

PROSPECTS FOR GERMAN POST-WAR SINGLE-FAMILY HOME NEIGHBORHOODS

Case Studies in Five Western German Federal States¹

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1. Abstract

Germany is one of the Western European countries with the most apparent effects of demographic change (United Nations 2011). Its population has been declining since 2003 and, under the assumption that this trend will continue, could decrease by a further five million by 2030 (Statistisches Bundesamt 2009). Several rural peripheral regions that are additionally affected by internal migration losses are expected to suffer population declines of up to 30 percent. Considering Germans' ongoing preference for detached housing and the low proportion of detached and semi-detached houses in the overall housing stock in Germany, it was long assumed that the demand for houses would remain stable. However, a closer look at foreseeable developments reveals a declining housing demand, driven primarily by demographic factors and internal migration. This could lead to a fall in demand for older detached and semi-detached houses. Currently, there are only a few studies in Germany that look specifically at post-war housing estates; therefore, it is difficult to empirically verify the assumptions above. Against this background, this research project aimed at finding the reasons and defining the characteristics of a possible negative development of mature post-war housing estates in western Germany.

As a first step, the research team conducted a risk assessment at the district level, analyzing supply and demand variables to identify districts with a high probability of a future oversupply of older houses. The results show that the risk of housing oversupply

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¹ The ILS, Research Institute for Regional and Urban Development, conducted a research project in collaboration with IREUS, the Stuttgart Institute of Regional Development Planning, and HFT the Stuttgart University of Applied Sciences to analyze the future viability of housing estates built from the 1950s to the 1970s in Germany. It was funded by the Wüstenrot Foundation.

is confined almost exclusively to suburban and rural areas. The main empirical sources were the 29 local case studies in 14 municipalities carried out in different spatial settings (from urban to rural) in various western German federal states (Länder). Case studies were used because the large amount of data required to objectively assess the problem was not available in the official statistics at particular state and district levels. The case studies provided insight into local population structures, building uses and the availability of public amenities. Qualitative interviews with local authorities and estate agents were used to record the subjective assessment of possible developments. A standardized survey in ten selected areas provided insight into residents' views, concerns and wishes.

In contrast to the widespread opinion that detached housing estates in Germany fall outside the scope of public intervention, the results of the empirical surveys revealed a wide range of policies and measures for action. Moreover, the research results underline the importance of housing stock-oriented management as a way of enhancing the future development of the post-war housing stock.

2. Background and principal arguments

2.1 Demographic development

Since the 1970s, the fertility rate in Germany has remained lower than is required to at least stabilize the national population. The rising surplus of deaths in combination with a declining net immigration figure since 2003 has led to a negative population development. The current high immigration rates only have a small influence on the long-term changes in population. They will lead to a short-term increase in population, but cannot change the trend towards a long-term ageing population (FAZ.net 2016)

According to its calculations, the German Federal Statistics Office expects a population loss of five million by 2030 and up to 13 million by 2050 (Statistisches Bundesamt 2009), and a decline in the number of households starting in 2020 (Statistische Ämter des Bundes und der Länder 2010). Some peripheral, rural and economically underdeveloped regions that are experiencing additional intra-national migration losses are anticipating an estimated decrease in the population of up to 30 percent.

It must be taken into account that the existing housing stock was built by members of comparatively large population cohorts who predominantly still live there today; it must also be considered that potential younger buyers belong to age groups characterized by increasingly lower birth rates. The number of people aged 30 to 50 years, a cohort with a high probability of moving from renting to home ownership, is predicted to decrease by 19.5 percent between 2015 and 2030 in Germany, according to Eurostat projections (Eurostat 2016). This may result in a quantitative mismatch when a growing number of housing stocks become vacant and encounter a declining number of demanding households (see also Myers, Ryu 2007). The mismatch problem will be enhanced through the low housing mobility in Germany, which leads to a deferred change in ownership. Only approximately 20 percent of German home owners relocate after the age of 55 and thus "block" a huge number of single-family homes and large dwellings (Neugebauer 2007 43).

This phenomenon is also discussed as the “remanence effect” (cf. Simons 1999, Just 2009: 67). In the meantime, the current demand for single-family homes is often satisfied by the construction of new houses.

2.2 Change in living preferences

Nevertheless, in view of the unabated preference for less-dense settlements and, in an international context, a comparatively low share of single-family housing neighborhoods within the German housing stock, the decline in the demand for housing was not expected to affect single-family homes. Due to the diversification of lifestyles accompanied by a fundamental change in household structures comprising a loss of the significance of traditional family models and a rise in the number of households consisting of single parents, childless couples and singles, a change in accommodation requirements is expected, which is best met by urban residential locations (Buzar, Ogden; Hall 205; Buzar et al. 2007). The prerequisites for the acquisition of property are long-term foreseeable income and the credit standing of the household. These conditions are met by declining amounts of people, particularly when taking into account the retraction of government subsidies. Additionally, the change in time structures due to a changing family model often requires both parents to work in different places at flexible times. Long distances between the place of residence and the workplace are often no longer feasible (Siebel 2008: 30). As such, work-related changes such as an increase in female employment, the erosion of normal working conditions and a rise in precarious employment often lead to a loss in the attractiveness of suburban single-family homes (Häußermann 2009; Häußermann 2007; Siebel 2008). The demand group for single-family homes is declining and becoming more and more differentiated. Besides families with children, other demand groups such as singles and elderly people appear, as will be described in greater detail in chapter 3.2.3.

2.3 Shifts in housing demand

These quantitative and qualitative dimensions of the problem must be seen in the context of a spatial polarization between growing and shrinking regions. The reason can be found in the interregional population redistribution, which is characterized by a north-to-south and east-to-west migration towards economically prospering cities and regions. In total, Germany has experienced distinct intraregional concentration processes during the last decade.

While many central cities and their densely populated surroundings have registered an above-average population increase in recent years, some peripheral suburban and rural areas have been affected by particularly high population losses (Hefert, Osterhage 2012; Siedentop 2008). In growing regions with competitive housing markets, it can be expected that even properties with unfavorable characteristics of the (micro-)location and structural defects will find a market. On the contrary, privately owned houses that are situated in shrinking regions (primarily peripheral and rural regions) and feature a problematic

**Migration balance (in-migrations – out-migrations) total 2000-2011
per annum and 100,000 inhabitants**

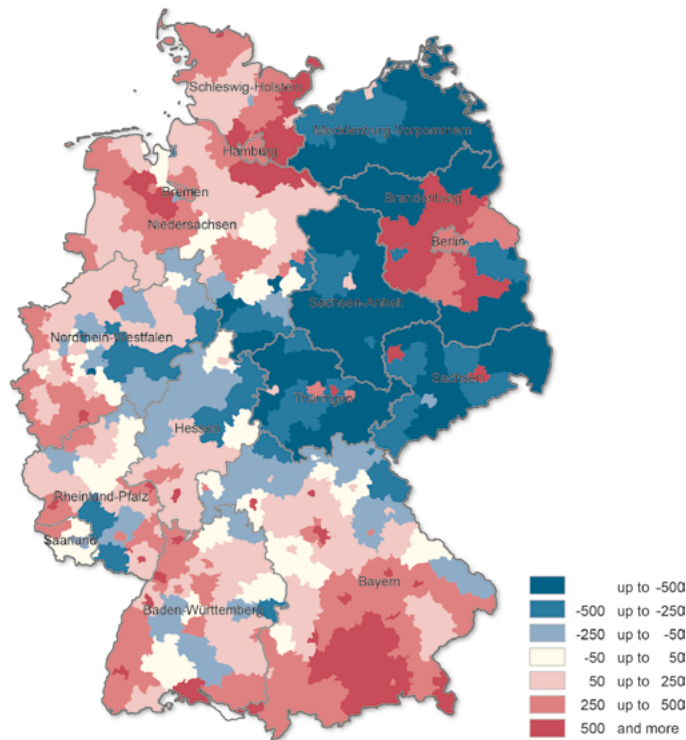


Fig. 1: Migration balance (in-migration – out-migration) in Germany (Source: ILS)

building structure or an unfavorable location will be confronted with a decline in demand and a value reduction that could lead to unsaleability in the future (Aehnelt et al. 2008; Hahne 2010; Spehl et al. 2011).

The construction of single-family home neighborhoods was encouraged through Federal German subsidy policy in the former West Germany and later until 2006 in the both East and West in the form of different direct and indirect subsidy tools such as a tax-deductible commuter rate or subsidies for private home ownership. The commuting allowance – a lump sum according to the distance between the workplace and the place of residence – is tax-deductible. Since 1949, tax depreciation has been granted for building costs. Between 1996 and 2005, homeowners received direct funding (Eigenheimzulage (GND: 4518034-9)), and these instruments always promoted suburbanization. Subsidizing home ownership has always been seen as an instrument to promote retirement provision, which would relieve the state of the costs of future social aid payments. However, this object cannot be achieved if privately owned houses are affected by a continuous loss in value. If the sale revenue of a house does not cover geriatric care, public assistance financed by the state is required. In this respect, it is generally in the state's interest to stabilize the value of single-family homes. Moreover, any housing vacancies will lead to less revenue and higher infrastructural costs for municipalities (Schiller, Siedentop 2005).

Declining occupancy as well as vacancies further lessen the already low economic viability of infrastructural services in single-family home neighborhoods. Furthermore, a visible deterioration of individual houses can negatively affect the image of the neighborhood and even the whole municipality. Although structural vacancies in residential areas with a low population density are not a common occurrence presently, growing marketing difficulties, decreasing value and growing vacancies in partial housing stocks can be expected in the future. The municipality's objective must therefore be to avoid a pressing need for repair and long-term cumulated problems in single-family home neighborhoods by taking preventive action. Accordingly, the need for public intervention undoubtedly exists if the structural deficiencies of a property are obvious and it is possible to prevent foreseeable negative developments in a residential area or an entire neighborhood.

In this context, the financial engagement of a proactive municipality is not as important as the creation of basic conditions and a positive climate for the privately financed development of the existing housing stock. In view of this situation, this article aims to identify the causes and implications of a potentially critical development of older single-family home neighborhoods in Germany and put forward a catalog of suitable countermeasures for discussion.

3. Methodology and findings of the research project

3.1 County-level risk assessment

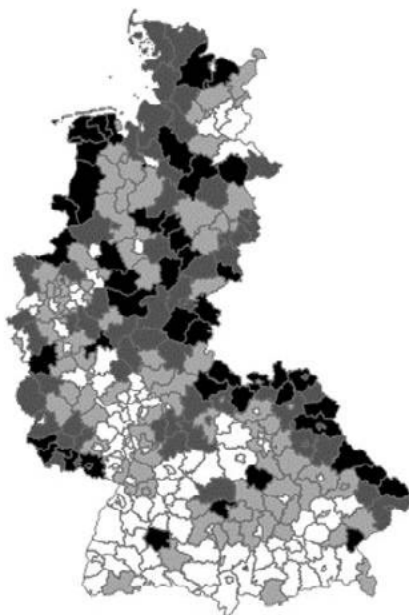
As an initial step, the research team conducted a risk assessment to identify districts that feature a high probability of future supply surpluses. Because no data on detecting housing oversupply were directly available, the risk analysis was based on a set of proxy indicators. In this context, a rising market supply coinciding with a declining demand is interpreted as a possible risk of oversupply. The findings of our analysis, which are illustrated at the county level in the figure on the left, allow for only a relative evaluation.

We identified several districts characterized by an above-average risk of supply of older single-family homes exceeding demand. As a result, the risk assessment demonstrates that housing surplus risks almost exclusively affect suburban and rural areas.

Due to the small-scale differentiation below the level of administrative districts, no conclusions concerning individual municipalities can be drawn. Consequently, the findings for the districts were enhanced by a more detailed analysis at a municipal level. As an example, the findings for North Rhine-Westphalia are depicted in Figure 3.

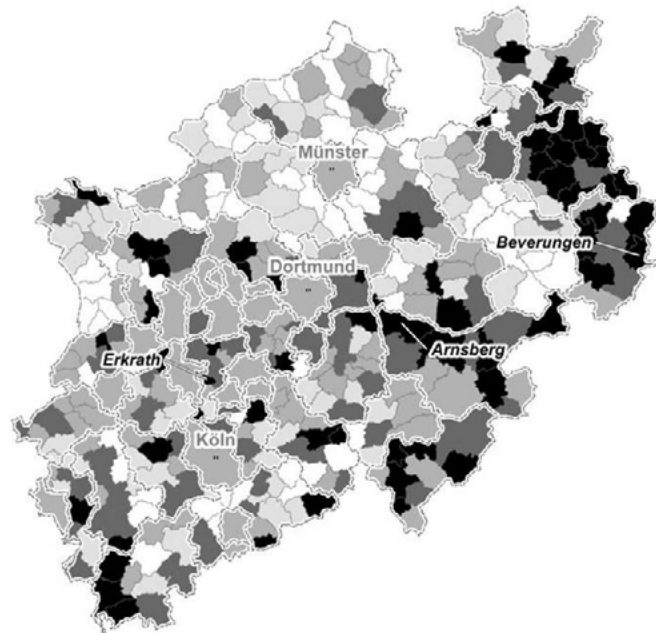
3.2 Case studies

For the case study, two or three municipalities featuring varying conditions were chosen in each of the five western German federal states of Baden-Württemberg (Backnang, Gundelsheim, Mosbach), Bavaria (Pressig, Rehau, Sulzbach-Rosenberg), Hesse (Kassel,



Low Degree of affectedness High

Fig.2: Accounting of supply and demand for used single-family houses at the district level in western Germany (Source: Wüstenrot Stiftung: 29)



Low Degree of affectedness High

Fig.3: Result of the risk assessment at municipal level for North Rhine-Westphalia (Source: Wüstenrot Stiftung: 33)

Lauterbach), Lower Saxony (Bad Sachsa, Garbsen, Meppen) and North Rhine-Westphalia (Arnsberg, Beverungen, Erkrath). The main selection criteria for partner municipalities, in addition to being highly affected and therefore featuring a strong need for action, were the communities' willingness to actively participate in the research project and a minimum population of approximately 5,000 inhabitants. As a general rule, the share of single-family homes in the municipal housing stock is inversely correlated with the number of its inhabitants.

Finally, one major city, six medium-sized towns, six small towns and one rural community were included, accounting for a total of 14 municipalities. Cities and municipalities from predominantly rural and urban areas were considered equally. The seven municipalities located in rural counties are comprised of mostly small towns and one rural community. With the exception of one small town, the six municipalities situated within more densely populated counties consist of medium-sized towns. Kassel is the only city included in this sample that is characterized as a regional center.

First, all relevant single-family home neighborhoods built from the 1950s to the 1970s were listed and categorized according to four major criteria: their intra-communal situation, year of construction, process of settlement and type of building structure. For the final selection, it was of primary importance to ensure a wide spectrum of different types of neighborhoods. Some of the characteristics of the areas that were examined are listed in table 2.

| Municipality | State | Pop. 2010 | Town size type | District type | Building stocks 2005 | | Pop. change | |
|--------------------|------------------------|-----------|-------------------------|----------------|----------------------|-----------------|-------------|-----------|
| | | | | | % of SFH | % built 1949-78 | 2010-2020 | 2010-2030 |
| Kassel | Hesse | 195,530 | Large city | Urban district | 63.1% | 51.8% | -1.8% | -4.4% |
| Arnsberg | North-Rhine Westphalia | 74,227 | Large medium-sized town | Compact | 80.2% | 41.9% | -6.0% | -12.0% |
| Garbsen | Lower Saxony | 61,790 | Large medium-sized town | Compact | 80.4% | 56.4% | -3.6% | -7.7% |
| Erkrath | North-Rhine Westphalia | 45,963 | Small medium-sized town | Compact | 77.8% | 56.4% | -6.0% | -11.5% |
| Backnang | Baden-Württemberg | 35,395 | Small medium-sized town | Compact | 76.8% | 48.2% | -1.9% | -4.3% |
| Meppen | Lower Saxony | 34,944 | Small medium-sized town | Rural | 92.2% | 51.1% | 3.3% | .4% |
| Mosbach | Baden-Württemberg | 24,490 | Small medium-sized town | Compact | 86.3% | 57.9% | .8% | -4.5% |
| Sulzbach-Rosenberg | Bavaria | 19,665 | Small town | Rural | 83.8% | 46.2% | -7.2% | -12.5% |
| Beverungen | North-Rhine Westphalia | 14,147 | Small town | Rural | 92.3% | 44.4% | -8.5% | -15.3% |
| Lauterbach | Hesse | 13,783 | Small town | Rural | 90.0% | 47.7% | -8.0% | -14.2% |
| Rehau | Bavaria | 9,427 | Small town | Rural | 84.9% | 43.0% | -9.8% | -16.6% |
| Bad Sachsa | Lower Saxony | 7,679 | Small town | Rural | 82.0% | 38.0% | -12.9% | -20.8% |
| Gundelsheim | Baden-Württemberg | 7,221 | Small town | Compact | 92.8% | 39.6% | -2.5% | -4.3% |
| Pressig | Bavaria | 4,123 | Rural town | Rural | 92.9% | 43.2% | -8.1% | --- |

Tab. 1: Overview of the characteristics of the selected case study municipalities (Source: Berndgen-Kaiser, A.; Fox-Kämper, R.; Siedentop, S.; Prospects for West German Post-War Single Family Home Neighborhoods, Comparative Population Studies Vol 39, 2 (2014): 290.

| | |
|-------------------------------|--|
| Location | Near the city center |
| | Periphery |
| | City district, not integrated |
| Period of construction | Predominantly 1950s-1960s |
| | Predominantly 1960s-1970s |
| | Mixed |
| Settlement type | Gradual settlement by a variety of individual builders |
| | Simultaneous construction by one or a few property developers |
| Building structure | Predominantly detached |
| | Predominantly compact |
| | Mixed types of single or two-family houses |
| | Mixed types of single or two-family houses and apartment buildings |

Tab.2: Characteristics of the examined neighborhoods (Source: Wüstenrot Stiftung: 46)

For each municipality, up to three neighborhoods were selected for this case study, amounting to a total of 29 single-family home neighborhoods. Detailed information was gathered on the population structure, infrastructure and neighborhood structure along with the building structure, land use and spatial qualities of each neighborhood.

Twenty-six of the 29 housing estates are characterized by a higher share of older residents compared with the German average of 21 percent of people aged 65 or older. The median of all the study areas is 31 percent, and the highest proportion of old residents in the sample is as much as 52 percent. Whereas only four housing estates are dominated by terraced houses, twelve study areas predominantly feature detached housing. The remaining 13 neighborhoods are characterized by a mix of different housing types, which are mostly single-family houses but in some cases also include interspersed small multifamily houses.

3.2.1 *Survey results*

The evaluation of the data provided by the municipalities was supplemented by our own on-site fieldwork and surveys of relevant stakeholders, such as residents, decision-makers within the municipal administration and representatives of the real estate sector. Although information on the residents' perspective was gathered through a written questionnaire sent to all inhabitants of ten neighborhoods, members of the municipal administration and real estate agents were included by conducting in-depth guided interviews.

3.2.2 *Perspective of the local government*

The interviews conducted with mayors and planning office managers revealed that the perception of potential problems concerning aging single-family home neighborhoods and consequently the degree of analyzing the problems raised in these districts varied greatly. The barrier for municipal intervention was perceived as being relatively high.

"I ask myself what the municipality would be able to do in any case. The number of staff is not what it used to be. We have to concentrate on the main issues. We can't have a finger in every pie."

Furthermore, uncertainty exists regarding whether this development really is of public interest or just a particular matter concerning homeowners. Decision-makers lack reliable indicators and threshold levels that indicate the necessity of municipal intervention.

"Vacancies and over-aging are one side of the problem, the resulting problems for the neighborhood are the other. You have to differentiate between the personal problem of not being able to sell your house and the problems which affect the whole neighborhood."

The need for regional control of the designation of new building land is widely accepted among municipalities, but its implementation is seen rather critically. A competitive stance prevails between neighboring municipalities, and cooperation concerning the designation of new building areas seems hardly imaginable.

“The neighboring communities rather work against us and keep on designating new building land. We see this with skepticism. It’s where the problematic neighborhoods we are talking about are being built right now.”

There is no effective instrument to restrict the designation of new building land. As of yet, the interviewed municipalities have no experienced or well-practiced regulation mechanisms concerning existing single-family home neighborhoods.

“It is true that the municipality can choose to utilize its leading capacity. It can also initiate certain measures and try to take a more active role, but this will certainly not be enough. So private stakeholders have to cooperate, and private commitment is indispensable.”

Taking steps to strengthen the development within the municipality by focusing on the adaption of planning laws rather than cost-intensive measures is considered most relevant in this context. Specifically, these measures should be aimed at the reduction or non-designation of new building land. However, concerns exist regarding a sort of “free-rider” phenomenon, according to which neighboring municipalities profit from the land-saving policies of one community by continuing to designate new building land and hereby trying to attract new residents.

3.2.3 Perspective of the real estate sector

Local real estate stakeholders, such as estate agents, employees of financial institutions and representatives of housing associations, were able to provide practical information on the developments of the real estate market and on the relevant demand groups. The remanence effect was confirmed to be a significant influence on the real estate market. The result is usually a growing deterioration of existing building stock at the time of sale because owners at an advanced age hardly carry out renovation or modernization measures. Individual properties in bad condition could trigger a quick devaluation of entire streets and neighborhoods.

According to the experts who were interviewed, the main demand groups of single-family homes still consist of families with one or two children. However, in the last two years, the range has been expanding. For instance, childless couples and singles, who usually prefer housing types in more densely populated areas, have shown a growing interest in single-family homes. Demand by elderly people who want to move out of their large single-family homes located in a peripheral area into smaller, accessible houses closer to the city center, is less common but nevertheless exists. Locations with good infrastructural facilities are usually preferred. However, we were told that this criterion does not play a major role for less compact single-family home neighborhoods due to the widespread availability of cars. However, the price of an existing single-family home, including renovation costs, must remain below the level of a newly constructed house as an important factor to ensure continued use of the existing housing stock. In the long term, municipalities anticipate (continuously) falling real estate prices. A decline in prices for existing single-family homes will regulate their marketing possibilities to a certain degree. However, because the demand group of families is shrinking in many places, a surplus of single-family homes is to be expected in the future.

“The supply will increase while demand will more likely decrease due to the demographic change and the employment situation.”

Generally, in regions that display a stable or increasing housing demand, the question of renovation or demolition followed by new construction is expected to be seen more frequently in older single-family home neighborhoods in the coming years.

3.2.4 Perspective of the residents

The survey of residents was conducted in ten neighborhoods (selected from the 29 study areas) that represented the different types of single-family homes included in this case study. The main selection criteria were the location of the municipality (central/peripheral pursuant to BBSR regional types, BBSR 2010), the settlement process (gradual or simultaneous) and the type of neighborhood structure (predominantly low-density or compact).

On average, 46 percent of participants in the survey were aged 65 and older. More than half of the respondents lived in a detached single-family home, 20 percent in duplex houses, and 20 percent in row houses. First-generation residents who built or purchased a newly built house amounted to 45 percent of the households questioned, and the remaining 55 percent inherited or purchased used real estate. Although only 14 percent of participants ($n = 76$) wanted to sell their house or apartment, considerably more homeowners answered the question concerning expected difficulties of a possible sale, suggesting that even those who do not have specific intentions to sell concern themselves with the future prospects of their property. Of these respondents, 42 percent ($n=232$) stated the problems they expect in the future. The realization of their own price expectations is seen as the main problem, but the concern of being able to find a potential buyer at all was also often named.

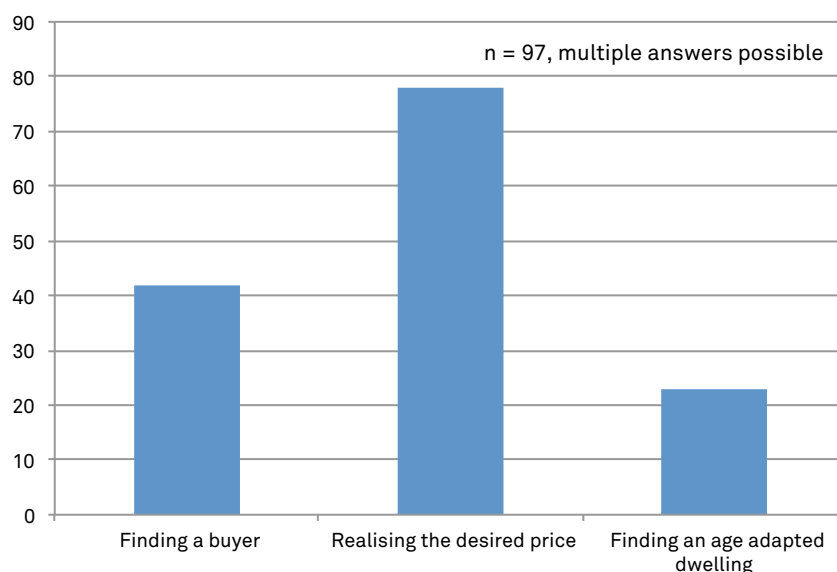


Fig. 4: Difficulties in finding potential buyers for used real estate (Source: Wüstenrot Stiftung 215)

The statements of the real estate experts confirm that locational criteria have the highest significance; the selection criteria of buyers of existing single-family homes include not only the neighborhood but also its proximity to the city center. The second most important factor is the size of the house. Other criteria are related to the characteristics of the property, such as its size in general and its yard, which are apparently more important than the layout of the house or an attractive purchase price.

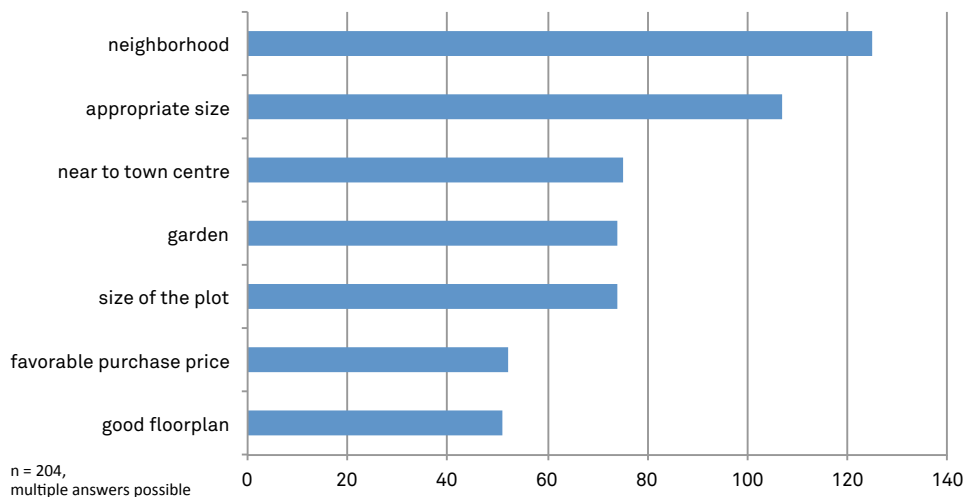


Fig. 5: Decision criteria for second-generation residents when choosing a property (Source: Wüstenrot Stiftung 214)

Eighty-five percent of the first-generation residents and 99 percent of the second-generation residents had already conducted conversion and renovation measures. Whereas first-generation residents primarily carried out modernization measures related to energy conservation, such as the renewal of the heating system (68 percent) or the installation of new windows (67 percent), second-generation residents initially concentrated on the renovation of the bathrooms and kitchen (82 percent) and only subsequently replaced their windows (77 percent) and heating systems (65 percent). However, with the exception of heating, the main refurbishment activity remains with the subsequent inhabitants.

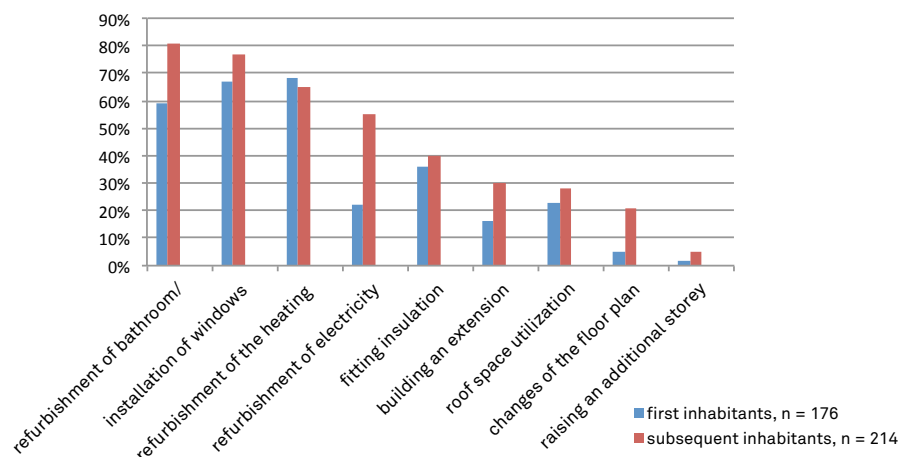


Fig. 6: Conversion and renovation measures carried out by first- and second-generation residents (Source: Wüstenrot Stiftung 218)

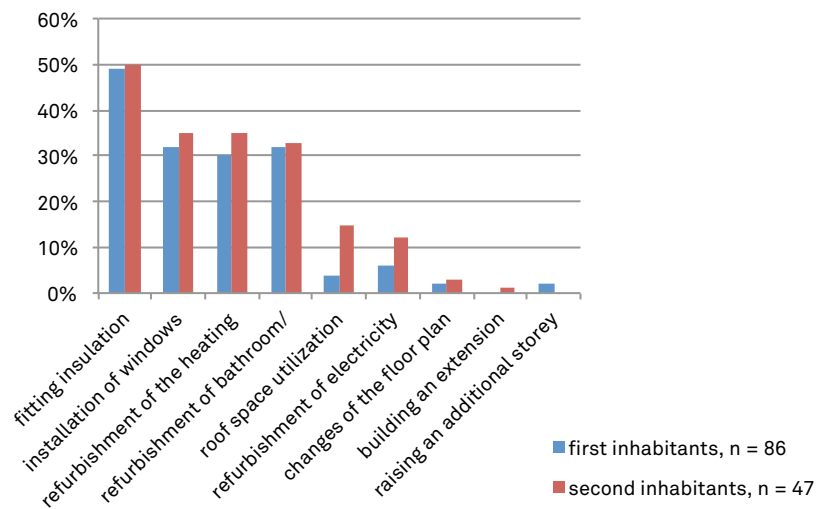


Fig. 7: Planned modernization and renovation measures (Source: Wüstenrot Stiftung: 219)

Concerning planned modernization and renovation work, both first-generation (49 per cent) and second-generation residents (50 percent) rated the fitting of insulation as the most important measure. These findings emphasize that this measure has been recognized as important, although it has not yet been carried out due to its high cost, both financially and structurally.

3.2.5 Interim conclusion

In summary, it can be said that on all three levels—of municipal politics and planning, the real estate sector and, restrictedly, even ownership—the awareness of future inconveniences regarding older single-family homes is growing. Occasional vacancies and marketing problems and declining sale prices are not perceived as the beginning of a structural crisis. However, hardly any interviewee negated the necessity of more closely monitoring older single-family home neighborhoods and of carrying out interceding measures in the future. At the same time, a general uncertainty about the realistic possibilities of counteracting strategies and measures can be observed. A systematic approach that goes beyond simply establishing an information basis and furthers a public discussion on the topic, which is a precondition for developing political measures, could not be identified in any of the municipalities. Additionally, a lack of horizontal and vertical integration in urban planning could be identified. This refers to a still-underdeveloped inter-municipal cooperation concerning, on the one hand, the designation of new building areas and housing policies in general. On the other hand, the municipal measures to improve neighborhood quality have still not been integrated into state subsidy programs. As a whole, municipalities feel insecure about their future roles in this process. Besides their traditional planning and regulatory role, new tasks manifest themselves, such as monitoring and consulting, promoting and funding, moderating and managing processes that have not yet been sufficiently trained.

On the whole, we note an emerging trend of polarization that is characterized by a steady development in well-located residential areas and by initial problems of reuse in peripheral neighborhoods. Interviewees from the municipalities and the real estate sector discern a type of “fringe-core gradient” regarding this problem and expect that this phenomenon will intensify as demographic change proceeds.

3.2.6 *The case studies of Beverungen and Erkrath (both situated in North-Rhine Westphalia)*

As an example, two North Rhine-Westphalian case study municipalities and their neighborhoods will be presented below. Both neighborhoods were chosen as representing for all 14 municipalities that were part of the case studies. They represent a wide range of different housing and neighborhood types and emphasize the influence of rural-peripheral locations in contrast to central locations within an agglomeration area.

Beverungen is a small city of 13,400 inhabitants(2013) located in the Weser uplands in the east of North Rhine-Westphalia. Beverungen has existed in its current size since 1970, when numerous surrounding villages were amalgamated. The actual city core is home to 6,600 inhabitants. Through the loss of many large companies, primarily in the furniture industry, the town has lost approximately one third of its employees over the last few decades. However, its economic structure is still characterized by the manufacturing industry, in which currently around 41 percent of its dependent employees are employed. Since 1998, Beverungen has registered a continuous population decline. According to the prognosis of North Rhine-Westphalia’s office of statistics, a further population decrease



Fig. 8: View of the main shopping street of Beverungen (Source: City of Beverungen)



Fig. 9: Detached houses in the Poelten neighborhood (Source: Author)

of approximately 18.3 percent can be expected between 2011 and 2030 due to negative natural population development combined with a negative net migration rate. For this reason, the number of inhabitants is expected to decline to 12,000 (IT.NRW 2014).

The case study area of **Beverungen-Poelten** is a single-family home neighborhood with detached houses mostly built in the 1950s and 1960s. It directly borders the city core.

Between 1990 and 2009, the population declined by 17%. Many buildings are already characterized by internal vacancies—that is, only one (usually elderly) person lives in a house. Consequently, at 0.54, the old age dependency ratio for this neighborhood is significantly higher than that of the city as a whole (0.40). Due to a good number of infrastructural facilities for this neighborhood, including local amenities, schools, kindergartens and doctor’s offices, as well as to the flatness of the neighborhood, which is not typical for the Weser uplands, the neighborhood is well-suited for young families and the elderly.

However, because it seems unlikely that there will be sufficient family households to form a demand group in the future, the locational advantages of the neighborhood could be used to adapt it to the needs of an aging population. For instance, by specifically promoting refurbishment to suit the elderly population or exploiting the subsequent potential for densification, small facilities for accessible and assisted living could be built. According to municipal stakeholders, these facilities are in high demand in Beverungen. Thus, older people who require support or care would have the possibility to stay in the neighborhood.

| | | Poelten |
|---------------------|------------------------------------|--------------------|
| Location | Distance from city center | 1.4 km |
| | Location within the city | Central |
| | Topography | Level |
| Area | Neighborhood area (net) | 13.2 ha |
| | Avg. lot size | 605 m ² |
| | Percentage of empty lots | 5.2% |
| Construction | Site occupancy index (actual) | 0.2 |
| | Structure type | Unattached |
| | Settlement process | Gradual |
| | Dominant building age classes | 1950s – 1970s |
| Residents | Number of inhabitants (2009) | 767 |
| | Population development 1990 – 2010 | -17% |
| | Population density (2009) | 58 inhabitants/ha |
| | Old-age dependency ratio | 0.54 |
| | Percentage of immigrants | 7.4% |

Tab. 3: Structural data of the neighborhood Poelten in Beverungen (Source: Zakrzewski, P.; Berndgen-Kaiser, A.; Fox-Kämper, R.; Siedentop, S.; Prospects for West German Post-War Single Family Home Neighbourhoods, Comparative Population Studies Vol 39, 2 (2014): 304)

Erkrath is a medium-sized city of 46,000 (2010) inhabitants approximately nine kilometers from the North Rhine-Westphalian capital of Düsseldorf, and thus within commuting distance. Erkrath's population has increased since the 1960s, and it was incorporated as a city in 1966. The district of Hochdahl, in which the case study neighborhood is located, was developed at the beginning of the 1960s under the name of "Neue Stadt Hochdahl" (Hochdahl New Town) as an overspill town for Düsseldorf. With around 30,000 inhabitants, Hochdahl is the largest of Erkrath's three districts. The city is characterized by the relatively high spatial and functional autonomy of its districts. Each district has its own center. Erkrath's economic structure is defined by small and medium-sized enterprises that focus on trade, services and the manufacturing industry.

In 2013, the number of inhabitants registered at 43,600, which indicates a population decrease of 0.4 percent in comparison to 2011. However, IT NRW predicts a slight population increase of 0.8 percent between 2011 and 2030, whereas the Bertelsmann Prognosis (Bertelsmann 2009) expects that the population will continue to decline by 1.3 percent between 2012 and 2020.

With 56.4 percent of the existing building stock having been built between the 1950s and the 1970s (single-family homes and apartment complexes), Erkrath displays the second-highest share of buildings from this era of all municipalities included in our case study. The homogeneously planned dense building stock of single-family homes in Hochdahl is an important testimony to the planning concepts of the period between the 1960s and the 1980s.



*Fig. 10: Erkrath, Hochdahler Markt
(Source: own picture)*



*Fig. 11: Erkrath, row houses in "Willbecker Hang"
(Source: Author)*

The development of the neighborhood **Willbecker Hang** in Erkrath-Hochdahl started in 1966 as part of the Neue Stadt Hochdahl. Various building types, such as row houses, bungalows, linked houses and atrium houses, were built in the area over different construction phases.

With its dense building structure of single-family homes, connecting footpaths and stairs, concentrated parking areas in courtyards, adjacent apartment complexes and wide outer access roads, the neighborhood is typical for planning and living concepts of that era. The mostly single-story buildings are principally suitable for elderly persons. However, the accessibility using footpaths and stairs is often a problem for this demographic group and is also not very popular with younger residents.

The old age dependency ratio of 0.61 is significantly higher than for the city as a whole (0.35), indicating that the neighborhood is currently undergoing a generational change. Accessibility using footpaths is generally suitable for families with children, but either there is not high enough demand from families or this demographic group prefers other neighborhoods. Due to declining prices, generational change will likely lead to increased buying interest by other socioeconomic classes that often include a higher percentage of visual minorities² (e.g., those coming from the neighboring terraced housing districts).

| | | Willbecker Hang |
|---------------------|------------------------------------|------------------------|
| Location | Distance to city center | 1.5 km |
| | Location within the city | City district |
| | Topography | Slope |
| Area | Neighborhood area (net) | 9.6 ha |
| | Avg. lot size | 335 m ² |
| | Percentage of empty lots | 6.6% |
| Construction | Site occupancy index (actual) | 0.34 |
| | Structure type | Compact |
| | Settlement process | Simultaneous |
| | Dominant building age classes | 1960s – 1970s |
| Residents | Number of inhabitants (2009) | 709 |
| | Population development 1994 – 2009 | +7% |
| | Population density (2009) | 74 inhabitants/ha |
| | Old-age dependency ratio | 0.61 |
| | Percentage of immigrants | 2.7% |

*Tab. 4: Structural data of the neighborhood Willbecker Hang in Erkrath
(Source: Wüstenrot Stiftung: 96)*

² In German, usually the term „Migrationshintergrund“ is being used, which also can be translated as „migration background“.

4. Recommendations for action

One of the main findings of the municipal case studies conducted here is that the regions, municipalities and districts that show a higher risk for the saleability of their single-family housing stock can only partially be identified using specific indicators or available statistical data. Furthermore, the site inspections and in-depth analysis of single-family home neighborhoods reveal a partly divergent development of physically and structurally similar neighborhoods, which can only be explained by specific location characteristics or the local image.

On this basis, neither a neighborhood-specific nor a universal concept for an 'upgrading' - means increasing the saleability of the housing stock - in single-family home neighborhoods is feasible. Consequently, this project aimed to establish a toolbox containing different strategic modules, possible courses of action and measures that allow for a variable combination of different solutions adapted to specific local and neighborhood characteristics. Depending on the area-specific strategy chosen, the possibilities of municipal intervention range from informal measures such as non-binding district development planning to regulative intervening measures within the context of urban land-use planning. The recommended measures were developed with reference to the findings of our case studies and were subsequently initially evaluated by experts during a workshop. In the following, some of the tools will be presented.

The case studies confirm that the future course of development of single-family home neighborhoods cannot be regarded in isolation but has to be considered in relation to changes within the municipality. Different aspects, such as local demographic change, the dynamic of the municipal economy or specific land policies, significantly influence the conditions surrounding the housing stock. This can be performed in the context of integrated urban development schemes or housing market schemes from which neighborhood-specific development strategies can be derived. During interviews and workshops, the municipal stakeholders emphasized that thorough data acquisition and analysis of affected single-family home neighborhoods and their significance for the local housing supply as an important first step in creating a reliable foundation for strategic action. It was revealed that, even though some municipalities have already analyzed different aspects of the problem, an integrative approach has not yet been conducted. Such an approach could be implemented in the context of an integrated urban development or real estate market concept, possibly enhanced by in-depth interviews or questionnaires of inhabitants and real estate agents. Ongoing neighborhood monitoring is generally a suitable means of identifying unfavorable developments early on and taking proactive measures. Even municipalities that do not currently identify a need for action support this strategy.

The limitation of the designation of new building land (zoning) is another important measure for promoting the existing housing stock. In this way, municipalities affected by unfavorable demographic development in particular could curb the effect of new building areas on existing neighborhoods. However, those communities face competition for inhabitants with neighboring communities. The negative consequences of such parish-pump politics have been described numerous times (see Schiller, Gutsche 2009;

Preuß, Danielzyk et. al. 2010). Therefore, there is a resulting need to designate new areas for development at least to a limited extent. In this context, inter-municipal coordination, which aims at balancing the interests between neighboring municipalities concerning the designation of new building land, is recommended. Although most municipalities follow a trend towards infill development manifested in council resolutions, none of the analyzed case study municipalities made attempts to facilitate cooperation with other municipalities on this topic.

A restrictive policy for designating new building land should be supplemented by taking different steps on a neighborhood level. In this context, measures to develop vacant sites and reuse brownfields, which would increase the density of users and could therefore have a positive effect on the sustainability of infrastructural facilities, have been discussed. Municipal stakeholders have identified a municipal land register that offers information on vacant sites within the municipality as a useful measure for connecting supply and demand.

Municipalities that experience marketing problems and significant devaluation of older single-family homes might profit from an image campaign promoting the existing built stock³, which could underline specific qualities and potentials of existing neighborhoods in comparison to new building land and steer demand towards the existing housing stock in general and towards individual neighborhoods in particular. Within this context, campaigns that link the purchase of the built stock with financial incentives have been closely monitored (i.e., the program “Jung kauft alt” (young buys old – see the article by Homburg in this anthology) in the German municipality Hiddenhausen). This subsidy campaign, which was initiated in 2007, has managed to significantly reduce the number of vacant houses while increasing the use of social infrastructure. Measures of such effective publicity that target the relevant audience could help generate a positive climate for infill development and for the acquisition of the existing built stock. However, empirical experience shows that a direct application in other municipalities does not necessarily lead to similar success, most likely due to the influence of specific local conditions.

Concepts that aim for subsequent densification are often seen as “modules of a successful infill development” (Department of Environment Baden-Wuerttemberg 2009). Many sparsely developed single-family home neighborhoods feature a low settlement density and therefore present a potential for densification. However, a low density is often seen as a feature of a high quality of life. The main reasons for the popularity of single-family home neighborhoods can be found in their low settlement density and consequently high share of open space. In municipalities influenced by a high demand for housing, it can therefore be beneficial to protect districts with a low density from subsequent densification. According to municipal stakeholders, areas in which a low density is perceived as unfavorable also exist. However, as of yet, densification concepts have rarely been implemented. The municipal stakeholders stressed that, in order to make them successful, they have to be developed in an open and participative process.

Additionally, municipal stakeholders identified the topic of infrastructure and local amenities as another field of action. This has to be considered within the context of demand

³ In German: „Pro Bestand“.

potential, accessibility, economic viability, municipal public service obligations and their effects on the attractiveness of districts. Single-family neighborhoods are, as mentioned above, naturally characterized by a low population density. The inhabitants' aging process and the consequent remanence effects lead to a significant decline in population density and therefore also in demand. This can acutely endanger the economic sustainability of the technical infrastructure (Schiller, Siedentop 2005; Koziol 2004; Siedentop 2009).

One of the main concerns of municipalities is maintaining infrastructural facilities despite decreasing demand in order to keep neighborhoods attractive for potential buyers. Generational change was identified as a great challenge—particularly for homogeneously settled single-family home neighborhoods, in which older people and families with children have to be serviced simultaneously. It might be possible to benefit from enhanced synergy effects through the cooperation of existing facilities for all generations and multifunctional and flexible concepts that allow different groups to use the facilities.

Municipalities in which local amenities are not economically viable point to alternative concepts and types of business to ensure the supply of goods and services located nearby.

Although the initiation of new supply models is technically not a municipal responsibility, municipalities consider themselves obliged to make further contact and contribute ideas and financial and organizational support. Alternative models could include cooperative stores, village centers in which residents organize their local supply autonomously, mobile retailers or rolling supermarkets and delivery services. Our case study municipalities reported initial positive experiences with these concepts.

With the aim of achieving climate targets, municipalities see themselves as an important advisor in motivating the large but heterogeneous target group of homeowners to improve their property's energy efficiency. A high share of single-family homes is still characterized by a lack of modernization, particularly regarding energy-oriented refurbishment. The literature identifies an information deficit (i.e., about the energy performance of the home) or prejudices, worries and apprehensions (i.e., about the inconvenience and expense of refurbishment) are identified as the key reason for a lack of investment on the part of single-family homeowners (Kleemann, Hansen 2005; Stieß et al. 2010). Municipalities could therefore try to raise the refurbishment rate of existing single-family homes while simultaneously encouraging the adaptation of buildings to the needs of the elderly by providing relevant information and offering assistance.

Municipalities can support the generation change taking place in single-family home neighborhoods through the creation of laws that allow for the construction of accessible dwellings that offer care services or other facilities for elderly persons on undeveloped building plots or unused areas (i.e., unused playgrounds) and initiating corresponding projects. The conversion of larger single-family homes or duplex houses into smaller units that are adapted to old-age requirements represents another possibility. In this context, the active involvement of local providers of living arrangements, such as local housing associations or care facilities, is recommended.

The aforementioned fields of action are within the influence of municipalities. In addition, important fields of action exist on higher levels. On a national level, both fiscal and juridical instruments are particularly relevant, for instance, for differentiating the land transfer tax aimed at facilitating the acquisition of developed plots. Another possibility is a land value fee for infill sites within existing residential areas to create an incentive for their commercialization and promote the development of these areas. It is also interesting to consider the extent to which instruments and urban redevelopment funding lines (in Germany, the joint responsibility of the federal government and federal states) such as so-called “Housing Improvement-Districts” could be applied to single-family home neighborhoods. Interviews with experts indicated that the problematic situation in districts featuring a high density of multi-story residential buildings is more pressing, and thus different. Consequently, a shift from public urban redevelopment funding in favor of single-family homes is still considered unrealistic.

5. Conclusion

Because the share of single-family homes within the German housing stock is low in international comparison and since Germans display a high affinity for this type of housing, a negative housing stock development in this market segment has not been expected until now. However, socio-demographic change will very likely affect the market of existing single-family homes—in a development that will possibly be intensified by the continued development of new building land. The primary cause of the possible instability of this stock segment is a change in demand rather than a deficit in supply. Population decline in combination with a massive change in household structures will significantly reduce the demand for single-family homes. Future problems can primarily be expected in suburban and rural regions far away from large cities, and single-family home neighborhoods in urban locations or situated within the surrounding regions of central cities will remain in high demand on the real estate market. In the latter field, generational change and the refurbishment of the existing stock will easily take place through ordinary market activities without requiring comprehensive public intervention. Therefore, a growing polarization in the development of the housing stock, which is already noticeable in the price of the existing building stock, is to be expected.

However, the anticipated decline in demand for and loss of value of existing single-family homes in peripheral regions will not necessarily lead to deficient urban structures. If emerging problems are identified at an early stage, sufficient time will remain to counteract these, and single-family home neighborhoods with a low population will be able to be preserved as in their quality of life. However, this will require measures of stabilization and adaption on behalf of the municipality, an area in which hardly any experience has been gained to date. Contrary to the general opinion that the single-family housing stock is beyond the influence of public intervention, we were able to indicate various possibilities for municipal action in this article. As a first and important step, communities should start to analyze their older single-family home neighborhoods in order to decide whether the market mechanisms can lead to satisfactory results or whether intervention is necessary to safeguard the general public interest.

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