1 Introduction

1.1 City-regions, cityports, and airports at a first glance

In the era of globalisation and structural economic adjustments, competition between city-regions on various spatial scales increases.[1] Each of these global cities and city-regions strives towards a competitive position in the worldwide economic hierarchy. The notion is growing that regions themselves are becoming the most important actors both in creating the opportunities the city-region offers and in and making use of these opportunities (Friedmann 2001). A numerous amount of studies explores which factors allowed regions as Silicon Valley and Baden-Württemberg to become internationally successful. Economic specialisation and the possibility of establishing a specific position in the worldwide network of competing city-regions are crucial in this (Storper 1997).

Studies so far have discussed the fact that these city-regions specialise in a competitive world economy, and the way in which they do this. But, until recently, the question why certain economic sectors prospered particularly in these city-regions, remained unanswered. Hall and Soskice's (2001) recent answer is that a specific institutional setting favours specific developments. In liberal market economies such as those of the United States, the United Kingdom and Australia, the institutional setting enhances both possibilities for revolutionary developments and for innovations that are suitable for specific economic sectors. Coordinated market economies as found in the Netherlands, Germany and Japan are due to stable qualities and less market dynamics favourable for development of other economic sectors. In the long run, both institutional models lead to comparable levels of welfare and there is no predominant successful model. It is according to Hall and Soskice (*ibid.*) this variety of institutional arrangements with different approaches that leads to institutional complementarities (cf. Aoki 1997).

In order to understand the variety of models, institutional differences, similarities and complementarities (Hall and Soskice 2001) need to be explored. Salet and De Jong (2000) describe these properties as institutional pullers and triggers. Globalisation, differentiation in governmental acting and an increasing variety of spatial scales, as well as the increased importance of private actors in policy making are to Salet, Thornley and Kreukels (2002) the dominant tendencies that ignite institutional changes. It is these factors that put the question forward whether the current metropolitan policy models are fit for the changing economic realities.

The city-region can be considered as one node in the international economic network of city-regions with a regional embeddedness. This position forces the city-region to remain competitive and to expand its economic position. In this ubiquitous globalisation trend in the city-regions, external information exchanges are crucial, while on the other hand internal linkages and the internal geography of the city-region is the natural counterpart of globalisation (Hall 2001) The city-region is here defined as:

"Functionally integrated area consisting of both a core or central city (or cities) which usually lends its name to the area in question and, contiguous with it, a region that serves the multiple collective needs of this city and provides a space for its future expansion" (Friedmann 2001:123).

It is not just to traditional monocentric global cities as New York and London (Sassen 1991) that the described tendencies apply, urging them to develop into economically successful metropoles. These tendencies can increasingly be perceived, in polycentric regions such as Randstad Holland and Frankfurt-Rhein Main (Scott 2001). On a lower level of scale within the city-regions, nodes of (new) economic developments can be distinguished. These nodes are more and more related to the level of the city-regions by the integrating forces of infrastructure and by their interlinked position with the scale increase of the urban labour market in particular (Graham and Marvin 2001). Because these economic dynamics are combined with infrastructure and urbanisation, they create new spatial concentrations, and are essential city-regions comparisons.

At the intersection of economic, infrastructure and urban developments, new centres develop. These new and existent centres are referred to as cityports *in this dissertation. It is a typology of urban concentrations in the city-region that show rapid economic development and is internationally connected by infrastructure. They fulfil the role of port to the city-region, a place to stay and a traffic node at the same time, for instance in traditional downtowns, edge cities, (high speed) train stations, and airports.*[2]

In coordinated market economies, these cityports are strategic development locations. They can establish links between infrastructure and economic activities on the one hand, while on the other hand spontaneous market driven development based on an urban critical mass can be found at these locations. Since these cityports are economically profitable locations, there are opportunities for physical concentration, spatial quality and mixed land use. This contributes to the qualitative elements, where the cityports fulfils the function of a port, place and a node at the same time (Hartwing 2000). The cityports are not isolated units. Rather, they function in the context of the globalizing city-region as a whole. Cityports are complementary in the city-region; the variety of cityports is more than the sum of all cityports individually.

This research outline would allow for a study of a variety of cityport developments. However, it is necessary to focus further on the area development near airports in order to limit the research object. The airport area is loosely defined as *the airports, vicinity of the airport, and the wider airport region in the city-region*. Its economic activities are increasingly dynamic and are worth further research. The airport areas have the economic potential to become locations of mixed land use, with high urban qualities. They can also become magnets to entrepreneurs and visitors.

However, despite developments such as the *Airport City* (Güller and Güller 2002) and the regionally connected *Aerotropolis* (Kassarda 2000), planning practice regularly shows mixed spatial-economic results. Simmonds and Hack (2000) in particular address the poor urban qualities of the high-potential urban areas. They lack infrastructure and public space, and the relation between the airport and the wider urban fabric of the city-region is underdeveloped.

The question becomes relevant how governments deal with the opportunities of these dynamic and strategic locations as airports within their institutional contexts, while facing increased competition with other city-regions. These institutional contexts themselves are also dynamic.

Furthermore, governments in coordinated market economies are no longer the single dominant actors, and they increasingly share tasks with market actors. It is therefore essential that connectivity between different spheres of interaction of public and private actor coalitions is established on the level of the city-region (Salet *et.al.* 2002).

1.2 Theoretical perspective

Economic theories can help in understanding economic developments in the city-region that result in urban and regional developments. Economic theory revolves around demand and supply of scarce goods and services as well as around rules of the trading game. In this dissertation, those rules of the game that are imposed on actors and that are developed by the actors (both government and market actors) are considered to be most important. For this reason, theory of institutional economics offers an interesting perspective for this study. The perspective of new institutional economics (Healey and Barrett 1990, Van der Krabben and Lambooy 1993) in combination with evolutionary economics (Nelson and Winter 1982, Lambooy and Boschma 2001) in particular will be applied. Both theories focus on the gradual change of the rules of the game, as well as on their importance in the processes that take place in developing private and public actor coalitions. In the past, with the notable exception of Scharpf (1997), institutional theory focused too much on the role of governments. Hall and Soskice (2001) fit in the recent trend by bringing companies back to the centre of research. The positions of enterprises and economic sectors are according to the new insights in new institutional economics leading in institutional analysis. Additionally, location qualities, real estate demand, strategies of developing actors and the institutional context are other important factors in the area development process according to Healey and Barrett (1990). Institutions are here defined as:

"The rules of the game in a society or more formally the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social or economic" (North 1990:3).

Institutions are not limited to formal rules of the game (legal rules and regulations) but also include the informal rules of the game (acting, practices, values and norms) that are applied by the actors as strategic parties (March and Olsen 1989).[3] Acting, practises and norms and values are increasingly accepted as the deeper roots that co-determine acting, alongside the formal rules of the game.

The present research requires that we further categorise the rules of the game into specific groups of institutions. The argumentation and elaboration is discussed in chapter 5. Here, we introduce in brief:

- *Socio-cultural institutions:* local cultural characteristics and specific embeddedness based on historical roots of institutions and national policy models and styles;
- *Financial institutions:* the financial incentive that governments give market actors to invest in area development; either by subsidies and taxes, or by direct investments in projects that are not directly profitable for the market, in particular public;

- *Economic institutions:* the conditions in which market actors are willing to invest in spatial developments in cooperation with governments;
- *Institutions of governance:* horizontal (cross-sector) and vertical (between levels) organisation of governments, co-production of policy-making with non-governmental actors;
- *Legal institutions:* the legally embedded rules of the game of actors, as an outcome of institutions of governance, in, amongst others, plans, legal procedures and property development.

Institutions and combinations of institutions (institutional arrangements) are not static. They evolve over time in a process of institutional change and adjustment that is discussed in depth in chapter 5. Institutional change and adjustment over time is necessary to respond to changing economic realities. When economic realities change, some rules of the game turn out to be inefficient. However, established interests, the wish to avoid political conflict and the fact that the effectiveness of new institutions is not yet proven, cause institutional lock-ins to occur. A sense of urgency is needed to achieve institutional change, before the lock-ins and path-dependent behaviour lead to a performance crisis of the institutional system (Visser and Hemereijck 1998). Institutional change might follow rough paths of adjustment and learning. According to Hall (1993) this learning process is a process of 'puzzling' and 'powering' new institutions for the actors in charge. Institutional learning can contribute to the quality of institutional arrangements, along with social and cognitive learning. They might even enhance the competitiveness of the entire city-region in the end.

1.3 Research questions and frame of analysis

The aim of this book is twofold. It wishes to provide insight in both the economic and spatial dynamics of centre development in city-regions as well as in the institutional frameworks in which specific urban projects such as airport area development takes place. Furthermore, the book explores the possibilities of learning within and between the case study city-regions. The ambition is therefore to cross the border of planning disciplines.[4] It is a generalist study that includes economic geography, transportation planning and real estate, aviation economics, sociology, and institutional analysis of planning processes. In the analysis the focus is on actors and on their behaviour, as their position and playing field is considered essential (cf. Wissink *et.al.* 2003). All generalist studies must find the right balance between breadth and depth. In an attempt to find this balance, every field of study in this book includes a theoretical framework, followed by empirical findings, and is discussed with professionals in the field of study. Lastly, the selected case studies are studied in depth and for a longer period of time. Therefore, research in the case study city-regions itself is considered essential.

Against the background of spatial economic dynamics and institutional frameworks of the area development process of a specific kind of cityport, the research question is:

What are the spatial-economic and institutional positions of airports as cityports in the city-region, and if necessary, which institutional changes are required to adjust to the changed spatial-economic realities?

This main research questions actually consists of three related research questions. In order to answer them, each of these questions requires a step-by-step approach of answering sub-questions. The text below describes how the research questions will be answered.

1. What is the spatial-economic position of the airport as a cityport in the city-region?
1a. *What is the economic performance and regional embeddedness of the city-regions, and to what extent does this match the development of globalizing city-region (chapter 2)?*
1b. *Which cityports can be distinguished inside the city-region, and to what extent do these cityports contribute to the economic development of the city-region (chapter 3)?*
1c. *What is the spatial-economic position of airports as a type of cityport in the city-region (chapter 4)?*

Research question 1 is the spatial-economic analysis and it constitutes part one of this book. Answering this first research question requires, that we compare city-regions in terms of their strong and weak regional performances and the regional investment climate to establish their regional competitiveness. The regional economic analysis explores developments in past, present and future based on economic indicators on the regional and local levels. Therefore we elaborate on regional benchmark studies, that go beyond the quantitative economic indicators (labour productivity, sector structure, employment, and real estate). They discuss the reasons behind current developments and changing trends. The qualitative analysis is complemented by interview and literature study. In total, this approach offers the context, position and power of the regional economy that aims to bridge the regional level to the cityport level.

Next, the focus shifts on a lower spatial scale: the level of the cityports, in particular airport areas. The presumption is that a number of locations function as 'portal' to the city-region and so contribute to the development of the entire city-region. In order to answer research question 1b, we need to explore the patterns and fixation points of economic activities within the city-region, the cityports. The variety of geographical patterns will lead a further categorization of cityports. Here, we can challenge and elaborate further on Hall's categorization of traditional and new business centres, edge cities, and specialised subcentres (Hall 2001). This approach will result in an overview of cityports and of the position of the airport area in the city-region. In addition to the qualitative categorization of cityports, a quantitative analysis might provide further insight in the cityports in the city-regions. This quantitative analysis is based on Bertolini's node-place model (Bertolini 2000, 2005), which provides the infrastructure and urban dimensions of the cityport. The infrastructure dimension is expressed by node value (number of connections and directions of transportation). The urban dimension is expressed by the place value (number of inhabitants and jobs) in the cityports. The economic dimension of the cityports -was not included in Bertolini's model. However, in this dissertation, it is considered as a quintessential element of the cityport model, as it generates activities at the cityports. In addition to Bertolini's model, economic productivity indicators therefore express the economic dimension of cityports.

The overview of cityports in the city-region allows question 1c to be answered. This question addresses the spatial and economic position of the airport as a cityport in the city-region. The economic performance and urban development, as well as infrastructure connection of the airport in the context of other types of cityports is provided. Additionally, it is beneficial to compare the spatial-economic position of the peculiar type of cityports between different city-regions, rather than considering the airport as a cityport in one city-region.

2. What is the institutional position of the airport as a cityport in the city-region?
2a. *Who are the strategic actors for the formation of spatial development coalitions in airport areas as cityports in the city-region (chapter 6)?*
2b. *Which socio-cultural, financial, economic, governance, and legal institutions determine the playing field for the actors involved (chapter 5-9)?*
2c. *If so, where do inefficient institutions, path-dependent behaviour, and institutional lock-ins create obstacles in the spatial-economic development of airports as cityports (chapter 5-9)?*

The second part of the book includes the institutional dynamics of airports as cityports in the city-region. Research question 2 discusses the institutional position; it answers the question how actors, given their institutional contexts, create developing coalitions for the airports as cityports, and thereby contribute to the competitiveness of the city-region. A wide variety of actors are involved in this process of area development. For a further actor-oriented institutional analysis, introduced in chapter 5, we need to frame the actors first (Scharpf 1997). Strategic actors are framed by their instruments, power and positions in the institutional arena or playing field. This dissertation distinguishes between national, regional and local governments, asset managers, project developers and real estate investors, end users, and advisory actors with and without a relevant interest. There is a struggle for power and a conflict of interest between these actors. Furthermore, their interests in the development coalitions overlap. The way in which the involved actors think and act is analysed by interviews in chapters 6 to 9.

This thinking and acting on how to develop the city-region, the position of cityports and in particular the development of airport areas takes place within the given institutional contexts, which needs further analysis. As discussed in section 1.2, institutional analysis includes both formal and informal institutions. Rules of the political-bureaucratic, economic and policy regimes can be found on the first level, where institutions are mainly modes of organisation. On the second level and deeper rooted, are established values and norms. These informal institutions are expressed by the way of thinking of actors, in common practises and value systems. Both levels of institutional analysis will be applied to five distinguished groups of institutions: economic, financial, governance, legal and social-cultural institutions. The analysis of various groups of institutions and institutional arrangements of question 2b provide direct insight in the problematic areas of the institutional arrangements, and will therefore be discussed jointly.

3. If necessary, which institutional changes are required to adjust to the changed spatial-economic realities (chapter 10)?
3a. *What institutional learning takes place within the case studies?*
3b. *What institutional learning experiences can be projected between the case studies?*

Insight in the institutional frameworks of question 2, leads to the question where institutional change is required to respond to the changed spatial-economic realities. Dijkink *et.al.* (1991) consider this institutional reflection as the third level of institutions. The central issue of debate is in which manner and to what extent institutions are reproduced or adjusted. It provides insight into the learning capacity of the institutional arrangements in the city-region.

Hassink and Lagendijk (2001) introduced institutional learning into economic geography. They distinguish learning within the region (intraregional learning) from learning between regions (interregional learning). Both ways of institutional learning can contribute to the

institutional and economic competitiveness of the city-regions. The importance of interregional institutional learning increases in a more and more connected world of city-regions, in which every region develops its own set of institutional arrangements. Therefore, intraregional learning remains important. Foreign examples of institutional learning can contribute to reflection on the own institutional problems and enhance the self-correcting ability of institutional systems. Furthermore, they can also introduce alternative models for the current institutional arrangements. The distinction between learning within the city-region and learning between city-regions will also be applied in answering the third research question.

The frame of analysis in Figure 1.1 illustrates schematically how the research questions and sub-questions will be answered.

Part 1 (chapters 2, 3 and 4) of this thesis discusses the spatial-economic position and refers to research question 1. Part 2 (chapters 5-9) includes the institutional analysis. Firstly, chapter 5 is a theoretical introduction of actor-oriented institutional analysis. Then, chapters 6-9 address research question 2 empirically. Research question 3 is combined with the conclusions for the spatial-economic and institutional parts (I and II) that are drawn in chapter 10.

1.4 Methodology and case study selection

The most important tools for analysis of the problem statement are quantitative and qualitative case study research. This research consists of two parts: spatial-economic analysis and institutional

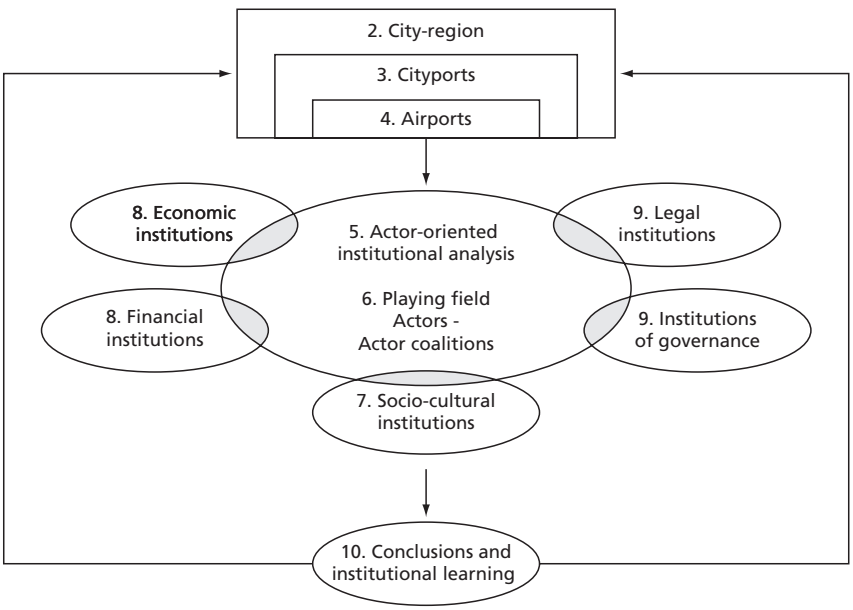

Figure 1.1 Frame of analysis

analysis. The first part of this book is mainly based on data collection, additional interviews and further categorization to establish a spatial-economic picture of the airport as a cityport in the city-region. Indicators of economic development, urbanisation, mobility and tendencies on the real estate market are included in this first part in a benchmark analysis. However, as quantitative sources offer only a limited perspective on current spatial-economic trends, additional interviews were held to discuss these issues.

Qualitative research is particularly useful when phenomena are difficult to separate from their surroundings, or when in-depth understanding is required, or, finally, when research has an explorative nature. The second part of this dissertation is qualitative research based both on document analysis and on open, in-depth interviews with the involved actors. These interviews provide useful and up-to-date information on actors and institutions that cannot be gathered by document analysis or data collection. Furthermore, the interviews function as a check on the picture raised by the benchmark's data collection.

At the start of the research period, interest in mixed land use and cityport development resulted as well as airport development resulted in co-written publications (resp. Majoor, Uffen and Van Wijk 2001; Majoor, De Munck and Van Wijk 2001). In order improve skills in institutional analysis and explore spatial economic developments in the region, pilot case studies are conducted in Amsterdam-Zuidoost (Van Wijk 2003) and Amsterdam-Zuidas (Rotimex and Kolpron 2001), specific kinds of cityport that, with Schiphol, join the Northern Wing of the Randstad. Then, research in each of the case studies led to detailed case study reports (Van Wijk 2004, 2005a, 2005b) resulting in conference papers open to local feed-back (Majoor and Van Wijk 2002, Van Wijk 2003a, 2005).

While case study research offers the possibility of connecting different sources (documents, interviews and data) for analysis, this type of research also tends to set each case apart. The so-called *n-problem* is the result of too many variables for a too limited number of cases. The n-problem thus makes it difficult to draw general conclusions for the research. Scharpf argues that increasing the number of case studies is not the solution to this problem, because of the regional specific characteristics that are involved (Scharpf 2000). It is therefore essential to find a way of dealing with the complexity of the causal constellations that lie underneath. Focussing on a limited number of variables while other variables are constant can do this. Scharpf's approach in *Crisis and Choice in European Social Democracy* (1991) is pragmatic, where four countries are faced with the similar type of problem in the same era, but with a different approach: diverse responses to common challenges.

The line of reasoning of 'diverse responses to common challenges' is continued in this book. The challenges are common for the case studies: airports all over the world show a rapid pattern of development due to increased international networks and to changing travel behaviour. The airport is, when considered in relation to other cityports, one of the gateways to the city-region. While the challenges for airports as cityports is similar for the airports, the results of airport development and the degree of spin-off for the wider airport region vary. The differences in results are related to the diverse responses the strategic actors' institutional arrangements in the city-region employ to make use of the airport area potential and of new economic realities. This diverse response in developing the airport as a cityport thus contributes to a certain extent to the competitiveness of the entire city-region in the end.

The chosen cases are studied on two levels of analysis: the regional and the local level. A numerous amount of recent studies shows that the awareness is growing that the regional level is the level where socio-economic patterns and institutional problems are predominant (Scott *ed.* 2001, Simmonds and Hack *eds.* 2000). Especially large-scale projects such as airports cannot be considered in isolation from the regional context. On the other hand insight on the local development and local institutional problems of the airport itself is also considered quintessential in order to frame other stakeholders interests that are not represented on the local level. They include amongst others airport authorities as end users, real estate developers and asset managers.

As there is not much time to conduct both spatial-economic and institutional analysis, this book focuses on three case studies of city-regions and their international airports. The criteria set for the selecting case studies are that the cases share the following characteristics:

1. OECD-economies with (in particular) economic dynamics in the city-region that attracts urban development;
2. Polycentric city-regions, with a variety of cityports;
3. Large and international airports;
4. A variety in coordinated market economy responses to these common challenges

Randstad-Schiphol, Frankfurt Rhein-Main and Tokyo-Haneda/Narita fit into these selection criteria.[5] The first case study is Amsterdam Airport Schiphol (AMS) in the Randstad city-region, in the western part of the Netherlands. This case is worth further study for a variety of reasons. Firstly, the Randstad aims to develop into an integrated city-region (Deltametropolis), despite the higher speed of development of the North Wing of the Randstad (Amsterdam, Almere, Utrecht) compared to the South Wing of the Randstad (Rotterdam and Den Haag). In addition, Schiphol airport is as the single large international airport seen as one of the key-drivers of the national economy (mainport) that shows a rapid economic development and spin-off in the 1980s and 1990s. Schiphol is located in the geographical heart of the polycentric Randstad city-region between Amsterdam, Rotterdam, Den Haag and Utrecht.

The second selected case study is Frankfurt International Airport (FRA) in the Frankfurt Rhein-Main city-region in central Germany. Its two major rivers Rhein and Main identify the region that includes Frankfurt International Airport. Despite its name, the region is polycentric, and has the airport in the geographical heart of the region. Frankfurt, Wiesbaden, Mainz, Darmstadt and Offenbach am Main are the major cities in this region. Since the Second World War, Frankfurt Rhein-Main is one of the most dynamic economic regions of Germany. Frankfurt's airport is Germany's largest international hub. It competes and cooperates with the new international airport of München, which is Germany's second largest airport. Although there are similarities in culture and economy between Germany and the Netherlands, the response to the common challenges in federal Frankfurt Rhein-main is quintessentially different from the Netherlands' unitary state model.

The third selected case study is Tokyo Metropolitan Area, which contains Asia's largest airport Haneda and Japan's largest international airport at Narita. Due to its rapid economic development in the post-war times, Tokyo has developed in a polycentric way, with urban concentrations near major railway stations. Tokyo International Airport at Haneda (HND) is

located in the Bay of Tokyo on the border of Tokyo prefecture, near Kawasaki and Yokohama in Kanagawa prefecture. Narita International Airport (NRT) is located in the east of the city-region in the city of Narita, Chiba prefecture. The fourth prefecture that is part of the Tokyo Metropolitan Area is Saitama, north of Tokyo. The difference between Tokyo Metropolitan Area and the European cases is not so much related to the actual difference in spatial scale for the common challenge, but is found in the unique Japanese institutional model. This model is however still a model of coordinated market economies, and it is worth further study (Hall and Soskice 2001). Because this model is also involved elsewhere in Japan, it is also rewarding to take a look at recently constructed airports in the Bays of Osaka (Kansai International Airport, KIX) and Nagoya (Chubu International Airports, CIA), which provides insight in the institutional change and learning process (cf. Van Wijk 2006, 2006a).

1.5 Randstad, Frankfurt Rhein-Main, and Tokyo Metropolitan Area

The considerations for the case study selection have been discussed before. Here, the case studies will be introduced in brief. The economic and urban development will be discussed in detail in the following chapters 2 and 3.

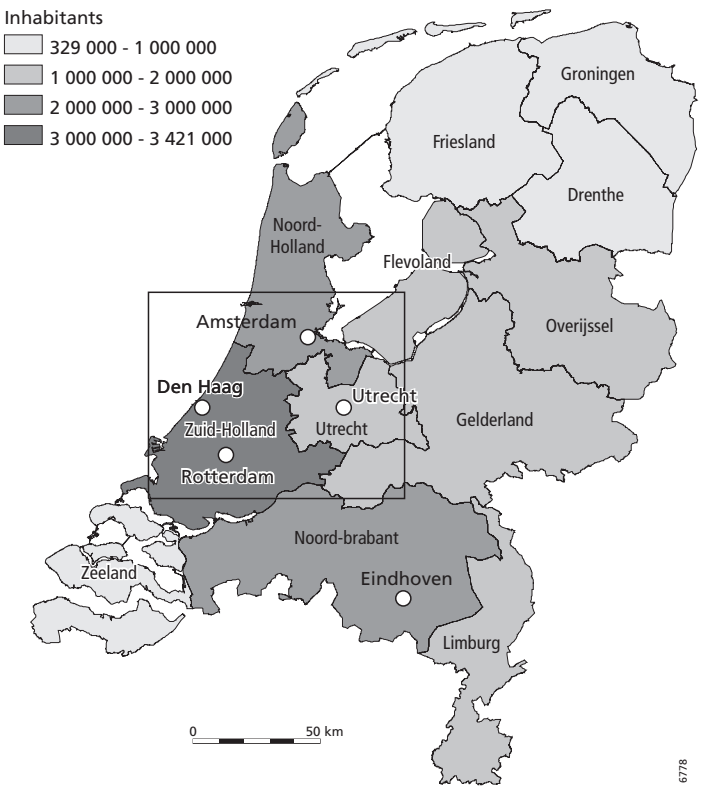

Figure 1.2 Inhabitants of Netherlands' provinces and location of Randstad (2003)

Randstad

The Randstad, literally meaning edge city, is a ring of medium-sized towns and cities in the western part of the Netherlands. Over 6.5 million inhabitants on circa 9.500 square kilometres inhabit this city-region, and it is located in the delta of Rhine and Meuse rivers (Figure 1.2). The city-region has a poly-nuclear urban morphology surrounding the inner Green Heart area (Figure 1.3). This poly-nuclear structure dates back from times when parts of the Randstad area was due its location under sea level affected by regular floods, and became dry soil after waterworks were development.

The Randstad city-region covers the provinces of Zuid-Holland and Utrecht as well as the southern parts of the provinces Noord-Holland and Flevoland. The main cities are Amsterdam (735.000 inhabitants in 2003), Rotterdam (600.000), The Hague (365.000) and Utrecht (245.000). These major four are surrounded both by medium-sized towns and villages such as the recent growth centres Almere and Amersfoort, as well as by the older merchant towns of Leiden, Delft and Haarlem (see Figure 1.3).

These cities developed rapidly in the 17th century Golden Age together with the main four cities. Amsterdam airport Schiphol and the harbour of Rotterdam are referred to as cores of national economic development. Utrecht, a city of national importance, is strategically located in the geographical centre of the Netherlands. Utrecht was, in contrast to the other cities, as one of the first cities founded in the Roman era. The Hague is the residence of the national government, while Amsterdam is the capital of the Netherlands. Finally, the regions Leiden-Bollenstreek, Aalsmeer and Delft-Westland are clusters of flower trade and horticulture.

The Netherlands, in particular the Randstad and the corridors towards Germany and Belgium in Brabant and Gelderland, enjoyed an economic booming period in the 1990s, after the

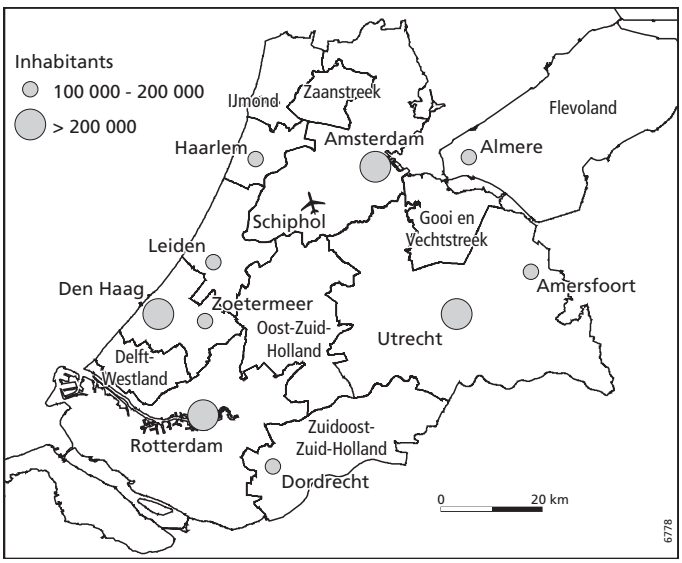

Figure 1.3 Airport and major cities in the Randstad

economic problems in the 1970s and 1980s. The economic growth period resulted in a fast further urbanization and network formation of the Randstad area, as can be seen in Figure 1.2. This development makes it increasingly difficult to set the Randstad city-region apart from the surrounding urban fabric. At the turn of century, economic growth slowed down and a sudden economic recession occurred.

Frankfurt Rhein-Main

Frankfurt am Main is located in the geographical and economical heart of Germany. It is, after the major four metropoles Berlin, München, Hamburg and Köln the fifth largest city in Germany with its population of 641.000 in 2001 (Figure 1.4). Frankfurt is located in the densely populated southern part of the state Hessen in the region bordering the states Rheinland-Pfalz and Bayern. Frankfurt Rhein-Main refers to the crossroads of the river Main flowing into the river Rhine, in German tradition giving the region her name. A second important geographical characteristic is the presence of the Taunus Mountains in the northwestern side of the region.

Frankfurt Rhein-Main resembles the Randstad best in terms of polycentric structure (see Figure 1.5), population (5.3 million), surface (13.400 square kilometre) and economy. Frankfurt am Main was founded even before the Roman Empire and had the status of duchy, *Reichsstadt*, in the German empire and later became independent *Reichsfreie Stadt*. The traditional merchant city

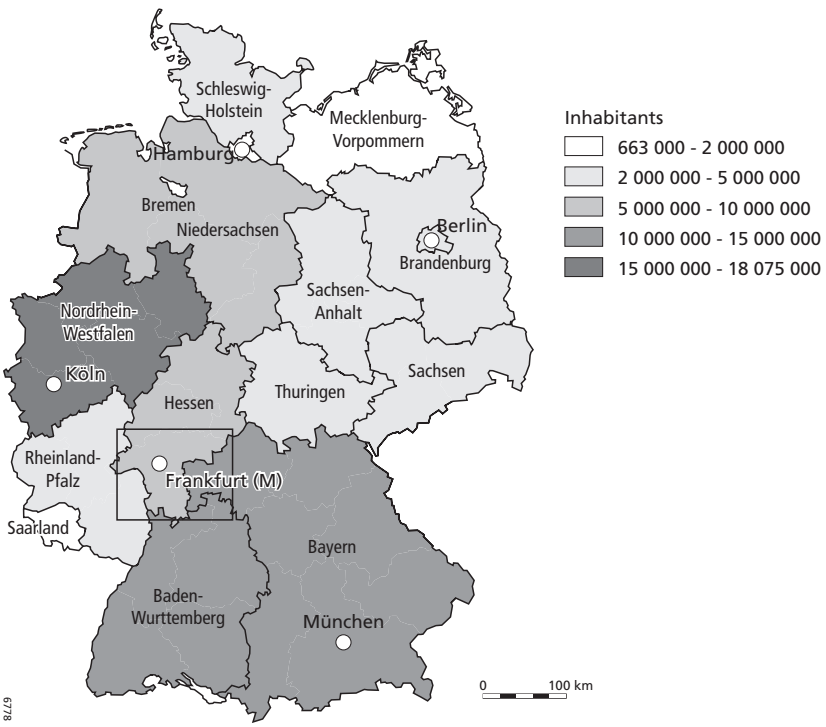

Figure 1.4 Inhabitants of Germany's states and location of Frankfurt Rhein-Main (2001)

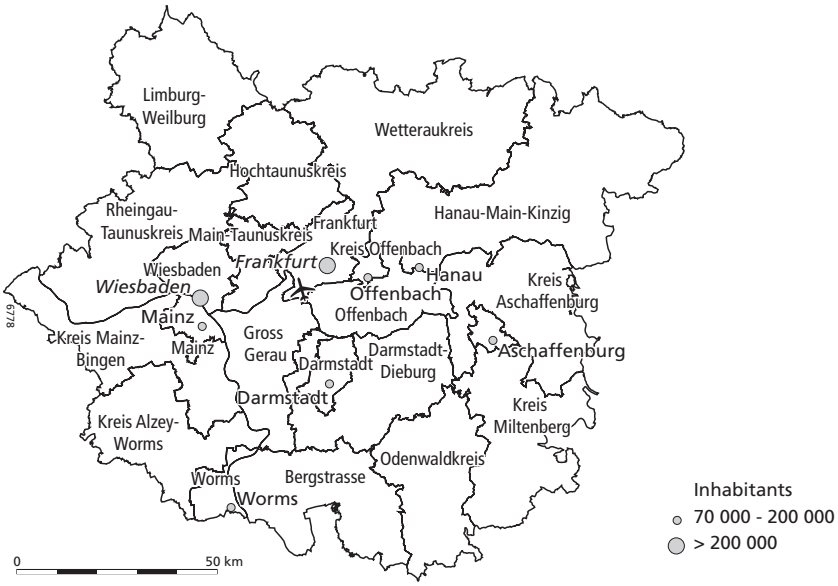

Figure 1.5 Airport and major cities in Frankfurt Rhein-Main

Frankfurt is strategically located at the Main river (Wiesbaden, Mainz, Frankfurt), a tributary river of the Rhine.

Frankfurt is the main centre of Rhein-Main in geography, population and economy (banking, trading and airport). It is surrounded by Hessen state capital Wiesbaden (271.000 inhabitants), regional administrative capital and science city Darmstadt (138.000), manufacturing city Offenbach am Main (118.000) and Hanau. Though the borders of the region are subject of debate, the common spatial-economic unit includes the parts of other German states: media city Mainz (185.000) and Worms (81.000) in Rheinland-Pfalz, and fashion manufacturing in Aschaffenburg in Bayern (70.000). The cities are interrelated and connected to the smaller *Kreisen*, the counties of towns and villages.

Tokyo Metropolitan Area

Japan's urban areas of Kanto (including Tokyo), Kansai (Osaka, Kobe) and Chubu (Nagoya) are concentrated in central Japan on the largest island Honshu (Figure 1.6). Tokyo was founded in 1457 as the village Edo, but started to grow only from the 17th century onwards, when the military 'Shogun' Tokugawa came in power and created the foundations of the modern Japanese society. Since the era of the Meji restoration (1868-1912), Edo is called 'Eastern Capital' or Tokyo in Japanese, and it has grown rapidly and constantly, becoming the world's largest metropolitan area (Sorensen 2002).

The Kanto-area of 41,6 million Japanese is defined as National Capital Region, a cooperation of public authorities that was set up to deal with the problems of concentration in the Tokyo region. It includes Kanagawa, Chiba, Saitama, Tokyo, Ibaraki, Yamanashi, Gunma, and Tochigi.

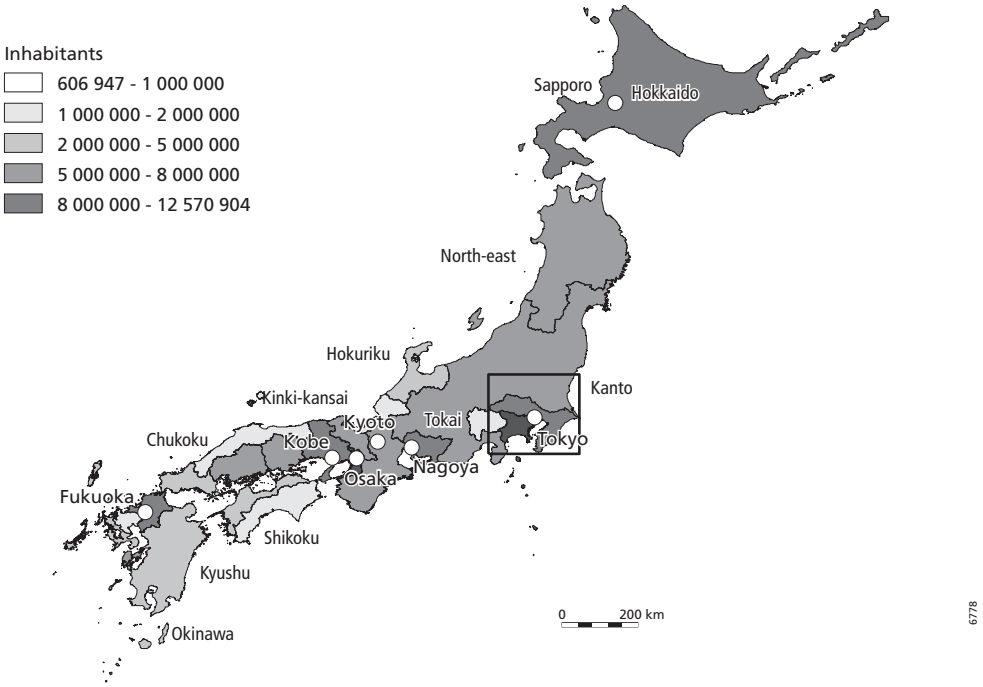

Figure 1.6 Inhabitants of Japan's prefectures and location of Tokyo Metropolitan Area (2005)[6]

Figure 1.7 Airports and major cities in Tokyo Metropolitan Area

The most central prefectures are Kanagawa, Saitama, Chiba and Tokyo, and they are referred to as the Greater Tokyo Metropolitan Area (TMA, Figure 1.7). This area contains 33 million inhabitants, over one quarter of the total population of Japan. The main cities in manufacturing and R&D-based prefecture Kanagawa are Yokohama (3.2 million inhabitants) and Kawasaki (1.3 million). Other major cities are Chiba (1 million) in Chiba prefecture dominant focus is on logistics and agriculture. Saitama City is the merger of Urawa and Omiya in Saitama prefecture, with over one million inhabitants. The headquarters of financial, business and service sector and the political-bureaucratic complex are concentrated in the dominant city of Tokyo (12 million).

With a size of 13.550 square kilometres, Tokyo Metropolitan Area is larger than Frankfurt Rhein-Main and Randstad, but in particular more densely populated and urbanised. The urban field of 33 million inhabitants forces to multiple regional centres and these are the reasons why Tokyo cannot be seen as a mono-centric urban area called 'Tokyo', Rather, the case of Tokyo must be approached on multiple levels of spatial scales. The Tokyo Metropolitan Government is the governmental body for the ward area (*ku*), Tama district area (*shi*), countryside villages (*gun*), and the islands (*shima*).

Notes

1 See for a detailed discussion on globalisation of city-regions: Sassen (1991), Castells (2000), Storper (1997), and Scott (2001).

2 The notion of the role as a port, place and node is drawn from Hartwing (2000); see chapter 4.

3 'Institutions' and 'rules of the game' that set the size of the actor's playing field are based on this definition in the remainder of the book. They are used interchangeably.

4 This research is therefore part of the Habiforum research program 'institutional conditions for optimal land use', with the focus on regional economic development, which completes other PhD studies on institutional conditions for land use in large urban projects, infrastructure and environment (Salet and De Jong 2000).

5 The names Amsterdam Airport Schiphol and Schiphol, Frankfurt am Main and Frankfurt, Tokyo and Tokyo Metropolitan Area will be used interchangeably in this book, except for the cases when the different context or meaning is made clear. Furthermore, the names Frankfurt, Narita and Haneda in combination Schiphol refer to the airports of respectively Frankfurt International Airport (FRA), Narita International Airport (NRT), and Tokyo International Airport at Haneda (HND).

6 Note that the number of inhabitants in Hokkaido is traditionally misleading as the northern island is only one prefecture out of 47.