RUHR
ECONOMIC PAPERS

Uwe Neumann
Serife Yasar

Fostering Prosperity at the Local Scale: Outcomes of Urban Policy for Deprived Neighbourhoods in Germany

RUHR UNIVERSITÄT BOCHUM RUB rwi #1129

Imprint

Ruhr Economic Papers

Published by

RWI – Leibniz-Institut für Wirtschaftsforschung
Hohenzollernstr. 1-3, 45128 Essen, Germany

Ruhr-Universität Bochum (RUB), Department of Economics
Universitätsstr. 150, 44801 Bochum, Germany

Technische Universität Dortmund, Department of Economic and Social Sciences
Vogelpothsweg 87, 44227 Dortmund, Germany

Universität Duisburg-Essen, Department of Economics
Universitätsstr. 12, 45117 Essen, Germany

Editors

Prof. Dr. Thomas K. Bauer
RUB, Department of Economics, Empirical Economics
Phone: +49 (0) 234/3 22 83 41, e-mail: thomas.bauer@rub.de

Prof. Dr. Ludger Linnemann
Technische Universität Dortmund, Department of Business and Economics
Economics – Applied Economics
Phone: +49 (0) 231/755-3102, e-mail: Ludger.Linnemann@tu-dortmund.de

Prof. Dr. Volker Clausen
University of Duisburg-Essen, Department of Economics
International Economics
Phone: +49 (0) 201/1 83 - 3655, e-mail: vclausen@vwl.uni-due.de

Prof. Dr. Ronald Bachmann, Prof. Dr. Almut Balleer, Prof. Dr. Manuel Frondel,
Prof. Dr. Ansgar Wübker
RWI, Phone: +49 (0) 201/81 49 - 213, e-mail: presse@rwi-essen.de

Editorial Office

Sabine Weiler
RWI, Phone: +49 (0) 201/81 49-213, e-mail: sabine.weiler@rwi-essen.de

Ruhr Economic Papers #1129

Responsible Editor: Ronald Bachmann

All rights reserved. Essen, Germany, 2024

ISSN 1864-4872 (online) – ISBN 978-3-96973-311-0

The working papers published in the series constitute work in progress circulated to stimulate discussion and critical comments. Views expressed represent exclusively the authors' own opinions and do not necessarily reflect those of the editors.

Ruhr Economic Papers #1129

Uwe Neumann and Serife Yasar

Fostering Prosperity at the Local Scale: Outcomes of Urban Policy for Deprived Neighbourhoods in Germany

RUHR UNIVERSITÄT BOCHUM RUB rwi

Bibliografische Informationen der Deutschen Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at **http://dnb.dnb.de**

RWI is funded by the Federal Government and the federal state of North Rhine-Westphalia.

https://dx.doi.org/10.4419/96973311
ISSN 1864-4872 (online)
ISBN 978-3-96973-311-0

Uwe Neumann and Serife Yasar*

Fostering Prosperity at the Local Scale: Outcomes of Urban Policy for Deprived Neighbourhoods in Germany

Abstract

Traditional urban policy focuses mainly on redevelopment measures. Germany's Social City programme incorporates urban regeneration with support to local communities in deprived neighbourhoods. We use microdata on household characteristics from the German Socio-Economic Panel (SOEP) and microdata on housing prices from the RWI GEO-RED to assess the policy effects on household income and housing markets. Drawing on propensity score matching, we find that household incomes among programme areas have not been affected. However, hedonic pricing models reveal significant effects on housing prices and rents.

JEL-Codes: C21, O18, R23, R31, R58

Keywords: Segregation; urban policy; matching; hedonic pricing models

December 2024

** Uwe Neumann, RWI; Serife Yasar, RWI and RUB.* *– We thank Ronald Bachmann, Malte Borghorst, Simone Salotti, Sandra Schaffner, Christoph M. Schmidt, participants at ERSA 2024 conference and BBSR 2024 online seminar for helpful comments. We thank Frederik Ebbinghaus and Niklas Seveneick for invaluable support. All remaining errors are our own.* *– All correspondence to: Uwe Neumann, RWI, Hohenzollernstr. 1-3, 45128 Essen, Germany, e-mail: Uwe.Neumann@rwi-essen.de*

1 Introduction

Over the past decades, various place-based policy initiatives have been based on the expectation that residential segregation may increase in line with the observed rising inequality in labour markets (Friedmann, 1986; Sassen, 1991; Autor et al., 2003). Since the regional variation of housing prices and rents is substantial, the expected occupational divergence might reinforce residential segregation by skills and income (Behrens et al., 2018; Diamond, 2016). Traditionally, place-based policies have focussed on redevelopment. They have aimed to address local manifestations of social exclusion by tackling the underlying economic, infrastructural, and ecological factors contributing to this issue. While an upgrading of local housing environments may go along with increases in rents and housing prices, these are usually accepted to a certain extent. After all, it is believed that the advantages achieved by preventing adverse neighbourhood effects outweigh the disadvantages of a moderate increase in local rents. In the following, we will define these policy approaches as "area-based initiatives (ABIs)", as opposed to "community development programmes", which enhance community engagement and participation (Nowosielski, 2012).

In Germany, the joint "Urban Development Support programme" (*Städtebauförderung*) was implemented in 1971, involving collaboration among the federal government, federal states, and municipalities. In 1999, the scope of urban regeneration policy was significantly expanded with the introduction of the *Soziale Stadt* (hereafter referred to as *Social City*). While traditional place-based policies had focused on the reconstruction of cities, the Social City became a unique policy tool that combined city reconstruction with the support of local communities in deprived neighbourhoods.[1]

In this paper, we examine the impact of the Social City programme on income levels and housing prices within the targeted areas. We use microdata from the German Socio-Economic Panel (SOEP) to explore the effects on household income and data from the RWI-GEO-GRID and RWI-GEO-RED to explore housing market effects. We draw on the SOEP for West Germany as a whole in order to examine household income effects, but restrict our analysis to Germany´s largest federal state, North Rhine-Westphalia, to analyse housing prices (see below). Since the Social City programme funded small-scale regions, primarily at the neighbourhood

[1]The German national programme took up the experience gained by preceding initiatives of federal states (e.g. in North Rhine-Westphalia the *Stadtteile mit besonderem Erneuerungsbedarf*, ILS, 2000) and the European Union (URBAN Community Initiative, EU, 2024).

or ZIP code level, obtaining precise data on whether a household resides within a programme area is challenging. However, the SOEP provides information on whether households are located within a programme area, enabling us to categorise households into treatment and control groups.

Understanding the effect of place-based policies on income and housing prices is crucial in evaluating the welfare effect of policies, considering an individual household´s indirect utility as influenced by wages, rents, and local amenities (Rosen, 1979; Roback, 1982; Moretti, 2011).

Using propensity score matching, we demonstrate that place-based policy has found it difficult to improve income opportunities among the inhabitants of deprived neighbourhoods. Yet, given the persistence of deprivation in programme areas (see below), due to increasing segregation over the past two decades, disadvantageous neighbourhood effects may have made it even more difficult for policy to improve living conditions.

Drawing on hedonic pricing models, however, we show that upgrading the local housing environment has affected prices for apartments and rents in programme areas. Hedonic price functions provide one way to characterise sorting equilibria, maintaining that the equilibrium price of an individual dwelling can be expressed as a function of its characteristics and the amenities it provides, i.e. they measure the willingness-to-pay for specific assets characterising the quality of housing (Rosen, 1979). In our case, including fixed effects for the programme and reference areas allows us to study whether the improvement of amenities has affected prices. In this context, it needs to be kept in mind that while a local incease in rents and housing prices may indicate a welcome upgrading of the local housing environment, there is also a risk of gentrification and displacement of poor households (see below).

This paper relates to the broad literature that analyses the effects of place-based policies. Notable large-scale place-based policies include the Empowerment Zone programme (Busso et al., 2013; Reynolds and Rohlin, 2015), the Tennessee Valley Authority (Kline and Moretti, 2014a; Kitchens, 2014) in the U.S., the EU Structural Funds in Europe (Becker et al., 2010, 2012), or the Neighbourhood Renewal Fund in the UK (Alonso et al., 2019; Calvert Jump and Scavette, 2024; Lupton et al., 2013). Ahlfeldt et al. (2016) investigate the urban renewal programme in Berlin implemented after German reunification, following the city's division during the

Cold War. This programme spanned from 1992 to 2012, partially overlapping with the Social City programme. They estimate an annual effect on property prices ranging from 0.1% to 2% and report significantly improved housing conditions.

These programmes mostly focus on city regeneration and are often categorised as area-based initiatives. Our paper, however, contributes also to the literature on place-based policies that target community development programmes, such as the mixed-approach GoWell programme in Glasgow (Curl et al., 2015; Kearns et al., 2012; Kearns and Mason, 2015) or the entire community development programme the Big Local in the UK (Akhter et al., 2023; Popay et al., 2023; McGowan et al., 2019). Most similar to the Social City programme are other mixed-approach initiatives like the Contrat de Ville, which has been implemented in France since 1998 (Hall and Hickman, 2002; Esteve-Guell et al., 2024; Clout, 1998). Weber (2013) provides an extensive comparison of the historical development and differences between the two programmes.

More specifically, we contribute to the literature by analysing the effects of place-based policies on income and rents, outcomes that have been frequently studied. For an overview of the effects of place-based policies, see Neumark and Simpson (2015) and Kline and Moretti (2014b). Among studies on income effects, Ku et al. (2020) find a decline in worker wages due to place-based tax incentives, while Reynolds and Rohlin (2015) show no evidence that the federal Empowerment Zone programme significantly benefited impoverished residents. Gibbons et al. (2021) examine the impact of subsidies on the construction of business floor space in deprived neighbourhoods in the UK. They show that it did not improve the employment opportunities for local residents. Examining housing prices, Aarland et al. (2017) study the Gorurd Valley programme in Norway, revealing mixed effects. In contrast, Krupka and Noonan (2009) find that the federal Empowerment Zone programme led to an increase in property values.

Regarding the effects of the Social City programme, in their report, FES (2016) comprehensively analyses the effects of the programme. They demonstrate that the programme has significantly improved the residential environment and social infrastructure, positively impacting the image and self-perception of the neighbourhoods involved. The initiative has also fostered new forms of interdepartmental cooperation and networking within city administrations, enhancing participation and engagement among local residents. Overall, feedback on the programme has been positive, with many neighbourhoods reporting improved management and a height-

ened sense of citizen responsibility for their living environments. Neuer-Miebach et al. (2005) find higher citizen participation in their case study in Hessen. They also observe strong heterogeneity and find that participation is higher in projects that address issues directly affecting the citizens. Heckman et al. (2008); Kersting et al. (2013) report positive effects on unemployment for programme areas in NRW but do not evaluate income or housing prices. BBSR (2017b) report positive effects on participation in 11 out of 21 case studies.

This paper's contribution to the literature is twofold. First, we draw on a unique micro-level dataset, which is representative for households in programme areas in order analyse the potential effects of a nationwide policy that combines area-based initiatives with community development on local household incomes. In addition, we utilise micro-level data on rents and housing prices in order to evaluate the effects on local housing markets. Other evaluations of neighbourhood policiess are seldom concerned with nationwide approaches (Aarland et al., 2017; Kearns et al., 2012) and as far as the German programme is concerned, micro-level information on outcomes has not been utilised systematically until now. Second, as we use unique small-scale data, this enables us to conduct a neighborhood-level analysis of the Social City programme's effects. The Social City programme receives funding primarily at the ZIP code level. Micro-data at levels below counties or districts is rare; our data is unique in providing detailed information at this granular level.

The following two questions provide the guidelines for our research:

1. Has the Social City programme, which was designed to foster local communities in Germany, affected household incomes among the population of deprived programme areas?

2. Has the Social City programme affected residential sorting and housing markets?

The structure of this paper is as follows: Section 2 provides an overview of the institutional background of the Social City programme. Section 3 describes the data, while Section 4 outlines the methodologies used. Section 5 discusses the results, and Section 6 concludes.

2 Background

2.1 Recent Trends

Beginning in the 2000s, a renewed sense of "city-mindedness" spurred a broader trend of urbanisation in Europe and North America, characterised by significant migration into cities (Haase et al., 2010; Couture and Handbury, 2020). This shift has led to rising urban housing prices and increased gentrification (Friedrichs, 1987; Christafore and Leguizamon, 2019). The recent COVID-19 pandemic has the potential to further alter preferences for urban living, particularly concerning urban density and centrality. Delventhal et al. (2021) suggest that the sustained rise in the proportion of individuals working from home could significantly affect segregation and urban housing markets. While the long-term consequences of the pandemic on mobility, location choices, and housing prices remain uncertain, the growing inequality in remote work opportunities may exacerbate divisions across income classes. This sorting by income could transform the composition of residential neighbourhoods, potentially leading to adverse neighbourhood effects (Wilson, 1987; Asquith, 2018; Van Ham et al., 2018).

To help individuals in distressed neighbourhoods, many governments have sought to enhance living conditions in deprived areas through "place-based" policies. However, evidence regarding the scope and effectiveness of these policies is limited. For instance, Gibbons et al. (2021) examine the impact of subsidies on the construction of business floor space in deprived neighbourhoods in the UK. They find that while investment in these projects increased the number of jobs located in the targeted neighbourhoods, it did little to improve the employment opportunities for local residents.

2.2 Policy Background

In Germany, alongside urban segregation, urban-rural differentials and the specific challenges faced by old industrial regions have recently become the focus of a national strategy aimed at fostering the convergence of living conditions. It comprises a wide range of policy measures incorporating the federal government, the Länder, and the municipalities (BMI et al., 2019). Evaluation studies on previous regional economic policies in Germany have confirmed significant effects on turnover and job

growth among firms located in programme areas (Bade and Alm, 2010; IWH, 2020). However, evidence suggesting any individual-level outcomes among the residential population is scarce. Regional policy effects on housing prices, however, have been shown by previous studies. For example, Tra (2010) finds a considerable increase in the desirability (and price) of housing in neighbourhoods where air pollution was reduced considerably between 1990 and 2000 in Los Angeles due to environmental improvement policy.

In Germany, the federal government has supported local area-based regeneration by means of a national Social City programme since 1999. For an overview of the programme, see Table 9 in the Appendix. In the year 1999, 161 neighbourhoods in 123 cities comprised the "first wave" of programme areas (Becker and Löhr, 2000). programme areas are usually subject to a ten-year policy process incorporating, e.g., the refurbishment of buildings, environmental upgrading, provision of consulting services for businesses and entrepreneurs, and additional support of the local education system, funded by the federal government, the Länder, and municipalities. By 2019, various initiatives located in 965 neighbourhoods of 544 municipalities altogether had received support from this programme (BMI, 2021). Average funding is moderate. Nevertheless, since it is the goal of the Social City and similar place-based policy initiatives to affect the living conditions of individual households alongside an upgrading of the local housing environment, we explore whether there have been any outcomes favouring local households and housing markets that can be observed if we compare them with similar households and local areas not receiving this funding.

Programme areas are characterised by exceptionally high poverty rates. For example, in 2017, in West Germany, 8.5% of all inhabitants received income support (i.e. SGB II in the German nomenclature), but in West German Social City areas, 21.5% did so (BA, 2018; BBSR, 2020). The Social City belongs to the national Urban Development Support programme *(Städtebauförderung)*, which focuses mainly on urban redevelopment measures. However, it is part of the efforts in the Social City programme to activate local citizen's associations, housing associations and enterprise participation (Göddecke-Stellmann, 2016) and thus to consider the perspective of local communities.

Additional measures targeting training and employment opportunities, as the projects co-financed by the European Structural Fund (ESF), also focus on Social Citys programme areas. Between 2008 and 2018, the ESF-BIWAQ programme

co-funded projects in 145 municipalities that included training initiatives for local unemployed individuals, support for school-leavers transitioning to employment, and qualification opportunities for non-working residents in the Social City programme areas. Total BIWAQ funding reached 219 million Euros from the ESF and 124.5 million Euros from German federal funds (BBSR, 2020).

It will be part of the following analysis to examine whether this policy has affected the income opportunities of residents in programme areas. Although many studies have examined the implementation and different outcomes of the Social City and the Urban Development Support programme (Altrock, 2016), so far, there have been no attempts to isolate the causal effects of programme implementation on household income among programme zones.

2.3 Similar Place-based Policies

The Social City programme is a unique approach that combines area-based with community development policies, creating a distinctive mixed-approach place-based policy. Few place-based policies explicitly integrate these two approaches. A notable example is the Contrat de Ville programme, established in France in 1998. However, the Contrat de Ville is less predefined and primarily defines the relationship between municipalities and the national government, with its implementation largely dependent on municipal authorities. This raises questions about whether and how citizen participation is facilitated within this framework.

Further mixed-approaches initiatives are the GoWell programme in Glasgow (Curl et al., 2015; Kearns et al., 2012; Kearns and Mason, 2015) and the Grorud Valley programme in Oslo (Aarland et al., 2017), which also combines elements of both area-based initiatives and community development. However, in contrast to Contrat de Ville and Social City, which are implemented at the national level, GoWell and Grorud Valley are limited to the city (or regional) level. See in the appendix Table 9 for a summary of area-based, community development, and mixed-approach programmes, including their scope, country, and year of implementation. Table 10 in the appendix presents the observed effects of select place-based programmes. Please note that these tables provide a summary and are not exhaustive, as there are numerous similar initiatives globally.

3 Data

3.1 Individual-level data

Initiated in 1984, the SOEP is an annual representative study of private households in Germany. It covers various topics, including household composition, residence, earnings, and household members' occupations. The SOEP has become a standard for individual and household-level analysis. For examples of prominent papers using the dataset, see Doepke and Gaetani (2024), Falck et al. (2014) or Dohmen et al. (2010).

Information about households and individuals can be linked to regional identifiers. However, due to the small size of regional clusters, it is challenging to construct a representative sample for a specific city or region (Giesselmann et al., 2019). Nevertheless, the SOEP may be used to study the regional context, e.g. with respect to broader regional categories (Goebel and Zimmermann, 2021; BBSR, 2017a).

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 O has been explicitly designed to increase the number of households from Social City programme areas. In order to improve the availability of georeferenced microdata that can be used to evaluate regional and urban policy in Germany, information about nearly 1,000 households residing in Social City areas in 2016 has been introduced to the SOEP in wave 35 from 2018. A new variable, "socurban", going back to the year 2000 was created as a result of a cooperation between the SOEP Group at DIW and the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) (SOEP Group, 2020). Based on this variable, we define households into treatment and control groups.

We use the SOEP-Core wave 38 from the year 2023 (Steinhauer et al., 2020; SOEP Group, 2020), in which information about residence in Social City areas is provided up to the year 2019. For the years 2020 and 2021, households not changing their residence can be assigned to programme areas using the information from 2019. During survey expansions, the number of households residing in Social City areas had increased to 2,641 by 2019. Due to this ample information, the SOEP provides a sound basis for the study of households in programme areas. Since living conditions in East Germany differed from those in the West for a long time after reunification, the analysis will be restricted to West Germany. It will not be possible to pursue

whether households in programme areas have any direct interaction with initiatives funded or supported by the Social City. Yet, the analysis will utilise information on whether individuals are generally interested in politics, which is provided by the SOEP. This will serve as a proxy for individuals with a higher propensity to become at least informed about local policy matters.

In Table 1, the descriptive statistics highlight considerable demographic differences between programme areas and West German averages, using data for 2015 as an example. The median net household income in programme areas is considerably lower (1,550 compared to 2,100), and the size of households is slightly smaller in programme zones than in West Germany altogether. Between 2015 and 2020, household income increased at a faster pace on average in Social City areas (+0.5% per year) than in West Germany as a whole (+0.4%).

Mobility is somewhat higher among programme areas, where 8.4% of households had moved in the previous year (compared to 6.4% in West Germany). The share of migrant households is much higher (38.6 % compared to 22%) in programme areas. The share of households with children is above the West German average, and the share of senior citizens´ households is below their average. The share of households, in which at least one person holds an upper secondary school certificate *(Abitur/Fachabitur)*, is lower in programme areas (26.4% compared to 33.3%) and so is the share of households, in which at least one person reports to be interested or, indeed "very interested" in politics (42.6% compared to 51%). We include this variable in order to identify households of persons with a higher propensity to become interested in local policy matters. The share of skilled blue-collar workers is somewhat lower in programme areas (11.1%) than in West Germany, the share of unskilled workers higher (12.1% compared to 8.9%).

Table 1: Household characteristics (2015 in %, except as indicated)

	West Germany	Social City
number of households	25,911,585	1,737,994
income growth (mean)	0.4	0.5
net household income (median)[1]	2,100	1,550
household size (mean)	1.8	1.7
dummy variables = 1 (in %)		
mobile	6.4	8.4
migrant background	22.0	38.6
policy interested	51.0	42.6
child <14	8.5	9,9
age 60+	49.3	36.6
upper secondary school	33.3	26.4
social city	6.1	100.0
skilled blue-collar worker	12.2	11.1
unskilled worker	8.9	12.1

Authors´ calculations based on the SOEP, weighted using weights provided by the SOEP. For an explanation of variables cf. Table 8; 1 in Euro.

3.2 Housing market data

Our data on housing markets comes from the unique RWI GEO-RED. This dataset provides micro-level information on prices for apartments (for rent and for sale) and residential houses (one- and two-family homes). This information is drawn from the internet platform *ImmobilienScout24*. All listings posted on the platform between 2009 and 2021 are included. Further variables include information about housing characteristics such as living space, type and condition of the building, and features like having a garden, balcony or cellar. Georeferencing is provided at the level of 1 km^2 grids and 5-digit postal code zones. For more information on the data, see Boelmann and Schaffner (2019). We restrict our analysis to North Rhine-Westphalia (NRW), Germany´s most populous federal state (comprising over a fifth of the country´s total population), which is highly urbanised and where municipal and state authorities draw on the experience from a previous state-level programme

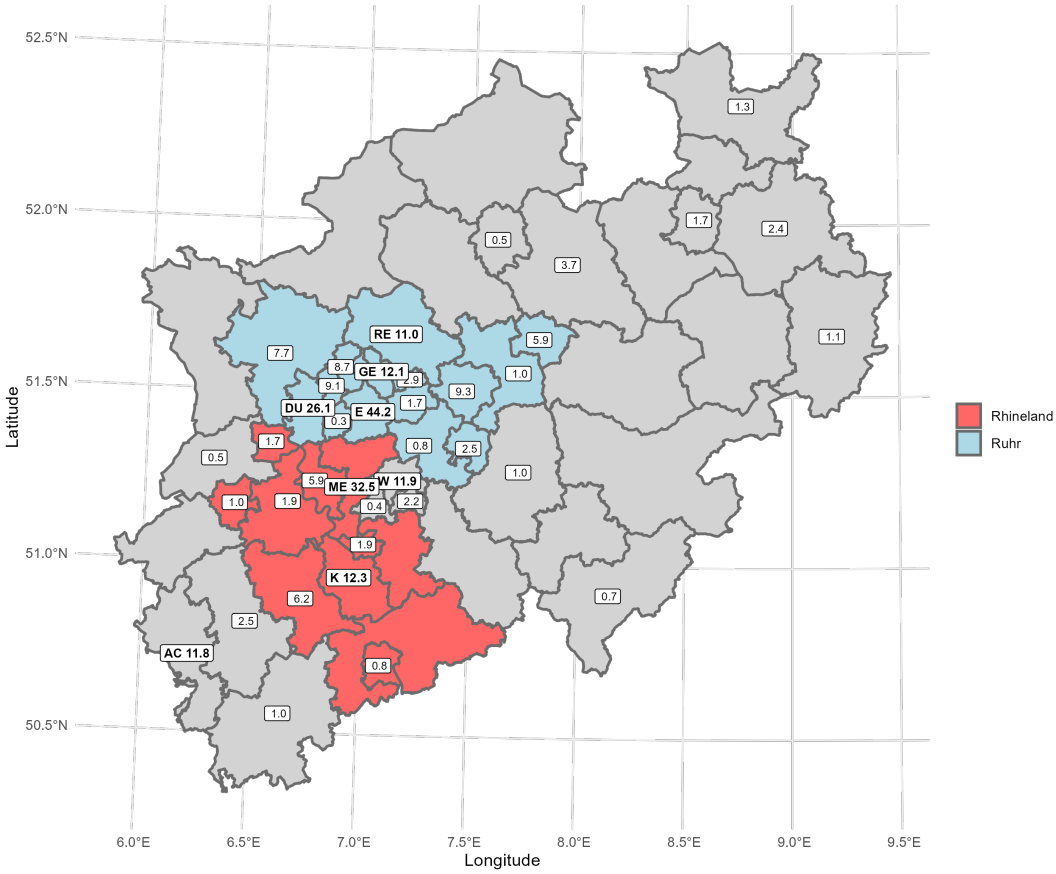
(*Stadtteile mit besonderem Erneuerungsbedarf*). The NRW programme served as a role-model for the nationwide Social City programme (ILS, 2000). We define 5-digit postal code zones directly adjacent to programme areas as reference areas.

We merge the RWI-GEO-RED dataset with the RWI-GEO-GRID. The RWI-GEO-GRID provides detailed socioeconomic information on the residential population at the level of 1 km^2 grids. The information is sourced by *Microm Micromarketing-Systeme und Consult GmbH*, a market research firm specialising in territorial analysis. Similar to the RWI-GEO-RED, this dataset encompasses the period from 2009 to 2021. For more information about the data, see Breidenbach and Eilers (2018).

3.2.1 Programme and reference areas in North Rhine-Westphalia

For our analysis, we divide NRW into three regions based on differences in basic economic conditions (Figure 1 and Table 2). The Ruhr and Rhine regions comprise the largest urban agglomerations in Germany, comprising around 11 Million inhabitants, the remaining part of NRW (around 7 Million inhabitants) includes smaller urban (e.g., Aachen, Bielefeld, Münster) and rural regions. Among the urban agglomerations, the old industrial Ruhr, which has been subject to considerable structural change over the past decades, still differs in terms of local economy from the Rhineland comprising Bonn, Cologne, Düsseldorf and surrounding areas. Table 2 highlights selected statistics for programme areas of the Social City programme and neighbouring reference areas in the Ruhr and Rhine regions for 2021 and change 2016-2021. Average income, housing prices and rents are considerably higher and have increased at a faster pace in the Rhine than in the Ruhr region. In both regions, income, housing prices, and rents are somewhat lower in the programme than in reference areas. Incomes have increased faster in reference areas. Prices for flats on offer for purchase have increased faster and rents slower in programme areas in the Ruhr, whereas rents have increased faster and prices slower in programme areas in the Rhine region. As a whole, average statistics suggest that, nevertheless, reference areas are suitable for comparison with programme areas.

Figure 1: Social City, total funding until 2011 in million euro, by municipal district (Kreis)



Authors´ calculations. Funding > 10 million euros highlighted. AC = Aachen, DU = Duisburg, E = Essen, GE = Gelsenkirchen, K = Cologne, ME = Mettmann, RE = Recklinghausen, W = Wuppertal. Data source: BMWSB Federal Ministry for Housing, Urban Development and Building (2024), Bundesprogrammem Soziale Stadt 2012. https://www.staedtebaufoerderung.info

Figure 1 displays funding by the Social City programme by the municipality up to 2011. In municipalities receiving over 10 million euros altogether, funding was usually provided for more than one programme area (e.g. 3 in Essen, 4 in Duisburg and Cologne). As a whole, more cities in the Ruhr than in the Rhine region received over 10 million euros from the Social City up to 2011. Outside the urban agglomerations, only one city (Aachen) received over 10 million. Support in NRW thus obviously focussed on deprived areas of the large urban regions and combined with other instruments of regional policy supporting structural change in the Ruhr area (e.g. ERDF and German regional economic policy).

Table 2: Descriptive statistics

Ruhr Area				
	2021		2016-2021	
	Programme Area	Reference Area	Programme Area	Reference Area
Population	5,963	5,478	+6.4%	+4.0%
Av. HH Income	39,252 €	41,559 €	+1.1%	+5.1%
Foreigners	21.5%	18.6%	+1.1 pc. pts	+3.2 pc. pts.
Unemployment Rate	13.4%	11.5%	-0.7 pc. pts	-0.8 pc. pts.
Av. Housing Price	1,412 €/m²	1,501 €/m²	+34.6%	+29.5%
Av. Rent	6.90 €/m²	7.37 €/m²	+17.5%	+20.8%
Rhine Area				
	2021		2016-2021	
	Programme Area	Reference Area	Programme Area	Reference Area
Population	8,160	7,255	+8.8%	+4.2%
Av. HH Income	45,909 €	48,445 €	+3.6%	+5.2%
Foreigners	22.9%	20.1%	-1.0 pc. pts	+1.3 pc. pts.
Unemployment Rate	11.5%	8.9%	+0.1 pc. pts	0.0 pc. pts
Av. Housing Price	3,082 €/m²	3,852 €/m²	+45.0%	+50.4%
Av. Rent	10.55 €/m²	10.86 €/m²	+26.5%	+22.2%

Authors´ calculation based on RWI GEO-GRID and RWI GEO-RED.

4 Empirical Strategy

4.1 Income analysis

In order to examine whether the Social City programme might have affected the income of local households, we draw on a matching procedure to construct suitable comparison groups for our estimations of treatment effects. A propensity score matching analysis in the spirit of Rosenbaum and Rubin (1983) gives us the *Average treatment effect on the treated* ($\widehat{ATT}$) for the outcome of five-year growth of household income for base years t1 = 2000, 2005, 2010 and 2015. We model this with the following Equation 1:

$$\widehat{ATT} = \frac{1}{n} \sum_{i \in I_1} \left[\frac{log(Y_{1i,t5})}{log(Y_{1i,t1})} - \sum_{j \in I_0} \omega(i,j)_{t1} \cdot \frac{log(Y_{0j,t5})}{log(Y_{0j,t1})} \right] \tag{1}$$

whereas n is the number of households in the treatment group I_1 (residing in programme areas), I_0 indicates households in the control group (non-programme areas) and $\omega(i,j)$ is a matching procedure-specific weight derived from basic house-

hold characteristics. The propensity score, which is estimated from a binary choice model, condenses the information from the covariates into a single index function such that households in the treatment and control group with the same distribution on the covariates would share the same score. It is assumed that conditional on the covariates, the outcome in terms of income growth among households in the programme areas (Y_1) would be the same as that among the control group (Y_0) if they had not decided to reside in neighbourhoods supported by the Social City. For a detailed description of the variables, see Table 8 in the Appendix.

From a range of different matching algorithms, we choose the Epanechnikov kernel approach and match households in programme areas with a weighted average of all controls such that the weight is inversely proportional to the distance between the treated and control groups within a predefined bandwidth.[2] Compared to other methods of nearest neighbour matching, the risk of bad matches in cases of relatively great dissimilarity between a member of the treatment group and the closest control member is thus avoided (Heckman et al., 1998) To account for potential changes in household income due to changes in household size in case persons enter or leave, apart from household income, we control for household size, age, qualification and occupation categories, migration background, mobility and growth in household income over the previous three years.

Overall, we conduct four robustness checks. In the first robustness check, we restrict the treatment group to households that were not mobile within the previous three years and whose residence was already in a Social City programme area three years ago. This step constructs a treatment group of households that were exposed to a Social City context for at least three years since the overall sample may include households moving into programme areas.

In the second robustness check, we limit our analysis to individuals residing exclusively in urban housing environments. An urban housing environment is defined as multi-family dwellings (i.e., all dwellings except single-family and two-family homes) located in urban regions, as designated for territorial planning purposes by the Federal Institute for Research on Building, Urban Affairs, and Spatial Development (BBSR, 2017a).

[2]Propensity score matching uses the PSMATCH2 Stata module, version 4.0.11 (Leuven and Sianesi, 2003). The predefined bandwidth for Epanechnikov kernel matching is set at 0.06. In previous research, Heckman et al. (1998) identified a bandwidth of 0.06 (comprising a propensity score from -0.06 to $+0.06$) out of a range of tested bandwidths to optimise the trade-off between variance and bias and to produce the smoothest fits.

The third robustness check restricts the analysis to North Rhine-Westphalia, which will be the focus of the analysis of housing market effects, because NRW comprises Germany's largest urban agglomerations and draws on an extensive experience of neighbourhood policy, predecessing the Social City programme.

In the fourth robustness check, we explore the five-year growth of household income for base years t = 2012, . . . , 2016 among households that resided in programme areas at least during the complete period 2006-2011.

4.2 Housing market analysis

Here we explore whether the designation of Social City programme areas affected local housing markets in North Rhine-Westphalia. Whereas we utilise household-level information in order to construct statistical "twins" from the control group of households not residing in programme areas for each household within programme areas in the matching analysis of the programme´s income effects, in the analysis of housing market effects, we are interested in neighbourhood-level amenities. Given that the hedonic pricing approach controls for a wide range of housing-specific characteristics determining the willingness-to-pay for a unit of housing, it can thus be demonstrated how far, in addition, local amenities affect the price (see above). These neighbourhood-level effects will be estimated by the hedonic pricing model as in the following Equation

$$\begin{aligned} \log(P_{i,jkt}) = \beta_x X_{i,t} + \beta_N N_{j,t} + \mu_k + \mu_k d + \lambda_k + T_t + \\ \gamma_{t,k} T_t \mu_k + \delta_{t,k} T_t \lambda_k + \zeta_{t,k} T_t \theta_k + \varepsilon_{i,jkt} \end{aligned} \tag{2}$$

in which $P_{i,jkt}$ is the price (or rent without heating) of the object i per unit of residential dwelling space (in m^2) in year t = 2009, 2008,..., 2021. $X_{i,t}$ 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 km^2 grid j are described by vector $N_{j,t}$, 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,...,75 programme zones of North Rhine-Westphalia, which had received funding by 2011, and thus control for area fixed effects, $\mu_k d$ denotes the distance of each programme

area to the nearest higher-order city centre [3], λ_k is a dummy denoting reference areas adjacent to programme areas, θ denotes other areas. 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, again identified by the interaction of time and community dummies, and ζ comprise the interaction between area and time-fixed effects for all other regions. In order to account for spatial autocorrelation, standard errors will be clustered by municipality. The analysis will be carried out separately for 3 large planning regions of NRW, the Rhineland, the Ruhr, and the remaining regions outside of the two large agglomerations. These three regions differ considerably in basic economic characteristics and housing markets (see below).

The study incorporates programme zones, which had received funding by 2011. In robustness checks for each of the three subregions of NRW, the analysis will be restricted to programme zones where funding terminated in 2011 and where it had amounted to at least 2.6 million euros altogether. As explained, funding of the Social City in each municipality is moderate. In 25 NRW programme areas, funding up to 2011 exceeded 2.6 million euros, i.e. this group comprises the upper tercile of local funding. Since the participation of municipalities in the Social City programme has evolved over the past decades, it was decided to include only those areas in the analysis which had received funding by 2011, because we can assume that in these areas, the policy conducted in the previous decade might have affected housing markets during the subsequent study period (2009-2021). Further, by restricting the analysis to programme areas where funding had terminated by 2011 and where total funding had amounted to a similar volume, we obtain a more homogeneous sample.

[3] The distance of the geographical centre of each programme area to the nearest higher-order centre (where the precise location of the centre is usually defined as the location of the city´s central railway station) is included, as some programme areas are close to city centres and some at more peripheral locations within the respective city. Presumably the distance to large urban centres affects prices, as housing prices and rents have increased at faster rates near to centres.

5 Results

5.1 Income effects

In order to explore the local effects of the Social City programme, the development of household income among residents of programme areas will be compared to that of comparable matches from non-programme areas. Note that the change in population characteristics in programme areas may have induced (more) undesirable neighbourhood effects, which may have rendered it more challenging for local households to improve their own prosperity in spite of local programme measures. Such potential neighbourhood effects remain out of the scope of the matching study but will be considered in the analysis of housing markets.

For the purposes of analysing the growth of household income over five years in programme areas of the Social City, suitable matches were found for all of the selected base years. Table 3 presents descriptive statistics for the matching procedure in 2015. The analysis (Table 4) demonstrates that sorting into programme areas is, most and for all, (negatively) correlated with the level of income in each base year. This confirms that the programme was well-targeted to low-income households.

Regarding the income effects of the Social City, no positive $\widehat{ATT}$ is found for households residing in Social City programme areas in any base year. Thus, we interpret the results as indicating that the Social City programme did not affect the income of the residents.

Table 5 shows the results for our robustness checks. Separate non-treated comparison groups are generated in each robustness check. The first robustness check restricted the treatment to non-mobile households having resided in Social City areas for at least three years before the base year 2015. Here we find a negative treatment effect (Estimation 1). In the second robustness check, which restricts the analysis for 2015 to urban housing environments (but not to immobile households as in the first check), we do not find any programme effect (Estimation 2). With respect to households in North Rhine-Westphalia (Estimation 3), again, no significant treatment effect is found. Finally, among households residing in programme areas for the complete period 2006-2011, regarding subsequent average annual income growth over five years for base years t = 2012,...,2016, a negative $\widehat{ATT}$ (-0.106 points) is reported (Estimation 4).

Table 3: Propensity score matching - descriptive statistics

Matching by
Residence and Non-Residence in Social City programme areas

	total			urban housing environment		
	means		difference	means		difference
	treated	controls	t-values	treated	controls	t-values
income (log)	7.45	7.52	-0.97	7.44	7.46	-0.22
past income growth	0.50	0.50	0.04	0.55	0.51	0.17
household size	1.67	1.74	-0.60	1.69	1.70	-0.06
dummy variables						
mobile	0.06	0.05	0.17	0.07	0.06	0.35
migrant	0.31	0.28	0.36	0.30	0.29	0.35
policy	0.44	0.46	-0.24	0.44	0.46	-0.29
age 60+	0.35	0.36	-0.09	0.31	0.32	-0.18
child <14	0.07	0.08	-0.12	0.05	0.05	0.01
upp. secondary school	0.33	0.34	-0.19	0.33	0.33	0.10
skilled blue-collar w.	0.08	0.10	-0.52	0.09	0.10	-0.10
unskilled worker	0.15	0.14	0.30	0.18	0.18	0.07

This table presents the descriptive statistics of the matches for covariates in 2015. The left table section represents the statistics for Estimation 4 in Table 4, the right table section the statistics for Estimation 2 in Table 5. We estimate an Epanechnikov kernel matching as in Equation 1 across alternative definitions. cf. Table 8. Significance levels: *p<0.1; **p<0.05; ***p<0.01. Authors´ calculation based on the SOEP.

All in all, it appears that urban regeneration measures did not "trickle down" to the extent that they would affect the income of households residing in programme areas. Significant and negative treatment effects concerning households residing in Social City areas for longer periods (i.e. at least three years (Estimation 1) or five years (Estimation 4)) even imply an income reduction due to longer exposure to programme areas. While it is assumed that the matching procedure accounts for a thorough characterisation of households, of course further unobservable features may distinguish households residing in deprived areas for longer periods from other households. For these households negative income effects appear to emerge from sorting into deprived areas.

Our results show that supplementing urban development with community-oriented initiatives has not succeeded in improving average household incomes in programme areas. This does not mean that participating in programme initiatives had no im-

Table 4: Income effects in Social City programme areas (ATT)

	Outcome avg. annual growth of income over the forthcoming 5 years			
base year	2000	2005	2010	2015
	(1)	(2)	(3)	(4)
$\widehat{ATT}$	-0.094	-0.040	0.020	-0.163
	(0.343)	(0.085)	(0.082)	(0.090)
income (log)	0.769	-0.701***	-0.558**	-0.900***
	(1.223)	(0.236)	(0.249)	(0.226)
past income growth	-0.311	0.029	0.104	0.082
	(0.304)	(0.060)	(0.072)	(0.066)
household size	0.140	0.154	0.030	-0.135
	(0.523)	(0.138)	(0.163)	(0.153)
dummy variables[1]	yes	yes	yes	yes
constant	-6.528	2.227	1.264	4.060
	(8.424)	(1.637)	(1.742)	(1.628)
observations	114	1,888	1,528	1,824
p^2_{MF}	0.021	0.021	0.022	0.066

This table shows the results for the $\widehat{ATT}$ as estimated in Equation 1 through a logit estimation and an Epanechnikov kernel matching. The outcome is the average annual growth of household income over the forthcoming five years, in %) for households in Social City programme areas. Robust standard errors are in parentheses. p^2_{MF} = McFadden's Pseudo-R^2; for explanation of variables cf. Table 8 in the appendix. Authors´ calculations based on the SOEP.

pact on local residents. While such beneficial effects may have been induced, they have not been generated to such an extent that they would affect a wide range of households, resulting in average income increases.

Inducing household income effects may be difficult or even beyond the scope of place-based policy. Yet, the goal of place-based policy is to equalise spatial disparities. As mentioned before, the Social City combines with projects which are co-funded by the ESF and thus directly designed to improve the job and income opportunities of local residents in programme areas (ISG et al. (2015)). Place-based urban policy focussing on deprived neighbourhoods may find it a more achievable goal to upgrade local amenities of programme areas—and to prevent neighbourhood

effects, which might be aggravated by the out-migration of more solvent households—than to improve the income of local residents. Yet, due to an overall desire to reside in urban locations, upgrading Social City areas may result in gentrification and displacement of residents.

A further step will therefore examine the housing price effects of Social City programme area designation in NRW between 2009 and 2021 (Equation 2).

5.2 Housing market effects

The analysis of household income effects has demonstrated that it remains difficult for place-based policy to improve the prosperity of households residing in programme areas. However, in order to prevent undesirable neighbourhood effects, it is a prerequisite to stabilise local housing markets. The following section examines whether the results of the hedonic pricing estimations according to Equation 2 indicate a favourable outcome of policy measures in programme areas. Table 6 reports results for apartments for purchase.

Table 5: Robustness checks for the income-effects (ATT)

	Outcome: average annual growth of household income over 5 years			
treated households	non-mobile households[1] in Social City areas	"urban" Social City areas	households in Social City areas of NRW	households in Social City areas 2006-2011
non-treated	other households	"urban" areas not in Social City	households in NRW, not in Social City areas	households not in Social City areas 2006-2011
base year	2015	2015	2015	2012-2016
	(1)	(2)	(3)	(4)
$\widehat{ATT}$	-0.221***	-0.111	-0.045	-0.106**
	(0.069)	(0.105)	(0.195)	(0.048)
income (log)	-0.741***	-0.738***	-0.655	-0.289
	(0.259)	(0.266)	(0.443)	(0.177)
past income growth	0.070	0.066	-0.079	-0.164**
	(0.0800)	(0.079)	(0.134)	(0.075)
household size	-0.247	-0.063	-0.231	-0.267**
	(0.183)	(0.173)	(0.274)	(0.134)
dummy variables	yes	yes	yes	yes
constant	2.837	4.437**	3.267	-0.509
	(1.858)	(1.911)	(3.206)	(1.267)
observations	1,725	823	506	4,272
p^2_{MF}	0.057	0.061	0.093	0.034

This table presents the results of the robustness checks. We estimate the logits with an Epanechnikov kernel matching as in Equation 1 across alternative definitions.[1]treated: non-mobile within three previous years in Social City. Robust standard errors are in parentheses. For an explanation of variables, cf. Table 8. Significance levels: *p<0.1; **p<0.05; ***p<0.01. p^2_{MF} = McFadden's Pseudo-R^2. Authors´ calculation based on the SOEP.

Table 6: Hedonic pricing estimations – apartments for purchase in North-Rhine Westphalia

Purchase	Ruhr Area		Rhine Area		Other	
	(1) all areas	(2) > 2.6 m €	(3) all areas	(4) > 2.6 m €	(5) all areas	(6) > 2.6 m €
Housing characteristics	yes	yes	yes	yes	yes	yes
Neighbourhood characteristics	yes	yes	yes	yes	yes	yes
2021*programme areas	0.528***	0.642***	0.753***	0.839***	0.656***	0.806***
	(0.043)	(0.075)	(0.083)	(0.054)	(0.040)	(0.094)
2021*reference areas	0.539***	0.580***	0.790***	0.912***	0.660***	0.669***
	(0.034)	(0.033)	(0.085)	(0.049)	(0.042)	(0.028)
2021*other areas	0.541***	0.518***	0.725***	0.715***	0.568***	0.581***
	(0.044)	(0.029)	(0.066)	(0.068)	(0.033)	(0.033)
programme area FE	yes	yes	yes	yes	yes	yes
reference area FE (reference: other areas)	yes	yes	yes	yes	yes	yes
programme area*distance to city centre	yes	yes	yes	yes	yes	yes
year*area fe 2010-2020 (reference 2009*area)	yes	yes	yes	yes	yes	yes
observations	128,104	128,575	225,875	227,786	96,101	95,141
R^2	0.61	0.62	0.58	0.58	0.55	0.55

Authors´ calculation based on RWI GEO-GRID and RWI GEO-RED. > 2.6 m €: Social City programme areas, in which funding had amounted to at least 2.6 million euro by 2011 and where funding had terminated by 2012; this is the top tercile of 75 programme areas funded until 2011 in NRW.

The analysis finds that prices for apartments have increased considerably in all regions. If we take into account all programme areas, however, Estimations 1, 3 and 5 find that between 2009 and 2021, prices per m^2 increased at slower rates in the programme than in reference areas in all of the three regions considered for purposes of comparison, i.e. the Ruhr region, the Rhineland and other regions of North Rhine-Westphalia (Figure 1).

In each region, however, prices have increased at considerably higher rates in programme areas with funding over 2.6 million euros than in areas with lower funding, as outlined by Estimations 2, 4, and 6. These areas represent the upper tercile in terms of total funding until 2011. It is plausible that price effects attributable to the Social City programme focus on these areas for two reasons. First, as funding per programme region is moderate, it can be expected that a certain threshold is required in order to achieve outcomes that can be measured at the neighbourhood level. Second, in programme areas receiving relatively large funding, a high share of the total investment is usually allocated to larger-scale redevelopment measures such as the regeneration of industrial sites, implementation of traffic-reducing measures or the creation of public green spaces. It can be expected that real estate markets correspond to such larger investments more immediately than to smaller redevelopment initiatives (Neumann et al., 2011).

In the Ruhr region, prices in programme areas with funding over 2.6 million increased by 64% and in all programme areas by 53% (estimations 1 and 2). In the programme areas of the Rhineland, prices per m^2 increased by 84% for apartments in programme areas with funding over 2.6 million euros between 2009 and 2021. In Rhineland programme areas with lower funding, they increased by 75% (estimations 3 and 4).

In the Rhine region, prices increased at higher rates in reference than in programme areas, whereas in the Ruhr area, they increased faster in programme areas receiving over 2.6 million than in the corresponding reference regions (64% compared to 58%, estimation 2). It can be argued, therefore that in the Ruhr, significantly higher housing price increases can be attributed to the programme, while no such effects can be observed in the Rhineland. Among the other regions of NRW, there was also significantly faster growth of prices in programme areas receiving over 2.6 million than in the corresponding reference areas (81% compared to 66%) (estimations 5 and 6). No such effects were found in any of the regions among programme areas receiving below 2.6 million euros.

Regarding rents, increases were more moderate altogether and again higher in the Rhineland than in the other regions (Table 7).

In the Rhine region rents per m^2 increased at a faster pace in all programme areas than in reference areas, in the other regions they increased at a faster pace only in programme areas receiving over 2.6 million. In the Rhine region, while the price increase in total was higher in areas receiving over 2.6 million than in other areas (32% compared to 28%), a similar difference distinguished the corresponding reference areas among all areas (+28% compared to +24%, estimations 3 and 4).

In the Ruhr area, rents had increased at a faster pace in programme areas receiving over 2.6 million than in the corresponding reference areas (24.5% compared to 22.2%). If all areas are taken into account, there were no considerable differences between programme and reference areas (estimations 1 and 2).

In the other regions, there was a considerable surplus in rent increases also in programme areas receiving over 2.6 million (27.7% compared to 23.6%), but no such surplus with respect to all programme areas. It is notable that in all regions, increases in prices and rents for apartments on offer between 2009 and 2021 were higher among programme and reference areas than in other areas. This is plausible since programme and reference areas are usually located in the inner zones of cities, where prices, in general, are higher and have increased at a faster pace than in outer urban zones.

Since the observable policy outcomes concerning prices and rents for apartments concentrate on programme areas receiving relatively large overall funding, Figures 2 and 3 show the annual change in prices and rents for programme areas receiving over 2.6 million euros and the corresponding reference areas in each of our three study regions.

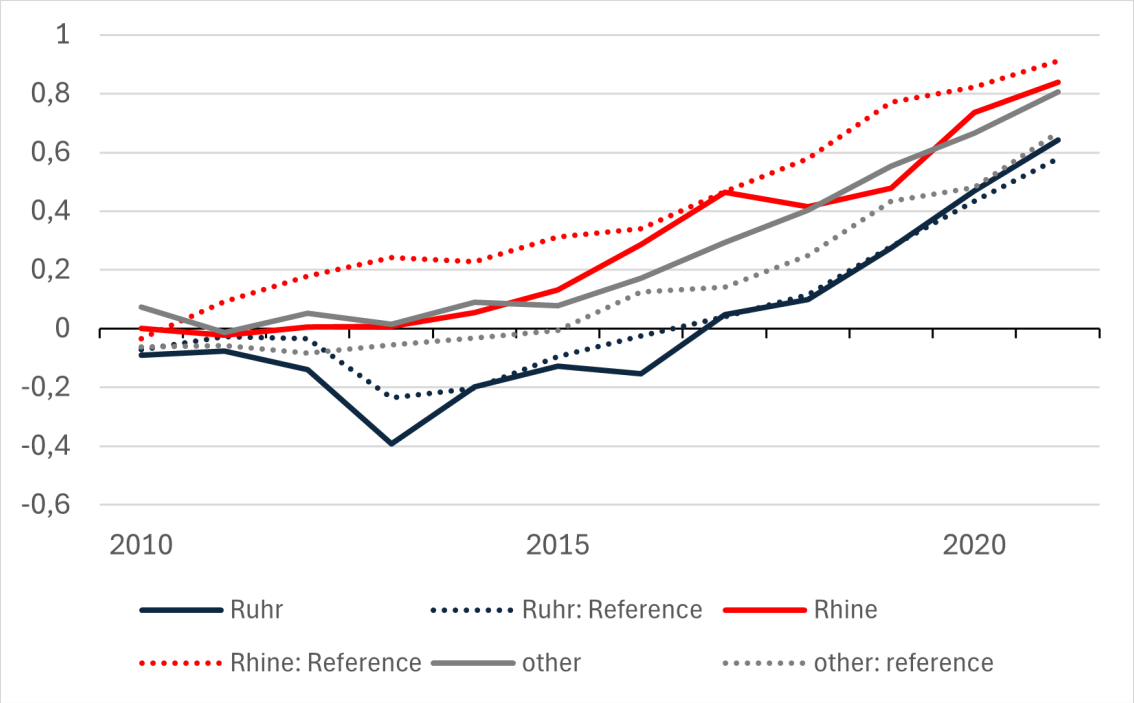
With respect to annual price changes over the period 2010-2021 among programme areas receiving over 2.6 million euros, prices for apartments stagnated in the first half of the past decade but began to increase from 2015 (Figure 2).

Table 7: Hedonic pricing estimations – apartments for rent in North-Rhine Westphalia

Rent	Ruhr Area		Rhine Area		Other	
	(1) all areas	(2) > 2.6 m €	(3) all areas	(4) > 2.6 m €	(5) all areas	(6) > 2.6 m €
Housing characteristics	yes	yes	yes	yes	yes	yes
Neighbourhood characteristics	yes	yes	yes	yes	yes	yes
2021*programme areas	0.217***	0.245***	0.281***	0.319***	0.234***	0.277***
	(0.025)	(0.033)	(0.042)	(0.058)	(0.022)	(0.025)
2021*reference areas	0.219***	0.222***	0.243***	0.280***	0.230***	0.236***
	(0.020)	(0.020)	(0.040)	(0.028)	(0.019)	(0.019)
2021*other areas	0.194***	0.194***	0.234***	0.228***	0.221***	0.220***
	(0.012)	(0.018)	(0.037)	(0.037)	(0.023)	(0.024)
programme area FE	yes	yes	yes	yes	yes	yes
reference area FE (reference: other areas)	yes	yes	yes	yes	yes	yes
programme area*distance to city centre	yes	yes	yes	yes	yes	yes
year*area fe 2010-2020 (reference 2009*area)	yes	yes	yes	yes	yes	yes
observations	506,273	509,044	722,898	777,158	350,072	346,915
R^2	0.47	0.46	0.49	0.49	0.55	0.54

Authors´ calculation based on RWI GEO-GRID and RWI GEO-RED. > 2.6 m €: Social City programme areas, in which funding had amounted to at least 2.6 million euros by 2011 and where funding had terminated by 2012.

Figure 2: Hedonic pricing estimations - apartments for purchase in North Rhine Westphalia, programme areas that had received >2.6 million euro and where funding had terminated by 2012, annual change of price per m², in %

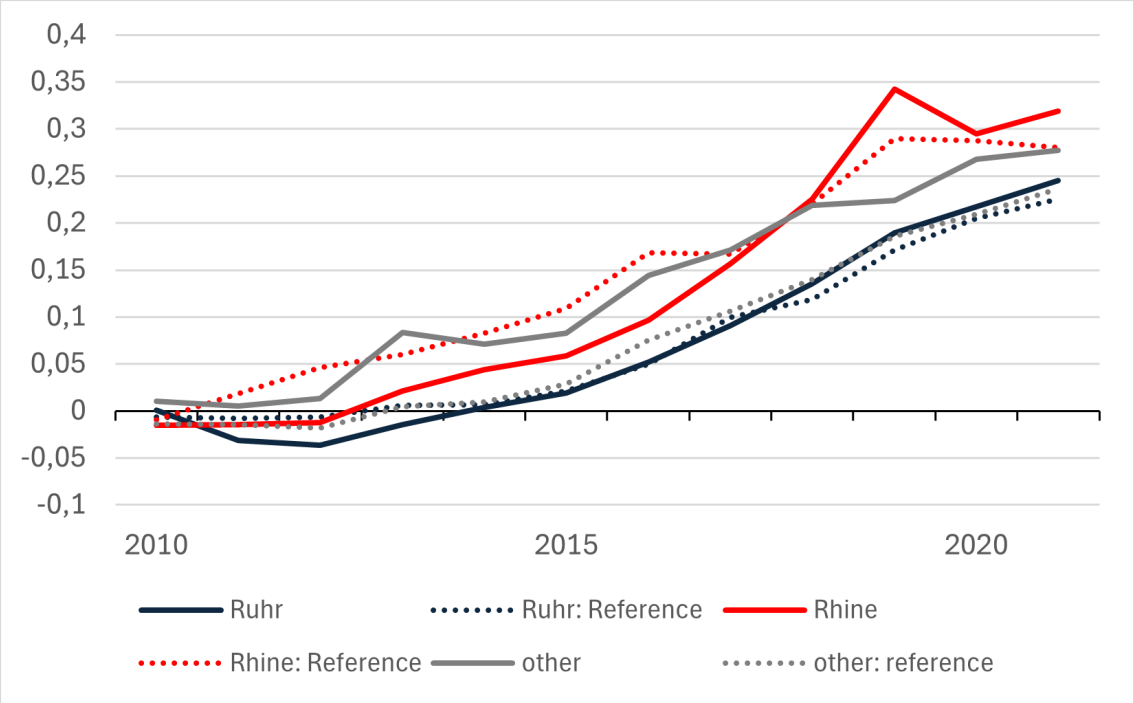


Authors´ calculations using RWI GEO-GRID and RWI GEO-RED.

In the Ruhr area, prices even slumped but began to increase in 2013. In the Rhineland reference areas, prices increased almost constantly and kept ahead of programme areas throughout the study period. In the Ruhr region, prices increased at very similar annual rates in programme and reference areas between 2017 and 2021, with a slightly higher increase in programme than in reference areas in 2020 and 2021. In the other regions, prices have increased at a faster pace in programme than in reference areas since the middle of the past decade. As explained, the analysis thus finds no price effects attributable to the Social City programme for the Rhineland region. In the Ruhr area, a significant price surplus has emerged only since 2020, in the other regions a significant price surplus in programme areas has been observable throughout the study period.

Concerning rents, increases were moderate or even slumped during the beginning of the past decade, but from around 2013 onward, they have increased in all regions. It is common for all regions for rents to have increased at higher rates in the programme than in reference areas since 2018 (Figure 3).

Figure 3: Hedonic pricing estimations - apartments for rent in North Rhine Westphalia, programme areas that had received >2.6 million euro and where funding had terminated by 2012, annual change of price per m², in %



Authors´ calculations using RWI GEO-GRID and RWI GEO-RED.

As explained, with respect to change over the total period, this price surplus is more moderate in the Ruhr area (+2.3 percentage points) than in the Rhineland (+3,9 points) and the other regions (+4.1 points) (Table 7). In the other regions, a surplus in price increases has characterised the programme areas since 2013, whereas in the Rhine and Ruhr regions, the programme areas "overtook" the reference regions only in 2018 (Ruhr) and 2019 (Rhine).

All in all, in terms of both purchasing prices and rents for apartments in regions of North Rhine-Westphalia outside of the highly urbanised Ruhr and Rhineland regions, a significant surplus characterised the programme areas throughout the study period, whereas in the Ruhr and Rhineland, a significant surplus in rents emerged only in the second half of the past decade. No surplus in purchasing prices has affected programme areas in the Rhineland, while a surplus has developed in the Ruhr region since 2020.

6 Conclusion

The analysis provides evidence on selected outcomes of urban policy for deprived neighbourhoods in Germany, which comprises a combination of urban reconstruction and community development initiatives. For community development, evidence of outcomes is scarce.

Regarding the two research questions raised in the beginning we find that the Social City programme has not affected household incomes in deprived neighbourhoods, but it has affected local rents.

A propensity score matching analysis finds no positive effect on household income among residents of programme areas during the past two decades. While there is no information on whether households profited from programme initiatives immediately, the analysis includes information on the likelihood of individuals participating in local initiatives. The results reveal that so far, household incomes have hardly profited from any desirable area-based trickle-down effects that may be believed to emerge from this policy. The findings thereby corroborate previous research on the outcomes of a programme providing incentives for businesses to locate in deprived areas in the UK, from which little benefits emerged for local residents (Gibbons et al., 2021).

With respect to housing prices and rents, however, significant programme effects are found by hedonic pricing models for North Rhine-Westphalia, Germany's largest federal state (in terms of the population, i.e. over 18 million). These effects, which are more salient regarding rents than purchasing prices, can be attributed mainly to programme areas receiving a relatively large amount of funding from the Social City programme (over 2.6 million euros until 2011). The persisting surplus characterising rent increases in all regions and the acceleration of rent increases in the urbanised Ruhr and Rhineland regions since 2018/2019 suggest that the community-oriented programmes, which also included investment in reconstruction, induced longer-term regeneration processes, which can be observed on rental markets.

While such effects may be welcome to some extent, there is also a downside. Given a persistent overall desire to reside close to urban centres, upgrading urban housing environments may carry the danger of gentrification and displacement of poor households, as local effects can be observed, particularly in rental markets.

Previous research has shown that community-oriented programmes focusing particularly on small businesses and entrepreneurs succeed mainly in encouraging the more prosperous businesses to participate in local networks (Neumann et al., 2013). Similarly, it cannot be expected for area-based community programmes alone to involve primarily those individuals and households, which find it most difficult to prosper by their own account.

All in all, it remains desirable to improve public spaces and to support the refurbishment of housing in deprived urban areas, but expectations regarding trickle-down effects on the prosperity of the local population should remain moderate. At best, urban regeneration strategies combine physical upgrading with support for local businesses, improvement of the local education infrastructure, and local employment policy.

References

Aarland, K., Osland, L., and Gjestland, A. (2017). Do area-based intervention programs affect house prices? A quasi-experimental approach. *Journal of Housing Economics*, 37:67–83. doi: 10.1016/j.jhe.2017.05.002.

Ahlfeldt, G., Maennig, W., and Richter, F. J. (2016). Urban renewal after the Berlin Wall: a place-based policy evaluation. *Journal of Economic Geography*, 17(1):129–156. doi: 10.1093/jeg/lbw003.

Akhter, N., McGowan, V. J., Halliday, E., Popay, J., Kasim, A., and Bambra, C. (2023). Community empowerment and mental wellbeing: longitudinal findings from a survey of people actively involved in the big local place-based initiative in England. *Journal of Public Health*, 45(2):423–431. doi: 10.1093/pubmed/fdac073.

Alonso, J. M., Andrews, R., and Jorda, V. (2019). Do neighbourhood renewal programs reduce crime rates? Evidence from England. *Journal of Urban Economics*, 110:51–69. doi: 10.1016/j.jue.2019.01.004.

Altrock, U. (2016). Evaluation komplexer Programme in der Städtebauförderung. *Informationen zur Raumentwicklung*, 2016(1):5–15. url: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/izr/2016/1/Inhalt/downloads/dl-altrock.pdf?__blob=publicationFile&v=1.

Asquith, B. (2018). Beggar thy neighbour, beggar thy neighbourhood. *Papers in Regional Science*, 97(2):439–469. doi: 10.1111/pirs.12248.

Autor, D. H., Levy, F., and Murnane, R. J. (2003). The skill content of recent technological change: An empirical exploration. *The Quarterly Journal of Economics*, 118(4):1279–1333. doi: 10.1162/003355303322552801.

BA (2018). Grundsicherung für Arbeitssuchende in Zahlen. Dezember 2017. Bundesagentur für Arbeit. Accessed on September 9, 2021.

Bade, F. and Alm, B. (2010). Endbericht zum Gutachten Evaluierung der Gemeinschaftsaufgabe Verbesserung der regionalen Wirtschaftsstruktur"(GRW) durch einzelbetriebliche Erfolgskontrolle für den Förderzeitraum 1999-2008 und Schaffung eines Systems für ein gleitendes Monitoring. url: https://hdl.handle.net/10419/93487.

BBSR (2017a). Städtische und ländliche Räume 2015. Bundesinstitut für Bau-, Stadt- und Raumforschung . Accessed on January 16, 2019. url: https://www.bbsr.bund.de/BBSR/DE/Raumbeobachtung/Raumabgrenzungen/Kreistypen2/kreistypen.html?nn=443270.

BBSR (2017b). Zwischenevaluierung des Städtebauförderungsprogramms Soziale Stadt. Bundesinstitut für Bau-, Stadt- und Raumforschung. url: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/sonderveroeffentlichungen/2017/zwischenevaluierung-soziale-stadt.html.

BBSR (2020). Wer lebt in der Sozialen Stadt? Analysen und Vergleiche auf Basis der Innerstädtischen Raumbeobachtung. Bundesinstitut für Bau-, Stadt- und Raumforschung. url: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/analysen-kompakt/2020/ak-04-2020.html.

Becker, H. and Löhr, R.-P. (2000). Soziale Stadt: Ein Programm gegen die sozialräumliche Spaltung in den Städten. *Aus Politik und Zeitgeschichte*, 50(10/11):22–29. url: https://repository.difu.de/handle/difu/32513.

Becker, S. O., Egger, P. H., and von Ehrlich, M. (2010). Going NUTS: the effect of EU Structural Funds on regional performance. *Journal of Public Economics*, 94(9–10):578–590. doi: 10.1016/j.jpubeco.2010.06.006.

Becker, S. O., Egger, P. H., and von Ehrlich, M. (2012). Too much of a good thing? On the growth effects of the EU's regional policy. *European Economic Review*, 56(4):648–668. doi: 10.1016/j.euroecorev.2012.03.001.

Behrens, K., Pokrovsky, D., and Zhelobodko, E. (2018). Market size, occupational self-selection, sorting, and income inequality. *Journal of Regional Science*, 58(1):38–62. doi: 10.1111/jors.12342.

BMI (2021). Programm Soziale Stadt. Bundesministerium des Innern, für Bau und Heimat. Accessed on April 21, 2021. url: https://www.staedtebaufoerderung.info/StBauF/DE/Programm/SozialeStadt/Programm/programm_node.html.

BMI, BMEL, and BMFSFJ (2019). Unser Plan für Deutschland - Gleichwertige Lebensverhältnisse überall. Schlussfolgerungen von Bundesminister Horst Seehofer als Vorsitzendem sowie Bundes-ministerin Julia Klöckner und Bun-

desministerin Dr. Franziska Giffey als Co-Vorsitzenden zur Arbeit der Kommission Gleichwertige Lebensverhältnisse“. Bundesministerium des Innern, Bundesministerium für Ernährung und Landwirtschaft, Bundesministerium für Familie, Senioren, Frauen und Jugend. url: https://www.bmfsfj.de/resource/blob/137240/e94cf2ffab8768fd37a1e632db3ee51e/schlussfolgerungen-kommission-gleichwertige-lebensverhaeltnisse-langversion-data.pdf.

Boelmann, B. and Schaffner, S. (2019). FDZ Data description: Real-Estate Data for Germany (RWI-GEO-RED v1) - Advertisements on the Internet Platform ImmobilienScout24. *RWI Projektberichte*. 2007-03/2019. url: https://hdl.handle.net/10419/236536.

Breidenbach, P. and Eilers, L. (2018). RWI-GEO-Grid: Socio-economic data on grid level. *Jahrbücher für Nationalökonomie und Statistik*, 238(6):609–616. doi: 10.1515/jbnst-2017-0171.

Busso, M., Gregory, J., and Kline, P. (2013). Assessing the incidence and efficiency of a prominent place based policy. *American Economic Review*, 103(2):897–947. doi: 10.1257/aer.103.2.897.

Calvert Jump, R. and Scavette, A. (2024). JUE Insight: The labor market effects of place-based policies: Evidence from England's Neighbourhood Renewal Fund. *Journal of Urban Economics*, 144. doi: 10.1016/j.jue.2024.103690.

Chetty, R., Hendren, N., and Katz, L. F. (2016). The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment. *American Economic Review*, 106(4):855–902. doi: 10.1257/aer.20150572.

Christafore, D. and Leguizamon, S. (2019). Neighbourhood inequality spillover effects of gentrification. *Papers in Regional Science*, 98(3):1469–1484. doi: 10.1111/pirs.12405.

Chyn, E., Collinson, R., and Sandler, D. (2023). The Long-Run Effects of Residential Racial Desegregation Programs: Evidence from Gautreaux. Forthcoming, url: https://robcollinson.github.io/RobWebsite/ccs_gautreaux_extendedabstract.pdf.

Clout, H. (1998). Urban policy in France: the contrat de ville. *ENVIRONMENT AND PLANNING A*, 30(6):1136–1137.

Couture, V. and Handbury, J. (2020). Urban revival in America, 2000-2010. doi: 10.1016/j.jue.2020.103267.

Curl, A., Kearns, A., Mason, P., Egan, M., Tannahill, C., and Ellaway, A. (2015). Physical and mental health outcomes following housing improvements: evidence from the GoWell study. *Journal of Epidemiology and Community Health*, 69(1):12–19. doi: 10.1136/jech-2014-204064.

Delventhal, M., Kwon, E., and Parkhomenko, A. (2021). JUE Insight: How do cities change when we work from home? *Journal of Urban Economics*. doi: 10.1016/j.jue.2021.103331.

Diamond, R. (2016). The determinants and welfare implications of us workers' diverging location choices by skill: 1980–2000. *American Economic Review*, 106(3):479–524. doi: 10.1257/aer.20131706.

Doepke, M. and Gaetani, R. (2024). Why didn't the college premium rise everywhere? employment protection and on-the-job investment in skills. *American Economic Journal: Macroeconomics*, 16(3):268–309. doi: 10.3386/w27331.

Dohmen, T., Falk, A., Huffman, D., and Sunde, U. (2010). Are risk aversion and impatience related to cognitive ability? *American Economic Review*, 100(3):1238–1260. doi: 10.1257/aer.100.3.1238.

Donzelot, J. (2007). Stadtpolitik in Frankreich. *Informationen zur Raumentwicklung*, 2007(6):371–380. url: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/izr/2007/Downloads/6Donzelot.pdf?__blob=publicationFile&v=1.

Esteve-Guell, M., NelAlo, O., and Blanco, I. (2024). Shared challenges, divergent practices. The impact of institutional frameworks on area-based initiatives in Barcelona and Paris. *Urban Research & Practice*. doi: 10.1080/17535069.2024.2383706.

EU (2024). REG-URBAN Programme Overview. European Union. Accessed on October 7, 2024.

Falck, O., Gold, R., and Heblich, S. (2014). E-lections: Voting Behavior and the Internet. *American Economic Review*, 104(7):2238–2265. doi: 10.1257/aer.104.7.2238.

FES (2016). *The Social City Programme: Wise Urban Development for the Future of Our Cities*. Friedrich-Ebert-Stiftung, Bonn, Germany. url: https://library.fes.de/pdf-files/bueros/indonesien/12540.pdf.

Friedmann, J. (1986). The world city hypothesis. *Development and Change*, 17(1):69–83. doi: 10.1111/j.1467-7660.1986.tb00231.x.

Friedrichs, J. (1987). Urban renewal policies and back-to-the-city migration. *Journal of the American Planning Association*, 53(1):70–79. doi: 10.1080/01944368708976637.

Gibbons, S., Overmann, H., and Sarvimäki, M. (2021). The local economic impacts of regeneration projects: Evidence from UK's single regeneration budget. *Journal of Urban Economics*, 122. doi: 10.1016/j.jue.2020.103315.

Giesselmann, M., Bohmann, S., Goebel, J., Krause, P., Liebau, E., Richter, D., Schacht, D., Schröder, C., Schupp, S., and Liebig, S. (2019). The Individual in context(s): research potentials of the Socio-Economic Panel Study (SOEP) in Sociology. *European Sociological Review*, 35(5):738–755. doi: 10.1093/esr/jcz029.

Glasze, G. and Weber, F. (2010). Drei Jahrzehnte area-basierte Stadtpolitik in Frankreich: die politique de la ville: Bearbeitung gesellschaftlicher Probleme mittels raumorientierter Ansätze? *Raumforschung und Raumordnung*, 68(6):459–470. doi: 10.1007/s13147-010-0068-9.

Goebel, J. and Zimmermann, S. (2021). Verändert sich die Einschätzung des Zusammenhalts in der Wohnumgebung im Zuge der Corona Pandemie? *Stadtforschung und Statistik*, 34(1):8–16. url: https://www.staedtestatistik.de/fileadmin/media/VDSt/Publikationen/Zeitschrift/Goebel_Zimmermann_2021.pdf.

GoWell (2024). About Our Regeneration Research. Accessed on November 11, 2024.

Göddecke-Stellmann, J. (2016). Jede Maßnahme ist anders – Nutzen und Grenzen quantitativer Daten für das Monitoring der Städtebauförderung. *Informationen zur Raumentwicklung*, 2016(1):17–28. url: https://www.bbsr.bund.de/BBSR/DE/veroeffentlichungen/izr/2016/1/Inhalt/downloads/dl-goeddecke-stellmann.pdf?__blob=publicationFile&v=1.

Haase, A., Kabisch, S., Steinführer, A., Bouzarovski, S., Hall, R., and Ogden, P. (2010). Emergent spaces of reurbanisation: exploring the demographic dimension of inner-city residential change in a European setting. *Population, Space and Place*, 16(5):443–463. doi: 10.1002/psp.603.

Hall, S. and Hickman, P. (2002). Neighbourhood renewal and urban policy: A comparison of new approaches in England and France. *Regional Studies*, 36(6):691–696. doi: 10.1080/00343400220146821.

Heckman, J. J., Ichimura, H., and Todd, P. (1998). Matching as an econometric evaluation estimator. *The Review of Economic Studies*, 65(2):261–294. doi: 10.1111/1467-937X.00044.

Heckman, J. J., Ichimura, H., and Todd, P. (2008). Soziale Kontextbedingungen der Stadtteilentwicklung. Indikatorengestütztes Monitoring im Rahmen der Evaluation des integrierten Handlungsprogramms Soziale Stadt" in Nordrhein - Westfalen. *Projektbericht*. url: https://www.soziale-stadt-nrw.de/das-staedtenetz/bericht_soziale-kontextbedingungen-2002_2004_ausgabe-20008-1.pdf.

ILS (2000). Analyse der Umsetzung des integrierten Handlungsprogramms für Stadtteile mit besonderem Erneuerungsbedarf. *ILS-Schriften*, 166.

ISG, Gillner, RWI, and SÖSTRA (2015). Evaluation des Operationellen Programms des Bundes für den ESF in der Förderperiode 2007–2013 (OP Bund) – Endbericht. *RWI Projektberichte*.

IWH (2020). Evaluation der Gemeinschaftsaufgabe Verbesserung der regionalen Wirtschaftsstruktur (GRW)"durch einzelbetriebliche Erfolgskontrolle. IWH Leibniz-Institut für Wirtschaftsforschung Halle. url: https://www.iwh-halle.de/publikationen/detail/evaluation-der-gemeinschaftsaufgabe-verbesserung-der-regionalen-wirtschaftsstruktur-grw-durch-einzelbetriebliche-erfolgskontrolle.

Kearns, A. and Mason, P. (2015). Regeneration, relocation and health behaviours in deprived communities. *Health & Place*, 32:43–58. doi: 10.1016/j.healthplace.2014.12.012.

Kearns, A., Whitley, E., Mason, P., and Bond, L. (2012). 'Living the High Life'? Residential, Social and Psychosocial Outcomes for High-Rise Occupants in a Deprived Context. *Housing Studies*, 27(1):97–126. doi: 10.1080/02673037.2012.632080.

Kersting, V., Strohmeier, K., and Teicke, M. (2013). Soziale Kontextbedingungen der Stadtteilentwicklung 2006 – 2009. Indikatoren gestütztes Monitoring im Rahmen der Evaluation des integrierten Handlungsprogramms Soziale

Stadt“ in Nordrhein-Westfalen. *Projektbericht*. url: https://www.soziale-stadt-nrw.de/das-staedtenetz/bericht_soziale-kontextbedingungen-2006_2009_ausgabe-2013-1.pdf.

Kitchens, C. (2014). The role of publicly provided electricity in economic development: the experience of the Tennessee Valley Authority, 1929–1955. *The Journal of Economic History*, 74(2):389–419. doi: 10.1017/S0022050714000308.

Kline, P. and Moretti, E. (2014a). Local economic development, agglomeration economies, and the big push: 100 years of evidence from the Tennessee Valley Authority. *Quarterly Journal of Economics*, 129(1):275–331. doi: 10.1093/qje/qjt034.

Kline, P. and Moretti, E. (2014b). People, places, and public policy: some simple welfare economics of local economic development programs. *Annu. Rev. Econ.*, 6:629–662. doi: 10.1146/annurev-economics-080213-041024.

Krupka, D. J. and Noonan, D. S. (2009). Empowerment zones, neighborhood change and owner-occupied housing. *Regional Science and Urban Economics*, 39(4):386–396. doi: 10.2139/ssrn.1135896.

Ku, H., Schönberg, U., and Schreiner, R. C. (2020). Do place-based tax incentives create jobs? *Journal of Public Economics*, 191:104105. doi: 10.1016/j.jpubeco.2019.104105.

Leuven, E. and Sianesi, B. (2003). PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing. Version 11.0. Accessed on October 9, 2017. url: http://ideas.repec.org/c/boc/bocode/s432001.html.

Lupton, R., Fenton, A., and Fitzgerald, A. (2013). Labour's record on neighbourhood renewal in England: policy, spending and outcomes 1997-2010. Forthcoming, url: https://sticerd.lse.ac.uk/dps/case/cp/casepaper177.pdf.

McGowan, V. J., Wistow, J., Lewis, S. J., Popay, J., and Bambra, C. (2019). Pathways to mental health improvement in a community-led area-based empowerment initiative: evidence from the Big Local 'Communities in Control' study, England. *Journal of Public Health*, 41(4):850–857. doi: 10.1093/pubmed/fdy192.

Moretti, E. (2011). Local labor markets. In *Handbook of labor economics*, volume 4, pages 1237–1313. Elsevier. doi: 10.1016/S0169-7218(11)02412-9.

Neuer-Miebach, T., Schneider, J., and Pfeiffer, A. (2005). Aktivierung der BewohnerInnen, Verbesserung der BürgerInnenMitwirkung und des Stadtteillebens. *Schlussbericht*. url: https://nbn-resolving.de/urn:nbn:de:kobv:109-opus-126426.

Neumann, U., Geißler, H., and Jakubowski, P. (2013). Agglomeration Economies in the Neighbourhood? Evidence from German Cities. *Local Economy*, 28(1):51–65. doi: 10.1177/026909421246379.

Neumann, U., Schmidt, C. M., and Trettin, L. (2011). Fostering local economic development in urban neighbourhoods: Results of an empirical assessment. *Local Economy*, 26(1):18–39. doi: 10.1177/0269094210391176.

Neumark, D. and Simpson, H. (2015). Place-based policies. In *Handbook of regional and urban economics*, volume 5, pages 1197–1287. Elsevier. doi: 10.1016/B978-0-444-59531-7.00018-1.

Nowosielski, M. (2012). Between area-based initiatives and community-development programmes. The example of the Soziale Stadt Programme. *Sociologija i prostor: časopis za istraživanje prostornoga i sociokulturnog razvoja*, 50(3 (194)):309–325. doi: 10.5673/sip.50.3.2.

Obach, B. K. and Tobin, K. (2014). Civic agriculture and community engagement. *Agriculture and Human Values*, 31(2):307–322. doi: 10.1007/s10460-013-9477-z.

Popay, J., Halliday, E., Mead, R., Townsend, A., Akhter, N., Bambra, C., Barr, B., Anderson de Cuevas, R., Daras, K., Egan, M., Gravenhorst, K., Janke, K., Kasim, A. S., McGowan, V., Ponsford, R., Reynolds, J., and Whitehead, M. (2023). Investigating health and social outcomes of the Big Local community empowerment initiative in England: a mixed method evaluation. *Public Health Research*, 11(9):1–147. doi: 10.3310/GRMA671.

Reynolds, C. L. and Rohlin, S. M. (2015). The effects of location-based tax policies on the distribution of household income: Evidence from the federal empowerment zone program. *Journal of Urban Economics*, 88:1–15. doi: 10.1016/j.jue.2015.04.003.

Roback, J. (1982). Wages, rents and the quality of life. *Journal of Political Economy*, 90(6):1257–1278. doi: 10.1086/261120.

Rosen, S. (1979). Wage based indexes of urban quality of life. *Current Issues in Urban Economics*. In: Miezkowski, Peter N., Straszheim, Mahlon R. (Eds.), Current Issues in Urban Economics. Johns Hopkins University Press, Baltimore, MD. url: https://www.jstor.org/stable/1830947.

Rosenbaum, P. R. and Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, 70(1):41–55. doi: 10.1093/biomet/70.1.41.

Sassen, S. (1991). *The global city*. Princeton University Press, New York.

SOEP Group (2020). SOEP-Core v35 – HBRUTTO: Household-Related Gross File. SOEP Survey Papers 829: Series D – Variable Descriptions and Coding. DIW/SOEP, Berlin. url: http://hdl.handle.net/10419/219055.

Steinhauer, H.W., Kroh, M., and Goebel, J. (2020). SOEP-Core – 2018: Sampling, Nonresponse, and Weighting in Sample O. SOEP Survey Papers 827: Series C. DIW/SOEP, Berlin. url: https://hdl.handle.net/10419/219057.

The Big Local (2024). About Big Local. Accessed on November 11, 2024.

Tra, C. I. (2010). A discrete choice equilibrium approach to valuing large environmental changes. *Journal of Public Economics*, 94(1):183–196.

Van Ham, M., Boschmann, S., and Vogel, M. (2018). Incorporating neighbourhood choice in a model of neighbourhood effects on income. *Demography*, 55(3):1069–1090. doi: 10.1007/s13524-018-0672-9.

Voge, J., Newiger-Dous, T., Ehrlich, E., Ermann, U., Ernst, D., Haase, D., Lindemann, I., Thoma, R., Wilhelm, E., Priess, J., and Egli, L. (2023). Food loss and waste in community-supported agriculture in the region of Leipzig, Germany. *International Journal of Agricultural Sustainability*, 21(1). doi: 10.1080/14735903.2023.2242181.

Weber, F. (2013). *Soziale Stadt – politique de la ville – kulturelle Differenzierungen ": Entwicklungen und Forschungsstand*. Springer VS, Wiesbaden, Germany. doi: 10.1007/978-3-658-00295-4_2.

Wilson, W. (1987). *The truly disadvantaged*. University of Chicago Press, Chicago.

Data sources

SOEP Socio-economic panel. DOI: 10.5684/soep.v38

RWI-GEO-GRID: Socio-economic data on grid level - Scientific Use File (wave 14). DOI: 10.7807/microm:suf:v14

RWI-GEO-RED: RWI Real Estate Data (Scientific Use File) - Apartments for Sale. DOI: 10.7807/immo:red:wk:suf:v11

RWI-GEO-RED: RWI Real Estate Data (Scientific Use File) - Apartments for Rent. DOI: 10.7807/immo:red:wm:suf:v11

A Appendix

Tables

Table 8: Description of Household Characteristics Considered in the Analysis

Variable	Description
household income	average monthly household income in Euro
household size	number of persons in the household
income growth	average annual growth of monthly net household income over forthcoming 5 years, in %
past income growth	average annual growth of monthly net household income over previous 3 years, in %
dummy variables (1 if characteristic applies to at least one household member, 0 otherwise)	
mobile	household relocated in previous year
migrant background	person immigrated (direct migration background) or is of migrant origin but born in Germany (indirect migration background)
policy interest	person is interested or very interested in politics
age 60+	aged 60 or over
upper secondary school	upper secondary school certificate
type of occupation	
skilled blue-collar worker (mining, construction, manufacturing)	ISCO88: 7000-9000
unskilled worker	ISCO88: $\geq$ 9000
household characteristics (1 if characteristic applies to household, 0 otherwise)	

Table 8: Description of Household Characteristics Considered in the Analysis

Variable	Description
social city	household resides in Social City programme area

This table shows the description of the variables we take from the SOEP data.

Table 9: Overwiev of Different ABI programmes and Community Development

programme	*Location*	*Level*	*programme Type*	*Timeframe*	*Summary*
Contrat de Ville	France	national	mixed-approach	1998 - 2007	The "Contrat de Ville" in France is a multi-year agreement between the state, local governments, and stakeholders to reduce social and economic disparities in disadvantaged urban areas. The focus lies on the contracts between the local governments and the state and addresses the centralised system in France. The integrated urban development approach addresses issues like employment, education, safety, and inclusion for marginalized populations. (Weber, 2013; Donzelot, 2007; Glasze and Weber, 2010)
Moving to Opportunity	Chicago, USA	city	(experimental) people-based area-based initiative	1994-1998	The Moving to Opportunity (MTO) programme was a randomized experiment in which families with children in low SES areas were granted a housing voucher to relocate to areas with better opportunities. (Chetty et al., 2016)

programme	*Location*	*Level*	*programme Type*	*Timeframe*	*Summary*
Gautreaux programme	Chicago, USA	city	people-based area-based initiative	1976 - 1998	The Gautreaux programme was initiated following the Hills vs Gautreaux ruling of the U.S. Supreme Court in 1976. The court judged the common housing practice of providing social housing only in disadvantaged neighbourhoods as a form of racial discrimination. Subsequently, the Chicago Housing Authority needed to provide African American families with housing vouchers to access white or "revitalized" neighbourhoods. (Chyn et al., 2023)
GoWell	Glasgow	city	mixed-approach	2006 - 2015	GoWell was a longitudinal research programme focused on the regeneration of communities using people- and place-based interventions like housing improvements, resident relocation, creation of mixed tenure communities, changes in housing type (demolition and replacement) and community engagement and empowerment. (GoWell, 2024)

programme	*Location*	*Level*	*programme Type*	*Timeframe*	*Summary*
Neighbourhood Renewal Fund	United Kingdom	national	place-based area-based initiative	2001-2008	The Neighbourhood Renewal Fund (NRF) is a placed-based initiative from the early 2000s under the Labour government era. It allocated almost £3 to deprived neighbourhoods for community safety, education, healthcare, and unemployment. (Calvert Jump and Scavette, 2024)
The Big Local	United Kingdom	national	community development	2012 - 2026	The Big Local is a community development programme by The National Lottery Community Fund which endows 150 neighbourhoods across the United Kingdom with £1m each. Residents decide in representative councils on how to spend the money to improve their communities' conditions. (The Big Local, 2024)
Community Supported Agriculture		global	community development		Community Supported Agriculture is a global movement. It describes local systems built on solidarity in which consumers and producers share the risk in food production through fixed subscriptions.

programme	*Location*	*Level*	*programme Type*	*Timeframe*	*Summary*
The Grorud Valley ABI programme	Denmark	regional	mixed-approach	2007-2016	The programme consists of a ten-year intervention with a total volume of approximately 125 million Euros. The intervention consists of four areas: (1) environmentally friendly transportation, (2) green areas, sports and culture, (3) area-based intervention and local urban development, and (4) childhood and adolescence, education, and inclusion. There was significant freedom for the cities to implement the programme, which led to CD components. (Aarland et al., 2017)

Note: This table provides an overview of select place-based policies. Please note that it is not exhaustive, as there are numerous additional initiatives in this area.

Table 10: Overview of Literature on Different Urban Development programmes

programme	*Effect*	*Location*	*Scope*	*Reference*
Contrat de Ville				Esteve-Guell et al. (2024)
Moving to Opportunity	Positive effects on long-term educational outcomes and earnings; Additionally positive effects on divorce rates; No effects after the age of 13	Chicago, USA	city	Chetty et al. (2016)
Gateraux programme	Positive long-run effects of social mixing and relocation on children including earnings, employment, wealth, marriage and inclusion.	Chicago, USA	city	Chyn et al. (2023)
GoWell	Housing improvements and changes influence physical and mental health and social outcomes; high-rise buildings have a negative impact; there is evidence for heterogeneity among households dependent on age and family status; possible mechanisms are better isolation and security.	Glasgow, UK	city	Curl et al. (2015), Kearns et al. (2012)
GoWell	Negative or no health outcomes for individuals who were relocated	Glasgow, UK	city	Kearns and Mason (2015)

programme	*Effect*	*Location*	*Scope*	*Reference*
Neighbourhood Renewal Fund	Cost-effective reduction of crime rates between 10 and 25 percent. For every 1 pound per capita, crime rates improved by 0.3-0.6 percent	United Kingdom	national	Alonso et al. (2019)
Neighbourhood Renewal Fund	Positive impact on local employment; Policy interventions that improve labour supply can be a successful strategy for urban transformation; On a larger scale also indications for a reduction in unemployment on a national level	United Kingdom	national	Calvert Jump and Scavette (2024), Lupton et al. (2013)
Neighbourhood Renewal Fund	Indications for improvement of physical environments and public services; Lower inequality on a national level	United Kingdom	national	Lupton et al. (2013)
The Big Local	Mixed evidence for the impact on mental health. Evidence for heterogeneity; mainly men and higher educated individuals benefit	United Kingdom	national	Akhter et al. (2023), Popay et al. (2023), McGowan et al. (2019)
The Big Local	Higher Social Cohesion. Social cohesion and mental health improvements are linked for residents who are directly participating	United Kingdom	national	Akhter et al. (2023)

programme	*Effect*	*Location*	*Scope*	*Reference*
CSA	Greater community and political involvement for individuals who participate in CSA. Participation is connected to volunteerism, civic and political engagement, and a connection to the community.	New York State, USA	regional	Obach and Tobin (2014)
CSA	Reduction of food loss and waste through CSA between 22-70 percent.	Leipzig, Germany	city	Voge et al. (2023)
CSA	Evidence for a high share of low-income households participating in CSA. This indicates that markets characterized by community participation are more attractive to low-income households.	California, USA	regional	Voge et al. (2023)
The Gorurd Valley ABI programme	Mixed results on the impact on housing prices for place-based policies.	Oslo, Norway	city	Aarland et al. (2017)

This table provides an overview of the effects of select place-based policies. Please note that this table is not exhaustive, as there are numerous initiatives with varying impacts.