Around 15 km
		Wollen-berger Str. 1	13053	Lichten-berg	15.000 m^2	Up to 2 min on foot to the closest bus stop	Car repair shops, car dealer, gas station, job center, supermarket, retirement housing, housing area,	Around 11 km

							cultural center, small stores, hotel	
		Zossener Str. 138 (BIM/THV)	12629	Marzahn-Hellersdorf	15.768 m²	Up to 3 min by foot to the closest bus stop and tram	Supermarket, school, church, sport facilities, elderly care, gymnasium, park, housing area	Around 15 km
		Privat	10247	Friedrichshain - Kreuzberg	21.700 m²	-	-	-
		Rummelsburger Landstraße 100	12459	Treptow-Köpenick	25.000 m²	Up to 8 min by foot to the closest bus stop and tram	Car dealer, housing area, school, religious care	Around 13 km
		Landsberger Allee 230	10367	Lichtenberg	36.000 m²	Up to 2 min by foot to the closest bus stop	Mall center, supermarket, glass factory, housing area	Around 8 km
		Privat	13629	Spandau	38.500 m²	-	-	-
		Bahnweg neben 1, Molchstr. Neben 15, Eisenbahn-Linie nach Lichtenberg (Land Berlin)	12524	Treptow-Köpenick	40.690 m²	Up to 5 min by foot to the closest bus stop	Housing area, playground area, public library, supermarket, circus, school, kindergarten	Around 23 km
	50 000 m² -100 000 m²	Am Beelitzhof 24	14129	Steglitz-Zehlendorf	60.182 m²	Up to 2 min by foot to the closest bus stop and 6 min to the S-bahn	Sports facilities, hotel, fire station, housing area, park, event center	Around 26 km
	>100 000 m²	Fincken-steinallee 63	12205	Steglitz-Zehlendorf	108.454 m²	Up to 2 min by foot to the closest bus stop	Restaurants, government office, sports facilities, housing area, driving school	Around 16 km

		Gerlinger Str. / Buckower Damm	12349	Neukölln	154.847 m²	Up to 2 min by foot to the closest bus stop	Housing area, supermarket, restaurants, gymnasium, small stores,	Around 16 km
		Platz der Luftbrücke 4-5 (Land Berlin)	12107	Tempelhof – Schöne-berg	200.000 m²	Up to 2 min by foot to the closest bus stop, tram and metro	4 tempohomes, dance school, theater, federal government office, restaurants, shops, airport tempelhof, police department, supermarket, gas station, chief customs office, historical monuments, apartment buildings	Around 6 km
		Karl-Bonhoeffer-Nervenklinik (ehem. Turnhalle; Koppel)	13509	Reinickendorf	360.477 m²	Up to 4 min by foot to the closest bus stop, and S-bahn	Supermarket, park, factories, shops, driving school, institute for psychiatry, hospital, apartment buildings, housing area	Around 10 km
		Rosenthaler Weg neben 1G, Elisabethaue	13159	Pankow	709.521 m²	Up to 4 min by foot to the closest bus stop and tram	Housing area, kindergarten, social help for young people	Around 14 km

Usage		MUF (Modulare Unterkunft für Flüchtlinge) - modular accommodation for refugees						
Descrip-tion		**Plot**	**PLZ**	**District**	**Surface**	**Transportation proximity**	**Surrounding amenities**	**Distance to Berlin city center**
Site surface	< 5000 m^2	Freudstr. 4	13589	Spandau	3.309 m²	Up to 2 min by foot to the closest bus stop	Housing area, elderly housing, shops, school, sports facilities, church	Around 20 km
		Quedlin-burgerstr. 45	10589	Charlot-tenburg – Wilmers-dorf	4.389 m²	Up to 4 min by foot to the closest bus stop and metro	Supermarket, hotel, lan-guage school, restaurants, park, univer-sity, shops, sports facili-ties, hotel	Around 8 km
		Hageno-wer Ring nördl. Nr. 16-22	13059	Lichten-berg	4.535 m²	Up to 5 min by foot to the closest bus stop and S-bahn	Housing area, super-market, sports facili-ties, restau-rants	Around 11 km
		Rauchstr. 22	13587	Spandau	4.721 m²	Up to 3 min by foot to the closest bus stop	Embassy buildings, restaurants, hotels, hospi-tal, college, museum, shops	Around 5 km
	5000 m^2 -10 000 m^2	Mat-thäusweg 2,4,6	12355	Neukölln	5.173 m²	Up to 10 min by foot to the closest metro	Sports facili-ties, housing area, day care, elemen-tary school, middle school, shops, restau-rants	Around 18 km
		Buckower Ring 54, 56	12683	Marzahn-Hellers-dorf	6.135 m²	Up to 9 min by foot to the closest bus stop	Housing area, kindergarten, elderly hous-ing, supermar-ket, shops, hostel, sports facilities, hos-pital	Around 14 km

		Wolfgang-Heinz-Str. neben 47	13125	Pankow	6.526 m²	Up to 9 min by foot to the closest bus stop	Youth center, recreation center, sports facilities, school, supermarket	Around 17 km
		Albert-Kuntz-Str. neben 41	12627	Marzahn-Hellersdorf	7.128 m²	Up to 4 min by foot to the closest bus stop and metro	Housing area, supermarket, shops, kindergarten, park, gymnasium, therapeutic center	Around 18 km
		Wittenberger Str. 16	12689	Marzahn-Hellersdorf	7.200 m²	Up to 10 min by foot to the closest bus stop and S-bahn	Housing area, kindergarten, supermarket, school, sports facilities, shops, youth center, park, customs office	Around 15 km
		Bernauerstr. 138 A	13507	Reinickendorf	7.847 m²	Up to 4 min by foot to the closest bus stop	Yacht club, housing area, nursery school, shops	Around 18 km
		Kiefholzstr. 74	12435	Neukölln	8.126 m²	Up to 8 min by foot to the closest bus stop	Recycling facilities, supermarket, restaurants, housing area, shops, factories	Around 9 km
		Rudolf-Leonhard-Str. 13	12679	Marzahn-Hellersdorf	8.249 m²	Up to 3 min by foot to the closest bus stop	Housing area, sports facilities, hospice, educational facility for people with disabilities, park, childcare	Around 16 km
		Bäkestr. Hinter Nr. 3	12207	Steglitz-Zehlendorf	8.454 m²	Up to 2 min by foot to the closest bus stop	Housing area, shops, elderly house	Around 30 km
		Späthstraße/Chris-	12437	Treptow-Köpenick	8.464 m²	Up to 2 min by foot to the closest bus stop	Housing area, shops, supermarket	Around 13 km

		Gueffroy-Str.						
		Treuen-brietzener Str. 36 oder Er-satzstandort	13439	Reinick-endorf	9.300 m²	Up to 2 min by foot to the closest bus stop	Housing area, shops, sports facili-ties, super-market, gas station, res-taurants, de-posit	Around 12 km
	10 000 m² -50 000 m²	Schmidt-Knobelsdorf-Kaserne	13581	Spandau	10.000 m²	Up to 2 min by foot to the clos-est bus stop	Supermarket, garden cen-ter, restau-rants, school, housing area	Around 17 km
		See-hausener Str. 33, 35, 37, 39	13057	Lichten-berg	12.771 m²	Up to 3 min by foot to the clos-est bus stop and 12 min till S-bahn	Elementary school, hous-ing area, gov-ernment of-fice, shops	Around 11 km
		Warten-berger Str. 120	13053	Lichten-berg	14.900 m²	Up to 7 min by foot to the clos-est bus stop and S-bahn	Housing area, school, sports facili-ties	Around 12 km
		Reichen-berger Str. 92	10999	Frie-drichshain - Kreuzberg	15.654 m²	Up to 3 min by foot to the closest bus stop	Housing area, restau-rants, park, sports facili-ties	Around 6 km
		Alte Ja-kobstr. 4/ Franz-Künstler-Str.	10969	Frie-drichshain - Kreuzberg	16.000 m²	Up to 5 min by foot to the closest bus stop and 9 minutes to the metro station	Museum, school, thea-ter, restau-rants, galler-ies, shops, apartment housing	Around 3 km
		Linden-berger Weg 19, 27	13125	Pankow	17.767 m²	Up to 8 min by foot to the closest bus stop	Hospital, sports facili-ties,	Around 19 km
		Gut-schmidtstr. 43 (urspr. auch 37 und 53)	12359	Neukölln	20.828 m²	Up to 3 min by foot to the closest bus stop	Circus, train depot, apart-ment build-ings, super-market, park	Around 14 km
		Hassoweg neben 13/Nelkenweg	12524	Treptow-Köpenick	22.809 m²	Up to 8 min by foot to the closest bus stop	Housing area, kinder-garten	Around 20 km

		Leonoren-str. 17, 33, 33A	12247	Steglitz-Zehlen-dorf	46.018 m²	Up to 2 min by foot to the clos-est bus stop	Housing area, sports facilities, res-taurants, re-cuperation center, super-market, shops	Around 14 km
	50 000 m² -100 000 m²	Fürsten-walder Al-lee 356 (ehem. Kaserne Hessen-winkel)	12589	Treptow-Köpenick	51.647 m²	Up to 2 min by foot to the closest bus stop	Former bar-racks, super-market, car atelier, sports facilities	Around 30 km
		Neu Ka-row, Straße 69	13125	Pankow	77.000 m²	Up to 18 min by foot to the closest bus stop and S-Bahn	Housing area, kinder-garten, super-market, auto dealer	Around 15 km
		Blanken-burger Pflaster-weg 101	13129	Pankow	78.007 m²	Up to 2 min by foot to the closest bus stop	Childcare center, ware-house, green field	Around 11 km
		Müggel-seedamm 109-111	12587	Treptow-Köpenick	88.064 m²	Up to 2 min by foot to the closest bus stop	Restaurant, housing area, sports facili-ties, shops	Around 20 km
	>100 000 m²	Griesinger Str. 27 + o. Nr.	13589	Spandau	230.284 m²	Up to 10 min by foot to the closest bus stop	-	-
		ehem. Karl-Bon-hoeffer-Nervenkli-nik (Kom-postplatz)	13509	Reinick-endorf	360.477 m²	Up to 10 min by foot to the closest bus stop	-	-

Curriculum Vitae

[redacted]

[redacted]

[redacted]

https://www.linkedin.com/in/simona-serban-2a605a63/

[redacted]

Work Experience

since 01.12.20

Project Manager
P3 Logistic Parks GmbH
Ulmenstrasse 37-39, 60325 Frankfurt am Main, Germany
Business or sector: Logistic sector

01.11.20 – 30.11.20

Project Manager
Serco Services GmbH
Lise-Meitner-Str. 10, 64293 Darmstadt, Germany
Business or sector: Facility management

15.06.20 – 31.10.20

Architect
emsprojects+
Wilhelmstrasse 8, 65232 Taunusstein Wehen, Germany
https://www.ems-projects.com/
Business or sector: Architecture and Project management

01.09. 2016 – 01.06.2020

Architect
Architekturbüro Bolbos
Wendelinusstr. 57, 66663 Merzig, Germany
Business or sector: Architecture and Construction

04.2014 –12. 2016
(1-year educational leave: 12. 2015 - 12.2016)

University Assistant
Vienna Technical University
Karlsplatz 13/010G, A-1040 Vienna, Austria
http://red.tuwien.ac.at
Business or sector: Real Estate Development and Management Department

04. 2014 – 12. 2015 **Project Manager**

GESIM

Gesellschaft für Immobilienentwicklung mbH, Technoparkstrasse 1, 8005 Zürich, Switzerland (Location – Darmstadt)

www.gesim.ch; www.more-space.ch

Business or sector: Real Estate and Architecture

03. 2012 – 03. 2013 **Junior Architect & Administrator**

SC PTM Global Project SRL subsidiary of the Swiss company **Ezio Tarchini Ingegneria SA** Via Ginnasio 4, 6982 Agno Switzerland

http://tarchinieng.ch/

Business or sector: Architecture and Construction

2009 – 2014 **Freelancer – Draftsman (during University time)**

SC SIMONICO EXIM SRL

Nicolae Balcescu 32, Barlad, Romania

Business or sector: Architecture

Summer 2011 **Operator**

Ghirardelli

Lathrop, California, USA http://www.ghirardelli.com/

Business or sector: Food Industry, Student Work & Travel Program

Education and Training

06. 2015 - Present **Doctoral studies in Technical Sciences**

(final presentation pending)

Vienna Technical University, Karlsplatz 13/010G A-1040 Vienna, Austria

Title "The influence of the refugees on the German housing market"

www.tuwien.ac.at

10.2013 – 06. 2015 **International Postgraduate Program of Advanced Studies in Urbanism and Real Estate Development (ASURED)**

RICS accreditation (Royal Institute of Chartered Surveyors)

"Ion Mincu" Center of Excellence in Planning (CEP) in collaboration with the University for Architecture and Urbanism "Ion Mincu" (UAUIM), 3-5, Mihail Moxa Street, Bucharest, Romania

Title Dissertation "Coworking facilities development"

http://cep-edu.eu/

10.2007 – 07.2013 **Bachelor and Master's Degree in Architecture**, July Session

Technical University "Gh. Asachi" -Faculty of Architecture "G.M. Cantacuzino" - 43 Bd. Dimitrie Mangeron, 700050 Iasi, Romania
http://www.arhitectura.tuiasi.ro/

Summer semester 2010 **Completion of Erasmus Student Exchange Scholarship Program**

Sapienza University – Faculty of Architecture "Valle Giulia"- 53, Via Antonio Gramsci, Roma, Italy
http://www.architettura.uniroma1.it/

09. 2003 – 06.2007 **Baccalaureate Diploma - Specialization: Mathematics-Informatics**

„Gh. Rosca Codreanu" National College, 11 Nicolae Balcescu, Barlad, Vaslui, Romania
http://www.colegiulcodreanu.ro/

Personal Skills

Mother tongue(s): Romanian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
German	B2	B2	B2	B2	B2
Italian	B1	B1	B1	B1	B1
French	A2	A2	A2	A2	A2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Computer skills

- Good command of Microsoft Office™ tools;
- Good knowledge in software design: AutoCAD, ArchiCad, 3D StudioMAX, Artlantis, ArCon, Creative Lines;
- Good command in Graphic programs: Adobe Photoshop, Indesign, Illustrator.

Additional Information

Projects

- Over 70 architectural projects: single houses, duplex houses, apartment buildings, house extension, kindergarten, Sports building, interior design for houses and apartments.

Portfolio

- https://docs.google.com/presentation/d/16zM2lzE_OeSL_MqnyCVbGo_OaqjOgcqBlb8aNNBDnxM/edit?usp=sharing

Seminars	▪ Introduction to Digital Design and Fabrication Methods, Grasshopper & Rhinoceros Level 1 –Workshop, Romania; ▪ "21 ways to increase your business", couching4u, Romania; ▪ Online sales seminar, couching4u, Romania; ▪ Nemetschek Beginner Course, Romania; ▪ Initiation in business management, Romania.
Certifications	▪ Goethe-Zertifikat B2,Goethe Institut e.V., Mannheim, Germany ▪ Introduction to Negotiation: A Strategic Playbook for Becoming a Principled and Persuasive Negotiator, Yale University, USA (COURSERA); ▪ Interior Designer Certificate, Atelierele ILBAH, Ministry of Labour Romania; ▪ German Language Certificate: Start Deutsch 1, Goethe Zentrum, Iasi; ▪ Graphisoft Archicad Certificate, ConSoft, Romania; ▪ Autodesk AutoCAD Certificate 2D, 3D, ATC Plus, Romania; ▪ Cambridge ESOL: First Certificate in English (FCE), Romania.
Memberships	▪ Romanian Board of Architects TNA 8448; ▪ ASURED Alumni.
References	Available upon request.

Annexes

▪ Certifications and documents to be provided at request.