Development finance for new urban quarters - a reasonable investment market for urban development funds?

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Arbeitspapiere zur integrierten Immobilienentwicklung, Band, Nr. 3
Working Papers for integrated Real Estate Development, Issue, No. 3

20.1.2015

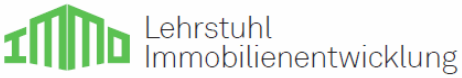
Zitierempfehlung:

Nadler, Michael/Guhl, Pascal (2015): Development finance for new urban quarters - a reasonable investment market for urban development funds? In: Michael Nadler (Hrsg.), Arbeitspapiere zur integrierten Immobilienentwicklung, Band Nr. 3, Dortmund.

Citation:

Nadler, Michael/Guhl, Pascal (2015): Development finance for new urban quarters - a reasonable investment market for urban development funds? In: Michael Nadler (ed.), Working Papers for integrated Real Estate Development, Issue No. 3, Dortmund.

Mit finanzieller Unterstützung von:
Part of the University Research Sponsorship (EIBURS):
European Investment Bank (EIB): Urban Development Funds in Europe: Opportunities, Structures, Operations“



Impressum (v.i.S.d.P.):		Imprint (editorship and publisher):
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Website:	www.immo.tu-dortmund.de	
ISSN Nr.	ISSN 2363-6238 (Print); 2363-6246 (Online)	

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1 Introduction

The objective of this research paper is to find out whether urban development funds should finance certain project types on a local level that are relevant in all European Member States. Therefore, our research focuses on integrated development of *new inner-city quarters and redevelopment of existing neighbourhoods*. These ventures are all organised as development investment projects. Typically, they are characterised by high cash outflows and an immanent high risk, which is why private stakeholders normally only develop areas with a granted return on investment. To pursue the public aim of an integrated urban development and to develop quarters in less profitable areas, financing via urban development funds seems reasonable. In our research paper, we try to find out where such quarter development projects[1] are located and whether there is a market-failure in structurally weak areas. This kind of analysis is an *ex-ante market assessment for a potential application field for UDFs*. The assessment object is not a specific region, the idea is rather for a full Member State (here: Germany) to justify the use of public revolving capital opposite to a purely private sector solution.

Therefore, we will first define and systemize quarter development projects in theory and in practice (in Germany). In the second step, we perform a market analysis using spatial variables to identify this kind of development projects in Germany. In the last step, we will conduct a regression analysis to test our central hypothesis: *promoters do not realize quarter development projects in structurally weak areas.* If this hypothesis turns out to be true, urban development funds, which have been introduced by JESSICA (Joint European Support for Sustainable Investment in City Areas), could provide a valuable contribution to European Cohesion Policy by funding integrated quarter developments in economically underdeveloped or disadvantaged regions (not only in Germany, but in every European Member State).

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[1] The existing research projects concerning the JESSICA imitative hardly deal with integrated urban development on the level of city quarters. Therefore, this research approach is an innovative application of urban development funds in Europe, although Nadler/FIRU/Kreuz (2008) conducted for the EU urban policy ministers' first ideas for a possible use of JESSICA type funds in this finance field. In general, the JESSICA initiative has the goal to provide development finance through revolving financial instruments (cf. Kreuz/Nadler 2010).

2 New city quarters as a possible asset class for urban investors and promoters

2.1 Existing research approaches

In the context of this research approach, we understand *district development* as the creation of a *new city quarter*. Therefore, we use quarter development *as a synonym* for district development. This development field is different from single real estate developments because of its size: Such projects usually last from at least 10 to 15 years, include a minimum area of 10 hectares and consist of several properties with different types of use. In contrast to conventional city planning, such developments are *implementation-oriented projects* with their own cost budget and financial plan – in general in cooperation with private stakeholders. These projects follow a rather *holistic approach* by combining not only physical investments in buildings and infrastructure assets but also social and ecological dimensions of urban development.

In the following, we will analyse existing research approaches in this context. First of all, research on the level of city quarters respectively districts exists within the scope of geographical and theoretical planning research from the German research group for *neighbourhood development*[2]. Secondly, DEFFNER/MEISEL (2013) take an interdisciplinary approach combining socio-scientific, economic and urbanistic as well as architectural aspects about city quarters. Thirdly, several case studies exist on the development of new city quarters but they do not exceed descriptive project analysis. For example, FELDMANN (2009) studied the development projects HafenCity Hamburg, Südstadt Tübingen, Arnulfpark Munich and Rebstockpark Frankfurt and generated an approach to link the economic model of strategic management with knowledge on city planning and real estate. DZIOMBA (2009) examined two large-scale projects of urban renaissance – HafenCity Hamburg and Westhafen Frankfurt – with focus on property sales. TOELLE (2005) assigns the inner-city waterfront developments HafenCity

[2] Cf. e.g. Drilling/Schnur (2009), Drilling/Schnur (2012). In the context of the European programme URBACT, the project SURE focused on the social cohesion in neighborhoods and the governance of integrated development in deprived city districts – supplemented by a working group with the aim to illustrate the state of the art in integrated sustainable urban development.

Hamburg, Lyon Confluence and Gdańsk Młode Miasto to the globalisation-driven transformational process in European metropolises. He examines whether a large-scale urban project due to its size, complexity, exposure in public and structural effects is a paradigm for the whole city to manage its urban development. KÖSTER (2006) analysed five case studies (Theresienhöhe Munich, Deutschherrnviertel Frankfurt, Unterneustadt Kassel, Falkenried Hamburg and Eldenaer Straße Berlin) with the focus on the implementation of urban qualities through Public Private Partnerships to assure its quality. Other descriptive case studies about new city quarters exist for Munich, Frankfurt, Heidelberg and Cologne[3] as well as in the related field of research that deals with *flagship projects*[4]. SZAMEITAT/ADAM (2011) conducted one of the few cross-studies about the "*benefits*" of this kind of urban development projects. The result of ten reviewed case studies in Germany is that new city quarters have an influence on local economy and boost inner-city development. This could be a "prove" that new urban quarters are a meaningful component of a *property-led policy*, because property development can influence and strengthen local economy by providing sites, infrastructure and accommodation for a wide range of developments.[5] However, the studies are purely descriptive and lack a quantitative approach to prove the economic benefits. Further research exists on follow-up costs of infrastructure.[6] However, this approach is at regional and not at urban district level.

2.2 Definition for new city quarters

A consistent definition for new urban *quarters* respectively *districts* does exist neither in theory nor in urbanistic practice. Furthermore, theory and practice uses terms like "*communities*" or "*neighbourhoods*" often as synonyms. Socio-scientific research

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3 Cf. Hafner/Miosga (2007), Skok (2000), Schütz/Feldmann (2008), Köhler (2008), Küpper/Vollmer (1988), Mrosek (2013).

4 They encompass not only urban development projects, but also events (e.g. Olympics), image projects (e.g. urban entertainment centres) or infrastructure (e.g. international airports).

5 Cf. a detailed discussion on external benefits Thiel/Nadler (2015), section 2. Bizer et al. (2008) have done the only quantitative study in Germany on empirical effects of Brownfield revitalizations on communal budgets and on living conditions, but the studied projects are smaller than 20 hectare and only rarely multi-used, so that you can hardly consider them as new city quarters.

6 Cf. e.g. BBR (2006), Siedentop (2009).

mostly points out that urban quarters do *not have fixed boundaries* that comply with administrative respectively statistical units.[7] Therefore, we follow the ideas of SCHNUR (2014, p. 43): he defines a (new) quarter as a contextually embedded, through external and internal actions socially *fuzzy constructed* centre-place of everyday life and individual social spheres (quarter as a "fuzzy place"):

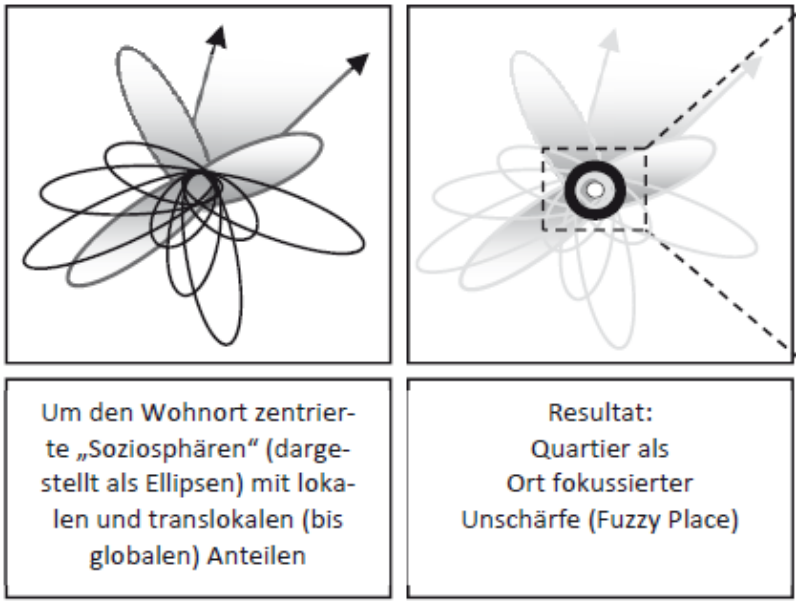

Figure 1: Quarter as a fuzzy place (Schnur (2014), p. 44)

It concludes that a quarter represents an individually perceived space of identity and living, which varies from person to person. Characteristics to delimit it to surrounding districts can be social, architectural, economic, historical, or physical ones[8]. It is possible to identify these characteristics of (new) city quarters/districts, if a (normative) *guiding principle or "mission statement"* for sustainable urban development is applied. This could be the image of the *European City*, which is typically characterised by the attributes of a contrast between urban and rural areas, of centrality, size, density

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7 This is a problem, if research wants to identify the generated benefit of district developments. Here it is indispensable to delimit districts exactly down to individual lot-level. By approximation, one can delimitate quarters by boundaries of urban planning designs, legally binding land-use plans or urban development zones. However, this kind of delimitation often does not comply with official statistics. At least large cities' statistics departments can provide relevant data for delimited districts on an aggregated level by using their existing statistics of parcels (e.g. population or buildings in relevant quarters). However, income data is often not available even in larger cities.

8 Cf. Heyder und Koch (2011), pp. 34, Schnur (2014), Wheeler (2004), p. 181.

and mixture.[9] On the one hand, the term "*urbanity*" refers to a way of life or lifestyle that fulfils a separation of public and private life as well as of labour and leisure. On the other hand, urbanity is an attribute for places with public space like streets, squares and parks as a constitutive element. Urban places are characterised by an animated public space and a functional mix as well as a compact architecture and a heterogeneous population. This turns the *European City* to a place of communication, division of labour and recreational activities. At the same time, it is also a place, where aberrant lifestyles and un-adapted behaviour can find a place due to its anonymity. In December 2005, European Policy (in the course of the EU Ministerial Informal on Sustainable Communities during the UK Presidency of the EU) applied these ideas. According to the approved "*Bristol Accord*" sustainable communities should be:[10]

- *Active, inclusive and safe*: Fair tolerant and cohesive with a strong local culture and other shared community activities,
- *Well run*: With effective and inclusive participation, representation and leadership,
- *Well connected*: With good transport services and communication linking people to jobs, schools, health and other services,
- *Well served*: With public, private, community and voluntary services that are appropriate to people's needs and accessible to all,
- *Environmentally sensitive*: Providing places for people to live that are considerate of the environment,
- *Thriving*: With a flourishing and diverse local economy,
- *Well designed and built*: Featuring quality built and natural environment, and
- *Fair for everyone*: Including those in other communities, now and in the future.

European policy derived these characteristics of sustainable communities from *Egan's wheel for sustainable communities*:

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9 Cf. Siebel (2000), pp. 28-32; Siebel (2004), p. 16.

10 Cf. Office of the Deputy Prime Minister (2006), p. 12.

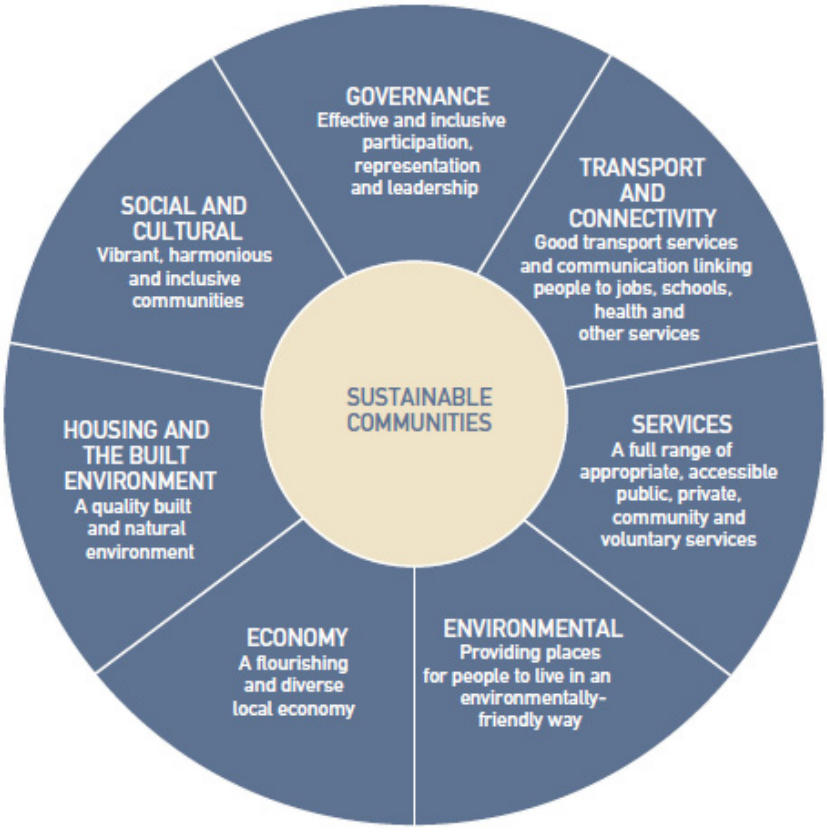

Figure 2: Components of sustainable communities - Egan's wheel (Office of the Deputy Prime Minister 2004, p. 19)

It contains *seven components of sustainable communities,* which constitute the main categories of the following design variables of district developments: housing and the built environment, environment and ecology, services, transport and connectivity, governance, economy and sociocultural setting. Several sub-components complement the seven components, which we will adapt to an analysis of district developments. With these guiding principles, it is possible to identify design characteristics[11] for new city quarters and districts and to show why investing in integrated quarter developments would be a very reasonable application field for urban development funds.[12]

2.3 Design characteristics of new city quarters

The design characteristics of new urban quarter developments appear in all of the seven components of sustainable communities following the Bristol Accord (see figure 2).

11 Cf. De Costa/Fumega/Louro (2013).

12 The operationalization of design variables occurs in many cases according to DGNB (2012).

2.3.1 High quality in housing and the built environment

Many new urban quarters have a high quality concerning the architecture of the new buildings as well as in the built environment. This is a consequence of the fact that we find many projects *on Brownfields*, which are a result of the following former uses:

- *Military sites and barracks*

  Military sites and barracks are a common former use of quarter development areas in Germany. After the German reunification, these sites of the Allied forces are gradually abandoned. In addition to that, a reform of German armed forces in 2011 has provoked that 31 further barracks are in need of new utilisation concepts in the next years.
- *Infrastructure facilities*

  German federal railways and other European railway companies generally are one of the most important property owners. After their privatisation, they gradually started to sell or to develop sites not used anymore. The same is true for former airports like for example in Germany Munich-Riem and Berlin-Tempelhof. Further abandoned infrastructure facilities, which became new urban districts, are abattoirs, central markets, fair grounds, sports facilities, university campuses and hospitals.
- *Industrial sites*

  Especially in Europe's old industrial regions, the structural change in employment and production caused the abandonment of inner-city production locations. After remediation, such sites (e.g. large factory sites, coalmines in former mining regions and former docklands) have the potential to become new urban quarters.

The advantage of the use of Brownfields is that they are usually *more integrated* than (new) Greenfield developments in suburban areas or outskirts. Also reuse of land (= reduction of land consumption) is a typical output indicator in operational programmes not only in Germany. Furthermore, very often these former uses give the new urban quarters a specific *sense of place*: Many new urban quarters create new places, but try to *preserve the historical structures* plus the local culture and tradition of the place. Such a relation to the location in terms of a "sense of place" arises from the preservation of old structures and the integration of historic listed or distinctive buildings with-

in the district development.[13] Therefore, quarter developments (like for example Zeche Zollverein in the city of Essen) are examples for the *preservation of culture heritage*.

High quality of the built environment in quarter developments is often a result of the *density of building use*. Density is important to land consumption, but also for viability of public transport, access to facilities and services, reduction of social segregation, and water and energy supply – as well as it can save energy due to shared walls and shorter infrastructure lengths. It can be measured by gross floor area (GFA), floor space index (FSI) or number of dwellings per hectare. Concerning these indicators, thresholds exist.[14] However, there is no overall suitable threshold, since it depends on urban locations. In new urban quarters next to city centre, compact housing might be adequate, but this would not be applicable in outskirts.

High quality in new urban quarters is not only achievable through specifications for density, but also for *building heights and parcelling of land:* On the one hand, residents are supposed to prefer living in a district with lower buildings coming along with fewer occupants. But on the other hand, in cities like New York or Hong Kong property values increase in proportion to the height of building. In these cases, storeys higher than the surrounding buildings can realise the highest rents because of the offered view. Concerning the parcelling there exist *four different strategies* in new urban quarter developments: district-based, block-based, street-based and plot-based. These different sizes of parcels affect the scale of the developments and reflect the degree of public regulation in the planning process. While bigger parcels enable a consistent development by one actor, small parcels permit many different sub-developers to create a more fine-grained district.[15]

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13 Cf. Breuer (2013), p. 12.

14 E.g., Barton (2000), p. 117, suggests an ideal density of 50 dwellings per hectare. Other exemplary thresholds focus on a maximum density, which is technically appropriate. Molestina (2004, p. 32) points out that in the case of residential building the costs of a density higher than a FSI of 0.8 pre-dominate the benefits from a higher density. Moreover, there exists an upper limit in Germany. For instance in six storeyed building areas, a maximum of 400 residents per hectare are allowed to avoid a lack of light, playgrounds, parking lots and garden areas (cf. Husemann 2005, pp. 18).

15 Cf. Love und Crawford (2011), pp. 94.

Finally, the *quality of architecture* in residential buildings in new quarters often is a distinct characteristic that influences prices and rents.[16] The quality of architecture in new urban quarters is displayed e.g. in the *number of contents*[17], in *contributions of famous architects* or in the existence of *flagship investments*[18] as well as *waterfront developments*[19]. The study of SZARMEITAT/ADAM (2011) revealed that nearly every new urban city quarter has at least one architecture contest and very often flagship investments create a new image for the overall city district.

2.3.2 Good transport services and connectivity respective accessibility

A car-oriented city quarter like in former periods of urbanism does not apply to be liveable and human-oriented anymore. Therefore, many new urban quarters create *car-free settlements* in combination with peripheral car parks, electronic mobility devices (e.g. e-bikes) and car or bike sharing facilities.[20] To achieve this goal, new urban quarters should have a good connection to *public transport systems*. Ideally, bus or tramway lines link the district to the city centre. The number of bus or tramway stops and the number of different bus or tramway lines in relation to quarter size is a first indicator to measure connectivity. A better comparable indicator is the length of public transport network as a proportion of land area. At the same time, new city quarters should be near to *superregional transport network* as for example national road network. Together with the micro-location, this usually leads to the effect that new urban quarters in practice have a *high accessibility* to all kind of services, retailers as well as

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16 The existence of buildings with a good architecture influences the value of real estate in the surrounding neighbourhood (cf. Hille 2013).

17 Such competitions are possible for designing master plans and for architectural planning of public places and infrastructures or private buildings.

18 Through the development of new urban quarters, cities often try to improve their image. An important instrument for such a branding effect is the conception of flagship investments. Generally, these are representative and prestigious individual projects. They gain popularity beyond the overall project. An example for such a project is the Elbe Philharmonic Hall in the HafenCity Hamburg (cf. Colantonio/Dixon 2011, p. 226, Adam/Fuchs 2012, p. 568).

19 Waterfront developments benefit from their extraordinary location and iconic view. Both residential and commercial uses constitute a high demand for developments next to the sea, a river or a lake. Users accept higher rents and prices in these places (cf. Szarmeitat/Adam 2011).

20 Cf. Breuer/Schmell (2012), p. 12

city centres.[21] One can measure this easily e.g. by the travel time or travel cost budgets for the inhabitants of the new districts, which makes them (small) *smart cities*.

2.3.3 Vibrant and harmonious communities through social and cultural uses

Numerous publications and research projects characterize new city quarters through a *functional mix*[22] with a particular utilisation focus. Thereby new city districts offer a coexistence of residential and business use and create residential structures for different demand-patterns.[23] Concerning the business use, offices as well as retail and gastronomy coexist. Furthermore, cultural and leisure establishments can even serve to attract foreign visitors. Public sector provides social infrastructure like schools and educational and research institutions. Even a settlement of public administration buildings is possible. To measure the functional mix one could separate quarters with mono-functional use (e.g. pure residential districts or industrial/business parks) from those ones with multifunctional use (residential and labour). However, practitioners in quarter developments use a better indicator, the *Berry index*, which indicates the degree of diversification of a group (originally in enterprises). One can calculate the Berry index as a complement of the sum of squared sales shares (in percent) of all independent components of an enterprise. If one uses instead of sales the share of land uses in new quarters, then the value is a good indicator for diversification. A value of zero means that the new quarter is not diversified (single land-use or mono-functional use). The more the value tends to one, the more diversified is the new urban quarter.

A central objective of public stakeholders for integrated urban development is to establish *social diversity* in housing districts. A concentration of lower social ranks as an

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21 Cf. Breuer/Schmell (2012), pp. 12.

22 Cf. Schütz/Feldmann (2008), pp. 847, Breuer/Schmell (2012), p.11, Breuer/Schmell (2007), p. 31. A functional mix can exist on different scales: on the scale of a building, of a street or block, of a neighbourhood, of a district, or of the town. Some authors point out that mixing is more important on the scale of the town or urban township than on the pedestrian-scaled neighbourhood (cf. Barton 2000, pp. 112). In the following, the functional mix is analysed only on district level.

23 The functional mix separates quarter developments from single property developments (cf. Schütz/Feldmann 2008, p. 846). DGNB (2012) employs the delimiting criterion that districts are composed of multiple buildings and a minimum of two building plots. Furthermore, districts imply infrastructure facilities and public or at least publicly available spaces.

indicator for an insufficient social diversity often is a reason for social problems in city districts.[24] Since all quarter developments use instruments of integrated planning, this characteristic is again typically for new urban quarters. Through these planning instruments, one can create social diversity, which should cause positive effects in the district like stability, social capital and lower delinquency. The *ratio of social housing* may designate an indicator for social diversity in district developments. The existence of different sizes of households or different housing tenures is also an indicator for high social diversity. Such a mix of property (privately rented dwellings and social dwellings) can create social diversity.[25] Therefore, the proportion of households living in owned dwellings (vs. rented housing) could be a possible indicator.

2.3.4 Effective participation in governance structures

Especially for citywide impacts of district developments, it is important that these are part of the overall vision for urban development. Within the meaning of an integrated urban development, it is necessary not to string together multiple projects with a short-term achievement of objectives that do not have any steering effect and may cause a unidirectional or dissonant urban development. Instead, decision makers on a superordinate level should discuss where potential problems might result from the development. Scenarios are a possible methodology, which decision makers can use in an *integrated plan for sustainable urban development (IPSUD)*. Typically, promoters implement quarter developments *as a project* and therefore always apply implementation-oriented IPSUDs because of the high impact on overall city development.[26]

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24 Cf. Feldmann (2009), p. 169, Widmer (2009), pp. 61.

25 Cf. Friedrichs (2010), pp. 325. By analyzing secondary data from the Survey of English Housing KEARNS/MASON (2007, pp. 686) stated: "First, with regard to patterns of neighbourhood deficiency, it was found that areas dominated by social rented housing perform the worst both in terms of identified neighbourhood problems and desired improvements to facilities and services. Furthermore, areas where social renting and owner occupation are both sizeable (30–50 per cent each) are the next-worst performers. In contrast, areas with an overwhelming proportion of owner occupied housing have the lowest incidence of neighbourhood problems, but areas with substantial proportions of both owner occupation and private renting also perform reasonably well in terms of neighbourhood problems and perform best in terms of having the lowest desire for improvements to local services and amenities."

26 Cf. Nadler (2014), Mayer (2008), p. 134, Breuer (2013), pp. 13, Adam/Fuchs (2012), p. 569.

The impact is a consequence of the pure size of quarter developments. However, the high capital volume invested makes it necessary to s*plit the resulting risk between public and private stakeholders*. Here, we distinguish between municipal developments – public actors bear all development risks by developing land, infrastructure and buildings using their own capital – and pure private developments. Here, private promoters and investors bear the risks investing their equity capital next to high credit financing ratios. However, in all new urban quarters we see *a form of PPP (Public Private Partnership)*, in which the public often is responsible for infrastructure and the private sector is responsible for buildings. The land used for the quarter development is either public or private depending on the former use (in case of brownfields). Nevertheless, PPP are always a *cooperative distribution of risks* and this again is a typical characteristic for quarter developments in Germany. This characteristic makes them ideal-typical projects for JESSICA-type investment funds.[27]

At the same time, the failure of several large-scale developments in Germany or France due to massive protest movements clearly shows the significance of appropriate *public participation in the development process*. Public involvement corresponds to the request for open planning processes to democratic scrutiny. It helps to establish good governance for such large-scale projects due to three main reasons. Firstly, involved persons can express their expectations and needs and influence policy-making. Secondly, participants see that promoters respect their democratic rights during the planning process, and thirdly the acceptance of planning and policy is much higher, if it corresponds to the society's values and preferences.[28] Projects with a good public participation – in the sense of a constructive participation and not only protest movements – seem to be more successful and sustainable.[29]

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27 Cf. Kreuz/Nadler (2010). The financing of PPP was a central idea in Art. 44 EC 1083/2006: „…urban development funds, that is, funds investing in public-private partnerships and other projects included in an integrated plan for sustainable urban development." The risk characteristics of large-scale mixed-use quarter developments are possible justifications for the promotions of these kind of development projects.

28 Cf. Colantonio/Dixon (2011), pp. 25.

29 Cf. Wolpensinger (2013), p. 2, Breuer (2013), p. 14

2.3.5 Full range of public and private services

A city district that offers inferior public services and facilities may have an influence on personal development and educational opportunities of residents.[30] For the residents of a new urban quarter it is important to have as much services as possible *within walking distance*. Such services include health services and facilities, education services and equipment, public agencies, shops for daily provisioning, and cultural offers and locations. Just as important are facilities for leisure and recreation – also because these aspects are getting more and more predominant in people's life. In practice, district developments not only offer these facilities to attract new residents.[31] Furthermore, promoters often create institutions like a *quarter manager* or an *urban quarter association* to integrate new residents when they have finished all buildings and infrastructure facilities. These new governance institutions assist social interaction among the residents, since they are responsible for all kind of events in quarters like e.g. exhibitions, concerts or festivals for the neighbors. This not only strengthens the social network in the quarter but also could generate a positive media resonance and image of the quarter.[32] Thus, new residents can get in touch with their neighbourhood more easily and participate in the development of the quarter. This higher rate of *social capital* can reflect the quality of districts.[33] Possible social capital indicators are membership in associations or clubs and dedication for social and political activities.

2.3.6 Places to live in an environmentally friendly way

In terms of sustainable urban development, promoters develop new urban quarters in an *ecologically responsible way* without perishing their natural surroundings. Therefore, the following measures are typical for new urban quarters:[34]

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30 Cf. Galster (2010), p. 3.

31 Cf. Breuer (2013), p. 13.

32 Cf. Mayer (2008), pp. 140, Wolpensinger (2013), p. 1, Drilling/Schnur (2009). Urban planners originally established quarter managements in deprived districts to respond to social difficulties like crime and high unemployment rates. Nowadays it has changed to a proactive instrument.

33 Cf. Colantonio/Dixon (2011), pp. 28.

34 Cf. Breuer (2013), p. 14, DGNB (2012).

- *Sustainable energy supply*

  Two main instruments can influence the energy supply in a sustainable way: Firstly, use of a local power-heat cogeneration to deliver heat and electricity for whole districts and secondly, the generation of solar electricity by landowners.

- *Energy-efficient construction*

  In times of increasing prices, energy-efficient construction is an important success factor for new urban quarters.[35] Examples are passive houses, roof greening and seepage of rainwater on the property. This often goes hand in hand with a certification of buildings by rating organisations like LEED, BREAM or DGNB.

- *Green and open spaces*

  The existence of green and open spaces creates a link between urban life and natural environment, which can be a success factor for quarter development projects.[36]

2.3.7 Flourishing local economy

An important goal of cities developing new urban quarters is to attract new households and companies to persist in the increasing competition to other cities. It is possible to assess the success of this strategy by the *number of new residents and new employments in the developed district.*[37] To measure these employments, it is necessary to differentiate between residents/employments, which only moved their location within the same city and residents/employments, which immigrated in the city because of the quarter development. It is not surprising that the *creation of an economic added-value* (from new residents through creation of taxes capacity and purchasing power and from new local companies through creation of employment)[38] is a dominant objective for the European Cohesion policy and therefore for JESSICA-type investment funds.

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35 Cf. Adam/Fuchs (2012), p. 569.

36 Cf. Feldmann (2009), p. 169, Wheeler (2004), pp. 203, Chapman 2006, p. 788

37 Cf. first results in Germany: Breuer/Schmell (2007). Colantonio/Dixon (2011, p. 230) state that it is useful to measure the percentage of new enterprises still operating after three years in order to analyse the long-term creation of employment.

38 Cf. Thiel/Nadler (2015).

3 Market analysis of quarters developments in Germany

Resulting from the description of the dominant design characteristics investments in quarter development projects could be a very valuable option in the management of JESSICA type financial instruments. However, this is only true if the private sector cannot fund and invest in these kinds of quarter developments on its own. This could be the case in economic weak areas. Therefore, we now perform an *economic market analysis* in Germany in order to find out where these urban development investment projects have taken place in the past. Our hypothesis is that in the past German promoters implemented these projects only in growth regions, leading to a *market failure* in economic weak areas. This could be a justification for granting support to this project type e.g. by financial engineering instruments.

3.1 Size and duration of existing development projects

The starting point of the following research was the pioneer work of the BBSR concerning the identification of quarter developments in Germany.[39] In this research, the authors identified 300 quarter development projects in Germany *since 1990.*

The starting point of a quarter development is often not easy to identify. In the following analysis, we define *the year after the project achieved a legally binding land-use plan* as project start, because in most cases this is the starting point for investments in infrastructure and buildings.

Therefore, the year 1990 also determines the starting point of our evaluation, so that we are able to analyse all quarter developments of the last 25 years in Germany. We excludes projects before this point in time because of limited data availability:

[39] Cf. Breuer/Schmell (2007), Breuer/Schmell (2012), Breuer (2013). The authors like to thank Bernd Breuer from BBSR for his provision of their data material free of charge.

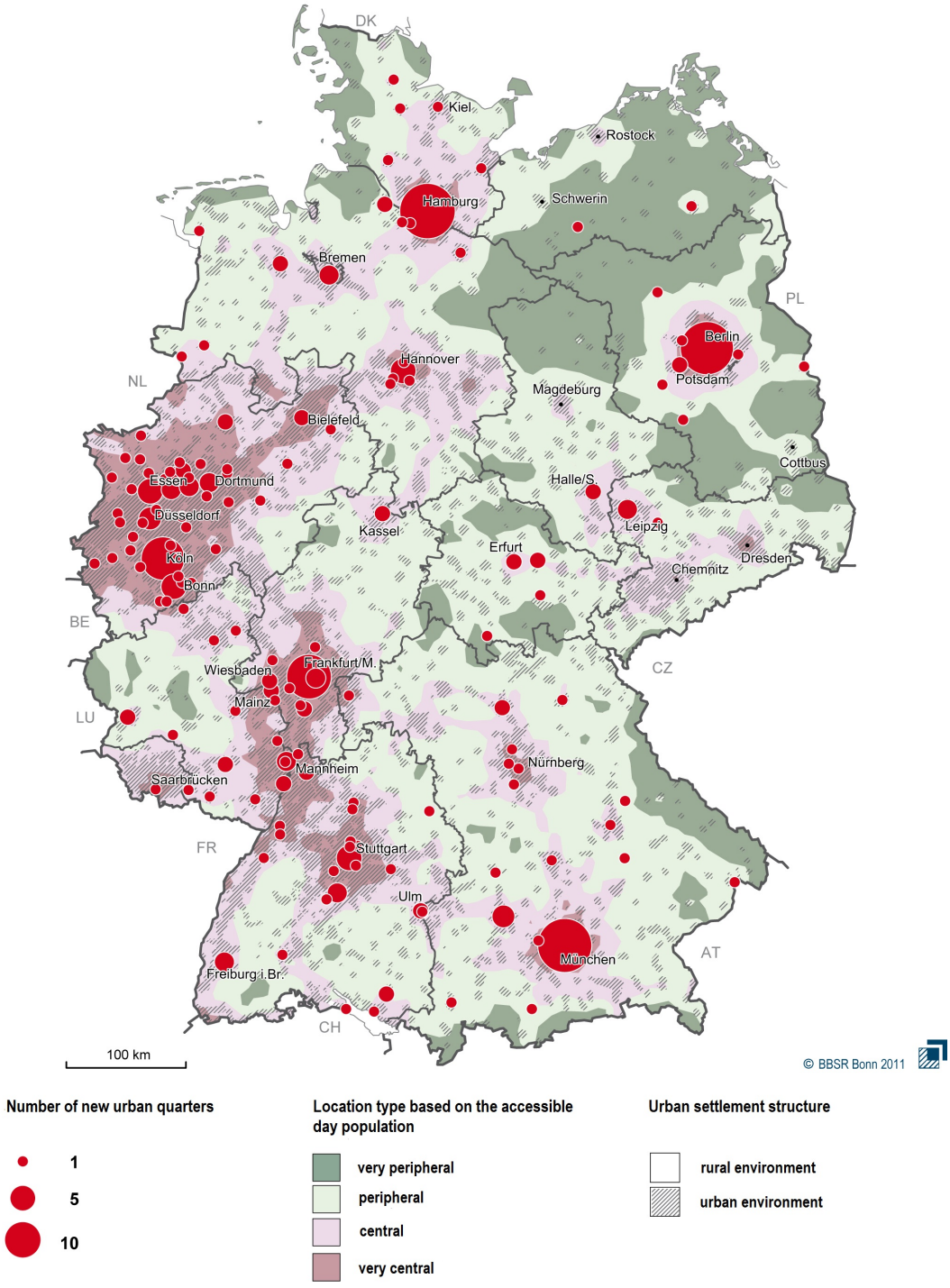

Figure 3: New urban quarters in Germany differentiated by their location type (cf. BBSR 2012, 7 modified)

However, our own analysis reveals that other delimitation criteria of the BBSR studies (size of the project, more than 10 ha or minimum of 500 new housing units or minimum of new 1000 residents) are too restrictive in comparison to theory and practice. In this context, the DGNB (2012) requires a minimum size of two ha to consider a

property development as a new city district. The use of new residents seems to be too restrictive since many quarter developments do not have available information on these criteria. Furthermore, it became clear that many development projects are still in planning and not in realization phase. We eliminated those projects. Thus, our *own desktop research* identified even *more* existing quarter developments in Germany for the same period (until 31 Dec. 2013). Overall, we were able to identify *514 quarter development projects,* in the last 25 years in Germany*,* which correspond to the definition and design characteristics of section 2. The reason for this astonishing result is that we used as information sources the project websites themselves, of the urban administrations especially of larger cities, of common urban planning workshops (like "Werkstatt Stadt"), and of promoters involved in district developments. Furthermore, we used in our research approach integrated plans for sustainable urban development (IPSUD), Operational Programmes of the European Regional Development Fund (ERDF), and the archive of a German weekly newspaper exclusively focused on real estate ("Immobilienzeitung"). For a final comparison of identified projects, we consulted members of urban administrations in cities as well as private promoters and investors by phone or email to verify that our detected district developments were complete, leading to 514 quarter developments in Germany (see annex for a complete project list). Therefore, we can clearly state that this already is a very l*arge market for urban development investment projects*. This statement is confirmed when we now exploit the development data: here we see that the overall market size is *19,945 ha* development area. The individual size of projects differs from one ha to 420 ha with a mean size of 38.8 ha:

		development_ha	Valid N (listwise)
N	Statistic	514	514
Minimum	Statistic	1.00	
Maximum	Statistic	420.00	
Sum	Statistic	19945.79	
Mean	Statistic	38.8050	
Std. Deviation	Statistic	57.23772	
Variance	Statistic	3276.157	
Skewness	Statistic	3.956	
	Std. Error	.108	

Table 1: Size of quarter development projects in Germany 1 Jan 1990 – 31 Dec 2013

If we classify the quarter developments, we find a nearly uniform distribution for all sizes of projects:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 8.5 ha	87	16.9	16.9	16.9
	8.6-13.0 ha	96	18.7	18.7	35.6
	13.1-20.26 ha	75	14.6	14.6	50.2
	20.37-33.50 ha	85	16.5	16.5	66.7
	33.6-55.0 ha	86	16.7	16.7	83.5
	more than 55 ha	85	16.5	16.5	100.0
	Total	514	100.0	100.0	

Table 2: Project classes of quarter development projects in Germany 1 Jan 1990 – 31 Dec 2013

If we look at expected project endings, we can see that our project group exists of nearly two even sized development groups: 46 percent of the quarter developments have been finished until the end of 2013 (*236 ex-post projects*), 54 % of the quarter developments are still under development (31+247= *278 on-going projects*):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1992	1	.2	.2	.2
	1995	1	.2	.2	.4
	1996	1	.2	.2	.6
	1997	5	1.0	1.0	1.6
	1998	4	.8	.8	2.3
	1999	4	.8	.8	3.1
	2000	14	2.7	2.7	5.8
	2001	4	.8	.8	6.6
	2002	8	1.6	1.6	8.2
	2003	8	1.6	1.6	9.7
	2004	15	2.9	2.9	12.6
	2005	14	2.7	2.7	15.4
	2006	13	2.5	2.5	17.9
	2007	15	2.9	2.9	20.8
	2008	19	3.7	3.7	24.5
	2009	13	2.5	2.5	27.0
	2010	32	6.2	6.2	33.3
	2011	13	2.5	2.5	35.8
	2012	20	3.9	3.9	39.7
	2013	32	6.2	6.2	45.9
	2014	31	6.0	6.0	51.9
	2014+	247	48.1	48.1	100.0
	Total	514	100.0	100.0	

Table 3: Project end of quarter development projects in Germany 1 Jan 1990 – 31 Dec 2013

Hereby we can conclude that district developments are characterised by long *project duration*. Because of size, physical features of the relevant area to be developed, legal conditions as well as exigencies in relation to marketing, a project duration of 10 or more years until completion of all buildings seems to be a reasonable assumption. Our data confirms this characteristic because we already have a mean duration of 8.66 years. Since the end of the on-going development group is open ("2014+"), we can assume that ex-post duration (after the completion of all projects) will be even higher:

	N	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
duration	514	0	26	4449	8.66	5.105	26.059
Valid N (listwise)	514						

Table 4: Duration of quarter development projects in Germany 1 Jan 1990 – 31 Dec 2013

In addition, the duration seems to grow with the size of the quarter development. This becomes clear by looking at the cross tables for both classified characteristics:

		duration_classes						
		1-4 years	5-6 years	7-8 years	9-10 years	11-14 years	> 14 years	Total
develop-ment_ha_class	less than 8.5 ha	**33**	**21**	9	11	7	6	87
	8.6-13.0 ha	27	23	12	15	8	11	96
	13.1-20.26 ha	15	12	9	19	11	9	75
	20.37-33.50 ha	22	10	13	12	18	10	85
	33.6-55.0 ha	10	18	17	12	17	12	86
	more than 55 ha	12	8	8	8	**22**	**27**	85
Total		119	92	68	77	83	75	514

Symmetric Measures

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval	Pearson's R	.287	.042	6.792	.000[c]
Ordinal by Ordinal	Spearman Correlation	.288	.042	6.797	.000[c]
N of Valid Cases		514			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.
c. Based on normal approximation.

Table 5: Size vs. duration of quarter development projects in Germany 1 Jan 1990 – 31 Dec 2013

Thus, the correlation between the two characteristics is highly significant and positive with a value of 0.287. We now take this project pool to analyse the locational and context determining factors of integrated urban quarter development projects in Germany.

This is a prerequisite for the test of our central hypothesis, which states that in the past quarter developments predominately exist in growth regions in Germany.

3.2 Regional and urban location of existing development projects

Theory and practice of property development subdivides "*location*" into macro and micro location.[40] Since promoters of district developments can influence *micro location*, these characteristics do not belong to determining and contextual factors, but to design variables (see section 2). Hard locational factors on the *macro level* concern population, labour market and income. These factors are more significant in comparison to other locations. Despite the importance of location for development projects, no research exists, which analyses the macro location requirements for a successful district development. Therefore, our research mainly draws on the *spatial planning observation system* of the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR)[41], which categorizes regions and municipalities accordingly to their population and economic dynamics. In addition to this, we also apply a private classification of administrative districts on regional level concerning their predicted dynamics from the research company PROGNOS.

3.2.1 Size and population of municipality

Spatial planning observation of the BBSR classifies *four different sizes of municipalities* in Germany. The criteria for this classification are the size of the municipality as defined by the population and their functional importance. In Germany, one can distinguish the following urban types:

- Large cities
  - Major cities: more than 500,000 inhabitants
  - Smaller large cities: from 100,000 up to 500,000 inhabitants
- Medium-sized cities
  - Big medium-sized city: from 50,000 up to 100,000 inhabitants

40 Cf. e.g. Peiser (2012).

41 BBSR provides all German spatial data free of charge on the websites www.raumbeobachtung.de and www.bbsr.bund.de/BBSR/DE/Raumbeobachtung.

  - Small medium-sized city: from 20,000 up to 50,000 inhabitants
- Small towns
  - Bigger small town: from 10,000 up to 20,000 inhabitants
  - Very small town: from 5,000 up to 10,000 inhabitants or with a functional importance
- Rural communities: municipalities with less than 5,000 inhabitants and no functional importance.

In Germany, about 47 % of the district developments are realised in major cities; together with the smaller large cities, this ratio is nearly 70 % of all projects. 25.4 % of the project developments are in medium-sized cities. Small towns only play a marginal role for the development of new city quarters representing only 4.8 % of the total sum of projects. Promoters did not implement quarter developments in rural communities.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	major city	241	46.9	46.9	46.9
	big medium-sized city	66	12.8	12.8	59.7
	bigger small town	15	2.9	2.9	62.6
	very small town	10	1.9	1.9	64.6
	small medium-sized city	65	12.6	12.6	77.2
	smaller large city	117	22.8	22.8	100.0
	Total	514	100.0	100.0	

Table 6: Size of the municipality of quarter development projects

A chi-squared test of goodness of fit reveals that the existence of district developments is *not uniformly distributed* over the different size of municipality. This is comprehensible when we look at the number of district developments in the particular types of municipalities. Promoters develop a new quarter best in major cities with more than 500,000 inhabitants:

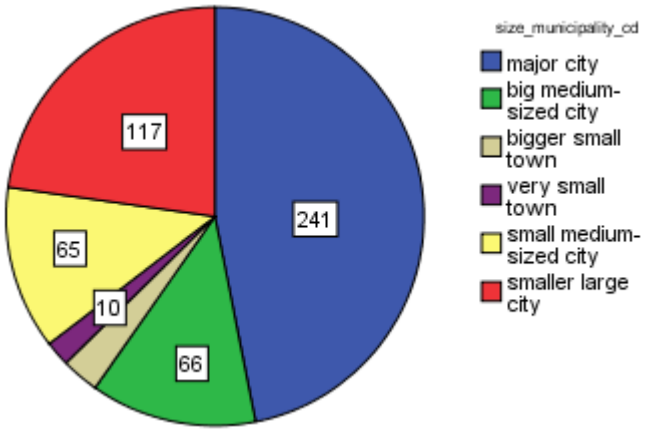

Figure 4: Distribution of quarter development projects in Germany according to the size of the municipality

In addition, size of population at the end of 2011 (measured by the so-called zensus 2011 and the forecasts of the "Volkszählung") shows that the mean of the relevant city population with quarter development projects is 667,646 people. This is a typical major city in the Germany. Nevertheless, we find quarter development projects even in very small cities with just 1,466 inhabitants:

	N	Minimum	Maximum	Mean	Std. Deviation
population2011_zensus	514	1,466	3326,002	667,646.15	810,610.098
population2011_VZ	514	1,574	3501,872	687,918.06	847,507.651
Valid N (listwise)	514				

Table 7: Inhabitants of the municipality of quarter development projects

3.2.2 Location types

In terms of *macro location* (at the regional level), we can differentiate quarter developments by means of two structural characteristics, the urban settlement structure and the zone type, independently from administrative boundaries.

The characteristic of the *zone type* is a result of the accessibility model of BBSR. The location type uses a centrality index and the proximity to concentrations of population and jobs, which offer employment opportunities and utilities for inhabitants. A complete source-destination matrix of all nearly 4,800 communities in Germany forms the basis for the calculation of the daily potential population within two hours driving time for private motorized transport (MIT). Following this data matrix, one can classify four types of location: very peripheral, peripheral, central and very central location.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	peripheral	27	5.3	5.3	5.3
	very peripheral	1	.2	.2	5.4
	very central	420	81.7	81.7	87.2
	central	66	12.8	12.8	100.0
	Total	514	100.0	100.0	

Table 8: Zone type (macro location) of quarter development projects

Regarding the quarter developments in Germany, data shows that promoters implement these projects only in predominantly urbanised environments. As to zone type, *81.7 %* of the new urban quarters are *in very central locations* and 12.8 % in regions of the central location type. Overall, only 10.7 % of the new districts in Germany are in peripheral or very peripheral locations. In this case, as well it is not surprising that the allocation of district developments is not uniformly distributed. In addition, BBSR uses the characteristic "*urban settlement structure*" by separating rural from urban regions. However, if we look at the results in table 8 we can understand that in practice all quarter development projects take place in urbanized areas. Therefore, we skipped this characteristic.

If we look at the *micro location* of the new quarters *within the urban area*, it is possible to separate projects in the city centre (CBD), in the zone between the city centre and the outskirts, in the outskirts (suburban area) and in exurban territory (areas outside the established suburbs). We derive this information by identifying every new urban quarter in the relevant city maps by using Google Maps™:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	city centre (CBD)	100	19.5	19.5	19.5
	between centre and outskirts	208	40.5	40.5	59.9
	outskirts and suburban area	154	30.0	30.0	89.9
	exurban territory	52	10.1	10.1	100.0
	Total	514	100.0	100.0	

Table 9: Micro location within the urban area of quarter development projects

The project analysis shows that most of the new urban quarters are between city centre and outskirts (40.5 %). Furthermore, 19.5 % of the districts are directly in the city centre revealing that quarter developments mainly occur in very central locations within urban areas. However, 30 % of district developments are in outskirts and suburban ar-

eas, which is not negligible. These are typically urban expansion projects (often not on Brownfields). In exurban territory (local centre of smaller towns), such projects are less common.

3.2.3 Municipal developmental dynamics in the past

In addition to the size and location of cities and quarters, also the *municipal developmental dynamics* serve as an attribute to describe quality demands of quarter developers and investors. Accordingly, the spatial planning observation of BBSR uses six indicators (e.g. demographic development) to differentiate five types of municipal developmental dynamics in the past: rapidly growing, growing, steady, shrinking and strong shrinking cities.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	shrinking	95	18.5	18.5	18.5
	steady	21	4.1	4.1	22.6
	rapidly shrinking	3	.6	.6	23.2
	rapidly growing	155	30.2	30.2	53.3
	growing	240	46.7	46.7	100.0
	Total	514	100.0	100.0	

Table 10: Statistics concerning the municipal developmental dynamics of quarter development projects

Quite surprisingly, about 19.1 % of all new urban quarters in Germany are or were in shrinking or strong shrinking municipalities. You can find most of these projects in cities affected by structural change like in the Ruhr, where promoters redeveloped many former industrial sites. However, 30.2 % of the districts are located in rapidly growing and 46.7 % in growing municipalities. At an average, new urban quarters in Germany are mainly in cities with growing developmental dynamics (median). Again, the allocation of new urban quarters over the different types of municipal developmental dynamics is not uniformly distributed.

Municipal development dynamics are a composite of *originally six different indicators*.[42] These are demographic development, overall migration balance, employment

[42] BBSR uses the same indicators for the characterization of residential market regions (rapidly growing, growing, steady, shrinking and strong shrinking).

development, unemployment rate, taxable capacity, and purchasing power.

Concerning these indicators in relation to district developments, we first analyse the *demographic development* of the particular city. Most of the new urban quarters are in cities with a growing population. The mean value for all of the 514 development projects is 1.96 % (growth rate per year). However, we do see quarter developments in cities with strongly shrinking population (minimum: –5.97 %) which is surprising since this is a dominant demand factor for developers. We distinguish four classes and it becomes obvious that 81.1 % of all projects are in growing communities.

	N	Minimum	Maximum	Mean	Std. Deviation
demographic_development	514	-5.97	7.65	1.9576	3.01474
Valid N (listwise)	514				

Table 11: Demographic development of quarter development projects

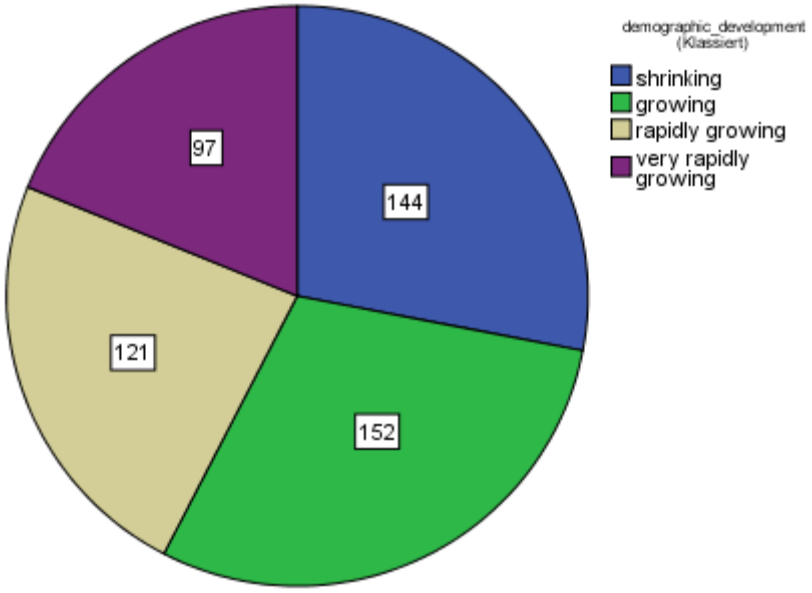

Figure 5: Distribution of demographic development of quarter development projects

A second BBSR indicator deals with the *overall migration balance* and shows that district developments take place almost exclusively in cities with an in-migration; the mean value is 5.22 (new resident) per 1000 inhabitants:

	N	Minimum	Maximum	Mean	Std. Deviation
migration_balance	514	-6.87	23.81	5.2202	4.12575
Valid N (listwise)	514				

Table 12: Overall migration balance (per 1000 inhabitants) of quarter development projects

Only 11.5 % of the municipalities with quarter development projects had a negative migration balance. Therefore, we have a distribution with a clear skewness to the right side (positive migration balance):

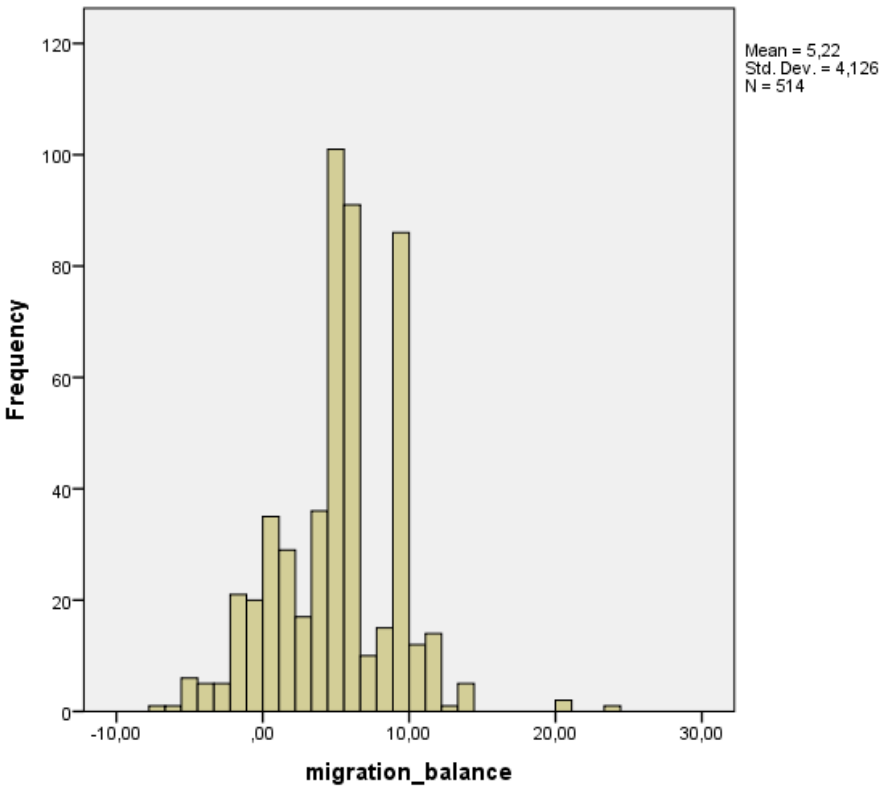

Figure 6: Histogram overall migration balance (per 1000 inhabitants) of quarter development projects

Even more distinct is the distribution of quarter developments regarding the development of the employment markets. We can see this by looking at two relevant indicators: development of *number of employees* and unemployment rate (in 2011) in the respective cities.

	N	Minimum	Maximum	Mean	Std. Deviation
development_employment	514	-4.74	75.12	8.3457	4.95097
unemployment_rate	514	2.41	15.34	8.3409	2.85490
Valid N (listwise)	514				

Table 13: Number of employees in the municipalities (development rate/unemployment rate) of quarter development projects

Concerning the development of the employment market, we see a normal distribution for the relevant data with a most probable value of 8.35 % growth in employment (mean). The distribution shows quarter development projects are only existent in

strong economic areas with a growth in the employment market:

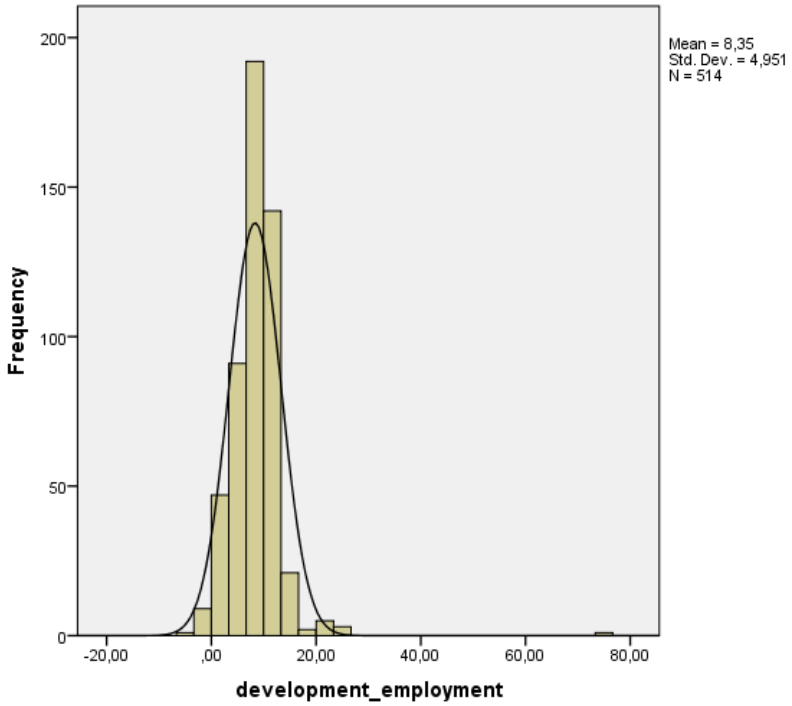

Figure 7: (Normal) distribution of development of the relevant employment market of quarter development projects

Less than 2 % of all German new urban districts are in economical weak cities with a decreasing number of employees:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	decreasing	10	1.9	1.9	1.9
	increasing	503	97.9	97.9	99.8
	very strongly increasing	1	.2	.2	100.0
	Total	514	100.0	100.0	

Table 14: Number of employees in the municipalities (classes) of quarter development projects

A little more difficult is the distinction of district developments regarding the *unemployment rate* of the relevant city. Here we have to compare the values with national unemployment rate, which was 6.6 % in 2011 (with clear differences at the federal state level, see the next figure):

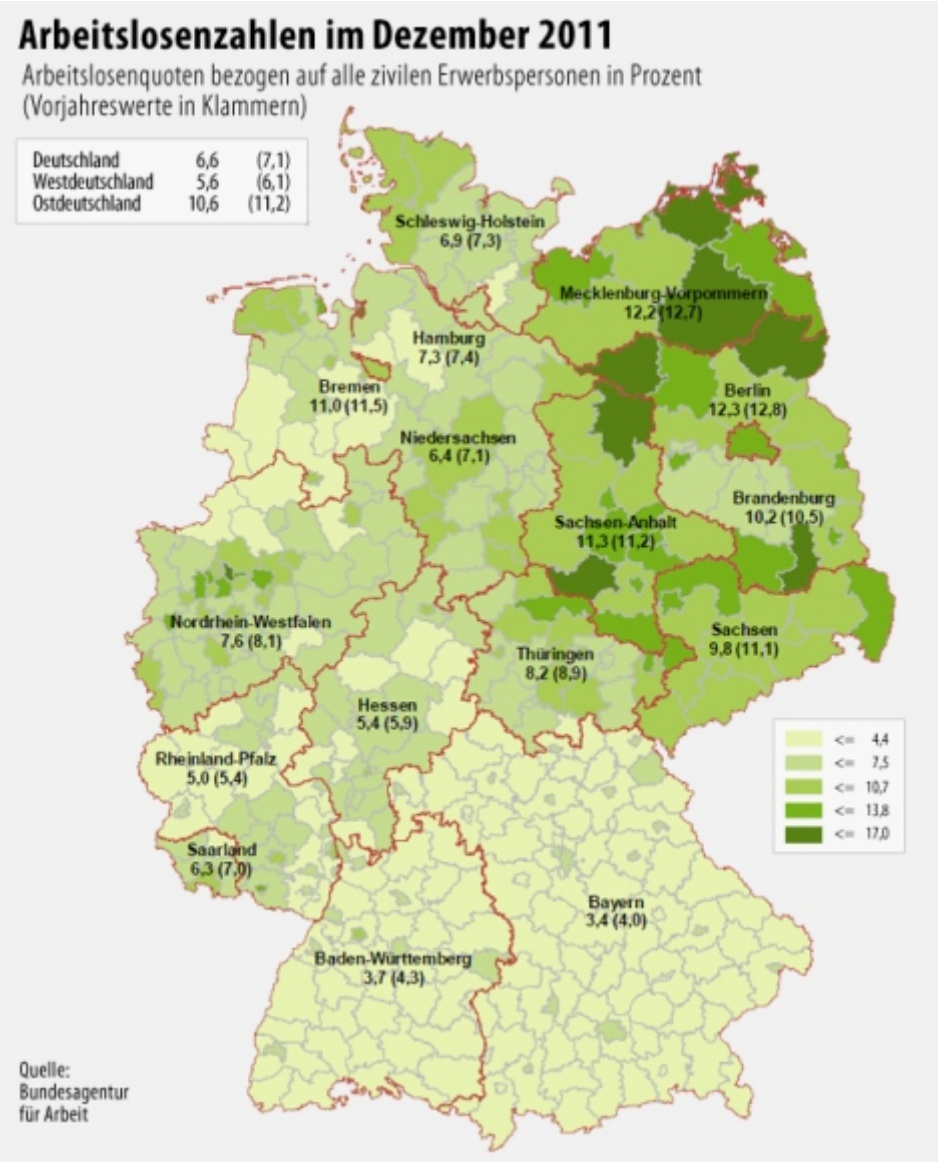

Figure 8: Unemployment rates in Germany 2011 (Bundesagentur für Arbeit)

Compared to national level, the unemployment rate in municipalities with quarter developments is quite high with a median value of 8.34 % (see table 13). In comparison to the national level of employment, we can derive the following classification:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very high employment	6	1.2	1.2	1.2
	high employment	167	32.5	32.5	33.7
	steady employment	161	31.3	31.3	65.0
	low employment	112	21.8	21.8	86.8
	very low employment	68	13.2	13.2	100.0
	Total	514	100.0	100.0	

Table 15: Unemployment rates in the municipalities (classes) of quarter development projects

Therefore, 21.8 % respectively 13.2 % of the development projects are in municipalities with a low respectively very low employment (meaning a rather high unemployment rate). Quite similar is the systemization of district developments in German cities regarding their (real) *tax revenue*. Only 25 % of the new urban quarters are in cities with low or very low tax revenues – which means a revenue (from real estate assets) lower than 300 € per year and per inhabitant. Contrary speaking, this means that ¾ of all quarter development projects are in cities with strong local real estate markets (with high prices and rents leading to high real taxes revenues for the municipalities):

			Statistic	Std. Error
tax_revenue	Mean		496.1280	11.01619
	95% Confidence Interval for Mean	Lower Bound	474.4856	
		Upper Bound	517.7704	
	5% Trimmed Mean		477.8553	
	Median		438.3800	
	Variance		62377.194	
	Std. Deviation		249.75427	
	Minimum		107.73	
	Maximum		2660.54	
	Range		2552.81	
	Interquartile Range		318.19	
	Skewness		1.839	.108
	Kurtosis		10.432	.215

Percentiles

	Weighted Average(Definition 1)	Tukey's Hinges
Percentiles	taxable_capacity	taxable_capacity
5	196.3725	
10	231.8100	
25	303.2825	304.0100
50	438.3800	438.3800
75	621.4700	621.4700
90	720.0000	
95	899.6200	

Table 16: Real tax revenue in municipalities of quarter development projects

Even more interesting is the distribution of the relevant *purchasing power* in the respective city. It shows the disposable income of residents in the municipality in 2011. Although national value was already 19,200 euros per inhabitant, the mean value for quarter development projects is even higher (21,257 euros):

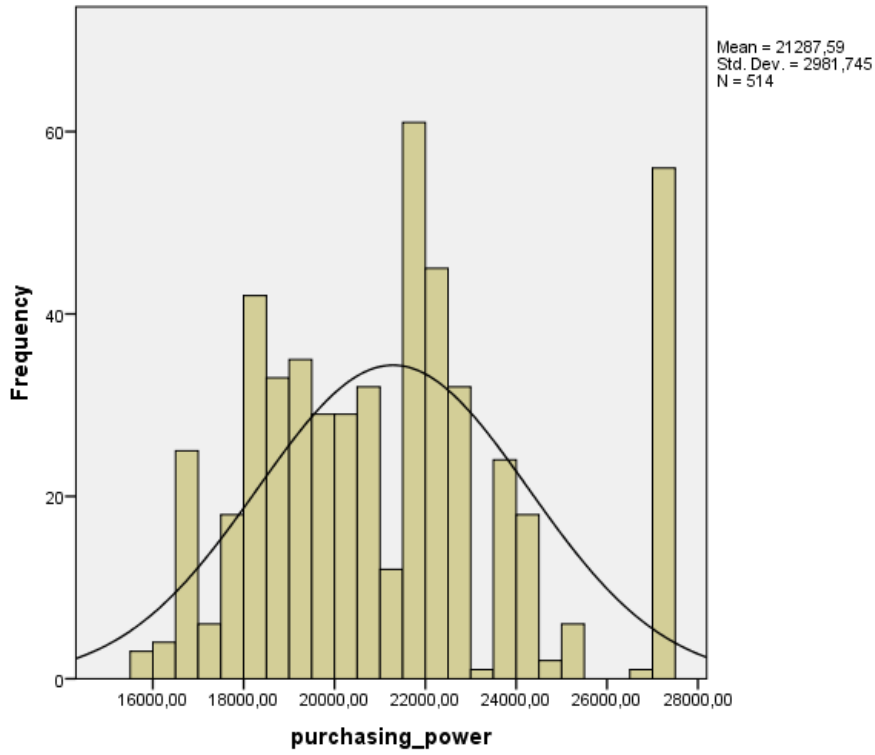

Figure 9: Distribution of purchasing power of the population of quarter development projects in 2011

Only 25 % of the district development projects appear to be located in cities with a lower purchasing power compared to national level. In contrast, this means that 75 % of the projects are in cities with rather rich inhabitants (measured by their recent income in comparison to national income level).

			Statistic	Std. Error
purchasing_power	Mean		21,287.5888	131.51913
	95% Confidence Interval for Mean	Lower Bound	21,029.2065	
		Upper Bound	21,545.9712	
	5% Trimmed Mean		21,201.7292	
	Median		21,069.1600	
	Variance		8890,802.504	
	Std. Deviation		2,981.74488	
	Minimum		15,812.18	
	Maximum		27,464.00	
	Range		11,651.82	
	Interquartile Range		3,770.34	
	Skewness		.596	.108
	Kurtosis		-.239	.215

Percentiles

Percentiles	Weighted Average(Definition 1) purchasing_power	Tukey's Hinges purchasing_power
5	16,898.9500	
10	17,723.5350	
25	18,934.4975	18,937.7900
50	21,069.1600	21,069.1600
75	22,704.8400	22,704.8400
90	27,464.0000	
95	27,464.0000	

Table 17: Purchasing power in municipalities of quarter development projects

3.2.4 Regional employment market characteristics and dynamics in the past

In addition, BBSR analyses the German employment market at the regional level by three indicators: First, BBSR separates urban employment markets from rural markets. Not surprisingly, the clear majority (88 %) of all quarter development projects is in urban employment markets with strong agglomerations:

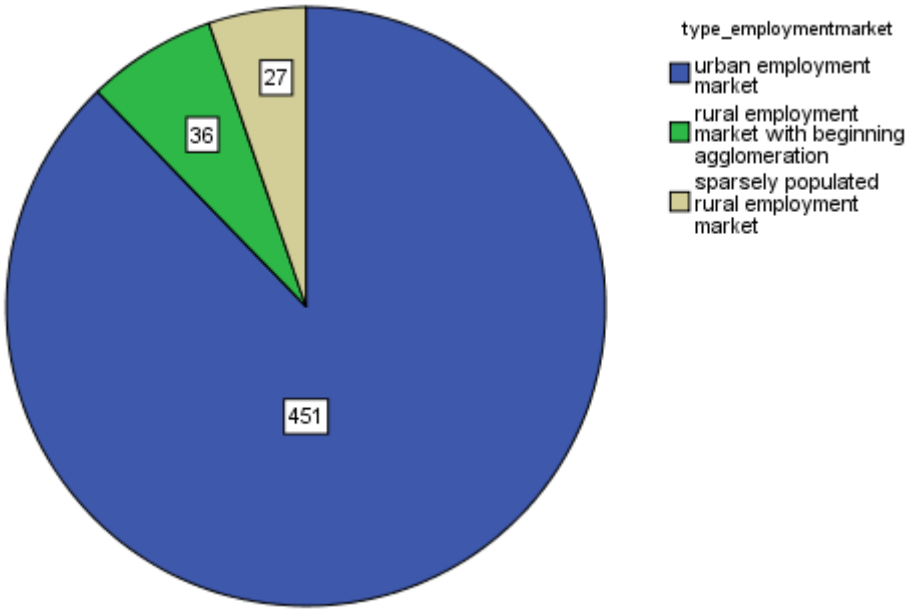

Figure 10: Distribution of employment market types of quarter development projects in 2011

Since the JESSICA-initiative concentrates on the support for urban development markets, quarter development projects are an ideal application field for urban development funds. If we further look at the second indicator on regional level (*region type*), we see that most of these projects are located in metropolitan regions (90.7 %). They are in focus of regional policy not only in Germany. 64.4 % of the new urban quarters are in

the core of these metropolitan areas where we typically find the strongest demographic and employment growth:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	outside metropolitan region	48	9.3	9.3	9.3
	core	331	64.4	64.4	73.7
	extension area to core	79	15.4	15.4	89.1
	rural suburban zone in narrower sense	31	6.0	6.0	95.1
	rural suburban zone in wider sense	25	4.9	4.9	100.0
	Total	514	100.0	100.0	

Table 18: Metropolitan region type of quarter development projects

If we now look at the third regional indicator, the *employment market dynamics* in the past, this could be of special relevance in the context of ERDF and Cohesion policy, since structurally weak areas are often situated in shrinking employment regions. In contrast to the indicators in section 3.2.3, BBSR defines and classify the employment market regions here by the ratios of commuter between two cities or counties. Therefore, this indicator is a typical regional dynamic indicator used for example by Eurostat or DG Regio to compare regions according to their employment dynamics:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	rapidly shrinking	5	1.0	1.0	1.0
	shrinking	86	16.7	16.7	17.7
	steady	31	6.0	6.0	23.7
	growing	175	34.0	34.0	57.8
	rapidly growing	217	42.2	42.2	100.0
	Total	514	100.0	100.0	

Table 19: Regional employment market dynamics of quarter development projects

Data reveals that only 16.7 % of the projects are in shrinking employment markets. Projects in rapidly shrinking markets are practically non-existent (5 of 514 and all of them have not been ended yet).

This reveals a form of *market failure* in weak employment regions. In contrast, nearly 76 percent of all quarter developments in the past have taken place in regions with a strong, growing employment market. It is obvious that private and public developers do not realise new urban quarters in disadvantaged regions with a weak employment markets. Thus, if financial engineering instruments like the UDFs in the JESSICA imi-

tative would fund quarter development projects in structurally weak, this could lead to *substantial contributions for European Cohesion policy*.

3.2.5 Developmental dynamics in the future

Besides the public classifications of municipalities and regions concerning their past development dynamics, there also exist several rankings from private organisations or institutions forecasting *future urban dynamic potential*. One example is the *Zukunftsatlas* from the private consulting company PROGNOS.[43] Based on 29 macro and socio-economic indicators it determines the *future dynamics and chances/risks* of the 412 administrative counties and large cities in Germany. These indicators comprise the status quo *and* the forecasts for the next years. They are dealing also with the main topics "demographics", "prosperity and social situation", "labour market" as well as "competition and innovation". The outcomes of this classification are seven types of *future dynamics*. The regions with the best outlook on their future have "TOP future chances", followed in the descending order by the regions with "very high future chances", "high future chances", "future chances" and regions with a "balanced mix of chances and risks", with "future risks" and "high future risks". If we look to the values adequate to BBSR data of the year 2011, we can easily see that the distribution is not equally distributed in Germany concerning the quarter developments:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	balanced mix of chances and risks	164	31.9	31.9	31.9
	High future chances	74	14.4	14.4	46.3
	high future risks	14	2.7	2.7	49.0
	very high future chances	105	20.4	20.4	69.5
	TOP future chances	78	15.2	15.2	84.6
	future chances	58	11.3	11.3	95.9
	future risks	21	4.1	4.1	100.0
	Total	514	100.0	100.0	

Table 20: Prognos outlook on the future of regional dynamics 2011 of quarter development projects

15.2 % of the identified new urban quarters in Germany are in regions with TOP future

[43] PROGNOS provides all data to the Zukunftsatlas since 2004 free of charge at its website: www.prognos.com/publikationen/zukunftsatlas-regionen.

chances, 20.4 % in regions with very high future chances, 14.4 percent in regions with high future chances and 11.3 percent in regions with future chances. Most of the district developments are in regions with a balanced mix of chances and risks, namely 31.9 %. Quarter developments in cities with (high) future risks are rarely found (2.7 + 4.1 % = 6.8 %). This data confirms the statements in section 3.2.4 that these highly important urban development projects do not take place in risky regions with shrinking employment markets. They seem to be too risky for the public *as well* as the private investors and promoters. We have a further confirmation on this view, when we apply the newest Zukunftsatlas published at the end of 2013: Here the data reveals that only 4.3 + 8.0 = 12.3 % of all quarter development projects are in urban regions with a (high) future risk potential:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	balanced mix of chances and risks	147	28.6	28.6	28.6
	High future chances	70	13.6	13.6	42.2
	high future risks	22	4.3	4.3	46.5
	very high future chances	110	21.4	21.4	67.9
	TOP future chances	77	15.0	15.0	82.9
	future chances	47	9.1	9.1	92.0
	future risks	41	8.0	8.0	100.0
	Total	514	100.0	100.0	

Table 21: Prognos outlook on the future of regional dynamics 2013 of quarter development projects

Cross tables for both outlook indicators reveals that for some regions with implemented new urban quarters the future chances significantly improved in the last years (leading to a reduction of possible development risks, green field in the next table). In contrast to this, in 29 quarter development projects the risk potential increased (red fields in the next table). However, the correlation between the outlooks of 2011 and 2013 is still highly significant:

		Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Ordinal by Ordinal	Kendall's tau-b	.327	.046	7.134	.000
N of Valid Cases		514			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

		futureatlas2013_cd							Total
		balanced mix of chances and risks	High future chances	high future risks	very high future chances	TOP future chances	future chances	future risks	
futureatlas 2011_cd	balanced mix of chances and risks	113	1	0	2	0	**20**	**28**	164
	High future chances	5	59	0	7	0	3	0	74
	high future risks	0	0	8	0	0	0	6	14
	very high future chances	0	3	0	81	19	2	0	105
	TOP future chances	0	0	0	20	58	0	0	78
	future chances	**29**	7	0	0	0	22	0	58
	future risks	0	0	14	0	0	0	7	21
Total		147	70	22	110	77	47	41	514

Table 22: Cross tables and correlation on the future of regional dynamics 2011 and 2013 of quarter development projects

3.2.6 Economic and real estate market cycle phase

As the economic and business activities in Germany vary from year to year, the same occurs for the real estate market. Therefore, it is important for development projects to keep in mind, whether the realization and building of the property starts in a period of recession or in a period of a booming real estate market. We can observe the *phases of the cycle* from the *turnover figures at the real estate investment markets* in Germany, since this kind of investment is very sensitive to fluctuation in economic activity.

Two institutions (IVD and GEWOS) measure this data by using public information concerning the real estate taxes (on transactions) in Germany.[44] If we look at the development of real estate transactions in Germany, we can clearly see boom and recession phases. Since 2010, a real estate boom is characteristic for the German economy leading also to strongly rising prices and rents. This information is valuable for the assessment of quarter development projects presupposing that they are *sensitive* to recession and boom cycle phases in Germany.

[44] The data is indirectly available. IVD (www.ivd.net/nc/der-bundesverband/presse/pressearchiv) as well as GEWOS (www.gewos.de/fileadmin/user_upload/2_Taetigkeitsfelder/IMA) provide the transaction data free of charge in their press relations sections.

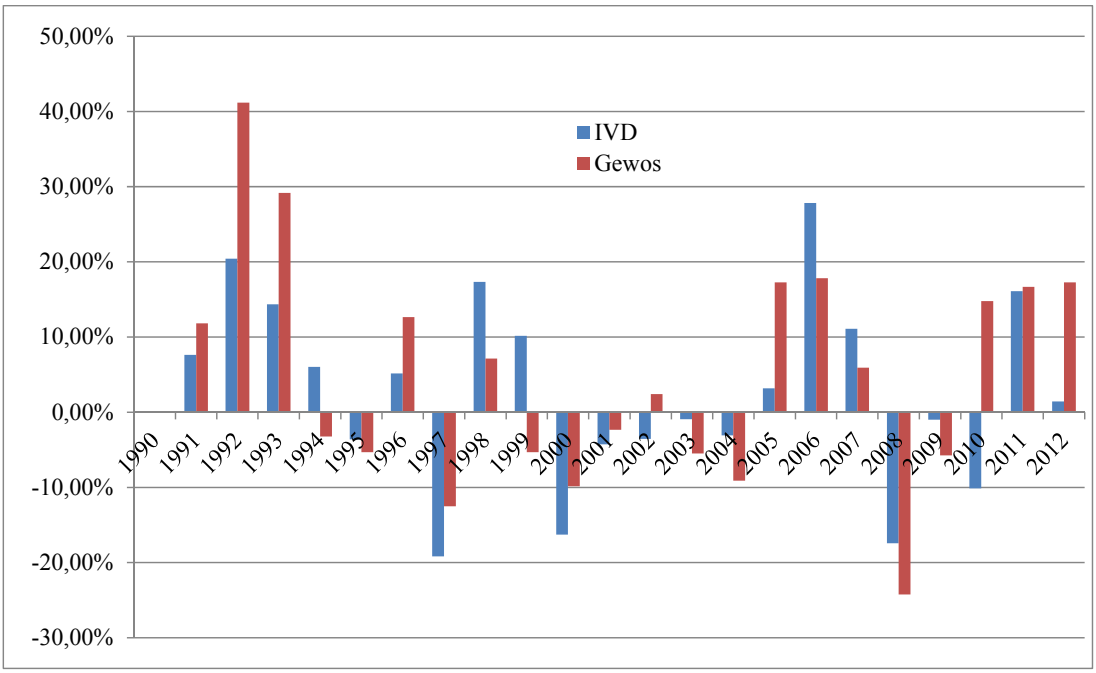

Figure 11: Economic and real estate market cycle phase in Germany

First, it is necessary to analyse the beginning year of the realization and building in the development projects (see section 3.1 for the definition of the project start):

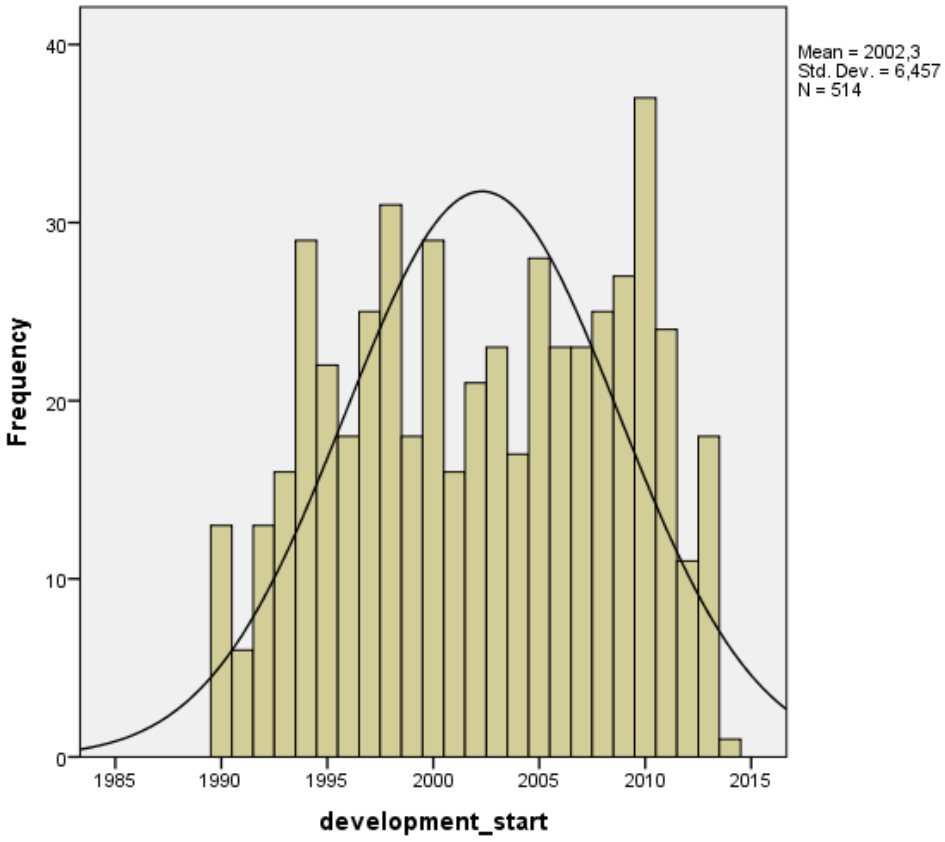

Figure 12: Histogram of the beginning year of quarter development projects in Germany

When we analyse the beginning year of quarter developments, we observe three "waives" in the development of new urban quarters in Germany. They take place in the midst of the nineties, the beginning of the new century and especially in the last years (since 2010). In the second step, we can now combine this data with the business cycle phases of figure 11. For this, we derive four economic cycle phases: boom (growth rate more than 5 % per year), recovery (0-5 %), depression (from 0.1 until -5 %) and recession (reduction rate more than -5 % per year):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	boom	262	51.0	51.0	51.0
	depression	45	8.8	8.8	59.7
	recovery	21	4.1	4.1	63.8
	recession	186	36.2	36.2	100.0
	Total	514	100.0	100.0	

Table 23: Economic cycle phase of the beginning of quarter development projects

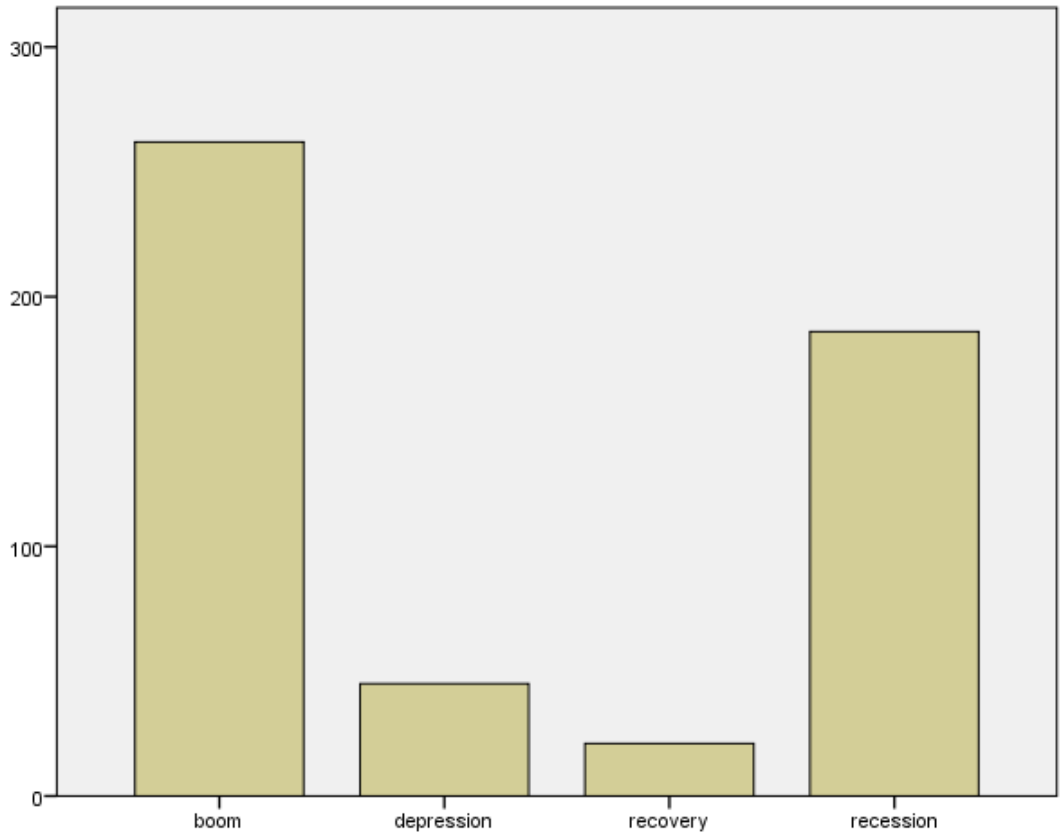

Figure 13: Distribution of the economic cycle phase of the beginning of quarter development projects in Germany

As a result, we have to conclude that quarter development projects are sensitive to the business cycle, since the majority of all projects (51 %) have had their starting point

for the investments in a boom phase. However, it is interesting that 45 % (8.8 + 36.2 %) projects started in economic weak cycle phases (depression or recession). This shows that the project's beginnings do not primarily depend on economic situation, but probably more on approval processes, which always take a lot of time in Germany. Furthermore, it shows that *cyclical trends* less affect residential developments. Promoters develop these projects even in recession periods, which mainly affect commercial real estate developments. Since a functional mix of commercial and residential investment is typical for quarter developments, this could be a second explanation for this distribution. The implementation of such major investment projects even in economic weak phases clearly reveals the *potential of these urban development projects in an anticyclical European policy*. In the current situation of many other European Member States (outside of Germany), the funding of such integrated quarter development investment projects could again lead to a substantial contribution to the European Cohesion policy.

This is even more significant because these urban development projects *do not* essentially require very transparent real estate markets. If we look at the distribution of the development projects concerning the project start in highly transparent real estate markets[45], we can confirm that 61.7 % of the projects are in the investment top locations (the so-called Big-7):

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	197	38.3	38.3	38.3
	no	317	61.7	61.7	100.0
	Total	514	100.0	100.0	

Table 24: Transparency of the real estate markets of quarter development projects

As a conclusion concerning the new financial engineering instruments in the JESSICA initiative of European Cohesion policy, this characteristic makes the funding of these kinds of urban development projects even more attractive.

45 In Germany, the real estate markets in Munich, Stuttgart, Frankfurt, Cologne, Düsseldorf, Berlin and Hamburg form the so-called "Big-7". Research firms fully cover these markets and provide all kind of necessary data concerning investment decisions.

3.3 Data transformations and econometric analysis of success variables

In the following chapter we would like to analyse whether the identified context and locational variables are of significance for the presence or the absence (indicating a market failure in certain regions) of quarter development projects. In preparation for this kind of causal analysis, we first have to check whether the distribution of the size of the realized projects (used as success indicator) is normal distributed. Since this Q-Q-diagram shows that this is not the case, we choose a log-transformation of data. The new Q_Q-diagram reveals that we now can work with a normal distribution hypothesis for this indicator:

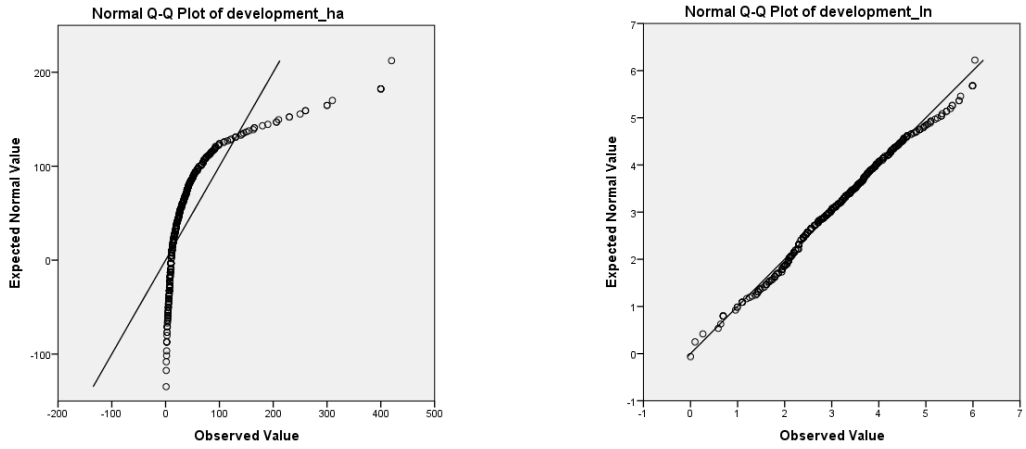

Figure 14: Log-Transformation of the distribution of size of realized quarter development projects in Germany (see also section 3.1)

In addition to this indicator, we will use a second variable by identifying whether promoters implemented quarter developments in an area of *ERDF support* from the programming period 2007-2013. Here, we can systemize areas with no support, with minimal support (D-areas) according Article 87 of the Treaty on the Functioning of the European Union from 2009, with medium support (C-areas) and with maximum support (A-areas). The so-called convergence regions are only in the Eastern parts of Germany. The data was available even on the level of the municipalities:

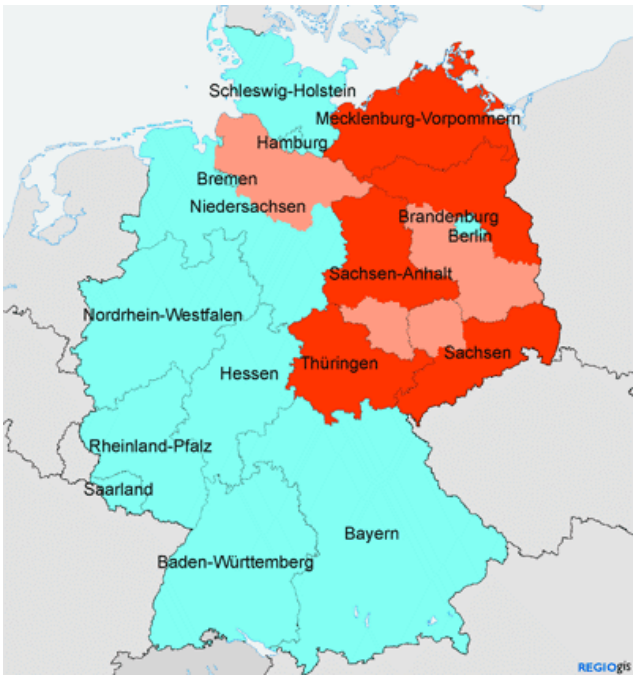

Figure 15: Eligible ERDF areas in Germany 2007-2013

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	maximum ERDF support Art 87.3a	32	6.2	6.2	6.2
	medium ERDF support Art 87.3c	34	6.6	6.6	12.8
	medium/low ERDF support Art 87.3c	66	12.8	12.8	25.7
	low ERDF support Art 87.3c	20	3.9	3.9	29.6
	not eligible	362	70.4	70.4	100.0
	Total	514	100.0	100.0	

Table 25: ERDF support for quarter development projects in Germany in the past

When we look at the table and the following visualization, we can confirm our hypothesis: integrated urban quarter developments were in 70.4 % of all cases not funded and supported by ERDF budgets.

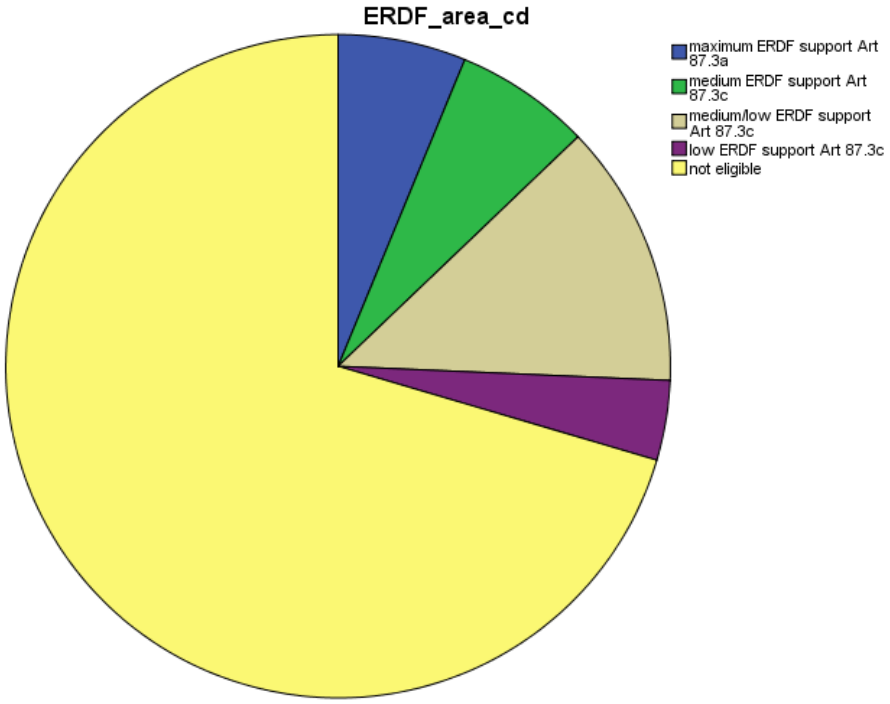

Figure 16: ERDF support for quarter development projects in Germany in the past

In only 6.2 % of all projects (32 new urban quarters), developments were realized in areas with the highest ERDF support (in Eastern Germany). If we now conduct a double t-test for the two groups (with and without ERDF-support), we see that both groups are significantly different in the overall size of available quarter developments (in ha after the log-transformation):

	ERDF_yes	N	Mean	Std. Deviation	Std. Error Mean
development_ln	no support	362	2.9628	1.01508	.05335
	support	152	3.3588	1.03771	.08417

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
								Lower	Upper
development_ln	Equal variances assumed	.428	.513	-4.010	512	.000	-.39604	.09876	-.59006	-.20202
	Equal variances not assumed			-3.974	277.943	.000	-.39604	.09965	-.59222	-.19987

Table 26: Double t-test for the relevance of ERDF-support for quarter development projects in Germany in the past

At this point of the research, we can already *confirm our central hypothesis* from the beginning of the paper: *We do not find* q*uarter development projects in structurally weak areas. More precisely, we see market failure in those areas with the biggest economic structural problems, the convergence regions (with the highest possible ERDF budgets and supports).* Since at the same time the public statistics of DG Regio reveal that the existing urban development funds in Germany (all of them are in the convergence regions) did not finance any project until the beginning of 2014, this clearly confirms market failure in the past. Urban development funds did not investment in this very important financing field yet.

3.4 Contingency analysis of development characteristics

If we now look at the results for the contingency of the context and locational characteristics for the size of realized quarter developments, we have to separate the data. Some data is just on a nominal scale available. Therefore, we choose *Eta* as coefficient for the contingency as well as the reliability of the variables:

			Value
Nominal by Interval	Eta	development_ln Dependent	.077
		size_municipality_cd Dependent	**.567**
Nominal by Interval	Eta	development_ln Dependent	.035
		zonetype_cd Dependent	.619
Nominal by Interval	Eta	development_ln Dependent	.117
		development_dynamics_cd Dependent	**.610**
Nominal by Interval	Eta	development_ln Dependent	.042
		type_employmentmarket Dependent	**.591**
Nominal by Interval	Eta	development_ln Dependent	.101
		metropolitan_area Dependent	**.591**
Nominal by Interval	Eta	development_ln Dependent	.215
		ERDF_area_cd Dependent	**.678**
Nominal by Interval	Eta	development_ln Dependent	.150
		futureatlas2011_cd Dependent	.541
Nominal by Interval	Eta	development_ln Dependent	.142
		futureatlas2013_cd Dependent	**.546**
Nominal by Interval	Eta	development_ln Dependent	.041
		big_seven_market_cd Dependent	.602
Nominal by Interval	Eta	development_ln Dependent	.143
		market_cycle_phase_cd Dependent	**.601**

Table 27: Contingency and reliability of nominal context characteristics of quarter developments

Here, we see a clear picture for all indicators: The context factors are less significant for the size of the quarter development as a dependent variable. In contrast to this, the size of integrated quarter development projects is significant for all context variables (as dependent variables). Therefore, the size of the realized new urban quarters correlates positively with all nominal indicators. If we now look at the metric context factors, we can apply the Pearson correlation coefficient:

		development_ln	population2011_zensus	population2011_VZ	demographic_development	migration balance	development_employment	unemployment_rate	tax_revenue	Purchasing_power	employment_market_dynamics
development_ln	Pearson Correlation	1	.068	.071	-.019	-.017	.008	.143**	-.086	-.127**	-.095*
	Sig. (2-tailed)		.123	.109	.663	.700	.857	.001	.052	.004	.032
	N	514	514	514	514	514	514	514	514	514	514
population2011_zensus	Pearson Correlation	.068	1	1.000**	.382**	.261**	.168**	.231**	.174**	.208**	.342**
	Sig. (2-tailed)	.123		.000	.000	.000	.000	.000	.000	.000	.000
	N	514	514	514	514	514	514	514	514	514	514
population2011_VZ	Pearson Correlation	.071	1.000**	1	.374**	.256**	.171**	.236**	.165**	.194**	.337**
	Sig. (2-tailed)	.109	.000		.000	.000	.000	.000	.000	.000	.000
	N	514	514	514	514	514	514	514	514	514	514
demographic_development	Pearson Correlation	-.019	.382**	.374**	1	.886**	.063	-.435**	.511**	.669**	.685**
	Sig. (2-tailed)	.663	.000	.000		.000	.155	.000	.000	.000	.000
	N	514	514	514	514	514	514	514	514	514	514
migration_balance	Pearson Correlation	-.017	.261**	.256**	.886**	1	.031	-.345**	.347**	.494**	.524**
	Sig. (2-tailed)	.700	.000	.000	.000		.481	.000	.000	.000	.000
	N	514	514	514	514	514	514	514	514	514	514
development_employment	Pearson Correlation	.008	.168**	.171**	.063	.031	1	-.085	.057	-.051	.119**
	Sig. (2-tailed)	.857	.000	.000	.155	.481		.053	.194	.249	.007
	N	514	514	514	514	514	514	514	514	514	514
unemployment_rate	Pearson Correlation	**.143****	.231**	.236**	-.435**	-.345**	-.085	1	-.357**	-.652**	-.477**
	Sig. (2-tailed)	**.001**	.000	.000	.000	.000	.053		.000	.000	.000
	N	**514**	514	514	514	514	514	514	514	514	514
tax_revenue	Pearson Correlation	-.086	.174**	.165**	.511**	.347**	.057	-.357**	1	.651**	.539**
	Sig. (2-tailed)	.052	.000	.000	.000	.000	.194	.000		.000	.000
	N	514	514	514	514	514	514	514	514	514	514
purchasing_power	Pearson Correlation	**-.127****	.208**	.194**	.669**	.494**	-.051	-.652**	.651**	1	.610**
	Sig. (2-tailed)	**.004**	.000	.000	.000	.000	.249	.000	.000		.000
	N	**514**	514	514	514	514	514	514	514	514	514
employment_market_dynamics	Pearson Correlation	-.095*	.342**	.337**	.685**	.524**	.119**	-.477**	.539**	.610**	1
	Sig. (2-tailed)	.032	.000	.000	.000	.000	.007	.000	.000	.000	
	N	514	514	514	514	514	514	514	514	514	514

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 28: Correlation (Pearson) of the metric contextual factors

As expected, the size of realized quarter developments correlates negatively with purchasing power and positively with unemployment rate (1 %-level). However, we see that many of the metric indicators correlate strongly with each other. This is not only true for population and demographic development, but also e.g. for migration balance and employment markets. Based on this data, we can assume that a possible linear regression of the size of quarter development projects (measured after log-transformation) with all of these indicators will have limited explanation power. The reason for this is that we will have to exclude most of the indicators in a *stepwise regression*, which we perform *backward*:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.384[a]	.147	.111	.97747
2	.384[b]	.147	.113	.97648
3	.384[c]	.147	.115	.97549
4	.384[d]	.147	.116	.97452
5	.384[e]	.147	.118	.97363
6	.383[f]	.147	.120	.97275
7	.383[g]	.147	.121	.97187
8	.383[h]	.146	.122	.97122
9	.382[i]	.146	.123	.97067
10	.381[j]	.145	.124	.97013
11	.379[k]	.144	.125	.96984
12	.376[l]	.142	.125	.97003
13	.374[m]	.140	.124	.97009
14	.371[n]	.137	.124	.97051
15	.367[o]	.135	.123	.97112

a. Predictors: (Constant), market_cycle_phase_cd, development_employment, migration_balance, metropolitan_area, development_start, type_employmentmarket, microlocation, futureatlas2013_cd, size_municipality_cd, futureatlas2011_cd, zonetype_cd, ERDF_area_cd, development_dynamics_cd, population2011_VZ, tax_revenue, unemployment_rate, employment_market_dynamics, purchasing_power, big_seven_market_cd, demographic_development, population2011_zensus

…

o. Predictors: (Constant), development_start, microlocation, futureatlas2013_cd, unemployment_rate, big_seven_market_cd, demographic_development, population2011_zensus

Table 29: Regression of all context and locational variables on the size of quarter development projects in Germany in the past (backward modelling approach)

In the final model, we see the following significant context and locational characteristics of quarter development projects:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
15	(Constant)	90.817	13.515		6.720	.000
	microlocation	.117	.050	.101	2.355	.019
	population2011_zensus	2.400E-7	.000	.188	2.508	.012
	demographic_development	.043	.020	.124	2.136	.033
	unemployment_rate	.049	.019	.134	2.518	.012
	development_start	-.045	.007	-.278	-6.637	.000
	futureatlas2013_cd	.036	.022	.070	1.649	.100
	big_seven_market_cd	.454	.161	.213	2.814	.005

a. Dependent Variable: development_ln

Table 30: Significant context and locational variables on the size of quarter development projects in Germany in the past

For the implementation of individual projects in the past micro and macro location is significant. Among the macro location characteristics especially population (and its

development) as well as unemployment rate and future-potential is of relevance. The same is true for market transparency.

If we now aggregate the data of all quarter development projects *on the city level*, this analysis is even *stronger* confirmed. Again, we choose the stepwise backward approach for the linear regression with the sum of the size of all development projects in ha in the same city (after the log-transformation) as dependent variable. The analysis reveals that only two variables are significant for the regression function: the *population of the city* and the *characteristic of a transparent real estate market*, measured by the criterion "big seven market" (cf. model 18 in the following summary table):

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918[a]	.843	.820	8.13072
2	.918[b]	.843	.821	8.10124
3	.918[c]	.843	.822	8.07276
4	.918[d]	.843	.823	8.04474
5	.918[e]	.842	.825	8.01921
6	.918[f]	.842	.826	7.99418
7	.918[g]	.842	.827	7.96925
8	.918[h]	.842	.828	7.94733
9	.917[i]	.842	.829	7.92378
10	.917[j]	.842	.830	7.90268
11	.917[k]	.841	.830	7.88258
12	.917[l]	.841	.831	7.86358
13	.917[m]	.840	.832	7.85587
14	.916[n]	.840	.832	7.84569
15	.916[o]	.839	.832	7.83868
16	.915[p]	.838	.833	7.83347
17	.914[q]	.836	.832	7.84915
18	.913[r]	.834	.831	7.87703

a. Predictors: (Constant), market_cycle_phase_cd_mean_1, unemployment_rate_mean_1, type_employmentmarket_mean_1, futureatlas2013_cd_mean_1, microlocation_mean_1, size_municipality_cd_mean_1, metropolitan_area_mean_1, development_employment_mean_1, migration_balance_mean_1, tax_revenue_mean_1, futureatlas2011_cd_mean_1, zonetype_cd_mean_1, big_seven_market_cd_mean_1, employment_market_dynamics_mean_1, development_dynamics_cd_mean_1, ERDF_area_cd_mean_1, purchasing_power_mean_1, population2011_VZ_mean_1, demographic_development_mean_1, population2011_zensus_mean_1

…

r. Predictors: (Constant), big_seven_market_cd_mean_1, population2011_VZ_mean_1, population2011_zensus_mean_1

Table 31: Regression of all context and locational variables on the size of quarter development projects (overall size on city level) in Germany in the past (backward modelling approach)

Because of the high correlation between the two population data (zensus 2011 and the extrapolation of VZ 1986), model 18 has a multi-collinearity problem measured by the

VIF coefficient (2885.192 respectively 2839.278). For this reason, we eliminate the population indicator of the extrapolation of VZ 1986. Therefore, we come to our final model 19, which has *only two predicators*:

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
19	.893[a]	.797	.794	8.68963	2.052

a. Predictors: (Constant), population2011_zensus_mean_1, big_seven_market_cd_mean_1
b. Dependent Variable: development_ln_sum

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
19	Regression	45837.739	2	22918.869	303.522	.000[b]
	Residual	11704.012	155	75.510		
	Total	57541.751	157			

a. Dependent Variable: development_ln_sum
b. Predictors: (Constant), population2011_zensus_mean_1, big_seven_market_cd_mean_1

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Toler-ance	VIF
19	(Constant)	104.277	10.171		10.252	.000		
	big_seven_market_cd_mean_1	-50.110	5.002	-.540	-10.018	.000	.451	2.217
	population2011_zensus_mean_1	2.339E-5	.000	.415	7.697	.000	.451	2.217

a. Dependent Variable: development_ln_sum

Table 32: Significant context and locational variables on the size of quarter development projects (overall size on city level) in Germany in the past

Analysis reveals that we can predict the existence of quarter development projects in Germany on the city level *with 79.4 % (adjusted R^2)* with the two highly significant variables of population and transparency of real estate markets in relevant municipalities. The Durbin-Watson-test (value 2.052) shows no autocorrelation, the VIF indicator no multi-collinearity. This means that in the past promoters concentrated urban quarter development projects in real estate markets with high transparency and high demand for residential and commercial assets. Obviously, this is a form of risk reduction because both criteria are not typical for convergence regions. However, here the highest possible ERDF budgets and supports could provide *an alternative risk buffer*.

4 Conclusion and outlook on future research

The majority of integrated quarter development projects are in regions not funded and supported by ERDF budgets. This strong growing regions show the following locational characteristics:

- 69.7 % of all projects are in major or smaller large cities leading to a median urban population of more than 660,000 inhabitants. 81.7 % of the new urban quarters are in very central locations. 60.0 % of the development projects are at the city centre or between the city centre and the outskirts.
- 30.2 % of the new districts are in rapidly growing and 46.7 % in growing municipalities. These municipalities typically grow in population (1.96 % per year) and have a positive migration balance (5.22 new residents per 1000 inhabitants). Furthermore, they have a growing employment market (8.35 % growth) with low unemployment rates (8.34 % mean), a strong local real estate market (with high prices and rents leading to high real taxes revenues for the municipalities) and rather rich inhabitants (measured by their recent income respectively their purchasing power).
- On the regional level, the majority (88.0 %) of all quarter development projects is in urban employment markets with strong agglomerations and with a strong, growing regional employment market.
- Logical the majority of identified cities and regions have either future chances (61.3 %) or at least a balanced mix of chances and risks (31.9 %). Quarter developments in cities with (high) future risks are rare (6.8 %).
- The majority of all projects (51 %) have had their starting point for investments in a boom phase. However, 45 % of the projects began in economic weak cycle phases. The implementation of such major investment projects even in economic weak phases clearly reveals the potential of these urban development projects in an anticyclical European policy.
- 61.7 % of the projects are in highly transparent real estate markets of the investment top locations (the so-called Big-7).

From regression analysis in this research, we can predict with nearly *80 % probability* the existence of integrated development projects by applying the population and the transparency of the real estate market in the relevant municipality. In order to explore to what extent an integrated district development also generates external benefits, we can refer to an empirical analysis of design criteria derived from theoretical research. According to this, integrated district development follows the ideal requirements of "*sustainable communities*" within the meaning of the Bristol Accord, since first data analyse show that these projects have the following design features:

- Many new urban quarters have a high quality concerning the architecture of the new buildings as well as in the built environment. The last characteristic is justified in the fact that the projects very often are Brownfield developments in rather central locations. Brownfields have an advantage in terms of integration when one compares them to (new) Greenfield developments in suburban areas or outskirts. Many new urban quarters create new places, but try to preserve the historical structures plus the local culture and tradition of the place. In practice, nearly every new urban city quarter has at least one architecture contest and very often, the new flagship developments (sometimes at the waterfront) create a new image for the overall city district.
- Many new urban quarters create car-free streets in combination with peripheral car parks. If the new urban quarter then is also well connected and if e-bikes or car sharing is available, then we can speak of "smart cities" on the district level. At the same time, new city districts offer a coexistence of residential and business use. Concerning the business use, offices as well as retail and gastronomy coexist. Public sector provides social infrastructure like schools and research institutions. This leads to social diversity as well vibrant and harmonious communities, which corresponds to the general principle of the "European city".
- Typically, promoters implement quarter developments as a project and therefore they always use implementation-oriented IPSUD. At the same time, high capital volume invested makes it necessary to split resulting risks between public and private stakeholders. In all new urban quarters, we therefore see a form of Public Private Partnership. This makes quarter developments a prototype for

the funding of financial engineering instruments in the JESSICA initiative.

- For the residents of a new urban quarter it is important to have as much services as possible within walking distance. Just as important are facilities for leisure and recreation – also because these aspects are getting more and more predominant in people's life. District development projects ideally offer these facilities because they have advantages in the economies of scale. Furthermore, after the construction phase we find here institutions like quarter management or the foundation of urban quarter associations. Thereby, these kind of projects provide a starting point of social interaction among residents. A higher rate of social capital can reflect the quality of the district.
- In terms of ecological development, new urban quarters often have sustainable energy supply, energy-efficient construction (often certified by ratings of LEED, BREAM or DGNB) and the existence of a multitude of green and open spaces. These advantages help them to attract new private households and new business companies to persist in the increasing competition to other cities. These new settlements are able to create an economic added-value on municipal and regional level. It is this characteristic which makes new urban quarter development projects so attractive for the European Cohesion policy and therefore also for the ERDF funding.

Although these potential external benefits could not be fully verified in terms of a cross-analysis yet, the high correlations and contingency in section 3.4 of this research already show very clearly the high importance of new urban quarter development projects for economic growth of cities. Consequently, it would make sense to reinforce financial engineering instruments of these projects in structurally weak regions, which do not correspond to the above location profile. In this context, the current distribution of these projects even in an economically booming EU Member State such as Germany shows that these complex development projects are virtually impossible to find in weak or disadvantaged areas. Consequently, we could detect *market failure* with respect to such integrated urban development projects at least for Germany. Private but also public sector is not able to implement such projects in structurally weak regions without the support of ERDF funding from JESSICA-type investment funds. They

could provide an adequate development finance as sustainable urban impact investors.

In this way, we were able to demonstrate empirically in terms of an ex-ante market investigation a possible useful investment area for JESSICA-type financial engineering instruments for a complete EU Member State. We assume that in the next funding period in Germany appropriate investment funds for this financing field will be developed and offered. The authors of this research paper themselves will support the concrete development of this sensible business strategy, which has previously identified a huge market volume (apart from of individual projects), through urban development funds in the German federal state of North Rhine-Westphalia. This fund could then provide a real success story in terms of a best practice example – which currently does not yet exist on a European level – that is able to communicate the idea of these financial innovations. In this context, it would be interesting to explore whether the financing of new urban quarter development projects through JESSICA-type funds is a useful application field in other EU Member States, too.

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6 Annex

municipality	quarter development	population 2011	ERDF	size (in ha)	Big
Kiel, Landeshauptstadt	Kai-City	237,667	D	25.00	no
Kiel, Landeshauptstadt	Kiel-Wellsee	237,667	D	40.00	no
Kiel, Landeshauptstadt	Meimersdorf	237,667	D	20.00	no
Lübeck, Hansestadt	Hochschulstadtteil	210,679	C/D	230.00	no
Rendsburg, Stadt	Hochfeld	27,519	D	6.30	no
Rendsburg, Stadt	Neuwerk-West	27,519	D	21.00	no
Schleswig, Stadt	Auf der Freiheit	23,812	C/D	56.00	no
Schleswig, Stadt	Berender Redder	23,812	C/D	46.60	no
Itzehoe, Stadt	Klosterforst	30,964	C/D	20.00	no
Wilster	Rumflether Feld	4,441	C/D	6.00	no
Hamburg, Freie und Hansestadt	Allermöhe West	1,718,187	no	163.00	yes
Hamburg, Freie und Hansestadt	Am Husarendenkmal	1,718,187	no	5.00	yes
Hamburg, Freie und Hansestadt	August-Krogmann-Str. 100	1,718,187	no	8.10	yes
Hamburg, Freie und Hansestadt	Averhoffstraße	1,718,187	no	8.20	yes
Hamburg, Freie und Hansestadt	Balance Bay, Schlossinsel	1,718,187	no	1.30	yes
Hamburg, Freie und Hansestadt	Baurstraße	1,718,187	no	14.00	yes
Hamburg, Freie und Hansestadt	Behringstr. 230/ Jürgen-Töpfer-Str.	1,718,187	no	5.60	yes
Hamburg, Freie und Hansestadt	Billwerder Ost	1,718,187	no	66.00	yes
Hamburg, Freie und Hansestadt	Boberger Anger	1,718,187	no	43.00	yes
Hamburg, Freie und Hansestadt	Boltwiesen	1,718,187	no	15.00	yes
Hamburg, Freie und Hansestadt	Buchenkamp Ost	1,718,187	no	33.50	yes
Hamburg, Freie und Hansestadt	Dieselstraße	1,718,187	no	10.40	yes
Hamburg, Freie und Hansestadt	Elbmosaik	1,718,187	no	11.00	yes
Hamburg, Freie und Hansestadt	Emil-Andresen-Straße	1,718,187	no	30.00	yes
Hamburg, Freie und Hansestadt	Farmsen Hunderennbahn	1,718,187	no	22.00	yes
Hamburg, Freie und Hansestadt	Farmsen Trabrennbahn	1,718,187	no	45.00	yes
Hamburg, Freie und Hansestadt	Finkenau	1,718,187	no	5.70	yes
Hamburg, Freie und Hansestadt	Finkenwerden 32, Langenscheideweg,	1,718,187	no	30.00	yes
Hamburg, Freie und Hansestadt	Güterbahnhof Hamburg-Barmbek	1,718,187	no	8.00	yes
Hamburg, Freie und Hansestadt	Hafen-City (10/11)?	1,718,187	no	155.00	yes
Hamburg, Freie und Hansestadt	Harburg Hafen/ Brücken?	1,718,187	no	165.00	yes
Hamburg, Freie und Hansestadt	Heidberg-Villages	1,718,187	no	16.00	yes
Hamburg, Freie und Hansestadt	Immenhorstweg	1,718,187	no	16.00	yes
Hamburg, Freie und Hansestadt	Jenfelder Au	1,718,187	no	35.00	yes
Hamburg, Freie und Hansestadt	Jürgen-Töpfer-Str.	1,718,187	no	8.30	yes
Hamburg, Freie und Hansestadt	Karlshöhe	1,718,187	no	20.00	yes
Hamburg, Freie und Hansestadt	Kornweg/Kleine Horst	1,718,187	no	9.30	yes
Hamburg, Freie und Hansestadt	Lurup 63 (Hermes)	1,718,187	no	7.30	yes
Hamburg, Freie und Hansestadt	Lurup (Jan-Külper-Weg)	1,718,187	no	2.70	yes
Hamburg, Freie und Hansestadt	Mitte Altona/ Altona Nord? Bplan 26	1,718,187	no	75.00	yes
Hamburg, Freie und Hansestadt	Mitte Wilhelmsburg	1,718,187	no	30.00	yes
Hamburg, Freie und Hansestadt	Neugraben-Fischbek	1,718,187	no	55.00	yes
Hamburg, Freie und Hansestadt	Othmarschen Park	1,718,187	no	14.00	yes
Hamburg, Freie und Hansestadt	Otto von Bahrenpark	1,718,187	no	10.00	yes
Hamburg, Freie und Hansestadt	Park Lane	1,718,187	no	19.00	yes
Hamburg, Freie und Hansestadt	Pergolenviertel in Winterhude	1,718,187	no	27.00	yes
Hamburg, Freie und Hansestadt	Rahlstedter Boltwiesen	1,718,187	no	15.00	yes
Hamburg, Freie und Hansestadt	Rahlstedter Höhe	1,718,187	no	27.00	yes
Hamburg, Freie und Hansestadt	Rissen Suurheid	1,718,187	no	42.00	yes
Hamburg, Freie und Hansestadt	Scharnhorst Höhe	1,718,187	no	10.00	yes
Hamburg, Freie und Hansestadt	Schleusengraben Bergedorf	1,718,187	no	70.00	yes
Hamburg, Freie und Hansestadt	Stadtgärten Lokstedt, Veilchenweg	1,718,187	no	3.50	yes
Hamburg, Freie und Hansestadt	Tarpenbek Greens	1,718,187	no	9.00	yes
Hamburg, Freie und Hansestadt	Waldquartier am alten Zoll (Klinikum	1,718,187	no	16.80	yes
Hamburg, Freie und Hansestadt	Waldquartier Ochsenzoll	1,718,187	no	44.00	yes
Hamburg, Freie und Hansestadt	Warnstedtstraße	1,718,187	no	1.00	yes
Hannover, Landeshauptstadt	Bemerode/Seelhorster Garten	509,485	no	16.00	no
Hannover, Landeshauptstadt	Büntekamp, Kirchrode	509,485	no	7.00	no
Hannover, Landeshauptstadt	Gartenbauschule	509,485	no	8.00	no
Hannover, Landeshauptstadt	Gartenstadt Hannover-Nord	509,485	no	27.00	no
Hannover, Landeshauptstadt	Kronsberg	509,485	no	70.00	no
Hannover, Landeshauptstadt	Pelikanviertel	509,485	no	10.00	no
Hannover, Landeshauptstadt	Wasserstadt Limmer	509,485	no	23.00	no
Hannover, Landeshauptstadt	Zero-e-Park	509,485	no	26.00	no
Gehrden, Stadt	Langes Feld	14,211	no	22.00	no
Laatzen, Stadt	Ehemalige Zuckerfabrik Rethen	39,090	no	16.00	no
Langenhagen, Stadt	Weiherfeld	51,045	no	71.00	no
Wennigsen (Deister)	Langes Feld	13,955	no	21.00	no
Neu-Isenburg	Stadtquartier Süd	19,935	no	12.00	no
Lüneburg, Hansestadt	An der Wittenberger Bahn	70,438	C/D	10.00	no
Lüneburg, Hansestadt	Hanseviertel	70,438	C/D	48.00	no
Buxtehude, Stadt	Estetalkaserne	39,858	C/D	23.00	no
Stade, Hansestadt	Ottenbeck	45,198	no	93.00	no
Stade, Hansestadt	Salztorsvorstadt	45,198	no	11.00	no
Emden, Stadt	Neuer Delft	49,848	C	10.00	no
Oldenburg (Oldenburg), Stadt	Alter Stadthafen	157,706	D	21.00	no
Oldenburg (Oldenburg), Stadt	Am Heideplacken	157,706	D	8.00	no
Oldenburg (Oldenburg), Stadt	Bloherfelder Anger	157,706	D	10.00	no
Oldenburg (Oldenburg), Stadt	Hindenburgkaserne	157,706	D	25.00	no
Lingen (Ems), Stadt	Alter Hafen	51,735	no	2.70	no
Lingen (Ems), Stadt	Emsauenpark Reuschberge	51,735	no	30.00	no

municipality	quarter development	population 2011	ERDF	size (in ha)	Big
Nordhorn, Stadt	Döppersweg	52,085	D	9.90	no
Nordhorn, Stadt	Wasserstadt Povel	52,085	D	18.00	no
Bremen, Stadt	Borgfeld - Ost	544,043	C	39.00	no
Bremen, Stadt	Borgfeld - West	544,043	C	46.00	no
Bremen, Stadt	Huckelriede	544,043	C	13.00	no
Bremen, Stadt	Hulsberg-Quartier	544,043	C	14.00	no
Bremen, Stadt	Uberseestadt	544,043	C	300.00	no
Bremen, Stadt	Weidedamm 3	544,043	C	25.00	no
Düsseldorf, Stadt	Airport City	589,649	no	23.00	yes
Düsseldorf, Stadt	Belsenpark	589,649	no	15.00	yes
Düsseldorf, Stadt	Bahnhof Bilk	589,649	no	7.80	yes
Düsseldorf, Stadt	Derendorf	589,649	no	35.00	yes
Düsseldorf, Stadt	D.Port / Reisholzer Hafen	589,649	no	108.00	yes
Düsseldorf, Stadt	Gerresheimer Glashütte	589,649	no	31.00	yes
Düsseldorf, Stadt	Golzheimer Höfe	589,649	no	2.00	yes
Düsseldorf, Stadt	Hansaallee	589,649	no	6.00	yes
Düsseldorf, Stadt	Medienhafen	589,649	no	40.00	yes
Düsseldorf, Stadt	Le Quartier Central	589,649	no	36.00	yes
Düsseldorf, Stadt	Quartier (n)	589,649	no	13.00	yes
Düsseldorf, Stadt	Rath	589,649	no	22.00	yes
Düsseldorf, Stadt	Schlüterstraße/Hohenzollern	589,649	no	32.00	yes
Düsseldorf, Stadt	Telleringstraße	589,649	no	10.00	yes
Düsseldorf, Stadt	Reitzensteinkaserne	589,649	no	22.00	yes
Duisburg, Stadt	Angerbogen	487,470	C	6.00	no
Duisburg, Stadt	Duisburger Freiheit	487,470	C	35.00	no
Duisburg, Stadt	Innenhafen	487,470	C	60.00	no
Duisburg, Stadt	Mercator Quartier	487,470	C	3.00	no
Duisburg, Stadt	Rheinpark	487,470	C	52.00	no
Duisburg, Stadt	Waterfront	487,470	C	10.00	no
Duisburg, Stadt	Wohnpark Neuenhof	487,470	C	7.00	no
Duisburg, Stadt	Zwischen Wedau und Bissingheim	487,470	C	92.50	no
Essen, Stadt	Krupp Gürtel	565,900	no	230.00	no
Essen, Stadt	Universitätsviertel	565,900	no	13.00	no
Essen, Stadt	Weststadt	565,900	no	11.00	no
Essen, Stadt	Zeche Zollverein	565,900	no	100.00	no
Mönchengladbach, Stadt	Nordpark	254,834	D	165.00	no
Remscheid, Stadt	Hohenhagen	110,132	no	17.00	no
Wuppertal, Stadt	Bergisches Plateau	342,570	no	13.00	no
Geldern, Stadt	Güterbahnhof	32,889	no	25.00	no
Geldern, Stadt	Nierspark	32,889	no	44.00	no
Ratingen, Stadt	An den Dieken	86,882	no	9.00	no
Ratingen, Stadt	Balcke-Dürr-Gelände	86,882	no	20.00	no
Grevenbroich, Stadt	Kapellen	61,374	no	34.00	no
Neuss, Stadt	Allerheiligen	151,070	no	130.00	no
Neuss, Stadt	Grimlinghausen Süd	151,070	no	32.00	no
Viersen, Stadt	Auf dem Burgacker	74,974	no	24.50	no
Viersen, Stadt	Bahnhof/Stadtwald	74,974	no	55.00	no
Viersen, Stadt	Butschenweg	74,974	no	6.00	no
Viersen, Stadt	Stadtpark Robend	74,974	no	40.00	no
Dinslaken, Stadt	Lohberg	67,743	C	40.00	no
Neukirchen-Vluyn, Stadt	Niederberg	27,134	C	85.00	no
Wesel, Stadt	Wesel an den Rhein	60,227	C	12.00	no
Xanten, Stadt	Gelderner Straße	21,223	C	13.00	no
Bonn, Stadt	Bon Village au quai	307,530	no	5.00	no
Bonn, Stadt	Bonner Bogen	307,530	no	9.00	no
Bonn, Stadt	Gallwitz-Kaserne	307,530	no	9.00	no
Bonn, Stadt	Im Rosenfeld	307,530	no	18.00	no
Bonn, Stadt	Vilich-Müldorf	307,530	no	12.00	no
Bonn, Stadt	Wohn- und Wissenschaftspark	307,530	no	70.00	no
Köln, Stadt	Am Donewald	1,013,665	no	11.00	yes
Köln, Stadt	BioCampus Cologne	1,013,665	no	25.00	yes
Köln, Stadt	Blumenberg/Blumenallee in Junkersdorf	1,013,665	no	400.00	yes
Köln, Stadt	Butzweilerhof	1,013,665	no	45.00	yes
Köln, Stadt	CFK-Gelände	1,013,665	no	40.00	yes
Köln, Stadt	Clouth	1,013,665	no	15.00	yes
Köln, Stadt	Deutzer Feld	1,013,665	no	4.80	yes
Köln, Stadt	Ehemaliges Sidolgelände in	1,013,665	no	10.00	yes
Köln, Stadt	Euroforum Nord	1,013,665	no	10.50	yes
Köln, Stadt	Gerling Areal	1,013,665	no	4.60	yes
Köln, Stadt	Kinderheime Sülz (allegro)	1,013,665	no	4.10	yes
Köln, Stadt	Mediapark	1,013,665	no	20.00	yes
Köln, Stadt	Messe City	1,013,665	no	22.00	yes
Köln, Stadt	Nördlich Odenwaldstraße/ehemaliger	1,013,665	no	40.00	yes
Köln, Stadt	Ossendorfpark	1,013,665	no	25.00	yes
Köln, Stadt	Poller Damm	1,013,665	no	7.00	yes
Köln, Stadt	Quartier Waidmarkt	1,013,665	no	6.00	yes
Köln, Stadt	Quartier Reiterstaffel	1,013,665	no	7.00	yes
Köln, Stadt	Rheinauhafen	1,013,665	no	16.00	yes
Köln, Stadt	Rheinrefugium	1,013,665	no	4.00	yes
Köln, Stadt	Siedlung Oberiddelsfeld	1,013,665	no	7.00	yes
Köln, Stadt	Stadtwaldviertel	1,013,665	no	14.00	yes
Köln, Stadt	Stellwerk 60	1,013,665	no	15.00	yes
Köln, Stadt	Südlicher Melatengürtel	1,013,665	no	8.00	yes
Köln, Stadt	Sürther Feld in Rodenkirchen	1,013,665	no	70.00	yes
Köln, Stadt	Waldbadviertel - Langendahlweg in	1,013,665	no	14.50	yes
Köln, Stadt	Widdersdorf	1,013,665	no	80.00	yes
Leverkusen, Stadt	neue bahn stadt: opladen	159,373	no	60.00	no
Alsdorf, Stadt	Anna Park	46,434	no	40.00	no
Alsdorf, Stadt	Zeche Anna	46,434	no	8.50	no

municipality	quarter development	population 2011	ERDF	size (in ha)	Big
Jülich, Stadt	Bebauungsplan Olmühle	31,909	no	2.00	no
Jülich, Stadt	Solar-Campus	31,909	no	14.00	no
Bedburg, Stadt	Bedburger Höfe	22,988	no	27.00	no
Kerpen, Stadt	Vogelrutherfeld	63,569	no	83.00	no
Kerpen, Stadt	Wahlenpfad	63,569	no	21.90	no
Gummersbach, Stadt	Ackermannareal	49,838	no	3.00	no
Gummersbach, Stadt	Steinmüllergelände	49,838	no	18.00	no
Hennef (Sieg), Stadt	Im Siegbogen	44,937	no	13.00	no
Meckenheim, Stadt	Nördliche Stadterweiterung	23,555	no	23.00	no
Rheinbach, Stadt	Hochschulviertel	26,534	no	43.00	no
Rheinbach, Stadt	Wohnpark Brückenacker	26,534	no	40.00	no
Sankt Augustin, Stadt	Zentrum West	54,100	no	46.00	no
Troisdorf, Stadt	Am Krausacker	72,584	no	23.00	no
Troisdorf, Stadt	Im Schonsfeld	72,584	no	11.70	no
Bottrop, Stadt	Friedensstraße/ Vossundern	117,074	C/D	15.00	no
Bottrop, Stadt	Prosper III	117,074	C/D	26.00	no
Bottrop, Stadt	Schultenkamp/ Dorfheide	117,074	C/D	25.00	no
Bottrop, Stadt	Südring/ Hünefeldstraße	117,074	C/D	10.00	no
Bottrop, Stadt	Tappenhof	117,074	C/D	19.00	no
Bottrop, Stadt	Westlich Von-Galen-Straße	117,074	C/D	9.00	no
Gelsenkirchen, Stadt	Am Hasseler Bach	257,994	C/D	12.00	no
Gelsenkirchen, Stadt	Arena Park	257,994	C/D	120.00	no
Gelsenkirchen, Stadt	ehemalige Galopprennbahn/	257,994	C/D	9.00	no
Gelsenkirchen, Stadt	Graf Bismarck	257,994	C/D	92.50	no
Gelsenkirchen, Stadt	Wohnen am Stadtgarten	257,994	C/D	15.00	no
Gelsenkirchen, Stadt	Kraftwerk Westerholt	257,994	C/D	8.40	no
Gelsenkirchen, Stadt	Schalker Verein	257,994	C/D	37.00	no
Münster, Stadt	Auenviertel in Münster-Gievenbeck	293,393	no	92.00	no
Münster, Stadt	Meerwiese	293,393	no	15.00	no
Bocholt, Stadt	Feldmark	71,233	no	43.00	no
Bocholt, Stadt	Up de Welle	71,233	no	7.40	no
Datteln, Stadt	Wasserstadt Emscher-Lippe	34,543	C/D	35.00	no
Gladbeck, Stadt	Rosenhügel	74,045	C/D	18.00	no
Herten, Stadt	Backumer Tal	61,178	C/D	15.00	no
Herten, Stadt	Ewald	61,178	C/D	51.00	no
Herten, Stadt	Wohnbebauung Feldstraße/	61,178	C/D	9.90	no
Bielefeld, Stadt	Altenhagen	327,199	no	33.00	no
Bielefeld, Stadt	Campus Bielefeld	327,199	no	14.00	no
Bielefeld, Stadt	Breipohls Hof	327,199	no	20.00	no
Bielefeld, Stadt	Rüggesiek	327,199	no	10.00	no
Detmold, Stadt	Hohenloh	73,717	D	109.00	no
Bochum, Stadt	Innenstadt West	362,585	no	35.00	no
Bochum, Stadt	Ruhrauenpark	362,585	no	20.00	no
Bochum, Stadt	Zeche Holland	362,585	no	22.00	no
Dortmund, Stadt	City Quartier/ Güterbahnhof Ost	571,403	C/D	12.00	no
Dortmund, Stadt	Gneisenau	571,403	C/D	60.00	no
Dortmund, Stadt	Hohenbuschei	571,403	C/D	84.00	no
Dortmund, Stadt	Kronprinzenviertel	571,403	C/D	10.00	no
Dortmund, Stadt	Minister Stein	571,403	C/D	33.00	no
Dortmund, Stadt	Phoenix-Ost	571,403	C/D	98.00	no
Dortmund, Stadt	Phoenix-West	571,403	C/D	100.00	no
Dortmund, Stadt	Stadtkrone Ost	571,403	C/D	55.00	no
Dortmund, Stadt	Unionfläche	571,403	C/D	8.00	no
Dortmund, Stadt	Westfalenhütte	571,403	C/D	122.00	no
Herne, Stadt	Mont Cenis	154,887	C/D	25.00	no
Herne, Stadt	Sodingen	154,887	C/D	65.00	no
Herdecke, Stadt	Quartier Ruhraue	22,800	no	10.00	no
Arnsberg, Stadt	Jägerkaserne	74,125	no	18.00	no
Iserlohn, Stadt	Buchenwäldchen	94,367	no	11.00	no
Iserlohn, Stadt	Iserlohn Dahlbreite	94,367	no	7.50	no
Lippstadt, Stadt	Wohnpark-Süd	65,861	no	30.00	no
Bergkamen, Stadt	Wasserstadt Aden	48,892	C/D	54.00	no
Kamen, Stadt	Seseke Aue	43,765	C/D	34.00	no
Darmstadt, Wissenschaftsstadt	Edelsteinviertel	145,845	no	18.00	no
Darmstadt, Wissenschaftsstadt	Ernst-Ludwig-Park	145,845	no	11.00	no
Darmstadt, Wissenschaftsstadt	Europaviertel	145,845	no	17.00	no
Darmstadt, Wissenschaftsstadt	Im Appensee	145,845	no	8.00	no
Darmstadt, Wissenschaftsstadt	Technologiezentrum Rhein-Main	145,845	no	20.00	no
Frankfurt am Main, Stadt	Am Industriehof	676,533	no	39.00	yes
Frankfurt am Main, Stadt	Am Martinszehnten	676,533	no	87.00	yes
Frankfurt am Main, Stadt	Bürostadt Niederrad -> Lyoner Viertel	676,533	no	88.00	yes
Frankfurt am Main, Stadt	City West	676,533	no	52.00	yes
Frankfurt am Main, Stadt	Deutschherrnviertel	676,533	no	12.00	yes
Frankfurt am Main, Stadt	Europaviertel	676,533	no	145.00	yes
Frankfurt am Main, Stadt	Frankfurter Berg	676,533	no	20.00	yes
Frankfurt am Main, Stadt	Frankfurter Bogen	676,533	no	72.00	yes
Frankfurt am Main, Stadt	Friedberger Warte	676,533	no	20.00	yes
Frankfurt am Main, Stadt	Galluspark	676,533	no	10.00	yes
Frankfurt am Main, Stadt	Gateway Garden	676,533	no	35.00	yes
Frankfurt am Main, Stadt	Henninger-Areal	676,533	no	11.00	yes
Frankfurt am Main, Stadt	Honsell Dreieck	676,533	no	19.00	yes
Frankfurt am Main, Stadt	Kulturcampus	676,533	no	16.70	yes
Frankfurt am Main, Stadt	Maintor-Areal	676,533	no	2.00	yes
Frankfurt am Main, Stadt	Pfaffenwiese-Silogebiet	676,533	no	67.00	yes
Frankfurt am Main, Stadt	Rebstockpark	676,533	no	27.00	yes
Frankfurt am Main, Stadt	Riedberg	676,533	no	260.00	yes
Frankfurt am Main, Stadt	Südlich Rödelheimer Landstraße	676,533	no	28.00	yes
Frankfurt am Main, Stadt	Westhafen	676,533	no	20.00	yes
Offenbach am Main, Stadt	An den Eichen	114,855	no	16.80	no

municipality	quarter development	population 2011	ERDF	size (in ha)	Big
Offenbach am Main, Stadt	Bürgel-Ost	114,855	no	6.50	no
Offenbach am Main, Stadt	Hafen	114,855	no	30.00	no
Offenbach am Main, Stadt	Kaiserlei	114,855	no	40.00	no
Offenbach am Main, Stadt	Südlich der Innenstadt (ehemaliges	114,855	no	37.00	no
Wiesbaden, Landeshauptstadt	Europaviertel	270,952	no	32.00	no
Wiesbaden, Landeshauptstadt	LindeQuartier	270,952	no	10.00	no
Wiesbaden, Landeshauptstadt	Künstlerviertel	270,952	no	20.00	no
Wiesbaden, Landeshauptstadt	Sauerland	270,952	no	39.00	no
Wiesbaden, Landeshauptstadt	Weidenborn	270,952	no	8.50	no
Viernheim, Stadt	Bannholzgraben	32,723	no	51.00	no
Babenhausen	Kaserne	15,623	no	60.00	no
Weiterstadt, Stadt	Im Apfelbaumgarten	23,972	no	11.00	no
Groß-Gerau	Ahmadiyya-Muslim-Gelände	23,876	no	2.60	no
Groß-Gerau	Fagro Areal	23,876	no	7.00	no
Groß-Gerau	Südzucker-Areal	23,876	no	27.00	no
Raunheim, Stadt	An der Lache	14,675	no	30.00	no
Raunheim, Stadt	Resart-Ihm-Gelände	14,675	no	12.00	no
Neubrandenburg, Stadt	Lindenberg-Süd	35,051	no	53.00	no
Idstein, Stadt	NassauViertel	23,409	no	27.00	no
Idstein, Stadt	Taunusviertel	23,409	no	16.00	no
Friedberg (Hessen), Kreisstadt	Auf dem See	27,400	no	10.00	no
Kassel, documenta-Stadt	Kiefernweg	191,854	D	28.00	no
Kassel, documenta-Stadt	Auf dem Dessenborn	191,854	D	10.00	no
Kassel, documenta-Stadt	Hasenhecke	191,854	D	18.55	no
Kassel, documenta-Stadt	Marbachshöhe	191,854	D	37.00	no
Kassel, documenta-Stadt	Universität Campus Nord	191,854	D	8.50	no
Kassel, documenta-Stadt	Unterneustadt	191,854	D	5.00	no
Koblenz, Stadt	Flugfeld Karthause	107,954	no	12.00	no
Remagen, Stadt	Am Römerhof	15,862	no	8.00	no
Remagen, Stadt	Lange Fuhr	15,862	no	11.63	no
Bad Kreuznach, Stadt	Musikerviertel	43,247	no	10.00	no
Birkenfeld, Stadt	Haesgeswiesen	6,676	C	10.00	no
Birkenfeld, Stadt	Umwelt-Campus	6,676	C	42.00	no
Montabaur, Stadt	ICE-Park	12,427	no	30.00	no
Montabaur, Stadt	In der Kesselwiese	12,427	no	4.20	no
Trier, Stadt	Castelforte	106,284	no	15.00	no
Trier, Stadt	Castelnau	106,284	no	26.90	no
Trier, Stadt	Petrisberg	106,284	no	70.00	no
Kaiserslautern, Stadt	Europahöhe	96,963	C	10.00	no
Kaiserslautern, Stadt	Kantstraße-Hegelstraße-Zum	96,963	C	15.20	no
Kaiserslautern, Stadt	PRE-Park	96,963	C	68.00	no
Kaiserslautern, Stadt	PRE-UNI-Park	96,963	C	13.00	no
Kaiserslautern, Stadt	Theodor-Heuss-Straße	96,963	C	7.60	no
Kaiserslautern, Stadt	Waldhof	96,963	C	9.30	no
Kaiserslautern, Stadt	Zwerchäcker	96,963	C	20.26	no
Landau in der Pfalz, Stadt	Am Messegelände	43,476	no	62.00	no
Landau in der Pfalz, Stadt	Landau-Süd	43,476	no	39.50	no
Landau in der Pfalz, Stadt	Quartier Vauban	43,476	no	15.00	no
Landau in der Pfalz, Stadt	Wohnpark Am Ebenberg	43,476	no	23.00	no
Ludwigshafen am Rhein, Stadt	Rheinufer-Süd	158,637	no	38.00	no
Mainz, Stadt	Die Gonsbachterrassen	201,002	no	24.65	no
Mainz, Stadt	Gonsenheimer Sand	201,002	no	29.00	no
Mainz, Stadt	Layenhof	201,002	no	180.00	no
Mainz, Stadt	Stadtgarten	201,002	no	1.10	no
Mainz, Stadt	Zollhafen	201,002	no	30.00	no
Pirmasens, Stadt	Husterhöhe	40,655	C	75.00	no
Speyer, Stadt	Alte Ziegelei (Erlus)	49,712	no	6.00	no
Speyer, Stadt	Normand	49,712	no	13.00	no
Speyer, Stadt	Rheinufer-Nord (RheinPark?)	49,712	no	9.00	no
Speyer, Stadt	Yachthafen	49,712	no	10.00	no
Worms, Stadt	Liebenauer Feld	79,526	no	12.00	no
Zweibrücken, Stadt	Kreuzbergkaserne	34,161	C	48.00	no
Zweibrücken, Stadt	The Style Outlet etc.	34,161	C	310.00	no
Bodenheim	Kapelle	7,086	no	17.00	no
Stuttgart, Landeshauptstadt	Brenzstraße	591,015	no	10.00	yes
Stuttgart, Landeshauptstadt	Burgholzhof	591,015	no	13.00	yes
Stuttgart, Landeshauptstadt	Europaviertel (Stuttgart 21)	591,015	no	29.00	yes
Stuttgart, Landeshauptstadt	Hohlgrabenäcker	591,015	no	18.00	yes
Stuttgart, Landeshauptstadt	Im Raiser	591,015	no	8.00	yes
Stuttgart, Landeshauptstadt	Lauchäcker	591,015	no	24.00	yes
Stuttgart, Landeshauptstadt	Bahnhofsbereich Möhringen	591,015	no	9.00	yes
Stuttgart, Landeshauptstadt	NeckarPark	591,015	no	55.00	yes
Stuttgart, Landeshauptstadt	Seepark am Probstsee	591,015	no	4.20	yes
Stuttgart, Landeshauptstadt	Rosensteinviertel (Stuttgart 21)	591,015	no	48.00	yes
Stuttgart, Landeshauptstadt	Nordviertel (Stuttgart 21)	591,015	no	32.00	yes
Böblingen, Stadt	Flugfeld	45,167	no	80.00	no
Ostfildern, Stadt	Scharnhauser Park	36,093	no	140.00	no
Göppingen, Stadt	Stauferpark West	55,099	no	150.00	no
Kornwestheim, Stadt	Wohnpark Neckarstraße	31,053	no	17.00	no
Ludwigsburg, Stadt	Hartenecker Höhe	86,939	no	21.00	no
Ludwigsburg, Stadt	Rotbäumlesfeld	86,939	no	11.00	no
Remseck am Neckar, Stadt	Pattonville	23,390	no	82.00	no
Heilbronn, Stadt	Neckarvorstadt	116,716	no	52.00	no
Neckarsulm, Stadt	Amorbach II	25,533	no	51.00	no
Crailsheim, Stadt	Hirtenwiesen II	32,342	no	15.00	no
Baden-Baden, Stadt	La Cité	52,424	no	50.00	no
Karlsruhe, Stadt	An der Klam/Illwig	291,995	no	5.30	no
Karlsruhe, Stadt	Smiley West/Barracks	291,995	no	7.00	no
Karlsruhe, Stadt	Südoststadt/ City Park?	291,995	no	33.00	no

municipality	quarter development	population 2011	ERDF	size (in ha)	Big
Bruchsal	Bahnstadt	42,161	no	5.30	no
Ettlingen, Stadt	Rheinlandkaserne	38,638	no	13.00	no
Heidelberg, Stadt	Bahnstadt	148,415	no	115.00	no
Heidelberg, Stadt	Schollengewann	148,415	no	12.00	no
Mannheim, Universitätsstadt	Glückstein-Quartier	291,458	no	33.00	no
Mannheim, Universitätsstadt	Turley Barracks	291,458	no	12.70	no
Mannheim, Universitätsstadt	Wallstadt-Nord	291,458	no	17.00	no
Pforzheim, Stadt	Tiergarten	115,211	no	8.00	no
Freiburg im Breisgau, Stadt	Gare du Nord	214,234	no	38.00	no
Freiburg im Breisgau, Stadt	Rieselfeld	214,234	no	70.00	no
Freiburg im Breisgau, Stadt	Vauban	214,234	no	42.00	no
Villingen-Schwenningen, Stadt	Kasernenareal - Welvert	80,268	no	12.00	no
Konstanz, Universitätsstadt	Bahnhof Petershausen	78,539	no	13.00	no
Rottenburg am Neckar, Stadt	Kreuzerfeld-Süd	40,938	no	18.00	no
Tübingen, Universitätsstadt	Alte Weberei Lustnau	83,248	no	9.60	no
Tübingen, Universitätsstadt	Französische Viertel	83,248	no	60.00	no
Tübingen, Universitätsstadt	Güterbahnhof	83,248	no	9.00	no
Tübingen, Universitätsstadt	Südstadt	83,248	no	60.00	no
Ulm, Universitätsstadt	Eschwiesen	117,541	no	84.00	no
Ulm, Universitätsstadt	Eselsberg - Im Sonnenfeld	117,541	no	38.00	no
Friedrichshafen, Stadt	Wiggenhausen	57,153	no	11.50	no
Ravensburg, Stadt	Am Hofgut	48,466	no	8.00	no
Ravensburg, Stadt	Bahnstadt	48,466	no	30.00	no
Ravensburg, Stadt	Domäne Hochberg	48,466	no	22.00	no
Ingolstadt	Manchinger Straße	126,076	no	14.00	no
München	Ackermannbogen	1,364,920	no	40.00	yes
München	Agfa-Gelände Tegernseer Landstraße	1,364,920	no	10.00	yes
München	Altes Postgelände	1,364,920	no	3.30	yes
München	Am Hirschgarten	1,364,920	no	27.00	yes
München	Am Stiftsbogen	1,364,920	no	12.00	yes
München	Arnulfpark	1,364,920	no	18.00	yes
München	Bajuwarenstraße	1,364,920	no	30.00	yes
München	Bayernkaserne	1,364,920	no	48.00	yes
München	Birketweg	1,364,920	no	60.00	yes
München	Dachauer Straße - Kreativquartier	1,364,920	no	20.00	yes
München	Domagkateliers/ -straße	1,364,920	no	60.00	yes
München	Freiham-Nord	1,364,920	no	190.00	yes
München	München-Neuaubing, FreiWerk	1,364,920	no	400.00	yes
München	Funkkaserne	1,364,920	no	24.30	yes
München	Isar Süd	1,364,920	no	75.00	yes
München	Neuaubing	1,364,920	no	10.00	yes
München	Nordhaide	1,364,920	no	27.00	yes
München	Nymphenburg Süd	1,364,920	no	26.00	yes
München	Parkstadt Schwabing	1,364,920	no	400.00	yes
München	Prinz-Eugen-Kaserne	1,364,920	no	29.70	yes
München	Riem	1,364,920	no	250.00	yes
München	Schlossviertel Nymphenburg	1,364,920	no	45.00	yes
München	Siemens Campus	1,364,920	no	45.00	yes
München	Theresienhöhe	1,364,920	no	45.00	yes
München	Werksviertel München	1,364,920	no	38.00	yes
München	Planegger Str.	1,364,920	no	23.00	yes
München	Alte Allee	1,364,920	no	23.00	yes
München	Aubing Ost	1,364,920	no	10.00	yes
München	Colmdorferstr. "Mein Aubing"	1,364,920	no	10.00	yes
München	Aubing Mitte	1,364,920	no	5.40	yes
München	Aubing Gleisharfe	1,364,920	no	8.50	yes
München	Großhadern	1,364,920	no	2.00	yes
München	Leo 250, Leoplodstraße 250	1,364,920	no	42.00	yes
München	Haidpark city	1,364,920	no	11.00	yes
München	Futtermittelfabrik Dr. Zentz	1,364,920	no	3.00	yes
München	Gerberau	1,364,920	no	6.20	yes
München	Isolden- /Rümannstraße	1,364,920	no	18.00	yes
München	Westend- / Zschokeestraße	1,364,920	no	4.38	yes
München	Landsberger Straße / Laimer Würfel	1,364,920	no	4.20	yes
München	Hochäckerstraße	1,364,920	no	19.00	yes
München	Ziegelei Deck, Oberföhringer Straße	1,364,920	no	7.17	yes
München	Ottobrunnerstraße, Stadtgarten	1,364,920	no	15.50	yes
München	Vogelweideplatz	1,364,920	no	3.00	yes
München	Kraillerstraße	1,364,920	no	37.70	yes
München	Hochstiftsweg	1,364,920	no	6.00	yes
München	ehem. Perutzgelände, Kistlerhofstraße	1,364,920	no	5.00	yes
München	Schwablhofstraße	1,364,920	no	4.40	yes
München	Feldbergstraße westlich	1,364,920	no	9.00	yes
München	Friedenspromenade	1,364,920	no	8.00	yes
München	EON-Gelände, Boschetsrieder Straße	1,364,920	no	8.00	yes
München	Ratzingerplatz	1,364,920	no	13.00	yes
München	McGraw-Gelände/Kaserne,	1,364,920	no	1.90	yes
München	Europäische Schule, Perlacher Forst	1,364,920	no	11.40	yes
München	Carl-Wery-Straße	1,364,920	no	10.00	yes
Emmering	Leitenfeld/Schwabenberg	**6 195**	no	13.00	no
Murnau a.Staffelsee, Markt	Kemmel-Kaserne	11,379	no	18.00	no
Passau	Kohlbruck	48,623	C/D	13.00	no
Mallersdorf-Pfaffenberg, M	Neue Mitte	6,367	no	1.80	no
Regensburg	Burgweinting-Mitte	136,352	no	24.00	no
Regensburg	Candis	136,352	no	60.00	no
Regensburg	Marina Quartier	136,352	no	7.00	no
Nittenau, Stadt	Schlingmann-Areal	8,435	C/D	30.00	no
Bamberg	Mayersche Gärtnerei	70,712	no	7.50	no
Bamberg	Regnitz-Insel / Insula	70,712	no	22.00	no

municipality	quarter development	population 2011	ERDF	size (in ha)	Big
Bayreuth	Hohlmühle	71,214	D	15.00	no
Erlangen	Röthelheimpark	104,312	no	130.00	no
Erlangen	Industrie- und Gewerbepark	104,312	no	33.00	no
Fürth	Max-Grundig-Park	10,535	no	26.00	no
Fürth	Südstadt	10,535	no	42.00	no
Nürnberg	Am Leonhardspark	490,085	no	9.00	no
Nürnberg	Tiefes Feld	490,085	no	67.00	no
Schwabach	O'Brien-Park Süd	38,610	no	20.00	no
Aschaffenburg	Am Rosensee	67,470	no	14.00	no
Augsburg	Ehemalige Ladehöfe	269,402	no	9.00	no
Augsburg	Innovationspark	269,402	no	70.00	no
Augsburg	Kobelcenter Süd	269,402	no	11.00	no
Augsburg	Prinz-Karl-Viertel	269,402	no	11.00	no
Augsburg	Reese Kaserne	269,402	no	43.00	no
Augsburg	Sheridanpark	269,402	no	18.00	no
Kempten (Allgäu)	Jakobwiese	64,300	no	18.00	no
Neu-Ulm, GKSt	Wiley	53,300	no	76.00	no
Asbach-Bäumenheim	Neue Mitte	4,262	no	12.00	no
Saarbrücken, Landeshauptstadt	Burbach	176,497	C	3.70	no
Saarbrücken, Landeshauptstadt	Franzenbrunnen	176,497	C	11.00	no
Saarbrücken, Landeshauptstadt	Wohngebiet am ehemaligen Kalkwerk	176,497	C	8.70	no
Berlin, Stadt	Adlershof	3,326,002	C/D	420.00	yes
Berlin, Stadt	Alexanderplatz	3,326,002	C/D	19.00	yes
Berlin, Stadt	Altglienicke, Kölner Viertel	3,326,002	C/D	91.00	yes
Berlin, Stadt	Aalemannufer	3,326,002	C/D	7.00	yes
Berlin, Stadt	Am Borsigturm	3,326,002	C/D	15.00	yes
Berlin, Stadt	Biesdorf-Süd	3,326,002	C/D	142.00	yes
Berlin, Stadt	Buchholz	3,326,002	C/D	39.00	yes
Berlin, Stadt	Columbia-Quartier	3,326,002	C/D	11.00	yes
Berlin, Stadt	Eisenacher Straße	3,326,002	C/D	48.00	yes
Berlin, Stadt	Eldenaer Straße	3,326,002	C/D	50.00	yes
Berlin, Stadt	Gartenstadt Falkenberg	3,326,002	C/D	50.00	yes
Berlin, Stadt	Hauptstadt Berlin, Regierungsviertel?	3,326,002	C/D	260.00	yes
Berlin, Stadt	Heidestraße/Europa-City	3,326,002	C/D	40.00	yes
Berlin, Stadt	Hellersdorf-Zentrum	3,326,002	C/D	20.00	yes
Berlin, Stadt	Ludwig Hoffmann Quatier	3,326,002	C/D	28.00	yes
Berlin, Stadt	Karow-Nord	3,326,002	C/D	99.00	yes
Berlin, Stadt	Pankower Tor	3,326,002	C/D	24.00	yes
Berlin, Stadt	Potsdamer Platz/Leipziger Platz	3,326,002	C/D	206.00	yes
Berlin, Stadt	Quartier McNair	3,326,002	C/D	12.00	yes
Berlin, Stadt	Rummelsburger Bucht	3,326,002	C/D	130.00	yes
Berlin, Stadt	Schöneweide	3,326,002	C/D	400.00	yes
Berlin, Stadt	Spandauer See / Oberhavel	3,326,002	C/D	206.00	yes
Berlin, Stadt	Stadtquartier Neukölln	3,326,002	C/D	8.00	yes
Berlin, Stadt	Stadtquartier Tempelhof	3,326,002	C/D	28.00	yes
Frankfurt (Oder), Stadt	Südöstliches Stadtzentrum	59,063	A	13.00	no
Potsdam, Stadt	Bornstedter Feld	157,603	A	300.00	no
Potsdam, Stadt	Kirchsteigfeld	157,603	A	59.00	no
Potsdam, Stadt	Krampnitz-Kaserne	157,603	A	74.00	no
Falkensee, Stadt	Zentrum	40,465	A	25.00	no
Falkensee, Stadt	Falkenhöh	40,465	A	35.00	no
Woltersdorf	Vogelsdorfer Straße	293	A	36.00	no
Neuruppin, Stadt	Vorstadt-Nord	30,184	A	39.00	no
Borkwalde	Schwedensiedlung	1,480	A	35.00	no
Jüterbog, Stadt	Wohngebiet Lok-Stadion	12,211	A	6.50	no
Neu Wulmstorf	Röttiger Kaserne	64,027	A	50.00	no
Parchim, Stadt	Südstadt	17,336	A	25.90	no
Parchim, Stadt	Wohnpark Regimentsvorstadt	17,336	A	36.00	no
Dresden	Neumarkt	517,765	A	34.00	no
Dresden	Leipziger Vorstadt - Neustädter Hafen	517,765	A	50.00	no
Leipzig, Stadt	Am alten Zoll	510,043	A	11.00	no
Leipzig, Stadt	Kaserne Schönau	510,043	A	54.00	no
Leipzig, Stadt	Lindenau	510,043	A	40.00	no
Leipzig, Stadt	Thomas-Müntzer-Siedlung	510,043	A	25.00	no
Grimma, Stadt	Alte Garnison	26,993	A	43.00	no
Halle (Saale), Stadt	Halle-Büschdorf	230,494	A	30.60	no
Halle (Saale), Stadt	Bebauungsplan Nr. 100 - Halle-	230,494	A	6.95	no
Halle (Saale), Stadt	Waldstraßenviertel	230,494	A	19.70	no
Halle (Saale), Stadt	Heide-Süd	230,494	A	210.00	no
Halle (Saale), Stadt	Wörmlitz-Kirschberg	230,494	A	52.00	no
Erfurt, Stadt	Brühl	201,952	A	25.00	no
Erfurt, Stadt	Nordhäuser Straße	201,952	A	90.00	no
Weimar, Stadt	Am Horn	62,886	A	5.00	no
Weimar, Stadt	Uber der großen Sackpfeife/Im	62,886	A	34.00	no
Hildburghausen, Stadt	Waldstadt	11,704	A	78.00	no
Rudolstadt, Stadt	"Wohn- und Gewerbegebiet	22,998	A	34.00	no
Rudolstadt, Stadt	Schaalaer Kaserne	22,998	A	26.00	no

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