

Rosenfeld, Martin T. W.; Hinz, Jana

### Book Part

Coordination between municipalities and local Non-Municipal Public Units (NMPUs) for supporting urban economic development: Theoretical analysis and empirical evidence for the example of universities in Germany

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*Martin T. W. Rosenfeld, Jana Hinz*

**Coordination between Municipalities and Local Non-Municipal Public Units (NMPUs) for Supporting Urban Economic Development – Theoretical Analysis and Empirical Evidence for the Example of Universities in Germany**

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Martin T. W. Rosenfeld, Jana Hinz

# Coordination between Municipalities and Local Non-Municipal Public Units (NMPUs) for Supporting Urban Economic Development – Theoretical Analysis and Empirical Evidence for the Example of Universities in Germany

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## Abstract

In many European cities, policymakers are trying to change the local paths of economic development to head in new directions, e. g. by trying to become a location for Non-Municipal Public Units (NMPUs), like federal special agencies, state museums, military bases, universities or publicly funded research institutes. But as the competencies for such local NMPUs are allocated to higher levels of government, the municipal level has no direct formal institutional responsibilities for influencing their location. Once a NMPU has chosen a certain location, support from the municipality may, however, stabilize the NMPU. There

are some categories of NMPUs that should have considerable interest in local conditions, as determined by the municipal level. This paper first theoretically categorizes NMPUs with regard to their importance for the urban economy, with regard to the importance of local conditions for the performance of NMPUs and with regard to their degree of fiscal autonomy. It is shown that universities are one example of NMPUs where the relevance of coordinating activities with the municipalities is fairly high. The benefits of universities for local economic development have often been discussed. From the point of view of universities, their capacity to attract human capital depends on factors which may be influenced by the municipalities. This means that there is a reciprocal relationship between municipalities and universities; coordination by cooperation between the partners could be useful for both – but in practice there is often a lack of cooperation. Information policy is one relevant field for coordination: the city should highlight publicly the advantages of local universities; the universities should highlight the advantages of their city. As information policy is a field for which empirical data is available, the empirical part of the paper presents results from an analysis based on the internet presentations of selected cities and universities. It is shown that in most cities the level of coordination in this field is so far quite low. One possible way to achieve a higher degree of coordination could be to introduce fiscal incentives for cities.

### **Keywords**

Urban economic growth – coordination of public activities – intergovernmental relations – public research units – universities

## **Koordination zwischen Städten und Nicht-Kommunalen Öffentlichen Einrichtungen (NKOE) als Strategie der Stadtentwicklung – Theoretische Analyse und empirische Befunde am Beispiel ausgewählter Universitäten und Universitätsstädte**

### **Kurzfassung**

In zahlreichen europäischen Städten gibt es Versuche, der lokalen Wirtschaftsentwicklung eine neue Richtung zu geben, u. a. durch die Ansiedlung von Nicht-Kommunalen Öffentlichen Einrichtungen (NKOE), z. B. Bundesagenturen, Gerichte, Rechnungshöfe, Landesmuseen oder Universitäten. Allerdings liegen die Kompetenzen für solche NKOE nicht bei den Kommunen, sondern zumeist bei den höheren staatlichen Ebenen. Deshalb haben die Kommunen keinen unmittelbaren Einfluss auf die Ansiedlung von NKOE. Sobald aber eine entsprechende Entscheidung gefallen ist, können die Kommunen die weitere Entwicklung von NKOE begünstigen. Im Beitrag wird zunächst eine Kategorisierung von NKOE durchgeführt, und zwar sowohl gemäß der Bedeutung von NKOE für die lokale Wirtschaftsentwicklung als auch hinsichtlich des Einflusses lokaler Maßnahmen auf die Leistungsfähigkeit von NKOE. Es wird gezeigt, dass Universitäten zu jener Kategorie von NKOE zählen, für die eine Koordination der eigenen Aktivitäten mit jenen der Kommunen besonders wichtig sein dürfte. Die Effekte von Universitäten für die lokale Wirtschaftsentwicklung wurden bereits vielfach diskutiert. Die Fähigkeit der Universitäten, das für ihre Effektivität erforderliche Humankapital zu attrahieren, hängt von verschiedenen lokalen Faktoren ab. Folglich gibt es eine reziproke Beziehung zwischen Kommunen und Universitäten. Eine Koordinierung der jeweiligen Aktivitäten wäre deshalb für beide Seiten von Vorteil. Dies gilt z. B. für den Bereich der Informationspolitik. Eine Kommune sollte nach innen wie nach außen die Vorzüge der örtlichen Universitäten kommunizieren; umgekehrt sollte auch eine Universität die Stärken des lokalen Umfelds deutlich machen. Da

für den Bereich der Informationspolitik empirische Daten leicht zugänglich sind, konzentriert sich der empirische Teil des Beitrags auf eine empirische Untersuchung der Internetpräsentationen ausgewählter Städte und Universitäten. Es zeigt sich, dass in den meisten betrachteten Städten die Koordinierung zwischen Kommunen und Universitäten zu wünschen übrig lässt. Eine Verbesserung dieser Situation ließe sich z. B. durch die Einführung finanzieller Anreizmechanismen erreichen.

## Schlüsselwörter

Lokale Wirtschaftsentwicklung – Koordination öffentlicher Aktivitäten – Föderalismus und Finanzausgleich – öffentliche Forschungseinrichtungen – Universitäten

## 1 Introduction

In many European cities, globalization and the increase of interregional competition have resulted in a collapse of old traditional industries and severe economic development problems. Policymakers in these cities are trying to change their paths of economic development in new directions. This could be done by supporting private companies from new or “modern” sectors of the economy (e. g. in Germany, the support of private activities in the field of renewable energies has become quite popular in recent years). Another new path of development for some cities is the option to become a location for non-municipal units from the public sector, e. g. federal special agencies (like e. g. in the city of Dessau-Roßlau: the Federal Office for the Environment, or in the city of Nuremberg: the Federal Office for Employment), infrastructure for connecting cities (like airports or train stations), state museums, military bases, universities or publicly funded research institutes.

With regard to supporting the investment and/or the research activities of already existing private companies, a municipality has access to different categories of instruments, like subsidies, measures for site development or the provision of local public “amenities” which may be attractive for the workers of the private companies. The same set of instruments may be used for the municipal support of private start ups. But as the major competencies for local non-municipal public units (NMPUs) are allocated to higher levels of government or to (national or regional) non-governmental organizations (“NGOs”, e. g. in Germany: charities like “*Diakonisches Werk*” or “*Caritas*”, political parties, trade unions and other special interest groups), the municipal level has no direct formal institutional responsibilities for influencing the location of NMPUs, although they often have a quite relevant impact on local development. The choice of location for a NMPU may not be influenced by the same instruments as those described above for the field of private companies; political considerations and bargaining processes are decisive for the choice. But if a NMPU has once chosen a certain location, support from the municipality may stabilize the NMPU (and, consequently, also the given choice of location). This means that – focusing on the NMPU – a NMPU also profits from its municipality (from a certain supply with goods and services). But, in general, it seems that the municipalities benefit more from a NMPU than the NMPU profits from municipal services or from the municipality as a whole; therefore, the municipalities are probably more interested in attracting new NMPUs and in supporting “their” already existing NMPUs than the NMPUs are interested in supporting “their” municipality. An additional problem derives from the fact that local NMPUs have often just a small degree of autonomy; decisions about the provision and production of their goods and services (and e. g. about the number of employees) are determined at the higher levels of government, by governing units which are located in other

cities – in general, in the state or national capitals. This also implies that the coordination of activities between cities and NMPUs may sometimes not be undertaken on a horizontal level – directly between the city and a NMPU which is located within the city – but rather in a vertical direction, between the city and the branch of the state or federal government or the NGO which has the main formal responsibilities for steering the local NMPU.

As municipalities have in general a certain degree of autonomy, coordination between them and their local NMPUs may usually only be achieved by cooperation. Neither the higher levels of government nor the NMPUs themselves may influence the municipalities to coordinate all their activities with the NMPUs. This is even more true for the municipalities. If they want to increase coordination with their local NMPUs they have to install some kind of cooperative relations with them.

There are some categories of NMPU which should – at least from a theoretical point of view – be rather interested in local conditions, as determined by the municipal level. One relevant category is universities (as a sub-category of Public Research Units [PRUs], which also include special public research institutes, located outside the universities). The benefits for cities from universities, resulting from the relevance of universities for local economic development, are quite obvious and have often been discussed (Bauer 1997; Rosenfeld/Franz/Roth 2005; Fritsch/ et al. 2007; Stötzer/Krähmer 2007).

Following modern economic theories – especially New Growth Theory –, the stimulation of innovations and entrepreneurship has become one major focus of modern municipal development strategies<sup>1</sup>. Public research units, especially universities, play a rather relevant role for local innovation systems and may also influence the “image” of a city. In addition, universities also have an important short term impact on local employment and income, as people earn their money by being employees of universities, and as students from other cities and regions spend their income where their university is situated. Therefore, local politicians want to support the location of universities and their growth within their city. If we look at the other side of the coin, from the point of view of universities themselves it is necessary to attract mobile human capital (teachers, researchers, other staff members, students) as their major factor of production. But the capacity of a university to attract human capital not only depends on the quality of their research and teaching, but also on factors which may be influenced by the municipalities (for details see below, section 2.2.). To sum up, there is a reciprocal relationship between municipalities and universities; coordination of activities between the partners could be useful for both – but in practice there is often a lack of coordination due to the given allocation of competencies. Cities often do not care very much about their universities (or other NMPUs), as they are not formally responsible for them, and often their decision-makers have the impression that this infrastructure (the universities and other NMPUs) is quite stable and will last more or less forever – so that municipal support for universities (or other NMPUs) is not necessary.

This paper aims to shed more light on the conditions for and benefits of coordination of activities between municipalities and local NMPUs, and presents empirical evidence for a selected field of coordination. The paper is organized as follows. The second part theoretically categorizes NMPUs with regard to their importance for the urban economy, with regard to the importance of local conditions for the performance of NMPUs and with regard to their degree of fiscal autonomy. The result is a kind of taxonomy of NMPUs, according to their relevance for coordinating their activities with their municipalities. It is shown that universities are an example of a NMPU for which such activity coordination is of considerable relevance. Therefore, in the third part of the paper, we look explicitly at

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<sup>1</sup> For the basic ideas of the New Growth Theory see Grossman/Helpman 1991.

possible fields of coordination between cities and universities. Which instruments could generally be used by the local level for supporting universities, and what could universities do to support their city? It will be shown that information policy is one rather relevant field for coordinating the activities of cities and universities: the city should publicly highlight the advantages of local universities; the universities should highlight the advantages of their city. As information policy is a field for which empirical data is available, the fourth part of the paper presents results from an analysis based on the internet presentations of selected cities and their universities. The selection is (a.) a sample of cities which in the last decade have won the German annual national contest for the official title of “City of Science”, (b.) complemented by a sample of cities which have not won this title, but are of similar size and structure as the cities of the first sample. Finally, in the fifth part, in light of the empirical results we will draw some conclusions for local policymakers. Is the level of coordination of the activities of both sides sufficient, and if not, why is this the case and what could be done to achieve better coordination between cities and their universities? Finally: what could be the next steps of research?

## 2 Universities as Examples for NMPUs with a High Need to Coordinate their Activities with the Municipal Level of Government

### 2.1 What Determines the Relevance of NMPUs for Local Economic Development?

NMPUs are financed and governed by higher levels of government (states; federal level) or by non-governmental organizations (NGOs) which have their headquarters in a state or national capital, as the core benefits produced by NMPUs are regarded as public goods of a regional or national range. But apart from these core benefits, NMPUs also produce different categories of supplementary benefits which often have only a local range.

Which local advantages or disadvantages (supplementary benefits) may accrue if a NMPU is located in a certain city? This question may to a certain extent be answered in line with discussions in the literature on public infrastructure and especially PRUs, as a special category of NMPU (see e.g. Rosenfeld/Franz/Roth 2005). Public infrastructure may have *demand effects* and *supply effects*. In addition to this quite common general differentiation, NMPUs may also have a special or pure *centrality effect*<sup>2</sup>.

The demand effects include the direct employment effect of a NMPU and the multiplier effects of the employment effect, followed by positive effects on local taxes and additional employment effects, resulting from higher local public spending. As – in the case of Germany – Fiscal Equalization Schemes include the number of inhabitants as a weighting factor for determining the level of grants in aid for municipalities, employees (if they live at the place where they work) furthermore directly impact the fiscal situation of municipalities. An indirect employment effect is created by people who are visiting the city where a NMPU is situated in order to undertake transactions with this NMPU (the visitors create demand for hotel rooms, restaurants, retailing shops, museums and other attractions etc.). This effect is also followed by multiplier effects and the positive effects of increased expenditures of the local public sector. In addition to the direct employment effect (as determined by the number and the qualifications of employees), also the demand of NMPUs for other production factors is relevant for the demand effect as a whole.

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<sup>2</sup> A general overview on different categories of impacts from NMPUs on regional and urban development is given by Pepler 1977: 48-78. For the local impact of so-called “capital-city goods” see; Dascher 2000: 53-59.

The supply-side effects of NMPUs vary according to the public tasks or functions a NMPU has to fulfil. For example, a university produces supply effects in the sense of transfers of knowledge from the public to the private sector of the economy, where the absorptive capacity of a city determines whether these transfers lead to positive impulses for the city or are “exported” to other cities and regions (Rosenfeld/Franz/Roth 2005). As highly qualified employees from the NMPUs may also be employed by the local private sector, the NMPUs function as an employment reservoir for urban growth. Often, the employees from the NMPUs are highly likely to participate in local cultural and public policy issues; this means they may support the offer of cultural amenities (which may also be attractive location factors for people who work in the private sector) and the “political culture” and the “social capital” within the city in which they live. In addition, there may be positive effects for private businesses in need of special services for the private sector which are produced by a NMPU, because of the advantage of the NMPUs being easily accessible to local firms within a city. Also lobbyists may profit from the local accessibility of relevant NMPUs; and if the NMPUs within a city are relevant for lobbyists, this may lead them to concentrate in this city. More generally, NMPUs contribute to the amount of urbanization economies within a city.

A well-known supply effect of NMPUs is the positive impact on the image of a city where high-ranking NMPUs are located; this may lead to more tourists and to the attraction of private businesses in the long run. As far as a NMPU may itself decide on the spending of public money, one could assume that the unit’s decision-makers will often prefer the investment of money within the city where the NMPU is located.

The pure centrality effects result from the fact that, in general, the higher the centrality of a NMPU, the higher the qualification of its employees. This means that the effects which have been described as resulting from the employees of NMPUs vary with the degree of centrality of a NMPU. In addition, higher-ranking NMPUs have better access to information, which could also be a positive stimulus for the development of private activities within the city where the NMPUs are located. Higher-ranking NMPUs may decide on the resources of the NMPUs at the lower levels of their organization, this could lead to an increase of employment in the city where the more central unit is located, if the decision-makers have a tendency to decide in favour of “their” city.

Of course, one has also to take into account that there may be some negative impacts of NMPUs on local economic development. It is often assumed that cities which are dominated by the public sector are somewhat less dynamic than other cities, as people within such cities have become accustomed to living from public resources which are financed by people and businesses from other cities and regions. In addition, the location of NMPUs within a city may lead to increasing land prices (and higher rents for flats). If a NMPU occupies a large piece of land within a city, this may have negative effects on urban development; the same is true if a NMPU changes its location within a city, leaving behind vacant buildings in some quarters of the city. The location or dislocation of a NMPU within a city or from one city to another location may also change the local flows of traffic; this may lead to an increase in municipal expenditures, e. g. for restructuring or adjusting the public transport system.

To sum up, the main determinants for the magnitude of the (net) positive effects of NMPUs on local economic development are:

- the number and qualifications of employees of NMPUs,
- the demand of NMPUs for other production factors,
- the attraction of visitors from other regions by NMPUs,

- the relevance of the outputs of NMPUs for private businesses (e. g. PRUs produce innovations and graduates [= academic workers], both categories of outputs are today highly regarded as input factors for private businesses and as relevant factors of urban growth),
- the degree of centrality of NMPUs,
- the capacity of a NMPU (its “publicity value”) to shape the image of a city,
- the autonomy of NMPUs with regard to spending money, determining their own budgets and raising their own taxes or fees from the private sector,
- the structure of the local economy and the matching of this structure with the structure of NMPUs (Are the production factors which are used as inputs for NMPUs produced within the city in question? Are local businesses in need of inputs from or relations to certain categories of NMPU? What about the absorptive capacity of the local economy?),
- the existence of negative impacts of NMPUs.

Universities (as one relevant category of PRU) are examples of NMPUs with high potential for cooperation with municipalities, as they have the advantage that they not only employ a lot of highly qualified people, but also attract students from other cities and regions who bring their own private income with them (as students have to finance their costs of living on their own). The demand for other input factors by universities (e. g. cleaning and repairing services) is relatively low, apart from periods of large investments in new facilities or in new technical equipment. But universities attract academic scholars from other cities and countries and – as already mentioned above – are rather relevant for private businesses. In addition, even quite small universities like universities of applied sciences have a high degree of centrality, as there are, e. g., in Germany, just a few of them per state. And universities have – in comparison to other NMPUs – a high degree of autonomy, as with regard to funds from third parties, the universities or even a single researcher may alone determine how the money should be used. With regard to the state or federal funding of universities, their executive committees have a lot of leeway. To sum up, universities are a category of NMPU with rather high relevance for local economic growth processes (Grossman/Helpman 1991).

## 2.2 What Determines the Relevance of Local Conditions and Municipal Administrations for NMPUs?

To some extent, basic municipal services have a general relevance for all NMPUs. This is especially true of the accessibility of a NMPU for its employees and with regard to the general living conditions (including the prices for real estate) and urban amenities (for the workers) within a city. It is favourable for a NMPU if its employees live quite near to its location. Employees will then have a more stable relation to their NMPU, as compared to a situation where workers commute over longer distances, day after day. In addition, if a NMPU needs highly specialized employees, these employees as “members of the creative class” may have a tendency to choose a location with a high level of local amenities<sup>3</sup>. So if a city is not able to secure such amenities, this may have negative implications for the NMPU and its performance. Accessibility also includes the question of whether the city is ready to offer a NMPU a place within the city where the NMPU may find favourable con-

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<sup>3</sup> For the discussion on the importance of the „Creative Class“ for urban and regional development see Florida 2002.

ditions for its future growth and to which the visitors of the NMPU and its workers may have easy access. Especially for NMPUs with a high frequency of visitors, the accessibility of the city and the quarters where the NMPUs are located are of great relevance; these factors may be affected by measures taken by local politicians. A prominent location for a NMPU within a city has a high prestige value and will impress visitors more than a peripheral location; this may be relevant with regard to the customers of a NMPU, but also with regard to politicians and bureaucrats at higher levels of government who are responsible for governing and financing the NMPU.

Another relevant factor is the general attitude of a city and its politicians and officials towards NMPUs. The performance of a NMPU may be enhanced by the feeling of being highly valued, e.g. if representatives of the city are involved in events at the NMPU, act as members of the NMPU board, or if the city takes care to make the NMPU visible in the city (e.g. by signposting of NMPUs).

Quite relevant for all NMPUs is also the overall image of a city. If a city has a fairly negative image, this will have negative implications for the NMPUs, e.g. with regard to the supply of workers. In the long run, if the performance of a NMPU declines, then the negative image of the city could influence the governmental bodies responsible for the NMPU in question to close it or to change its location to another city.

NMPUs may also profit from other NMPUs which are located in the same city. For instance, a special research institute has advantages if it may employ students for part-time work who are enrolled at a nearby university. So if a municipality is willing to attract additional NMPUs, this could lead to better conditions for the already established NMPUs.

For some NMPUs, a certain structure of local private businesses might be important, e.g. with regard to cooperation in the field of research by PRUs or the possibility for internships for students. It has advantages if businesses in the city have a specialization which is quite similar to the specialization of PRU.<sup>4</sup> As graduates or academic workers of a PRU may want to become entrepreneurs, it would be good if the city supports this intention (and the future careers of the persons in question), e.g. with the help of business incubators.

In terms of the effects of municipal taxes or local budget subsidies for NMPUs or their workers, it is quite obvious that lower taxes and/or higher subsidies may stabilize the existence of a NMPU within a city.

Looking at the potential benefits for NMPUs from cities, universities are also quite good examples for NMPUs with high potentials for coordinating their activities with municipalities. Universities compete for high-skilled academic workers, for students and for external funding. Therefore, all the parameters which have been discussed above as possible features supporting the attraction of mobile factors (including resources or money from central or state government or from third parties) may be beneficial for the economic performance of universities.

In some cases, a NMPU cannot work without direct coordination with the city where the NMPU is located. This is, e.g., true for federally funded Agencies for Employment Exchange if the municipalities also have some responsibilities in the field of labour market policy or social welfare. In these cases, the degree of dependence between cities and NMPUs is extremely high.

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<sup>4</sup> See for this discussion on complementary structures of PRUs and cities and for possible ways to measure these complementarities: Rosenfeld/Franz/Haug et al. 2011: 152-157.

## 2.3 Hypotheses about the Degree of Coordination between Municipalities and NMPUs

As has been shown, both sides, the municipalities and the NMPUs, could often profit if they would coordinate their activities. It is quite obvious that, in general, the decision-makers of both sides have information about the reciprocal relationship between their activities in order to achieve their own objectives and / or the objectives of the other side.

But the hypothesis is that the level of activities by the municipalities (NMPUs) which could produce benefits for the NMPUs (municipalities) is sub-optimal, because there is no direct institutional mechanism for compensating the municipalities (NMPUs) for what they do in favour of the other party (or for punishing them for what they fail to do in favour of the other party). The benefits are “external benefits”, as (a.) NMPUs are financed and governed by higher levels of government (states; federal level) or by non-governmental organizations (NGOs) which may not be directly influenced by the municipalities, and as (b.) the municipalities are also in general independent of steering by the organizations behind the NMPUs. In addition, the benefits are mostly intangible, while activities intended to support the municipalities (the NMPUs) may be measured in exact monetary terms. In as far as the benefits for the municipalities (the NMPUs) really have the character of pecuniary benefits, the other party (the NMPU or the municipalities) does not participate in these benefits. All this leads to the conclusion that the decision-makers from both sides have little incentive to coordinate their activities with their potential partners.

Assuming a certain amount of coordination is desired at least by the municipalities, one additional important institutional aspect is the range of competencies of a NMPU. The more leeway a NMPU has for making its own decisions on provision of goods and services, as well as on the production process, the more it will be ready to react positively or negatively to certain activities by the municipalities. If a NMPU is more or less totally dependent on the decision-makers at the higher levels of government and/or in other cities, a city will have to interact with the branch of government (or the headquarters of a non-governmental organization) which has the main competencies for decisions concerning the NMPU. This may result in higher transaction costs than if the city could directly negotiate with the NMPU.

## 3 Specifying the Need for Coordinating the Activities between Cities and Universities (as an Example of NMPUs)

### 3.1 What should Municipalities do?

As just has been explained, universities are examples of NMPUs with a high potential for coordinating their activities with municipalities; cities may benefit to a much greater extent from their universities if they are willing to provide services which may support the performance of universities. Of course, the reciprocal support activities by cities and by universities may be regulated in some kind of formal agreement between both partners. But even without such a formal institutional setting, a city will profit considerably if it takes care to support its local universities. In the light of the considerations in Section 2.2, possible municipal strategies for supporting local universities could include:

- Real estate policy aiming to keep the land prices and residential rents as low as possible, which is of course in general favourable. In addition, and more concretely directed towards universities, real estate policy should ensure that there is a suitable place for local universities within the city as a whole.

- Social, education and cultural policy should create and finance a suitable level of urban amenities (for the employees of universities). Again, this is also a general condition for attracting highly qualified workers, not just employees for universities, although perhaps certain amenities are more relevant for employees of the universities than for workers in other local industries.
- Image policy is also a general strategy, not especially directed towards universities and the employees of the universities.
- Accessibility policy should ensure the city is accessible from the outside and that the local universities are accessible from places within the city, e.g. in the field of public transport with the introduction of special bus routes from student hostels to the university.
- Regulatory policy could try to simplify administrative processes, e.g. at the registration office for new inhabitants of the city.
- With regard to fiscal policy, taxes on universities and their inputs should be quite low, while subsidies could help to attract universities or mobile factors which are relevant for universities. A second residence tax could improve the fiscal condition of a city in the short run, but in the long run students and researchers could be deterred from locating in such a city as long as other cities have no such tax or lower tax rates. Subsidies, like a welcoming payment to students, lower fees / prices / rates for students using public transport or cultural amenities, may have positive effects, but only if they are not ubiquitous (if not every city has introduced such subsidies), as this may lead to a “race to the bottom” among the cities.
- Labour market policy may provide special help in the sense of employment exchange for students if they want to earn their living by working parallel to studying.
- Industrial policy could be directed to support cooperation between universities and private companies, e.g. with the help of business incubators (where start-ups may get some training) or by attracting private businesses that match the structure of local universities, or by helping to supply private firms with students for internships.
- Finally, the city's information policy could include: (a.) the installation of information signs to show visitors the way to a university; also, more generally, such signs make the local importance of universities visible for everybody; (b.) Information policy could also try to make the local universities and their achievements more visible and popular for students, academic workers, private businesses, the general public within the city and people from abroad; in addition, the city could provide students and academic workers with relevant information on its activities and offers in different fields of policy, as mentioned above; (c.) the accessibility of the city from outside; (d.) the accessibility of the universities from places within the city (and special local institutional settings for good accessibility); (e.) special offers and subsidies by the city for these groups; (f.) general cultural offers of the city in fields with special demands by the different groups; (g.) employment exchange for students and job opportunities in general; (h.) internships; (i.) support policy for start-ups; (j.) the structure and the growth potentials of the local private sector; (k.) relevant administrative processes, e.g. of the registration office. All this information could be given in the traditional way (printed on paper) or via the internet.

### 3.2 What should Universities do?

As universities profit from the support of the local authorities for their city and by the city as a potential for urbanization economies, it would be efficient if the universities supported their city with various categories of activities.

- As the city is interested in academic workers as residents, the universities could try to support their employees if they are willing to settle in their city, e. g. with advisory services on the local housing market.
- As universities are in some cases significant landowners within a city, they may to some extent influence the local price of land and – more importantly – the location of university buildings and facilities with their real estate policy. In many cases, university buildings from older times shape a city and its image. The refurbishment and the use of these buildings may make a relevant contribution to stabilizing local identity.
- Supporting start-ups, because a supply of new entrepreneurs is a relevant way to re-structure the local economy; in addition, this new structure may become equivalent to the structure of the local university landscape.
- Attracting national and international attention to a university and its city by organizing congresses and events.
- Universities could try to make use of marketing techniques to convince local politicians and the general public how relevant universities are for local development, in order to stimulate support from the city government for them.
- As the overall image of a city is important for attracting academic workers and students, the universities could try to make use of information policy to communicate a positive image of the city to people working at the university and to the outside world. Again, as has already been pointed out in the context of what a city could do, this information could be provided in the traditional way (printed on paper) or via the internet.

### 3.3 Why is Coordination between Cities and Universities so difficult?

As explained above, it would be profitable for both parties, for the city and for its universities, to coordinate their policies. Cities (universities) benefit from the activities of their universities (their cities). And cities (universities) may implement some activities which may lead to even higher benefits for them from their universities (from their cities). Although both partners are in general well informed about these interrelations, the general hypothesis of this paper – as has already been pointed out – is that cities and universities are somehow isolated from one another, that coordination only occurs in limited cases, which leads to under-investment in all activities, as described in Sections 3.1 and 3.2. This may be explained for the specific case of universities with the following arguments:

- The benefits of universities (cities) for cities (universities) have the character of external benefits which may not be measured in exact monetary values (intangible benefits), while the inputs of a city (university) for increasing the external benefits are relevant for the budget planning process and are in competition with all the other activities of a city (university). In addition, with regard to the calculation of the cities, it has to be emphasized that at the moment, in Germany, universities pay no local taxes, so that their “direct value” is not as visible as the “direct value” of a private business.

- The external benefits also exist to some extent without any activities being undertaken by the cities (universities) to support their partners. Therefore, it may be more comfortable for both parties to behave as “free riders”.

## 4 Empirical Results of an Inquiry for the Field of Universities, based on Data from the Internet

### 4.1 Description of the Sample of Cities and the Design of the Empirical Survey

As shown in the last section, a lot of different measures may be taken by cities and universities to improve the conditions for local universities or the development of the city, respectively, while the general hypothesis is that both sides will not be ready for intensive coordination.

Is this hypothesis right? In fact, at the moment, we do not know a lot about what cities on the one hand and universities on the other hand actually do, although – according to their public statements (their “stated preferences”) – each party is in general informed about the need to help the other party. This means that there is need for an empirical investigation. As investigations in all categories of possible activities of cities and universities would be rather costly, the decision was made to conduct a survey of the internet presentations of selected cities and universities. This serves as an initial approach to the empirical assessment of the performances of cities and universities with regard to coordinating their activities. The focus in the following is on the field of information policies, as described above, and the extent to which the internet presentations give the right impression of what cities and universities are doing in practice.

One could question whether the state of information policy and especially the state of internet distribution of information is an adequate measure for estimating the willingness of cities and universities to coordinate their activities. If a city wants to present to the outside world how excellent and relevant the local university is, perhaps a link from the city’s website to the university’s website could be sufficient. But this would only be the case if the university’s website offers students and other groups all relevant information on the local conditions for students (this could be a result of good coordination between both sides). If this is not the case, it would be good if the city could provide information on issues which are missing from the website of the university. In addition, if a city presents more general information about its university, this might be redundant but would in any case make clear that the city values its university and wants to make it visible to the outside world – this is at least a proxy for the city’s general willingness to support the university and to achieve some kind of coordination of activities. And if a university wants to attract students it has to spread information about the attractiveness of its city; this is again a proxy for the university’s willingness for coordination and cooperation.

Of course, it would have been the best solution to look, for this quite well-defined field, at all cities in Germany which are the locations of universities. However, this would again have been too costly. Therefore, for our survey we focused on cities which have been elected “German Cities of Science” in the last decade. Between 2004 and 2011 this title was awarded by the “*Stifterverband für die deutsche Wissenschaft*” – the objective of this organization is to stimulate research and creative activities in all sections of society in order to secure Germany’s future economic growth. To date, the following cities have been chosen as “German Cities of Science of the Year X”:

- 2005: Bremen/Bremerhaven
- 2006: Dresden
- 2007: Braunschweig
- 2008: Jena
- 2009: Oldenburg
- 2011: Mainz
- 2012: Lübeck

Our idea behind the focus on “German Cities of Science” was as follows. It could be expected that agents in these cities might have developed a higher sensibility to the need for coordination between cities and universities than agents in other cities. To ascertain whether this is really the case, we compared the “German Cities of Science” with a sample of other cities of similar size, structure and academic tradition. By leaving out Dresden and Lübeck<sup>5</sup>, we drew up the following “pairings” of cities:

- Braunschweig and Chemnitz, as in both cities there is a technical university and a long tradition of industrial production.
- Bremen and Halle: both cities have a long Hanseatic tradition, and both cities have experienced great structural changes.
- Jena and Heidelberg, as both cities are traditional and relatively small university cities, and are situated in regions with a good tradition of cooperation between PRUs and private businesses.
- Mainz and Magdeburg, as both cities are state capitals.
- Oldenburg and Regensburg, as in both cities the universities were newly developed in the 1970s, with the goal of improving regional economic development.

For our empirical investigation we used a set of criteria derived from the theoretical considerations discussed in Section 3 with regard to the question of which categories should be included in the information policies of both a city and local universities.

In the light of these considerations, the internet-information policy of a city should include the following categories of information:

- A special website with information for students, because students represent the main group of mobile factors which could be attracted by a city.
- Information on the current research results of the university, thus presenting the relevance of the university to the outside world and making the research more visible.
- Information on the unique selling points of the university.
- Information on the international visibility / importance of the university.
- Information on the location of the university on the city map, as students and academic visitors from abroad would probably like to know where they should go to find the university and the various faculties or research institutes.

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<sup>5</sup> Lübeck had the position as „German City of Science“ for only one year before we started our empirical investigations, so this position will have, up to the time of our investigation, not changed a lot in the attitudes of the city and the local university. In addition, Lübeck University is a very small one. With regard to Dresden, this city has some characteristics which are already represented by some other cities (state capital; technical university; economic success of the region); therefore, we decided not to include Dresden in our sample.

- Information on accommodation for students; for a student who is looking for a new place of residence and study, the question of accommodation is most important. If a city has a lot of vacant dwellings, this would be a good argument for students to choose this city. If a city is characterized by rather high rents for rooms, it would be good to show the students how they might be able to find a room at a reasonable price.
- Information on local public transport, as the choice of a residence should take into consideration how a student might travel from his/her home to the university.
- Information on special taxes and tariffs for students; a relevant tax for students is the "Second-Residence Tax" (*"Zweitwohnungsteuer"*), which is common in many German cities.<sup>6</sup>
- Information on job opportunities for students.
- Information on local amenities (with relevance for students).
- Information on local businesses with high relevance for research and/or on organizations for exchange of research ideas and results.
- Information available in English or other foreign languages.

With regard to the website of a local university, one could demand that the following categories of information should be available:

- Information on the city as a location for businesses and workers, as many students and academics looking for a new location are interested in a good climate for economic development and for the opportunity to get a job after graduation or a part-time job while studying. Also for academics, it is important to know whether their life partners might have good opportunities in the local labour market.
- Information on the city's amenities (leisure/child care)?
- Link to the website of the city?
- Information on joint projects (university plus city).

#### 4.2 Evaluation of the Information Policies of selected Cities and Universities

The results of our empirical investigations (with regard to the question: are the activities of cities and their universities in accordance with our normative approach?) are documented in the following Tables 1-3. These results could be interpreted as a verification of our general hypothesis: Cities (universities) in Germany are at the moment restricting their activities to support the development of universities (cities) to a rather low level. Table 1 is reporting on the range of information on university-specific facts which are presented on the websites of the selected cities, while Table 2 includes the evaluation of information on city-specific facts on the websites of the universities. The overall results for the ten cities and their universities are shown in Table 3.

With regard to the differences between the two samples, the hypothesis was that within cities which had been elected as "German Cities of Science", both partners would invest

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<sup>6</sup> Students whose main residence is where their parents live are faced with the obligation to pay the Second-Residence Tax in the city where their university is located. If a city does not have such a tax, one could expect that this city would use this fact as an argument for attracting students. The main rationale for cities to levy the Second-Residence Tax is to increase the number of their inhabitants (people with their first place of residence in a certain city).

Tab. 1: The Range of Information on University-Specific Facts on the Websites of Selected German Cities (below the criteria: weighting factors [7-3] with regard to the relevance of the criteria; if there is information, the respective weighting factor is inserted in the cell; if no information is given, a 0 is inserted in the cell).

City	Special website with information for students?	Information on current research results of the university?	Information on unique selling points of the university?	Information on international cooperations of the university?
	3	2	2	3
Braunschweig	0	2	0	0
Bremen	3	2	0	0
Jena	3	0	2	3
Mainz	0	0	0	0
Oldenburg	0	2	0	3
Chemnitz	3	0	0	0
Halle	3	0	0	3
Heidelberg	3	2	0	0
Magdeburg	3	2	0	0
Regensburg	0	0	0	0

more in cooperative activities than in the other cities. As Table 3 shows, this is not the case. “German Cities of Science” are even less active than the cities of the control sample; this is at least true of the municipalities. One could have expected that information policy would have quite a high priority in today’s era of information, and it is quite astonishing that this is probably not the case. A possible explanation is that the municipalities and the universities within “German Cities of Science” coordinate their activities in all other fields so well that they have no need to care about information policy, while cities from the control sample have to take more care of their information policy.

By looking at the differences between all the cities, the municipalities in the two cities with newly founded universities (Oldenburg and Regensburg) show a fairly low performance, but the results for the universities in these cities are quite good. A contrasting result is visible for the city of Bremen, also a city with a newly founded university. In Bremen, the performance of the municipality is very good, and the university in this city also shows a very high level of activities.

Table 1 (continued)

City	Information on the location of the university on the city map?	Direct information on residences for students?	Information on special tariffs for local public transport?	Information on special taxes ("Second-Residence Tax") for students?
	<i>1</i>	<i>3</i>	<i>2</i>	<i>3</i>
Braunschweig	1	0	0	0
Bremen	1	3	0	0
Jena	0	0	0	0
Mainz	0	0	0	0
Oldenburg	0	0	0	0
Chemnitz	0	0	2	0
Halle	1	0	0	0
Heidelberg	0	0	0	0
Magdeburg	0	3	2	3
Regensburg	0	0	0	0

Most of the cities in our two samples have some kind of economic development problems, apart from Mainz and Heidelberg. By looking at the cities from East Germany (problems following the transition from central planning to a market economy and from soviet-type central decision-making on local issues to local self-government and autonomy), it can be seen that the average for East German cities (municipalities) is more or less the same as the average for West Germany (the values are 13 for the East and 12 for the West). So the transition problems have probably no relevant influence in this case.

By looking at the ranks of the cities in Table 3, it becomes obvious that in those cities where the performance of the municipalities is high, the performance of the universities is comparatively low, and vice versa. One exception is Bremen, where both the municipality and the university show a good performance. With regard to the differences between the performances of cities and their universities, our hypothesis was that cities will be generally more interested in their universities than the universities in their cities. But as the examples of Oldenburg and Regensburg make clear, at least in some cases the universities are more inclined to present rich information on their cities than the municipalities are to provide information about their universities.

Table 1 (continued)

City	Information on job opportunities for students?	Information on local amenities with special relevance for students?		Information on local innovative businesses	Information available in English or other foreign languages?
		Uni-Sport	Child-care facilities		
	2	2	2	3	3
Braunschweig	2	0	0	3	3
Bremen	2	2	0	0	3
Jena	0	0	0	0	3
Mainz	0	0	0	0	3
Oldenburg	0	0	0	0	3
Chemnitz	0	0	0	3	3
Halle	0	0	0	3	3
Heidelberg	2	0	0	3	0
Magdeburg	2	2	0	0	0
Regensburg	0	0	0	0	0

Looking at the categories of information and at the cities reveals that while providing at least some special kind of information for students is relatively common, only very few cities seem to be proud of the specific advantages of their universities. Perhaps the municipal decision-makers are well informed about such advantages and may think that everyone in the world must have their level of information. Information, which could be needed by students to make a choice between different cities, is also quite rare. Why do East German cities characterized by quite low rents for flats not give more information on this situation?

Looking at the categories of information and at universities shows that in general universities give the public the impression that they live in a kind of vacuum – it seems as if the universities live in their own universe and have not yet accepted that local conditions and the existence of municipal goods and services could be important for their survival. It is probable that universities are too accustomed to having a regional monopoly without external competition and to being financed from the outside, without having the need to raise their own money.

Tab. 2: The Range of Information on City-Specific Facts on the Websites of Selected German Universities (below the criteria: weighting factors [1-3] with regard to the relevance of the criteria; if there is information the respective weighting factor is inserted in the cell; if no information is given, a 0 is inserted in the cell).

City	Information on local innovative businesses? <b>3</b>	Information on the city's amenities?		Link to the website of the city? <b>3</b>	Information on joint projects (university plus city)? <b>1</b>
		Culture <b>2</b>	Childcare facilities <b>2</b>		
Braunschweig	3	2	0	0	0
Bremen	3	2	2	3	0
Jena	0	2	0	3 (but link may only be found by chance!)	0
Mainz	0	2	2	3	0
Oldenburg	0	2	2	3 (but link may only be found by chance!)	0
Chemnitz	3	2	2	3	0
Halle	0	0	0	0	0
Heidelberg	3	0	0	3	0
Magdeburg	0	0	2	3	0
Regensburg	3	2	0	3 (but link may only be found by chance!)	0

Tab. 3: Aggregated Results for all Criteria, with Regard to Cities and Universities.

City	Results for the city's websites	Rank of the city within both samples	Results for the websites of the universities	Rank of the university within both samples
Braunschweig	11	2	5	3
Bremen	16	1	10	1
Jena	11	2	5	3
Mainz	3	4	7	2
Oldenburg	8	3	7	2
<i>Sum for the sample of "German Cities of Science"</i>	<i>49</i>		<i>34</i>	
Chemnitz	11	3	10	1
Halle	13	2	0	5
Heidelberg	10	4	6	3
Magdeburg	17	1	5	4
Regensburg	0	5	8	2
<i>Sum for the control sample</i>	<i>51</i>		<i>29</i>	

## 5 Conclusions

The empirical results for the field of selected German cities with universities have made clear that – as expected with our general hypothesis – both partners are at the moment not aware of the potentials of coordinating their activities. In addition – as we also expected – universities are less interested in trying to support their cities than vice versa.

What could be done to stimulate the interest of the municipal level in the development of local universities? One solution could be to assign part of the obligation to finance universities to the municipalities, as is the case in certain other areas of public activity. Another solution could be to introduce a local tax on universities (e.g. on the value added of the universities, or on the number of students). Such a tax could also lead to the universities being more interested in their cities, as the decision-makers of the universities might have an interest in addressing the question of what their cities are doing with the money they get from the universities.<sup>7</sup> More generally, a higher degree of competition between universities could encourage them to pay more attention to the development of their cities than is currently the case – this would not only benefit the cities, but also lead to better living and working conditions for students and for the academic staff of the universities.

Even more generally, with a look at other categories of NMPUs, we have to consider that most NMPUs are even less interested in local economic development than universities are. This means that the municipalities will perhaps have to support these NMPUs even more in order to benefit from them. Of course, another way to achieve a higher degree of coordination could be that the higher levels of government force their NMPUs to coordinate their activities with their municipalities. This could also be in the interest of the higher levels of government, as better local economic development would lead to benefits for the state or country as a whole. But one could have severe doubts about whether policymakers at the higher levels of government would really be interested in this kind of governance.

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<sup>7</sup> For this idea of a „balance of interests“ („Interessenausgleich“) between different groups within a municipality see the explanations in Wissenschaftlicher Beirat beim Bundesministerium der Finanzen, Gutachten zur Reform der Gemeindesteuern in der Bundesrepublik Deutschland, Schriftenreihe des Bundesministeriums der Finanzen, Heft 31, Bonn 1982, S. 30.

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## Autoren

Prof. Dr. rer. pol. habil. **Martin T. W. Rosenfeld** studierte Volkswirtschaftslehre und Wirtschaftsgeographie an der Universität Hamburg und arbeitete dort bis zu seiner Habilitation als wissenschaftlicher Mitarbeiter und Hochschulassistent im Bereich Finanzpolitik. 1994 wurde er an die Fachhochschule der Sächsischen Verwaltung in Meißen berufen. Seit 1998 ist er als Abteilungsleiter im Institut für Wirtschaftsforschung Halle (IWH) für das Forschungsfeld Stadtökonomik zuständig und lehrt an der Martin-Luther-Universität Halle-Wittenberg (MLU) sowie an der Hochschule Anhalt. Er hat eine apl. Professur für Volkswirtschaftslehre an der MLU und ist u. a. Mitglied der Akademie für Raumforschung und Landesplanung (ARL), der European Urban Research Association (EURA) sowie des Ausschusses für Regionaltheorie und -politik des Vereins für Socialpolitik (VfS). Seine Forschungsschwerpunkte liegen in den Bereichen der nachhaltigen Stadt- und Kommunalentwicklung, des Fiskalföderalismus sowie der Governance und Finanzierung kommunaler Aufgaben.

**Jana Hinz** studierte zunächst Tourismusmanagement an der University of Brighton (England). Nach erfolgreichem Abschluss als Bachelor of Arts nahm sie ein Masterstudium in der Fachrichtung Volkswirtschaftslehre mit der Vertiefungsrichtung „Sustainability Economics“ an der Martin-Luther-Universität Halle-Wittenberg auf. Im November 2013 erfolgte der Abschluss des Studiums mit dem akademischen Grad Master of Science.