From shop fronts to home offices: Entrepreneurship and small business dynamics in urban residential neighbourhoods

Folmer, E.C.

Citation for published version (APA):
Chapter 2.
Planning the Neighbourhood Economy

Land-Use Plans and the Economic Potential of Urban Residential Neighbourhoods in the Netherlands

This chapter investigates the relationship between zoning by-laws, as put forward in governmental land-use plans and the viability of urban residential neighbourhood economies. The Dutch planning tradition has long been characterized by strict separation of functions and top down planning. We argue that profound changes in social and economic structures make land-use planning practices less suitable for the current policy formula of “mixed urban milieus”. Although the residential neighbourhood might not be the location of large firms, it definitely attracts small ones, and facilitates starting businesses whose presence (and potential growth) can be beneficial to the city as a whole. We present a typology of spatial patterns of neighbourhood economies based on land-use plans and describe whether these are related to the distinctive economic development of the neighbourhood over the period 1999–2007.

2.1 Introduction

Marshallian arguments that explain processes of agglomeration economies in inner city areas and industrial districts continue to strongly influence the current debate on urban economies (Phelps, 2004). One of the implications of this is that the bulk of the literature on urban economies has a focus on Central Business Districts (CBDs) or industrial clusters. However, several authors have drawn attention to the (economic) significance of new urban landscapes different from CBDs and industrial clusters, and how changes in the organization of production are related to the built environment in these a-typical places of production (see for instance Knox, 1991; Phelps, 2004; Gospodini, 2006). Phelps (2004) argues that in the light of decentralization and polycentric metropolitan areas, more theoretical and empirical work should be devoted to the economic significance of inner and outer suburbs, or what he calls “banal” urban spaces. The work of Knox (1991) and Gospodini (2006), considers the connection between economic structure and urban form; the changes in the urban landscape that are the result of the transition from “Fordist” to advanced capitalism. Gospodini (2006) describes how the com-

---

11 This chapter is co-authored with Anne Risselada and is published in European Planning Studies (2012). DOI:10.1080/09654313.2012.722965.
combination of built heritage and new buildings in central cities are especially attractive for “new urban economic activities” in informational, financial and creative sectors. Knox (1991) emphasizes the role of developer companies in designing fashionable office space and trendy warehouses to fit both producers and consumers in the “new urban economy” (McNeill & While, 2001). Knox’ (1991) claim is that geographers “have generally failed to come to terms with the emergence and significance of new urban landscapes” (p. 182).

Since Knox’ claim, many studies on how economic restructuring and urban shape are connected have proved to be valuable (see for instance Hutton, 2004; Phelps, 2004), but often leave out the intermediary role of the local regulatory framework and environmental land-use plans. We claim that this is a crucial link in the chain that connects economic structure and urban landscape—limiting what is possible and delineating what is desirable in urban space. In this article, we want to address this link and draw attention to the ways in which existing local planning frameworks accommodate or constrain the change towards a post-industrial economy by influencing the built environment and the way it is used. Much like Hajer and Zonneveld (2000) we question whether traditional Dutch land-control oriented strategic planning is effective in the light of a transition towards flexible production systems. Combining this side of the “sociospatial dialectic” (Soja, 1980) with a focus on an atypical location of economic activity—the residential neighbourhood—we aim to contribute to the debate about the relationship between the urban economy and urban form. We analyse how neighbourhood economies have developed over a period of 9 years (1999–2007) and link this to the urban environment as documented in statutory land-use plans. The main question of this paper is: can we identify different types of economic zoning in the land-use plans, and if so, are there types of land-use plans that are either more or less suitable to accommodate a vibrant local neighbourhood economy?

In the Netherlands, the built environment of both urban and rural areas and their functions are to a large extent controlled by land-use plans. Therefore, these plans offer the best entry to a detailed study of local regulatory frameworks. Land-use plans control which functions (residential, economic, leisure, infrastructure) are allowed where in a very detailed manner. This means that through land-use plans, city governments can influence spatial patterns of economic activity and facilitate or hinder the (re)location of new and existing firms. This strong tradition of regulating use of space offers an interesting contrast to the Dutch’ advanced urban economy and its recent liberal views on entrepreneurship.

Our focus on land-use policies is embedded within the framework of increasing attention for governance and institutions and how they influence local economic
development. The importance of institutions for economic systems is rooted in the idea that the phenomenon that we call “economy” or the “economic system” is neither a mechanical system nor a set of individual preferences but rather an “instituted process” influenced by formal as well as informal institutions (Amin, 1999: 367). Within economic sociology, economic geography and institutional economics the idea is now well established that economies are embedded in local social, cultural and institutional contexts (Wood & Valler, 2004). We analyse how the regulatory framework of spatial planning is related to the local economic activity in the neighbourhood. However, this should not be interpreted as a one-on-one relationship. The level of education, local entrepreneurship incentives, and the socio-economic position of residents are prone to influence the composition of the neighbourhood economy as well.

In this paper, qualitative and quantitative methods are used to grasp both the richness of information contained in land-use plans whilst linking it to economic developments on the neighbourhood level. Based on land-use plans for 44 Dutch urban residential neighbourhoods we propose a typology of 4 different types of neighbourhood economies as reflected in those plans. We combine a descriptive and explanatory analysis, hoping to capture the general change that is taking place in neighbourhoods, as a result of economic restructuring and at the same time describe how residential neighbourhoods are distinctive from each other as well as from other urban spaces.

The following section of the paper concisely puts forward processes that influence economic activities in urban residential neighbourhoods. Section 3 elaborates on the development of Dutch spatial planning and on the activity of land-use planning in particular. Next, our method and data are explained in Section 4, leading up to the empirical analysis in Sections 5 and 6. Section 7 concludes and discusses the findings.

2.2 The Neighbourhood as a place of production

Changes in the organization of production in contemporary capitalism have led to what oftentimes has been called a post-Fordist or post-industrial economic structure (Lash & Urry, 1994). Two interrelated outcomes of these changes are of particular interest when studying economic activities on a neighbourhood level: a shift in dominant sectors and a shift in firm size (Scott, 2000). The shift towards knowledge and design intensive sectors that rely heavily on human capital input have tended to erode the importance of internal economies of scale, opening up an important window of opportunity for small and medium-sized firms. The shift towards smaller firm size, less polluting and nuisance-sensitive sectors and
changes in dominant technologies potentially allow more of these firms to settle in residential urban areas.

How the “new urban economy” influences urban landscapes has been theorized upon by both planners and geographers. Gospodini’s (2006) theoretical argument entails that “the locational trends of flourishing post-industrial economic activities, along with the development of new urban governance strategies tend to rearrange the landscapes of the post-modern city” (p. 311). He contrasts the emergence of entrepreneurial and creative “islands” of business activity in the inner city to the “scattered developments” in urban fringes. Taking some of his arguments from Knox (1991), Gospodini states that changing economic structures are primarily influencing the urban landscape. However, Knox’s (1991) argument itself was more nuanced, arguing that “the spatial imprint of capitalism is not a smooth and automatic process in which the ‘needs’ of capital are stamped, without resistance and constraint, onto the landscape” (p. 181). For instance, one might question whether urban residential neighbourhoods are susceptible for accommodating structural changes in the economy. In this sense, the conditioning role of the local regulatory framework might be an important factor, influencing to which degree “flourishing postindustrial economic activities” are located in residential areas. This regulatory framework plays an intermediary role, often not accounted for in the arguments by the preceding authors and sheds light on the other side of the “sociospatial dialectic” between the organization of production and urban form (Soja, 1980; Sheppard, 2002). At the same time, the study of these local regulations brings attention to the potential of urban residential districts as places for “new” economic activity. Especially in the Netherlands, the tradition of top down land-use planning combined with very detailed zoning regulations could easily hinder the adaptation of the built environment to changing needs of today’s entrepreneurs. The above implies that our frame of reference is the formal one. We look at rules and regulations as stated in the land-use plan; we do not look at practices of spatial planners and planning authorities. Since the Netherlands is also known for “tolerance policy”—for example with regard to Dutch policy on soft-drugs use—it might be the case that formal regulations in practice are not as strictly complied with.

Even beyond the question of land-use planning, one could argue that Dutch municipal governments often direct their (limited) resources to (central) business districts or deprived neighbourhoods, while hardly paying attention to the economic potential of “ordinary” suburban-like residential districts. As a consequence, the economic importance of these districts, as sites of both production and consumption, might be overlooked. As a consumer site Dutch cities have, similar to many other advanced urban economies, witnessed significant changes in residen-
tial preferences. Whereas larger cities in the 1960s and 1970s were confronted by an outflow of the middle-classes, the closing decades of the twentieth century have shown reversal of this trend. Instead of leaving the city, many middle-class households opted to live in urban environments again where employment opportunities and amenities are close at hand (Ley, 1996; Karsten, 2003; Florida, 2004). As a site of production, literature on entrepreneurship and location choice also shows that many firms start from home (Schutjens & Stam, 2003). Often these firms’ location needs are very much connected to lifestyle preferences (Mackloet et al., 2006). There is a regained interest in urban living by people that predominantly work in post-Fordist sectors. These jobs are in turn eminently suitable to be performed from within residential neighbourhoods, even from home, without pollution or nuisance of production activities. This leads us to expect a rise in economic activity in urban residential areas. However, it remains to be seen to what extent the existing land-use zoning practices show flexibility with regard to accommodating these economic activities.

2.3 Dutch spatial policy and land-use planning

Very much like the rest of Western Europe, planning in the Netherlands from the 1950s was heavily dominated by functionalism. The dominant doctrine was the separation of functions in space founded on Le Corbusier’s ideas of “spatially autonomous” functions (Le Corbusier, 1933). This resulted in strict land-use zoning practices that controlled what functions could be located where in a detailed manner. During the 1980s, many European countries shifted towards more post-modern urban design and planning, entailing mainly a renewed focus on land-use mixing, as was the norm before the 1950s (Gospodini, 2006). According to several authors, the Dutch planning practice however, remained “stuck” in functionalism (see, for instance, De Roo, 2000; Pols et al., 2009). Although the Dutch policy discourse was following other European countries in emphasizing the importance of “real” and “vibrant” cities, its planning practice lagged behind. As in other Western countries, the “compact city” discourse gained foot in the Dutch policy debate. The Fifth Spatial Planning Memorandum of the Dutch government (Ministry of Housing, Spatial Planning and the Environment, 2000) expressed an ambition towards more mixed and diverse urban environments. The compact city with mixed functions is aiming to facilitate economic development (due to its focus on economic activity and leisure) and at the same time offer a high quality living environment for city inhabitants. Despite this new policy discourse however, the planning practice of detailed land-use zoning and regulations seemed to persist. This persistence has several reasons, partly to do with the mindset of urban planners and local politicians. First, municipalities still attribute economic gain to mono-functional office parks by hoping to attract large (multi)national
companies while at the same time continue to design very detailed zoning plans that do not allow much flexibility when it comes to the spatial mixing of functions (Pols et al., 2009). This might also have to do with the “environmental dilemmas” and clashing interests of users that are more likely to occur in mixed functional spaces (De Roo, 2000). Local politicians often succumb to pressures of “NIMBY” like arguments coming from neighbourhood residents. Second, municipalities can choose between designing a “general” or a “detailed” land-use plan where the former is flexible towards diverse functions that can be interchanged. In practice, the majority of the municipalities opt for detailed zoning plans for legal security reasons or to avoid ambiguity. Legal rights to buildings and land-uses depend heavily on land-use plans, so local governments want to avoid costly and drawn-out conflicts over space. Third, the earning capacity for landowners is often higher for residential functions than for mixed or economic functions. This is due to a longer depreciation period for residential buildings compared to office buildings (Pols et al., 2009). Lastly, the tendency to solidly arrange the (urban) landscape is a highly valued tradition in a country as small and densely populated as the Netherlands.

Dutch urban planning practice relies heavily on environmental zoning, with detailed regulations for the degree of separation between residential and other land uses. Municipalities are obliged to design land-use plans for city districts separately, with a mandatory 10-year revision period. The activity of zoning implies that geographically delineated zones are assigned a certain land use function. Within the neighbourhood land-use plan, assigned functions may vary even within the same property, in which, for example, the ground floor of a building is for commercial use while the other floors are assigned a residential function. These local land-use plans, together with policy plans on different levels (municipal and regional level), are output of a local political process with which urban space is assigned certain qualities, and through which these qualities can be (re)shaped. Over the years, municipal governments have gained more autonomy and control in designing land-use plans. National government guidelines have become less strict, allowing municipalities more freedom in their decisions regarding land-use (Spatial Planning Act 2008). Through land-use plans, local planners have always had the possibility of changing land-use functions by making statements about the future functions of buildings or areas if they were to change ownership. Also, new functions can be ascribed to areas that are being redeveloped or restructured. This policy and planning practice entertains the thought that if urban form is adapted to the changing needs of the organization of production, economic growth will follow. However, urban form, function and its existing legal structures might not share the flexibility that is so characteristic of the “new economy”. We can conclude that the majority of the Dutch land-use plans were created within a top-down doctrine of “high
modernity\textsuperscript{12}: functional and environmental zoning heavily influenced by notions of spatial separation of functions. Although recent views and policies are more oriented toward mixing of functions, local planning practice seems resilient with regard to this policy interest. It seems as if policy ideas and societal developments on a more macro level are not congruent with the implicit rational and functional foundation of the land-use plan. What we will see in the remainder of this study is to what extent the existing land-use planning of residential neighbourhoods facilitates or limits a vibrant local economy.

2.4 Method and data

For our analysis we selected five cities in the Netherlands: Amsterdam, Dordrecht, Leiden, Utrecht and Zoetermeer. The cities of Zoetermeer, Dordrecht and Leiden are medium sized with around 120,000 inhabitants whilst Amsterdam and Utrecht are larger with, respectively, 767,000 and 306,000 inhabitants in 2010. All cities belong to the Randstad region, the conurbation in the West of the Netherlands, which is often considered to function as one regional economy (Figure 2.1). They offer a broad array of Dutch urban environments differing in size, physical structure, age, economic background and growth rates. Zoetermeer can be characterized as a new-town and as a planned centre of urban growth while Amsterdam, Utrecht, Dordrecht and Leiden have been defined by trade and handicraft since the seventeenth century. The research design is a cross-sectional analysis of the number of firms in residential neighbourhoods. We examine variation across neighbourhoods and across time. The outcome variable—the number of firms in the neighbourhood—is analysed between 1999 and 2007.

\textsuperscript{12} \textquoteleft High modernism\textquoteright refers to the belief that bureaucratic planners can order and control physical space from behind their desks (Scott, 1998).
CHAPTER TWO

FIGURE 1: RESEARCH AREA

Source: CBS/Kadaster Emmen 2008/BWBS.
We selected 44 residential neighbourhoods with a diverse socio-economic status\textsuperscript{13} to assure a heterogeneous research sample. In the selection we included only neighbourhoods that can be categorized as “purely residential neighbourhood\textsuperscript{14}”. We excluded city centre neighbourhoods or those neighbourhoods with a designated industrial estate within its boundaries since these more formal work sites are assumed to have different dynamics. This resulted in a selection of six to eight geographically dispersed neighbourhoods per city. The selected neighbourhoods have an average size of 4600 inhabitants, with a population range of 1000–10,000. The municipal administrative boundaries are used, since the zoning plans are also designed according to these boundaries. In terms of square kilometres, the selected neighbourhoods are very diverse, ranging between 0.3 and 2.5 km². Economic activity is measured by the number of firms located in the neighbourhood. For calculating this number LISA\textsuperscript{15} data were used, which list all business establishments in the five cities for the period 1999–2007. Schools, hospitals and some public sectors that do not produce for a “market” were excluded from the analysis. Consequently we display the number of firms as a ratio per 100 inhabitants, to correct for neighbourhood population size. The data related to land-use plans was acquired by an in-depth study of the most recent zoning plans of the selected 44 neighbourhoods. To get an idea of the research area, Figure 2.2 shows the selected neighbourhoods in Dordrecht and Utrecht.

\textsuperscript{13} Neighbourhoods were ranked by socio-economic status. A factor analysis was performed to group seven variables that indicate socio-economic status of the neighbourhood (including income, unemployment levels and data on housing stock) into two variables. Consequently, k-means cluster analysis was used to rank all the neighbourhoods into the categories.

\textsuperscript{14} The categorization into four types of neighbourhoods is made on the basis of postal code areas. First, only areas with more than 500 residential addresses are selected. This group is divided into three categories: neighbourhoods with a city centre function, neighbourhoods that have an industrial site within them and the residue is categorized as “purely” residential neighbourhoods (Raspe et al., 2010).

\textsuperscript{15} The National Information System of Employment register (LISA-Landelijk Informatie Systeem Arbeidsplaatsen) is based on Chamber of Commerce data supplemented with employment figures at firm level.
FIGURE 2:
MAP OF SELECTED NEIGHBOURHOODS IN DORDRECHT AND UTRECHT

Source: CBS/Kadaster Emmen 2008/BWBS.
2.5 Urban residential neighbourhoods, zoning and economic activity

In 2010 a first attempt was made to empirically explore the scale and scope of economic activity in residential neighbourhoods in the Netherlands. This publication of the Dutch Environmental Planning Agency (PBL) deals with residential neighbourhoods in the Netherlands as an aggregate entity within the Dutch economy and it argues that economic activity in these residential neighbourhoods is losing ground in comparison to other areas. The findings of the PBL illustrate that the number of both firms and jobs in Dutch residential neighbourhoods are lagging behind compared to the national average. What is especially remarkable is that even the figures on knowledge intensive sectors in residential neighbourhoods are below the national average (Raspe et al., 2010). It is debatable whether these nationally aggregated findings are exemplary for more localized urban economies. Putting cities and neighbourhoods in a comparative perspective, as we do in this paper, might show very diverging localized economic trajectories (Kloosterman & Rath, 2001).

Contrary to the conclusions of the PBL, a relatively large part of firm establishments in our selected research cities are located in purely residential urban districts. When we consider all the residential neighbourhoods in Amsterdam, Utrecht and Zoetermeer the neighbourhoods that can be categorized as purely residential house the largest share of all firm establishments in the municipality (respectively, 56%, 53% and 61% in 2007). In Leiden and Dordrecht the residential neighbourhood is not the dominant area of business activity. Here, the share of firm establishments in residential neighbourhoods is, respectively, 21% and 31% in 2007. In four of the five selected cities, purely residential neighbourhoods make up around half of the city districts. In Leiden it is a bit less with one-third. The largest part of the economic activity in these neighbourhoods consists of small firms and self-employed entrepreneurs. On average 60% of all firms consist of one person, while the Dutch average is around 42% (Raspe et al., 2010, p. 36).

The most important sectors in the residential neighbourhoods of these five cities are business and consumer services with a combined average share of 69% in the period between 1999 and 2007. This supports the statement made earlier that it is these kinds of post-Fordist economic activities that are suited to be performed in primarily residential areas.

When we look at the number of firms, including self-employed entrepreneurs, in the city as a whole in 2007 we see that Amsterdam (60,000 firms) and Utrecht (20,000 firms) are of a different order than Leiden and Dordrecht (both around 4000 firms) and Zoetermeer (5000 firms). Between 1999 and 2007 an municipal-wide increase in the number of firms can be observed in Amsterdam, Utrecht and
Zoetermeer with growth figures of, respectively, 23%, 37% and 65(!)%. However, Dordrecht and Leiden show no growth in this period, with figures of, respectively, 23% and 20.4%. In Zoetermeer the number of firms is growing faster than in the other cities. In addition, it is interesting to see that in this period the share of firms located in residential neighbourhoods is growing substantially as well. Thus, in the case of Zoetermeer, net growth in firms seems to take place within residential neighbourhoods.

We now turn to the detailed analysis of the 44 selected neighbourhoods. For 40 of our 44 neighbourhoods, the municipalities designed a detailed land-use plan, ascribing specific functions to each built entity on the map. For four neighbourhoods, a more “global” map was designed which differs slightly in its visual representation because it divides the neighbourhood in areas with different colours that refer to the dominant function of that area. Within the land-use plan, some flexibility can still be achieved by assigning “mixed functions” to buildings or allowing the interchangeability of functions. This interchangeability can range from permitting some to all non-residential functions to interchange with each other without extra regulatory burdens. However, the changeability from residential to non-residential functions is not often found due to housing stock regulations. Every land-use plan consists of a detailed map with functions attributed to each respective building. The plan also has a detailed explanatory memorandum, which provides information on the neighbourhood. It describes its history and policy considerations, contains detailed zoning regulations, recent developments and future plans for the neighbourhood. As such, the land-use map and explanatory memorandum are determinants of both form and function. For the document analysis presented in Table 1 we examined both the land-use map and the accompanying memorandum.

Table 1 shows two dimensions of the land-use plan: the number of mapped economic functions (column 2) and the type of spatial economic planning (column 3). The fourth column indicates the publication year of the most recent zoning plan. The last three columns provide information on our outcome variable, the Firm:Inhabitant rate (F:I rate) that reflects the number of firms per 100 inhabitants in each neighbourhood. The F:I rate is presented for 1999, 2007 and the change in F:I rate during this period. The number of mapped economic functions indicates the actual premises on the land-use map that can be used for economic or mixed functions (quantity). It denotes a + when there is 2 relative to the other

---

16 Wittenstein, Mildenburg, Zuilenburg and Vredenburg in Dordrecht have a global land-use plan.

17 In Utrecht and Amsterdam, if one wants to change the residential function of a building to a non-residential function, the number of M2 taken away from the housing stock have to be compensated by adding M2 for residential use or for compensation, a substantial sum of money has to be paid.

18 Or groups of buildings in the case of the “global” land-use plan.
functions on the map and compared to the other land-use plans of the 44 neighbourhoods—more premises on the map that allow economic activity or if the (re)development of such physical structure is expressed in the memorandum. Also, the spaces that allow for “mixed functions” are regarded as beneficial to economic activity as is a high level of interchangeability of functions. If both are the case, the denotation is ++.

The type of economic planning refers to the regulation of economic activity in the neighbourhood. This typology of the different forms of planning evolved during the qualitative analysis of the plans and can be seen as grounded in them. We distinguish four types of spatial economic planning: centralization (C), decentralization (DC), restriction (R) and lack of economic planning (NO). Centralized economic planning applies when all designated spaces for economic activity tend to be located in one spot while decentralization implies a spread of economic spaces throughout the neighbourhood. Restriction represents an active limitation of economic activities in the neighbourhood. The presence of local amenities in other neighbourhoods is often used as an argument for this restrictive policy. The neighbourhoods that are characterized by a lack of economic planning have memoranda that do not contain any statements about how economic activity in the neighbourhood should be regulated.

Quite straightforward, we expect to find higher number of firms in neighbourhoods that allot more space to “economic activity”. We expect restrictive planning to go hand in hand with a lower number of firms in the neighbourhood. However, it is less obvious how other types of economic planning relate to the number of firms in a neighbourhood. Visualizing the two dimensions of zoning plans as two axes, four types of economic zoning are distinguished (Figure 3). It is important to note that these four types function as ideal types, offering a stripped-down image of quite detailed and complex land-use plans.
# CHAPTER TWO

## TABLE 1: ANALYSIS OF NEIGHBOURHOOD LAND-USE PLANS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AMSTERDAM</td>
<td>Willemspark ++</td>
<td>DC</td>
<td>2002</td>
<td>17.55</td>
<td>21.77</td>
<td>4.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Apollobuurt ++</td>
<td>DC</td>
<td>1996</td>
<td>12.40</td>
<td>14.26</td>
<td>1.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Helmersbuurt +</td>
<td>DC</td>
<td>2005</td>
<td>10.61</td>
<td>11.90</td>
<td>1.29</td>
<td></td>
</tr>
<tr>
<td></td>
<td>De Krommert +</td>
<td>DC</td>
<td>2002</td>
<td>4.62</td>
<td>6.37</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Westlandgracht ++</td>
<td>DC</td>
<td>2010</td>
<td>15.32</td>
<td>16.13</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overtoomse Veld +</td>
<td>DC</td>
<td>2004</td>
<td>3.14</td>
<td>3.58</td>
<td>0.44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overtoomse Sluis +</td>
<td>DC</td>
<td>2005</td>
<td>7.14</td>
<td>9.17</td>
<td>2.02</td>
<td></td>
</tr>
<tr>
<td>Utrech</td>
<td>Buiten Wittenvrouwen ++</td>
<td>DC</td>
<td>1992</td>
<td>13.30</td>
<td>13.50</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wilhelminapark +</td>
<td>DC</td>
<td>2000</td>
<td>7.90</td>
<td>9.50</td>
<td>1.60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Langerak -</td>
<td>NO</td>
<td>2002</td>
<td>-</td>
<td>5.35</td>
<td>5.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Veldhuizen +</td>
<td>C</td>
<td>1998</td>
<td>-</td>
<td>3.18</td>
<td>3.18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ondiep ++</td>
<td>DC</td>
<td>2006</td>
<td>1.66</td>
<td>3.13</td>
<td>1.47</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Schilderbuurt +</td>
<td>DC</td>
<td>2000</td>
<td>4.91</td>
<td>6.94</td>
<td>2.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pijsweer Noord -</td>
<td>NO</td>
<td>1994</td>
<td>1.53</td>
<td>3.07</td>
<td>1.53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pijsweer Zuid ++</td>
<td>DC</td>
<td>1994</td>
<td>6.59</td>
<td>9.01</td>
<td>2.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>De meern ++</td>
<td>DC</td>
<td>2005</td>
<td>3.14</td>
<td>4.19</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>DORDRECHT</td>
<td>Oud-Dubbeldam +</td>
<td>C</td>
<td>2005</td>
<td>5.05</td>
<td>4.80</td>
<td>-0.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Admiralsplein(5) +</td>
<td>C</td>
<td>2004</td>
<td>5.73</td>
<td>3.48</td>
<td>-2.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Middenburg(4) -</td>
<td>R</td>
<td>1993</td>
<td>1.57</td>
<td>2.15</td>
<td>0.58</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vredenburg(4) +</td>
<td>C</td>
<td>1993</td>
<td>1.91</td>
<td>2.13</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crabbehof -Zuid +</td>
<td>C</td>
<td>2005</td>
<td>1.55</td>
<td>1.90</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dubbeldam -Zuid -</td>
<td>R</td>
<td>2005</td>
<td>2.14</td>
<td>1.64</td>
<td>-0.50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wittenstein -</td>
<td>R</td>
<td>1993</td>
<td>1.72</td>
<td>1.58</td>
<td>-0.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zuilenburg -</td>
<td>R</td>
<td>1993</td>
<td>0.81</td>
<td>1.47</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kinsbergenst -</td>
<td>R</td>
<td>2004</td>
<td>1.11</td>
<td>1.35</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ewijsstraat -</td>
<td>R</td>
<td>2004</td>
<td>1.16</td>
<td>1.12</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Zechehavenln -</td>
<td>R</td>
<td>2004</td>
<td>0.77</td>
<td>0.96</td>
<td>0.19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crabbehof - Noord -</td>
<td>R</td>
<td>2005</td>
<td>0.87</td>
<td>0.80</td>
<td>-0.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Rijkerstr -</td>
<td>R</td>
<td>2004</td>
<td>0.15</td>
<td>0.00</td>
<td>-0.15</td>
<td></td>
</tr>
<tr>
<td>ZOETERMEER</td>
<td>Rokkeveen West +</td>
<td>DC</td>
<td>2007</td>
<td>1.88</td>
<td>4.02</td>
<td>2.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rokkeveen Oost +</td>
<td>DC</td>
<td>2007</td>
<td>1.15</td>
<td>2.52</td>
<td>1.38</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sekhwaert NO -</td>
<td>NO</td>
<td>2006</td>
<td>1.20</td>
<td>2.43</td>
<td>1.23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sekhwaert ZW +</td>
<td>DC</td>
<td>2006</td>
<td>1.78</td>
<td>3.19</td>
<td>1.42</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meerzicht W +</td>
<td>DC</td>
<td>1999</td>
<td>1.70</td>
<td>2.41</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Meerzicht O +</td>
<td>DC</td>
<td>1999</td>
<td>1.27</td>
<td>2.07</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>LEIDEN</td>
<td>Raadsherensbuurt -</td>
<td>NO</td>
<td>1975</td>
<td>2.57</td>
<td>3.26</td>
<td>0.69</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Houtkwartier -</td>
<td>NO</td>
<td>1993</td>
<td>3.06</td>
<td>3.21</td>
<td>0.16</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waardeiland -</td>
<td>NO</td>
<td>2008</td>
<td>1.32</td>
<td>2.04</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>De Kooi +</td>
<td>C</td>
<td>2003</td>
<td>1.69</td>
<td>1.80</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Noorder kwartier -</td>
<td>R</td>
<td>2003</td>
<td>1.70</td>
<td>1.65</td>
<td>-0.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Slagwijk -</td>
<td>R</td>
<td>2006</td>
<td>2.05</td>
<td>1.64</td>
<td>-0.41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kloosterhof +</td>
<td>N.A.</td>
<td>2008</td>
<td>1.00</td>
<td>1.46</td>
<td>0.46</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Schenkewijk +</td>
<td>C</td>
<td>2008</td>
<td>1.96</td>
<td>1.86</td>
<td>-0.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dobbeuwijk-Zuid -</td>
<td>R</td>
<td>2008</td>
<td>0.73</td>
<td>1.15</td>
<td>0.42</td>
<td></td>
</tr>
</tbody>
</table>

Notes: DC, decentralized planning; C, centralized planning; R, restricted planning; NO, no economic planning; +, high no. of ec. functions; ++, high no. of ec. functions and mix functions/interchangeability; 2, low no. of economic functions.
The Market

A neighbourhood square surrounded by low rise shops, sometimes topped with residential flats and accompanied by abundant parking space. This image is typical for the concentration of economic activity of the neighbourhoods that we categorized as “market”. These neighbourhoods have a land-use plan that expresses the policy preference to develop the primacy of one local neighbourhood shopping centre, which is usually located on a neighbourhood square. The land-use maps thus often display a number of buildings that can contain economic activity, albeit limited and very much concentrated in one spot. This type is predominantly present in Dordrecht and Leiden. The centralized economic zone is designed to contain businesses ranging from retail to all sorts of services. In concurrence, the dispersion of business activity outside this local shopping centre is often expressed as something that “should be limited” or is even “unwanted” in the explanatory memorandum (explanatory memorandum zoning plan Zuilenburg and Vredenburg, p. 17). This negative stance towards the scattering of business activity is expressed by the limited amount of built space that is assigned a “business” or “mixed” function outside the neighbourhood shopping-

---

19 The neighbourhoods Mildenburg and Vredenburg in Dordrecht form an exception to this. The neighbourhood shopping centre is located exactly on the “border” of these two neighbourhoods. Both zoning plans only pay marginal attention to economic activity, simply stating the number of M2 designated for business and retail and the preference for not expanding the economic activity throughout the neighbourhood. (This might also have to do with the fact that the zoning plans for these neighbourhoods are of a “global” nature.)
centre. Seven of the 44 neighbourhoods can be considered a market-type. The F:I rate for the market is reasonably high in 1999, but they show very small or even negative growth rates for 2007. There is a limited growth potential to neighbourhood shopping centres. When there is no room for economic activity or mixed functions outside the neighbourhood shopping centre, the capacity for economic growth both in size of firms as well as in number of firms is delineated and limited. The lack of growth potential could possibly be ameliorated by positive attention for home-based business or attention for small- and medium-sized enterprises on a higher policy level. We observed that many “market-neighbourhoods” are surrounded by neighbourhoods that can be characterized as “Deserts”.

The Desert

Many of the “desert” type neighbourhoods are post-war neighbourhoods characterized by a mix of low- and high rise buildings. Some of these neighbourhoods are dealing with a combination of social and economic deprivation. This type is subjected to a strict limitation policy when it comes to economic activity and is often within direct influence of the shopping centre that is located in an adjacent neighbourhood. The land-use plan for this type of neighbourhood often stresses the availability of services and retail in an adjacent neighbourhood as an argument to limit the amount of local space for economic activity. We identified twelve of the 44 selected neighbourhoods as “deserts”. In terms of the number of business establishments, the economic performance of these neighbourhoods is poor, with generally low F:I rates for 1999 and very small or negative F:I growth rates. There are hardly any or no allotted spaces for economic functions in this type, thus offering no prospects for firms that want to expand due to, for example, firm growth. Furthermore, for home-based businesses in these kinds of neighbourhoods, it is impossible to find business space in their “own” neighbourhood in case of a firm relocation. And since houses in this type of neighbourhoods are oftentimes not very spacious, the growth of home-based business is hampered. This situation might be ameliorated by a lenient position towards home-based business in the land-use plan, including possibilities for adjustments to the house, or with special attention for small- and medium-sized enterprises in the city structure plan. For instance, some of the neighbourhoods with low social economic status in Dordrecht20 have been appointed as neighbourhoods that should receive special economic attention in the coming years. This might improve their economic position in the years to come.

The Mix

Many of the “mix” neighbourhoods are more varied in building style and appearance than the “desert” neighbourhoods. The neighbourhoods that are set up according to the “mix” type have a land-use map with quite a number of mapped functions that are designated as “economic” or “mixed functions”. These neighbourhoods do not have one delimited shopping centre, but instead shops and business are scattered along a few (mostly two or three) main streets. The land-use plans often emphasize the economic vitality and diversity of functions in the neighbourhood and can be seen as areas that policy makers might have in mind when stressing intensive use of existing space and mixing of functions. In our sample, there are eighteen neighbourhoods that can be characterized as “mix”. The zoning plan for Rokkeveen-West and Seghwaert ZW, for instance, notes that that a choice was made for low-rise building, explicitly leaving room for neighbourhood amenities and “small businesses like galleries, dentists, physicians and offices” (explanatory memorandum Seghwaert, 2006, p. 21). Especially the Amsterdam neighbourhoods are characterized by a high degree of interchangeability. For instance, the explanatory memorandum for the Helmersbuurt states that the neighbourhood has three “economic axes” along which the interchangeability of (non-residential) functions is almost completely unrestricted (p. 50). These neighbourhoods have land-use plans that overall contain more “innovative” elements that might be beneficial for vital neighbourhood economies such as extending the maximum nuisance levels (Amsterdam, Helmersbuurt) and influencing the type of economic activity to attract higher quality businesses (Utrecht, Buiten Wittevrouwen). As for the number of firms, we can observe that the F:I rates are quite high. In some cases the number of firms in the “mix” neighbourhoods is similar to the “market” type, but especially in some of the Amsterdam and Utrecht “mix” neighbourhoods, the F:I rates are much higher even. The main difference between the “market” and the “mix” can be observed in the F:I growth rate which is much higher in the “mix” type. A high degree of flexibility, interchangeability and a mix of residential and economic functions seem to attract more start-up firms.

The Dormitory

The dormitory type is characterized by a lack of mapped economic functions in the land-use map. Calm, spacious residential areas build in the latter part of the twentieth century are emblematic within this type of land-use plan. At the same time, no explicit economic policy or regulation can be attributed to this type of neighbourhood. As such, it partly falls outside of the two dimensions in the typology and is different from the “desert” because economic activity is not explicitly restricted. We could identify six neighbourhoods of this type in our
sample. The lack of economic premises in this type of neighbourhood is the result of conservative or “containment” land-use planning, due to (re)focusing on a different neighbourhood function. The latter is the case in the Wilhelminapark (Utrecht) neighbourhood where the zoning plan stresses a renewed focus on the park function of the neighbourhood. The zoning plan for Waardeiland (Leiden) states that this neighbourhood has a leisure function due to the small marina on its grounds. Also, the architectural homogeneity and high-value residencies are mentioned as arguments for its conservative land-use plan. Most interestingly, all of the “dormitory” neighbourhoods have reasonably high F:I rates, a few of them even higher than some of the “market” types. Most likely, the economic activity in these neighbourhoods is largely “invisible”, in the form of home-based businesses. The dwellings are generally spacious and attractive, providing a pleasant living environment and probably also a comfortable working environment. The recently built neighbourhood Langerak in Utrecht is an example of a “boom” of business activity. The combination of modern dwellings and a lack of regulation toward home-based economic activity seem to drive the large number of firms in this neighbourhood.

The typology that we derived from the land-use plans offers a framework for conceptualizing policies that are applied to the urban neighbourhood economy. In general, a high number of mapped economic functions, as expected, goes together with a high number of firms relative to the population size (F:I ratio). However, combined with a centralized planning type, the growth potential of the neighbourhood economy is limited, as is the case in the “market” type of neighbourhood. As we can observe in the “Dormitory”, neighbourhood, a low number of mapped economic functions does not always result in low F:I rates. Since Dormitory neighbourhoods have hardly any visible economic functions on the land-use map, the F:I rate is presumably foremost a reflection of home-based economic activity. These seemingly sleepy neighbourhoods might actually be prone to function as incubator areas for small or new firms. Table 2 presents an overview of the aggregated F:I rates for each planning type.

### Table 2: F:I Rates and F:I Growth Per Planning Type

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>7</td>
<td>3.03</td>
<td>2.74</td>
<td>-0.29</td>
</tr>
<tr>
<td>Mix</td>
<td>18</td>
<td>6.43</td>
<td>7.94</td>
<td>1.51</td>
</tr>
<tr>
<td>Desert</td>
<td>12</td>
<td>1.23</td>
<td>1.29</td>
<td>0.06</td>
</tr>
<tr>
<td>Dormitory</td>
<td>6</td>
<td>1.94</td>
<td>3.23</td>
<td>1.29</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>3.16</td>
<td>3.80</td>
<td>0.64</td>
</tr>
</tbody>
</table>
2.6 Testing the typology

In this section we will test whether the typology presented in the previous section—the linkage between the type of planning and the F:I rate and F:I growth in different neighbourhoods—holds statistically. We cannot perform any parametric tests on the raw data since it is derived from a population that we cannot assume to be normally distributed. However, it is possible to perform a non-parametric test on the F:I rates when we rank them. Consequently, low scores on the F:I rate are represented by low ranks, and high scores on the F:I rate are represented by high ranks. The main disadvantage of data-ranking is that we lose information on the exact magnitude of differences between scores (Gibbons, 1993). In this analysis we opted to use the Mann–Whitney and Kruskall–Wallis test.

For the Mann–Whitney test the sample is split along the axis of the land-use planning typology (as presented in Figure 3) that indicates the level of mapped economic functions as high (N=25) or low (N=19). The second test is the Kruskall–Wallis test. For this test we split the sample along the other axis of the zoning typology: the types of economic planning. For both tests, we look at the F:I rate in 2007 and the F:I growth rate, the latter signalling growth or decline of the number of firms in each neighbourhood for the period 1999–2007. Tables 3 and 4 show the test results for both tests.

### TABLE 3: MANN–WHITNEY TEST

<table>
<thead>
<tr>
<th>Number of mapped economic functions</th>
<th>N</th>
<th>Median</th>
<th>Mann-Whitney U</th>
<th>Z</th>
<th>Exact Sig. (1-tailed)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>F:I rate 2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>26</td>
<td>3.80</td>
<td>70.00</td>
<td>-3.92</td>
<td>.000</td>
<td>.59</td>
</tr>
<tr>
<td>Low</td>
<td>18</td>
<td>1.64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F:I growth rate (1999 - 2007)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>25</td>
<td>1.29</td>
<td>94.00</td>
<td>-3.04</td>
<td>.001</td>
<td>.47</td>
</tr>
<tr>
<td>Low</td>
<td>17</td>
<td>0.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Mann–Whitney test (Table 3) indicates that neighbourhoods with a high amount of mapped economic functions (the Market and the Mix) have significantly higher F:I rates in 2007 than neighbourhoods with a low amount of mapped economic functions (the Desert and the Dorm). This is what we expected and it indicates that the buildings designated for economic activity in the neighbourhood

---

21 The Mann–Whitney test is considered to be the non-parametric alternative to the student’s T test or ANOVA test. The Kruskall–Wallis test is the non-parametric counterpart of one-way ANOVA (Gibbons, 1993).

22 For this test holds that N=42, because growth rates could not be established for the two young Utrecht neighbourhoods Langerak and Veldhuizen since their population numbers are not available for 1999.
are actually also used as such. Moreover, neighbourhoods with land-use plans that have a high number of mapped economic functions generally display significant higher F:I growth rates. The effect sizes are quite large, indicating that specific land-use zoning is strongly related to the existent daily practices in the neighbourhood. In this sense the conditionality of the zoning map has consequences for local economic reality.

**TABLE 4: KRUSKALL–WALLIS TEST**

<table>
<thead>
<tr>
<th>Type of economic planning</th>
<th>N</th>
<th>Median</th>
<th>Mean Rank</th>
<th>Chi-square (H)</th>
<th>Assymp sig.</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>F:I rate 2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centralized planning (Market)</td>
<td>7</td>
<td>2.13</td>
<td>20.57</td>
<td>28.21</td>
<td>.000</td>
<td>3</td>
</tr>
<tr>
<td>Decentralized planning (Mix)</td>
<td>18</td>
<td>6.65</td>
<td>31.83</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrictive planning (Desert)</td>
<td>12</td>
<td>1.41</td>
<td>7.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No planning (Dormitory)</td>
<td>6</td>
<td>3.14</td>
<td>24.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F:I growth rate (1999 - 2007)</td>
<td>6</td>
<td>0.01</td>
<td>8.83</td>
<td>29.21</td>
<td>.000</td>
<td>3</td>
</tr>
<tr>
<td>Centralized planning (Market)</td>
<td>6</td>
<td>0.01</td>
<td>8.83</td>
<td>29.21</td>
<td>.000</td>
<td>3</td>
</tr>
<tr>
<td>Decentralized planning (Mix)</td>
<td>18</td>
<td>1.56</td>
<td>31.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restrictive planning (Desert)</td>
<td>12</td>
<td>-0.045</td>
<td>10.58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No planning (Dormitory)</td>
<td>5</td>
<td>0.72</td>
<td>22.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the results of the Kruskall–Wallis test (Table 4) we first look at the column “mean rank” which shows that the neighbourhoods with decentralized planning rank the highest on F:I rates (mean rank=31.83). In addition, it shows that neighbourhoods that are characterized by restrictive planning (the Deserts) have the lowest F:I rates in 2007 as well as very small F:I growth rates. This seems plausible, since planning in these neighbourhoods is geared toward restricting economic activity. However, it is remarkable that neighbourhoods led by centralized planning show even slightly lower mean ranks (based on F:I growth rates) than those characterized by a restrictive planning type. Thus, even though Markets have a large number of mapped economic functions, they show very limited growth potential. Another interesting observation concerns the relatively favourable position of the neighbourhoods with no specific economic planning (Dormitories) for both the F:I rate in 2007 and F:I growth rate. The lack of economic planning in these neighbourhoods is accompanied by a small number of formal mapped economic functions, but still, there seems to be a lot of “unmapped” economic activity going on in these neighbourhoods.

Table 4 shows the advantageous position in F:I growth rates of Dormitories, and even Deserts, in comparison to Markets. This indicates that centralized planning is strongly negatively related to the growth of economic activity. It is interesting to see that the Dormitory even marginally surpasses the Market type of neighbourhood when we only look at the F:I rate of 2007. Since the Market has more
mapped economic functions, these neighbourhoods are expected to have a higher F:I rate than Dormitories. However, the mean ranks of the KW-test on the F:I rates in 2007 shows that this is not so obvious, and that space assigned to economic functions alone is not a sufficient condition for a high number of firms. Location of these built spaces and the regulations that accompany them are of equal importance. We see that the neighbourhoods with decentralized planning and an emphasis on economic functions are outperforming all other types of neighbourhoods in both F:I rate and F:I growth.

Overall, the tests show that residential neighbourhoods with land-use plans that intend a notable amount of built space to be used for economic activities, be it buildings that are specially designed for business or buildings that allow for interchangeable use, rank higher on number of firms that operate from these neighbourhoods. Allotting physical space to economic functions thus seems to matter. However, the different planning types show that other factors also play a crucial role in the development of the neighbourhood economy. Some of the neighbourhoods that lack built space for economic functions still have relatively high F:I rates. Interestingly, when we compare “Markets” to “Dormitories”, we observed that the latter are actually performing better on both F:I rate and F:I growth rates. This seems to reinforce the proposition that Dormitories are possible incubators for entrepreneurs starting from home.

When interpreting the results mentioned above, it is important to keep in mind that policy goals stated in these land-use plans probably also reflect a certain “base rate”. Land-use planning is influenced by the historically present level of economic activity in a specific neighbourhood and the plan also serves as a reflection of the physical environment. After all, it is not always possible to “add” buildings or redevelop existing ones if policy goals change. However, once a certain “base rate” of economic activity is in place, land-use plans have the ability to secure business locations as qualities of space on the neighbourhood level, making sure business activity is facilitated. At the same time, land-use plans (as sediments of policy goals) can restrict (future) business space, for instance, by explicitly stating that it is unwanted outside neighbourhood shopping centres or at certain locations. In this sense, the process is a two-way street in which economic activities are both influencing as well as influenced by the zoning plan. The land-use plan is a way to facilitate or prohibit certain activities in the neighbourhood; however, it cannot cause firms to locate in specific areas.

The reciprocal relation between the land-use plan and observed economic activity is also influenced by factors that go beyond the scope of this paper. For example, if we compare Table 1 with the detailed description of the neighbourhoods (see
Appendix I) we can observe that neighbourhoods of high social economic status are generally doing better in number of firms. This holds between cities as well as within cities and might have to do with the overall image of a neighbourhood, or with the educational attainment of residents. Maybe there is also more local market demand in the wealthier neighbourhoods. The nature of the data does not allow judgements regarding the reasons for this difference.

2.7 Conclusion and discussion

Although relatively unexplored for its economic significance, the urban residential neighbourhood is an appealing research area where various macro-social and economic developments intersect at the micro level. In this paper the local regulatory framework and land-use zoning practice of residential neighbourhoods in connection to local economic activity was the starting point of our research. Land-use planning can be an influential instrument in shaping the economic vitality of a neighbourhood since it has legal implications. Changes in the organization of production have increased opportunities for small firms. These firms can settle in residential neighbourhoods provided that the local regulatory framework is supportive. We have explored this local regulatory framework and observe that it is an important conditioning link between urban form and economic practices. The dialectic link between urban landscapes and local economic practices (Soja, 1980; Knox, 1991) is mediated by the local regulatory framework, in which the land-use plan is conditional for the form and functioning of both urban space and local economic production systems.

We have observed that in Dutch urban residential neighbourhoods, diverse policies toward economic activity are applied. Two important distinctions in Dutch land-use plans are the “number of mapped economic functions and the type of economic planning”. These two dimensions result in four types of neighbourhood economies. The main characteristic of the “market” is centralization, locating all business activity in a limited and central location in the neighbourhood. This specific practice of zoning implies a limited growth potential and seems to have stronger negative effects on economic activity than a lack of economic zoning. The “mix” type of neighbourhood combines a high number of mapped economic functions with a decentralization policy. It might be the case that the presence of several main streets of economic activity allows for a “trickling down” effect, attracting economic activity in adjacent streets as well. In the “desert”, economic activity is explicitly barred from the neighbourhood. Explicitly restricting economic activity is a conscious choice, but it is also detrimental for the type of economic activity that is not related to any type of environmental nuisance. The “dormitory” type of neighbourhood shows a general lack of economic zoning.
and has no apparent economic planning. This might not always be accompanied by a lack of economic activity due to high numbers of home-based business that are not apparent in the land-use plan. A “vacuum” with regard to economic policy in these neighbourhoods might actually create room and lenient—because of lack of—rules for entrepreneurs starting from home.

We have investigated which existing built structures and regulations as captured in land-use plans are favourable to accommodating firms. Most surprisingly, we found seemingly sleepy neighbourhoods, in terms of the local zoning practices, to contain a substantial amount of business activity. This strengthens the ideas about post-Fordist economic activities as suitable to be performed from home or workspaces adjacent to residential spaces. Advancements in ICT technology make entrepreneurs, and teleworking employees, more flexible in managing their work, both spatially and temporally. In this sense, the home and the residential neighbourhood become a more integral part of working life (Green et al., 2000). Neighbourhoods that are planned and regulated according to the decree of separation of functions offer the least fertile ground for flexible “new” economic activities. It shows that a diverse and vital neighbourhood economy cannot be planned, but only planned for, by providing frameworks that are beneficial to local economic development (Scott, 1998).

The findings of this paper are based within the Dutch regulatory framework where top-down spatial planning is (still) the predominant mode of practice. The specificity of the Dutch land-use plan thus contextualizes the results. In, for example, Belgium, zoning rules are much more lenient. However, in the Netherlands, as in other European countries, there is a general policy idea that mixed neighbourhoods are the way to create sustainable communities for the future. Our findings suggest that generally, centralized and restrictive planning is related to small growth of local economic activity. If local governments want to stimulate mixed neighbourhoods, it is wise to look at how spatial plans are organized and to avoid centralized planning practices where economic activity is concentrated and confined to a specific locality in the neighbourhood. This might be difficult when the build environment is more an outcome of market-led development, and less the outcome of governmental spatial planning (for example in the US). In the past, real estate investors seemed primarily interested in investing in large scale mono-functional projects. However, the demand for offices, retail and apartments real estate in mixed areas is increasing, which is reflected in higher property values and investment returns (Pivo & Fisher, 2011). This might lead to different practices, also in private planned real estate developments. If the policy discourse of mixing functions is to find its way to the reality in neighbourhoods, these neighbourhoods and their land-use plans are in need of
more fundamental changes. Although the residential neighbourhood might not often house large firms, it definitely seems a place for small firms, and a place that facilitates starting businesses whose presence (and potential growth) can be beneficial to the city as a whole. Economic development on the city-level is important, but land-use plans and local policy can partly influence which neighbourhoods “win” economic activity and which neighbourhoods lose out. In accordance with earlier research on local zoning and efficient land use (Farmer, 2003) we think that residential neighbourhoods can perform very well economically without investments in costly redevelopment projects. Making land-use regulations more flexible and applying “enlightened” zoning practices can increase the economic potential of these areas (Farmer, 2003). To be sure, we do not wish to advocate a view of city governments whose sole focus is the economic attributes of neighbourhoods. However, we do think that changing economic structures have opened up a “window of economic opportunity” for residential neighbourhoods.

For future research, it is interesting to investigate what strategies local governments can take to increase the flexibility of their land-use plans, which might decrease the “response time” with which they can be updated to suit changing economic structures and urban planning needs. As has been discussed in paragraph 3, recent changes in Dutch planning policy offer some new possibilities for municipalities to increase the flexibility of zoning plans by starting to develop zoning plans for “mixed areas”. Also, putting zoning practices of different countries in comparative perspective might offer interesting research opportunities. It is also worthwhile to examine how spatial regulations are related to the type of firms found within residential neighbourhoods. The post-Fordist economy offers possibilities for economically vital, lively urban residential neighbourhoods. Providing space for (starting) entrepreneurs in residential neighbourhoods and flexibility towards their needs can contribute to a viable urban economy. Future research on land-use plans could increase our knowledge on the interaction between policy goals, legal restrictions and the spatial configuration of neighbourhood economies. We hope that the typology of neighbourhoods, according to land-use plans in relation to economic activity, might serve as a comprehensible tool in the design and further research of the effects of land-use plans.