Urban regeneration policy in the light of gentrification

Uwe Neumann

Extended Abstract

1. Introduction

During the past decades, urban regeneration initiatives in many countries have strived to prevent undesirable neighbourhood effects resulting from local deprivation. In many cases, policy initiatives have been based on the expectation that residential segregation and urban deprivation will increase in line with rising inequality on labour markets. While poverty remains a feature of many neighbourhoods, however, central urban areas have experienced a rising overall desirability as residential location. Gentrification of deprived quarters has therefore become a widespread trend, often leading to a rise of housing costs and displacement of low-income households (Christafore and Leguizamon 2019). Using the nation-wide "Social City" programme in Germany as case study, the analysis explores to what extent urban regeneration policy has affected the residential population of programme areas and whether it might have spurred gentrification. The Social City was established in 1999 with the goal to support regeneration and to strengthen local civil society in deprived urban neighbourhoods. Previous research focussing on North Rhine-Westphalia, Germany´s most urbanised federal state, suggests that during the period 2009-2021 programme areas experienced a significant surplus in the increase of housing prices and rents in comparison to non-supported reference areas (Neumann and Yasar 2024).

2. Data

In order to examine the policy outcomes across Germany, the analysis uses three data sources, which have been made available with a view to regional analysis during the previous decade

(in the first two cases) or expanded in order to provide opportunities for regional analysis (in third case):

1. RWI GEO-RED
2. RWI GEO-GRID
3. The German Socio-Economic Panel (SOEP)

In combination, they provide a suitable empirical base in order to examine the outcomes of the Social City Programme.

The first data source, RWI-GEO-RED, offers micro-level information on prices for apartments (for rent and for sale) and residential houses (one- and two-family homes), as advertised on the internet platform ImmobilienScout24, a large provider comprising around 40-50% of the housing on offer in Germany. The data includes information about a variety of housing characteristics such as living space, type and condition of the building, and features like having a garden, balcony or cellar. Georeference is provided with respect to 1 km²-spatial grids, and 5-digit postal code zones.

The second source, RWI-GEO-GRID, comprises data on the residential population, compiled at the level of 1 km²-grids, as compiled by microm Micromarketing-Systeme und Consult GmbH, a market research firm specialising in territorial analysis (Breidenbach and Eilers 2018). In combination with the data from RWI-GEO-RED the data will refer to the period from 2009 to 2021. Among various studies using the RWI-GEO-RED and RWI-GEO-GRID, for example, Bauer et al. (2017) examine to what extent the Fukushima Daiichi accident in Japan in March 2011 affected housing values in the vicinity of nuclear power plants in Germany. Employing a difference-in-differences approach, they find that the Fukushima incident reduced housing prices near nuclear power plants that were in operation before Fukushima by 4.9%.

The third source, the SOEP, has become a standard data source for individual and household-level analysis. It is one of the largest and longest-running multidisciplinary household surveys worldwide and has been utilised in manifold studies contributing to the international discussion, e.g. on labour economics (Beckmanshagen and Schröder 2022) and regional economics (Bertram et al. 2022). Started in 1984, the SOEP is an annual representative study of private households in Germany, comprising various topics, e.g. household composition, residence, earnings and occupation of household members. A new refreshment sample introduced in 2018 enhanced the SOEP as a source of research concerned with neighbourhoods and urban policy (Steinhauer et al. 2020). This sample was designed specifically to comprise a sufficient number of households from Social City pro-gramme areas, providing information about nearly 1,000 Social City households. These can be traced back as far as 2000, i.e. the very early phase of programme implementation. In the course of survey expansions, the number of households residing in "Social City" areas was even increased up to 2,641 until 2019. This study uses SOEP wave 38 from 2023

3. Approach and descriptive statistics

In the first step of the analysis, hedonic pricing estimations and income regressions based on data from RWI-GEO-GRID and RWI-GEO-RED will pursue the policy effects by comparison between programme and non-supported reference areas in Germany as a whole, at the level of federal states and among different sections of the city size distribution.

The potential effects on housing prices and rents will be estimated by the hedonic pricing model

$$\log(P_{i,jkt}) = \beta_x X_{i,t} + \beta_N N_{j,t} + \mu_k + T_t + \gamma_{t,k} T_t \mu_k + \delta_{t,k} T_t \mu_k + \varepsilon_{i,jkt}$$

in which P is the price (or rent without heating) of object i per unit of residential dwelling space (in m²) in year t = 2009, 2008, …, 2021. X is a vector of object-specific characteristics such as the year of construction, living space, the number of rooms and the state and quality of

the dwelling. Neighbourhood characteristics in 1 km² grid j are described by vector N including the total population, mortality rates and the share of foreigners. The designation of Social City programme zones is accounted for by dummies μ_k, which identify $k = 1, 2, \ldots, 502$ programme zones, which had received funding from the Social City by 2008, and thus control for locational fixed effects. T are year dummies for 2010 to 2021 (with reference group 2009). The coefficients γ display the variation of price changes for the programme zones, identified by the interaction of time- and neighbourhood dummies. Coefficients δ represent the variation of price changes for reference areas comprising adjacent neighbourhoods (5-digit postcode zones) surrounding each programme area, again identified by the interaction of time and community dummies. In order to account for spatial autocorrelation, standard errors will be clustered by municipality.

Table 1 highlights selected descriptive statistics for programme areas of the Social City programme in North Rhine-Westphalia. The statistics include information also for reference areas, which comprise postal code districts directly adjacent to programme areas, and for all other regions. The table provides information for 2020 and change 2015-2020. The data for 2020 characterise programme areas as urban neighbourhoods with a higher population density and population growth during the past decade than adjacent reference areas and other areas. Average income is lower than in adjacent non-programme areas and in other regions. It has grown at a somewhat faster pace in programme than in reference areas, but income growth was in line with growth in other regions. The share of foreigners among the residential population is higher than elsewhere and the unemployment rate is also higher than in the reference areas and other regions. Purchasing prices for apartments and rents are lower than in reference areas and other regions. Rents have increased at a faster pace in programme and reference areas, than in other regions of North Rhine-Westphalia, whereas purchasing prices have increased at a

much higher rate in reference areas (+38.4%) than in programme areas and other regions (+28.9%).

Table 1: Socio-economic characteristics and housing prices in "Social City" programme areas, reference areas and other regions of North Rhine-Westphalia, mean values (2020, left panel) and change 2015-2020 (right panel)

	2020			2015-2020		
	programme area	reference area	other regions	programme area	reference area	other regions
population	6,675	6,026	5,149	+5.8%	+4.1%	+3.4%
annual net house-hold inomce	41,258 €	42,829 €	47,068 €	+5.7%[1]	+ 4.8%	+5.9%
foreigners	22.1%	19.0%	15.2%	+2.2 pts[2]	+3.9 pts	+2.9 pts
unemployment rate	13.0%	10.9%	7.7%	-0.6 pts	-0.5 pts	-0.3 pts
price for apartments (median)	1,474 €/m²	1,756 €/m²	2,120	+28.9%	+38.4%	+28.9 %
rent (median)	7.00 €/m²	7.38 €/m²	8.00 €/m²	+20.7 %	+20.9%	+16.9%

Author´s calculations using RWI GEO-GRID and RWI GEO-RED; [1]current prices, [2]pts = change in percentage points

Apparently, the programme and reference areas are deemed relatively undesirable as residential locations, since both purchasing prices and rents are lower than in all other regions on average. In terms of increases of household income, housing prices and rents during the past decade the descriptive statistics would not outline a considerable impact on programme areas. As explained, previous research using hedonic pricing models for North Rhine-Westphalia, however, has suggested significant effects of the "Social City" programme on rental prices. The analysis will therefore pursue price changes using estimations, which will incorporate information from all federal states. In a second step, the analysis using the RWI-GEO-GRID will examine the evolution of household income in programme and reference areas

In addition, a third step will explore growth of household income in Social City programme areas, using the SOEP as data source. Previous research using the SOEP found that the length of exposure to residence in programme areas may be detrimental to the longer-term evolvement of individual prosperity. The role of the length of residence in programme areas will therefore

be controlled for among various household-specific determinants in panel estimations (fixed effects) examining the change of household income over the past two decades.

Table 2 outlines selected descriptive statistics for West German Social City programme areas, based on the SOEP. While the analysis will utilise information provided by the SOEP for Germany as a whole, the preliminary statistics provided here focus on West Germany, as socioeconomic characteristics continue to differ considerably between East and West.

Table 2: Household characteristics (2020, in %, except as indicated) for Social City programme areas in West Germany (incl. Berlin)

	West Germany	West German Social City programme areas
number of households	*27.689.703*	*1.726.256*
net monthly household income (median)[1]	2,400	1,800
household size (mean)	1.8	1.7
mean age	55.5	50.5
dummy variables = 1 if characteristic applies to at least one household member (in %)		
migrant background	23.8	42.9
child age < 14	9.0	10.8
upper secondary school certificate	35.6	27.3

Author´s calculations. – Data source: SOEP - weighted using weights provided by the SOEP; [1]if value > 0, current prices, in euro

The statistics in Table 2 show that household income among programme areas is below the West German average. In this respect, the table confirms the respective income differentials between programme areas and other regions found for North Rhine-Westphalia (Table 1). The mean age is somewhat lower in programme areas and there are more households with children, even though households with children are usually underrepresented in urban regions. A migrant background is a much more general characteristic in programme areas than among the West German population altogether and education attainment, here measured by the share of households, in which at least one person has achieved an upper secondary school certificate, is lower.

In addition to aggregate-level analysis of income growth using data from RWI-GEO-GRID the household-level information provided by the SOEP will make it possible to examine the development of household income with a view to different income levels, the duration of stay in programme areas and concerning households moving into and out of programme areas. In

combination, the steps of the analysis will provide a comprehensive view of the outcomes of nationwide urban regeneration policy in Germany so far, given the continuing preference of households to reside close to central urban areas.

References

Bauer, T., S. Braun und M. Kvasnicka (2017), Nuclear power plant closures and local housing values evidence from Fukushima and the German housing market. *Journal of Urban Economics* 99: 94-106.

Beckmannshagen, M. and C. Schröder (2022), Earnings Inequality and Working Hours Mismatch. *Labour Economics* 76: 102184,

Bertram, C., J. Goebel, C. Krekel, and Katrin Rehdanz (2022), Urban Land Use Fragmentation and Human Well-Being. *Land Economics* 98(2), 399-420.

Breidenbach, P. and L. Eilers, L. (2018). RWI-GEO-Grid: Socio-economic data on grid level. *Jahrbücher für Nationalökonomie und Statistik* 238(6):609–616.

Christafore, D. and S. Leguizamon, S. (2019), Neighbourhood inequality spillover effects of gentrification. *Papers in Regional Science* 98(3): 1469–1484.

Neumann, U. and S. Yasar (2024), Fostering prosperity at the local scale: outcomes of urban policy for deprived neighbourhoods in Germany. *Ruhr Economic Papers* #1129. Essen et al.

Steinhauer, H., M. Kroh, and J. Goebel, J. (2020). SOEP-Core – 2018: Sampling, Nonresponse, and Weighting in Sample O. *SOEP Survey Papers* 827: Series C. DIW/SOEP, Berlin.