Land Use Policy 109 (2021) 105681

Contents lists available at ScienceDirect

Land Use Policy

journal homepage: www.elsevier.com/locate/landusepol

Why municipalities grow: The influence of fiscal incentives on municipal land policies in Germany and the Netherlands

Vera Götze [a,c,*], Thomas Hartmann [b]

[a] Institute of Geography, University of Bern, Switzerland
[b] Dept. Spatial Planning, TU Dortmund University, Germany
[c] Leibniz Institute of Ecological Urban and Regional Development (IOER), Germany

A R T I C L E I N F O

Keywords:
Land take
Fiscal incentives
Local governments
Germany
The Netherlands
Local growth ambitions

A B S T R A C T

It is generally assumed that municipalities attract residents and businesses as a result of intermunicipal competition for tax revenues. This growth-oriented behaviour poses a serious problem considering internationally acknowledged goals to limit land take. Nonetheless, research on how fiscal incentives affect municipal land policies is scarce. Adapting a neoinstitutionalist approach, we compare the two contrasting fiscal systems of Germany and the Netherlands. While clear incentives can be deducted from the different sources of municipal income, complex balancing measurements and consequential infrastructure investments make it difficult to predict a project's profitability. According to the perspective of planning practitioners in municipalities around the growth centres of Utrecht and Berlin interviewed for this study, local pressures force them to keep allocating new building sites. In order to create effective policies to limit land take, it is important to understand not only the influence of fiscal incentives but also of place-specific pressures on municipal land policies.

1. Introduction

Land is a scarce resource. Its preservation is important for biodiversity, landscape preservation, food security, water management and carbon sequestration (European Commission, 2012). Therefore, governments in Europe and worldwide highly prioritize limiting land take, defined as "the change in the area of agricultural, forest and other semi-natural land taken for urban and other artificial land development" (European Environment Agency EEA, 2019). In its *Roadmap to a Resource Efficient Europe*, the European Commission (2011) sets the goal of fully preventing net land loss by 2050 in order to stop the contamination and irreversible erosion of fertile soils. Many national governments have adopted this goal.

Simultaneously, governments on the local level often adopt a growth-oriented behaviour, which here is understood as an ambition to increase the amount of residential and industrial areas within a municipality (Wegener, 2016; Langer and Korzhenevych, 2018; Hartoft-Nielsen, 2018; Monstadt and Meilinger, 2020; Shao et al., 2020). This is problematic as local governments in many countries have the responsibility to translate national goals into legally binding land use plans.

While scholars and practitioners alike search for ways to overcome this "municipal egoism" (Christoffersen, 2019, p. 16), for example through better communication and participation processes (van Zoest, 2010; Colombo et al., 2018; Fertner et al., 2016), through a transfer of power to higher levels of government (Wegener, 2016), or through equalization of development profits (see Henger and Bizer (2010) for Tradable Development Rights), the question remains relevant: why does it seem to be so important for a municipality to grow?

Scholars generally assume that municipalities allocate new building sites to attract inhabitants and firms (Duranton and Puga, 2013) because inhabitants and firms come with tax revenues. As municipalities are interested in increasing their tax incomes, they compete with each other for growth (Monstadt and Meilinger, 2020; Colsaet et al., 2018; Henger and Bizer, 2010; Langer and Korzhenevych, 2018).

This puts the fiscal system at the root of the problem. The fiscal system determines how municipalities generate revenues and makes some forms of land use more profitable than others. One can therefore assume that different fiscal systems incentivise different land use policies. Kaufmann (2018a) therefore recognizes local tax autonomy as a "game changer for locational policies agendas" (Kaufmann, 2018a, p. 22). He further underlines that this effect gains force with a more

* Correspondence to: Universität Bern, Institute of Geography, Political Urbanism and Sustainable Spatial Development, Hallerstrasse 12, CH-3012 Bern, Switzerland.
E-mail addresses: vera.goetze@giub.unibe.ch (V. Götze), thomas.hartmann@tu-dortmund.de (T. Hartmann).

https://doi.org/10.1016/j.landusepol.2021.105681
Received 29 December 2020; Received in revised form 27 June 2021; Accepted 30 July 2021
Available online 9 August 2021

decentralized fiscal system, meaning a system where municipalities are more dependent on their own tax revenues. Higher tier governments have to take incentives from the fiscal system into consideration in order to effectively prevent land take (OECD, 2017).

Despite its relevance, studies on the relation between land policies and fiscal systems are rare. This contribution aims at revealing how different fiscal systems affect land policy goals of local governments. Which forms of land use are incentivised by different fiscal systems? Apart from generating revenues, what other reasons do municipalities have to grow? And what is the role of fiscal incentives compared to other influences on municipal land policies?

Following a neoinstitutional approach, we not only use formal institutional rules to explain differences in land policies but also consider the effect of local arrangements and other place-specific circumstances (Debrunner and Hartmann, 2020; Kaufmann and Arnold, 2017). Therefore, a qualitative approach was chosen to gain in-depth insights into the motivations behind the land policies of selected municipalities.

2. Formal and informal institutional rules in policymaking

In this paper we are interested in what influences municipal land policies. Land policies are all political and legal measures that a municipality applies to regulate land use according to a politically defined goal (Hartmann and Spit, 2015). Following neoinstitutionalist theory, land policies, just as any other human actions, are guided by formal and informal rules (North, 1990). These rules constrain actor groups' scope of action and guide what individuals expect others to do (Scharpf, 1997; Hall and Taylor, 1996). Within public policy analysis, formal institutional rules are found in the democratic, constitutional framework (Knoepfel et al., 2007). They influence public policies as they determine which actors are involved in decision-making processes and what resources these actors can mobilize to enforce their interests. On the other hand, public policies are also shaped by the actors' own political and strategic interest (Gerber et al., 2018, p. xii). For example, Debrunner and Hartmann (2020) show how the application of policy instruments varies between Swiss municipalities, depending on local actors' arrangements.

In order to analyse influences on municipal land policies, we will therefore characterize and compare this interplay of institutional rules and local arrangements in two case study areas. We will do so using a framework from Multilevel Governance (MLG) analysis, which addresses that various levels of government develop policies simultaneously (Hooghe and Marks, 2003). Applied to urban politics, this implies that municipal policies are a result of interactions between actors at different scales (Kaufmann and Sidney, 2020). One can distinguish two main dimensions that describe the framework in which public policies emerge: a vertical and a horizontal dimension (Horak and Young, 2012). While municipalities are nested in a structured hierarchy of higher tier constraints and opportunities, the horizontal dimension accounts for their nesting in a wider metropolitan context and includes interactions with nongovernmental actors (Kübler and Pagano, 2012). Kaufmann (2018a) applies this framework to explain policy goals of secondary capital cities. On the vertical axis, he places features such as the degree of fiscal and political autonomy. On the horizontal axis, he places local actors' arrangements.

A high degree of fiscal autonomy is achieved in a decentralised fiscal system where local governments collect and keep local taxes. On the other hand, in a centralised fiscal system, tax revenues are collected and redistributed by the central government. Local governments, then, depend on national grants and are less autonomous. Generally speaking, fiscally autonomous local governments are expected to be more competitive and growth-oriented than local governments that depend on state grants (Kaufmann and Sager, 2018). Municipalities in centralised fiscal systems, on the other hand, have stronger incentives to pursue urban containment policies (OECD, 2017, p. 92). According to Kaufmann (2018b), the "degree of local tax autonomy is the best predictor of locational policies as it sets up the structures under which cities can raise funds" (p. 12). When analysing municipal land policies within different fiscal systems, one can also take into account local governments' political autonomy, which is determined by constraints from higher-level governments (Goldsmith, 1995). While a high degree of fiscal autonomy incentivizes competitive behaviour among municipalities in France, local spatial plans have to conform with development plans on a regional level (OECD, 2017).

On the horizontal axis, local business actors such as landowners, investors and developers can orient land policies towards more growth (Kaufmann, 2018a). By contrast, citizens can block further developments as they experience negative consequences of growth (Monstadt and Meilinger, 2020). Thus, strong influences at the local dimension can enable local governments to resist incentives from the vertical axis (e.g., incentives to grow) (OECD, 2017).

In the remaining paper we will use this analytical framework to describe influences on local land policies in two case study areas. For the case study analysis, we have chosen two countries with contrasting fiscal systems in order to highlight the distinctiveness of different national practices. While municipalities in Germany have a high degree of fiscal autonomy and a monopoly on local tax revenues, municipalities in the Netherlands depend on rate support grants from the national government. Additionally, it is common for Dutch municipalities to actively develop land. On the other hand, German municipalities predominantly pursue passive land policies. The national governments of both countries see the prevention of land take as crucial for their future spatial development (Die Bundesregierung, 2018; Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019). In both Germany and the Netherlands, municipalities are responsible for creating legally binding land use plans. Their urban growth is regulated by higher tier governments (states and provinces, respectively). Within these two countries, we have chosen to focus our research on the municipalities surrounding the cities of Berlin and Utrecht. Though the metropolitan region of Berlin-Brandenburg counts about 5 times as many inhabitants as the region of Utrecht, the cases are comparable in the sense that they are both important growth centres within their national context. Additionally, the relationship between strongly growing core municipalities on the one side and surrounding municipalities that are more reluctant in terms of further urban growth on the other side is similar in both regions.

In the following, we will describe the Dutch and German fiscal system, based on an analysis of secondary literature, legislation, handbooks on municipal finance, city budgets and secondary statistical data. The focus lies on sources of municipal income that can be influenced by their land policies. Beyond that, municipal expenditures were included as they can eat up the profits of certain developments.

This research is complemented by 11 semi-structured interviews that were conducted in the summer of 2020 with governmental representatives of various levels of government in both case areas (see Table A1 in the appendix for an anonymized list of interviewees). These interviews were dedicated to both understanding the land policy goals that municipalities were pursuing as well as the role that fiscal incentives play in the preparation of land policies next to other influencing factors. The interviews were transcribed, coded, and triangulated with the abovementioned document analysis.

3. The fiscal system of Germany and the Netherlands compared

We will illustrate the distribution of incomes and expenditures based on average budgets of German and Dutch municipalities respectively. In general, these are comparable to the budgets of the municipalities in the observed regions. In a national comparison, municipalities surrounding Utrecht and Berlin are fiscally stable, considering a relatively low indebtedness, and – regarding the German municipalities – high tax incomes (BDO, 2020; Bertelsmann Stiftung, 2019).

3.1. Germany

German municipalities retrieve the largest part of their income from local taxes (Fig. 1). The three most important taxes are the business tax (44%), the income tax (37%) and the property tax (14%). On average, state rate support grants only constitute a third of the municipal budget (Scherf, 2010). Fees cover charges for waste (water) disposal and other services. In contrast to tax revenues, municipalities can only charge the exact amount that is needed to provide the respective service, or, in other words, they are earmarked and were therefore excluded from the analysis. Other revenues consist of (1) license fees paid by network operators for the right to use municipal streets and infrastructure as well as (2) revenues from economic activity. As they cannot be influenced by municipal land policies, they will not be regarded further.

Table 1 illustrates the different sources of income and expenditures.

3.2. The Netherlands

About two thirds of the budget of an average Dutch municipality is derived from national grants (see Fig. 2). The national allocations can be divided into the unconditional grant and specific grants. The unconditional grant covers around 55% of the municipal budget and the specific grants cover an additional 10% of the municipal budget (CBS, 2020). While the specific grants are earmarked, the municipality can spend their unconditional grant freely (see Table 2).

3.3. Incentivised forms of land use in Germany and the Netherlands

The different fiscal systems provide various incentives for municipalities in Germany and the Netherlands.

3.3.1. Germany

In the decentralized fiscal system of Germany, municipalities can keep revenues from local taxes. In general, this makes growth profitable.

Although an increase in local revenues also leads to a lower allocation of state grants and higher regional contributions, the fiscal benefits of high revenues from local taxes are not completely outweighed. A municipality with high local revenues has more freedom of action than a municipality that is completely dependent on state grants.

If a German municipality is interested in generating more income, it can target its land use to maximize revenues from business and income taxes. Generally, tax revenues can be increased by attracting more businesses and more inhabitants to the municipality. More specifically, businesses with a high profit and inhabitants with high incomes lead to a larger tax revenue increase than small businesses and inhabitants with a low income.

In order to attract these target groups, the municipality can – amongst other things – provide the plots that these target groups demand. Given the assumption that large businesses have many employees and need much space, the municipality can primarily allocate large business areas. Given the assumption that wealthy inhabitants move to the suburbs in search of a large, detached house surrounded by nature, the municipality can primarily allocate large plots surrounded by nature for large, detached houses. In summary, increases in business and income taxes can incentivise municipalities to allocate large-scale business areas and large residential plots for spacious, detached houses, which only citizens with a high income can afford.

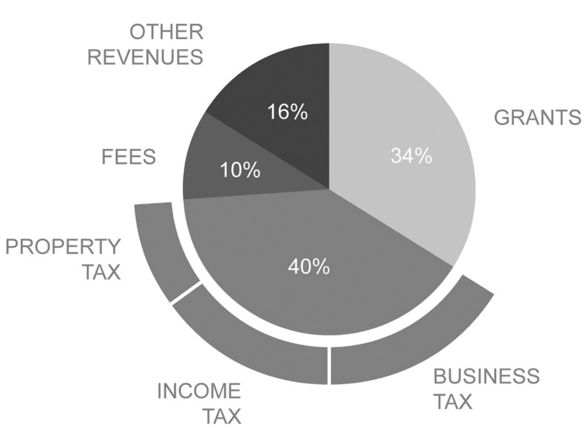

Fig. 1. Average municipal budget of a German municipality. Own figure based on Scherf (2010).

Table 1
Revenues and expenditures of German municipalities.

Business tax	Based on business profits within the municipality, multiplied with a collection rate, which the municipality can determine. Although business tax revenues can play a substantial role in the municipal budget, they fluctuate with economic developments (Gesellschaft für Innovationsforschung und Beratung mbH and Deutsches Institut für Urbanistik gGmbH, 2012).
Income tax	Based on the income of the municipality's residents. Attracting wealthy residents promises high and steady future revenues from the income tax.
Property tax	Paid by owners of business and residential estate, based on the property value multiplied by a collection rate that can be determined by the municipality; consists of land value and value of the buildings.
Grants	Unconditional grants are paid by the state to fill in possible gaps between a municipality's expenses and its revenues. If the tax revenues of a municipality are increasing, it receives less financial support from the state. If a municipality earns more than it spends, it is no longer eligible for the grant. In some states, these municipalities must pay surplus revenues to the state for redistribution.
Expenditures	Among the different expenditures, social costs (e.g., unemployment benefits) are of relevance to municipal land policies. About 12% of the municipal budget is left for investments (Scherf, 2010). With these, a municipality must finance technical and social infrastructure, such as streets, schools and kindergartens as well as energy and sewage systems.

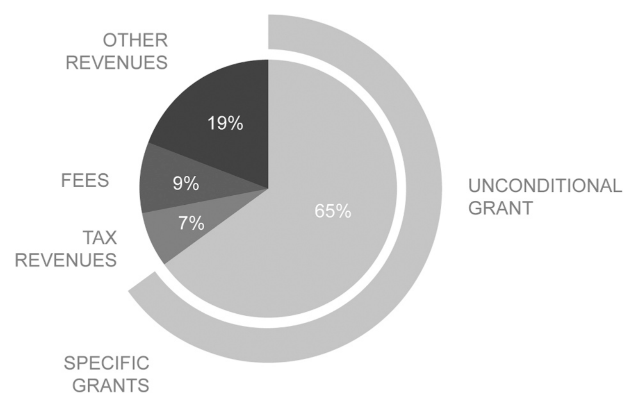

Fig. 2. Average municipal budget of a Dutch municipality. Own figure based on CBS (2020).

However, this simple equation must be scrutinised by also taking consequential costs into account. As mentioned above, increased local revenues do not stay in the municipal budget completely. To some degree, they are outweighed by lower state allocations and higher regional contributions. Also, consequential infrastructure investments must be considered: A growing population needs more kindergartens and schools; higher business activity puts more stress on transport infrastructure.

On the one hand, targeting new developments on high-income households can avoid comparatively high costs of disbursing unemployment and other social benefits. On the other hand, high-end, low-density residential developments lead to the issue that public infrastructure investments are used by fewer people. This can lead to decreased cost-efficiency of technical infrastructure, for example.

Table 2
Revenues and expenditures of German municipalities.

National grant	The extent of the unconditional grant depends on the size of the national grant pool as well as on the anticipated financial needs of the municipality. This financial need is calculated based on factors like population, built-up area, amount of young and elderly residents, but also local tax revenues, etc. Depending on their size, municipalities belong to a certain grant category. They move to a higher category as they grow.
Tax revenues	The most important municipal tax is the property tax that must be paid by the owners of business and residential real estate. It is calculated based on the value of the buildings and the value of the plot of land that the building is located on. Just as in Germany, the municipality can define its own collection rate. Generally, businesses generate more property tax revenues than residential use (Treasurer, municipality G, Utrecht).
Other revenues	Other sources of revenues are land exploitation and long-time land leases. In the Netherlands, many municipalities pursue an active land policy. This means that the municipality buys land, changes the zoning plan, prepares the land for development and sells it (Tennekes, 2018). The planning gain then stays in the municipal budget and can be spent on public services and infrastructure (Buitelaar, 2010).
Expenditures	The largest expenditures for Dutch municipalities are staff expenditures and social costs (CBS, 2020). Especially the social costs are rising with an increasing number of tasks being transferred to the municipal level from higher levels of government. Within this category, the expenses for unemployment benefits and allowances for nursing care are the highest (BDO, 2020).To some degree, these social costs can be influenced by the chosen land policy of the municipality. When developing new residential areas, a municipality can avoid targeting elderly citizens, unemployed or citizens with a low income.

Anticipating all consequential costs of a development can be challenging for a municipality.

3.3.2. Netherlands

The fiscal system of the Netherlands is centralized, meaning that most tax revenues go to the state and are distributed among the municipalities from there. Local growth is therefore expected to be rewarded to a lesser degree than in the decentralized fiscal system of Germany. Still, as a larger population can move a municipality to another category of the rate support grant, which allows municipalities to govern more efficiently, local governments in the Netherlands do have a fiscal incentive to grow.

That said, it is not easy to determine fiscal incentives that are more targeted towards certain developments. To move into a higher category of the rate support grant, it is sufficient to simply increase the population. The municipality can try to raise its local revenues to become less dependent on variable national grants and gain freedom of action that comes with a larger municipal budget.

To increase revenues from the local property tax, the municipality can choose to allocate areas for high-end residential developments or focus more on profitable business developments. Also, it can try to avoid expenses for social welfare by attracting wealthy inhabitants with little to no health issues and no children in the compulsory school age. But the tools to target such specific population groups are too coarse. Moreover, the national grant considers and covers social costs already. It is thus questionable whether these manoeuvres would really lead to a more profitable development.

Municipalities have different and easier ways to generate local tax revenues that are not necessarily connected to their land use policy. For example, they can collect a tourist tax, parking fees, or offer the service of collecting industrial waste (Treasurer, municipality G, Utrecht).

The largest fiscal benefits, however, can be achieved by developing on municipality-owned land. Although it is a one-time income, land exploitation is fiscally very attractive for municipalities in the Netherlands, especially in cases where greenfields are transformed into urban land. Active land policy therefore constitutes an incentive for urban expansion. Still, Buitelaar and Leinfelder (2020) add that developing greenfields in the Netherlands is often costly due to the country's weak soil. They remark that active land policy "provides an incentive for consolidated sprawl" (p. 52).

Still, the use of land exploitation as an instrument has declined. Smaller municipalities in particular rarely own land that is suitable for development (Treasurer, Municipality G, Utrecht). Additionally, the financial crisis of 2007–2008 illustrated the high risks connected with active land development. Municipalities buy and develop land, but in times of economic decline, it is not certain whether private actors are willing to purchase it (van Oosten et al., 2018).

3.4. Reconsidering fiscal incentives

While it is possible to assume that both Dutch and German municipalities are rewarded for growth in general, it is difficult to prove which land use is the most profitable. One can expect that municipal officials in charge of spatial planning do not know all these details either. This became clear from the interviews we conducted. Nevertheless, it is possible that land policies are – to some degree – based on false expectations of profitability.

4. The policy goals of interviewed municipalities

We conducted interviews with planning practitioners on different levels of government to gain a better understanding of how fiscal incentives are perceived in practice. On the municipal level, most interviewees did not see strong relations between land policy goals and fiscal incentives. They recognized that their municipality has to generate revenues to cover its expenditures and also that sufficient revenues represent a precondition to achieving politically defined development goals. But the latter, politically defined goals were considered as much stronger in shaping land policies than fiscal incentives. While interviewed mayors and treasurers could point out developments that were especially profitable, planners were often not able to say how a certain project would affect the municipal budget. Although the German and the Dutch fiscal system are very different, interviewees in both case areas mentioned comparable land policy goals:

- *Stabilize housing prices:* Demand for housing is high in the popular suburbs of Berlin and in some municipalities near the city of Utrecht. In order to stabilize housing prices, municipalities in Brandenburg have tried to apply a rent cap. However, after evaluating the effectiveness of this instrument, they realized that housing prices cannot be controlled unless the supply follows the demand (Project manager, Brandenburg Ministry of the Interior). Around Utrecht too, growth is seen as a necessity to keep housing prices at an affordable level (Planner, municipality E, Utrecht).
- *Ensure a balanced population:* Another reason to grow is the political goal to create space for a more diverse population in the suburban areas near Berlin that are mostly characterized by single-family homes. Often, the grown-up children of the families that moved to these areas decades ago cannot afford a house at the beginning of their career and are forced to move away (Mayor, municipality C, Brandenburg). Additionally, municipalities with a high concentration of low-paying jobs (e.g., freight centre Grossbeeren and airport area Schönefeld) are interested in providing their workers with affordable housing opportunities (Mayor, municipality C, Brandenburg). The political focus on this issue also reflects the representation of certain political parties in the city council (Planner, municipality B, Brandenburg). In the province of Utrecht, rural municipalities with few job opportunities are expecting their population to age drastically in the coming years. They see growth as an opportunity to attract and keep young families in the municipality, which is a necessity for stabilizing the population and ensuring that schools,

retail, sports clubs, etc. can function (Planner, municipality F, Utrecht).

- *Avoid high consequential costs and congestion:* The municipalities around Berlin have experienced a rapid, and mostly unregulated, growth in the past decades. Many municipalities have missed the opportunity to reserve areas and money for schools and kindergartens and have not sufficiently adapted their transport infrastructure (Planner, Joint planning Department Berlin-Brandenburg). After decades of shrinkage, they anticipated neither the sudden growth nor its high consequential costs (Mayor, municipality C, Brandenburg). Nowadays, many municipalities near Berlin report crowded schools and congested roads (Planner, Joint planning Department Berlin-Brandenburg). They are therefore hesitant to allow more growth as the increase in tax revenue does not cover the consequential costs of having to adapt the infrastructure (Planner, municipality D, Brandenburg). This is reflected in the political debate. Inhabitants and local politicians grow increasingly dissatisfied with insufficient infrastructure developments. They oppose further growth, as it would worsen, for example, the congestion of local streets.
- *Preserve natural assets:* Residents near Berlin actively block further developments to preserve the nature that enticed them back when they once moved there (Mayor, municipality A, Brandenburg). Also interviewed municipalities in the Province of Utrecht experience further urbanization as a danger to one of the province's greatest assets: open, natural landscapes (Planner, municipality E, Utrecht).

In the eyes of the interviewees, money plays a subordinate role in their municipality's land policy goals. Still, they were often able to name other municipalities whose interest in increasing revenues they perceived as a more crucial factor for land policy. In fact, the degree to which profitability determines the land policy of a municipality seems to differ from municipality to municipality, even within the same fiscal system.

How can these differences be explained? Why do fiscal incentives and the desire to generate local revenues influence the land policies of municipalities within the same fiscal system differently? How can it be that the same municipalities that pursued expansive spatial policies in the 1990s are no longer interested in growth? Which factors influence the weighting of different interests in municipal land policies?

5. Discussion

We have now analysed influences on municipal land policies both in a vertical and a horizontal dimension. At first, a comparison of revenues of Dutch and German municipalities suggested strong incentives for their land policies, as was already anticipated by Kaufmann (2018a). But when also taking into account the (indirect) costs that follow urban development, as well as the effect of increasing revenues on the extent of supralocal grants, it becomes more difficult to point out which policies are more profitable to a municipality than others. Still, it is possible that profit-seeking municipalities are seduced by a quick boost in revenues without always taking into account the costs that will follow upon urban expansion in the long term. History has shown this lack of foresight. When allocating large new residential and business areas in the 1990s, municipalities around Berlin did not anticipate the high costs for infrastructure investments that would be needed once the buildings were occupied.

The challenge of anticipating consequential costs still exists today. Of course, both Dutch and German municipalities make budget plans. But while the profitability of a single construction site can be calculated more or less precisely, it can be difficult to predict the fiscal viability of a newly allocated building zone. As the example of the municipalities around Berlin has showed, this effect compounds if a long time passes between a building zone's allocation and its residential use. It is questionable whether a municipality can even predict the exact usage and therefore future costs of a residential zone. Several German states offer calculation tools to give planners an overview of infrastructure investments that a new building zone will cause. But the costs of a new school or kindergarten are often not taken into account when deciding upon the profitability of a development project.

Also, when assessing the influence of fiscal incentives on municipal land policies, one would expect municipalities with a weak fiscal position to act more in accordance with fiscal incentives than municipalities with a strong fiscal position. Although more research is required, the interviews did not indicate any such relationship. Interviewed planners and municipal representatives doubted that the fiscal position of a municipality determines its inclination to follow fiscal incentives. They often referred to the municipality of Schönefeld – one of the richest municipalities in Brandenburg – that is widely known for its expansive development.

In the perspective of interviewed planners, local pressures weighed much heavier than fiscal incentives on the vertical dimension. On the one hand, this local dimension covers local business actors, such as developers, who negotiate land use plans with municipal governments. In these negotiations, municipalities can have a strong position if the demand for housing is high, which makes investments in housing projects profitable and safe. Larger municipalities that own public housing societies can even avoid negotiations with private developers. In smaller municipalities, on the other hand, planners admit that profitability plays a larger role in planning (Planner, municipality D, Brandenburg). Next to local business actors, citizens were also said to have a strong influence on land policy formulation. Municipalities around Berlin have experienced rapid growth in the past decades. As a consequence, transport infrastructure is lagging behind, schools are too small and residents have problems finding kindergarten spots. Further growth would worsen the situation and additionally decrease the natural values of the areas. The relatively wealthy inhabitants therefore actively engage in local politics and block further developments (Mayor, municipality A, Brandenburg). Also, Monstadt and Meilinger (2020) observe that municipalities with high income tax revenues oppose further urban development. Citizens are not only critical towards urban expansion but also dense inner-city developments, although these would comply with national goals to prevent further land take. In some municipalities, dense forms of living have a negative connotation. It is argued that multi-story dwellings will attract low-income, or even unemployed, residents who will disturb the social coherence in the municipality. This form of framing can hinder the emergence of space-saving spatial policies.

As described in Kübler and Pagano (2012), also the nesting of a municipality within the metropolitan region has an impact on land policy formulation. This could be observed in Utrecht, where municipalities followed the lead of a single municipality that was fast at attracting young residents after detecting an ageing population trend (Planner, municipality F, Utrecht).

As concluded by Kaufmann (2018a), local arrangements have a strong influence on municipal land policies. Although they function within different fiscal systems, municipalities around Berlin and Utrecht face comparable local pressures that ultimately shape their land policies. Understanding incentives on both the vertical dimension and the horizontal dimension allows for a more holistic understanding of the way that municipalities develop spatial policies and thus a better answer to the question of why municipalities pursue growth-oriented land policies.

6. Conclusion

The aim of this research was to obtain a more differentiated understanding of the effect of fiscal incentives on local land policies and thereby to contribute to knowledge on causes of land take. The main research question of this study was, *"How do different fiscal systems affect the land policy goals of local governments?"*.

To answer the research question, we performed qualitative analyses in two metropolitan areas in Germany and the Netherlands: two countries with contrasting fiscal systems. Secondary research resulted in an understanding of the functioning of the two distinct fiscal systems, as well as the forms of land use that are especially profitable for a municipality. Semi-structured interviews with municipal representatives complemented this understanding of fiscal incentives together with the role they play in the development of municipal land policies.

At first sight, Germany and the Netherlands seem to be representative examples of respectively a decentralised and a centralised fiscal system. German municipalities collect local business and income taxes, which incentivize the development of business- and high-end residential areas. Dutch municipalities depend on national grants, seemingly rewarding growth-oriented behaviour to a lesser degree. But, having thoroughly analysed municipal revenues and expenditures, the differences between the two systems become more blurred. Growing Dutch municipalities benefit from larger allocations from the rate support grant, a higher degree of efficiency gained from infrastructure investments and can additionally profit from land exploitation. In Germany, on the other hand, profits from urban expansion have to be compared to increasing contribution costs to neighbouring municipalities, reductions of the state rate support grant and consequential investments in infrastructure. In planning literature, this aspect of balancing mechanisms in fiscal systems and (long-term) reactions of municipal budgets to growth are rarely taken into consideration when analysing effects of fiscal incentives on land policies. The latter is not only a blind spot in planning literature, but also in planning practice. When developers plan a building project, they calculate the balance between building costs and profits from selling the completed units in finest detail. But when municipalities allocate new residential zones, many may not consider investments in, for example, social infrastructure that will be necessary in the future. This is especially so because a long time can pass between the allocation and the actual development of a residential area.

In the eyes of interviewed planners, fiscal incentives have little effect on their municipality's respective land policies. And although some municipalities strategically grow to increase their tax base, most interviewees underlined that other, local pressures shaped their land policy goals to a much larger degree. On the one hand, pressure on the housing market or an ageing population ask for further construction. On the other hand, local residents block new developments to preserve natural assets, social cohesion and prevent congestion.

This suggests that, in order to limit land take, one should not solely focus on fiscal incentives. Market-based solutions, such as fiscal counterincentives or instruments such as tradable development rights can support urban developments that are more desirable from a regional perspective, like brownfield redevelopments and dense residential areas. But they will not put an end to urban sprawl. To prevent land take, instruments must also address issues of demographic change, growing housing prices or the decreasing support of infrastructure services in shrinking areas.

In our paper, we were asking what influence fiscal incentives have on municipal land policies. We expected that the contrasting fiscal systems would be clearly recognizable in the land policy goals of interviewed municipalities. In fact, interviewed planners had little insight into the fiscal consequences of their municipalities' respective development plans. Mayors and municipal treasurers could say more about the connection between their development strategies and the municipal budget. In future research, it will be fruitful to have more interviews with the latter group, as this will shed more light on which land policies municipalities can pursue to expand their budget or deal with long-term debt or profit. In combination with quantitative research, this might give a generalizable picture of correlations between fiscal incentives and urban development. In addition, this study points at the need to explore the relation between municipal land policy and fiscal incentives on a broader level – i.e., a national or state planning level. This can give a more general perspective on the role that fiscal issues (should) play in planning education and practice.

CRediT authorship contribution statement

Vera Götze: Conceptualization, Methodology, Formal analysis, Investigation, Writing – original draft, Visualization. **Thomas Hartmann:** Writing – review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

Primary funding source: Swiss National Science Foundation, Switzerland. Grant ID: 188939.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.landusepol.2021.105681.

References

BDO. (2020). BDO-Benchmark Nederlandse Gemeenten 2020: Financiële veenbrand: Tekorten lopen op, meer gemeenten in 't rood. (Accessed 24 November 2020) https://herbertraat.files.wordpress.com/2020/04/bdo-benchmark-nederlandse-gemeenten-2020.pdf.

Bertelsmann Stiftung. (2019). Kommunaler Finanzreport 2019. Gütersloh: Bertelsmann Stiftung. Retrieved May 6, 2021, from https://www.bertelsmann-stiftung.de/fileadmin/files/Projekte/Kommunale_Finanzen/Finanzreport-2019-gesamt.pdf.

Buitelaar, E., 2010. Window on the Netherlands: cracks in the myth: challenges to land policy in the Netherlands. Tijdschr. voor Econ. En. Soc. Geogr. 101, 349–356. https://doi.org/10.1111/j.1467-9663.2010.00604.x.

Buitelaar, E., Leinfelder, H., 2020. Public design of urban sprawl: governments and the extension of the urban fabric in Flanders and the Netherlands. Urban Plan. 5 (1), 46–57. https://doi.org/10.17645/up.v5i1.2669.

CBS (2020). StatLine, the electronic databank of Statistics Netherlands. (Accessed 27 June 2021) http://statline.cbs.nl/Statweb.

Christoffersen, H., 2019. The municipality first. Byplan nyt 16.

Colombo, F., van Schaick, J., & Witsen, P.P. (2018). Kracht van Regionaal Ontwerp: 25 jaar vormgeven aan Zuid-Holland. De Nieuwe Haagsche.

Colsaet, A., Laurans, Y., Levrel, H., 2018. What drives land take and urban land expansion? A systematic review. Land Use Policy 79, 339–349. https://doi.org/10.1016/j.landusepol.2018.08.017.

Debrunner, G., Hartmann, T., 2020. Strategic use of land policy instruments for affordable housing: Coping with social challenges under scarce land conditions in Swiss cities. Land Use Policy 99, 104993. https://doi.org/10.1016/j.landusepol.2020.104993.

Die Bundesregierung, 2018. Deutsche Nachhaltigkeitsstrategie: Aktualisierung 2018. Presse- und Informationsamt der Bundesregierung,, Berlin. https://www.bundesregierung.de/resource/blob/975292/1559082/a9795692a667605f652981aa9b6cab51/deutsche-nachhaltigkeitsstrategie-aktualisierung-2018-download-bpa-data.pdf.

Duranton, G., Puga, D., 2013. The growth of cities. Organisation for Economic Co-operation and Development. https://www.oecd.org/economy/growth/Growth_of_cities_Duranton.pdf.

European Commission. (2011). *Roadmap to a Resource Efficient Europe*. Brussels.

European Commission, 2012. Guidelines on Best Practice to Limit, Mitigate or Compensate Soil Sealing. European Commission, Brussels (Accessed 24 November 2020). https://ec.europa.eu/environment/soil/pdf/guidelines/pub/soil_en.pdf.

Fertner, C., Jørgensen, G., Nielsen, T.S., Nilsson, K., 2016. Urban Sprawl and growth management – drivers, impacts and responses in selected European and US cities. Future Cities Environ. 2 (9) https://doi.org/10.1186/s40984-016-0022-2.

Gerber, J.-D., Hartmann, T., Hengstermann, A., 2018b. Preface (pp. xi-xii). In: Gerber, J.-D., Hartmann, T., Hengstermann, A. (Eds.), Instruments of Land Policy: Dealing with Scarcity of Land. Routledge.

Gesellschaft für Innovationsforschung und Beratung mbH & Deutsches Institut für Urbanistik gGmbH, 2012. Regionalwirtschaftliches Gutachten zu den Auswirkungen des Flughafens Berlin Brandenburg auf die Entwicklung der Kommunen im Flughafenumfeld (RG FU BER). Deutsches Institut fuer Urbanistik,. https://difu.de/publikationen/2012/regionalwirtschaftliches-gutachten-zu-den-auswirkungen-des-flughafens-berlin-brandenburg-auf-die.

Goldsmith, M., 1995. Autonomy and City Limits. In: Judge, D., Stoker, G., Wolman, H. (Eds.), Theories of Urban Politics. SAGE, pp. 228–252.

Hall, P.A., Taylor, R.C., 1996. Political sciences and the three new institutionalisms. Political Stud. 44 (5), 936–957.

Hartmann, T., Spit, T., 2015. Dilemmas of involvement in land management – Comparing an active (Dutch) and a passive (German) approach. Land Use Policy 42, 729–737. https://doi.org/10.1016/j.landusepol.2014.10.004.

Hartoft-Nielsen, P., 2018. Kampen om stationsnærhedspolitikken: Bedre målopfyldelse med forenkling af Fingerplanens regler. Aalborg Universitetsforlag.
Henger, R., Bizer, K., 2010. Tradable planning permits for land-use control in Germany. Land Use Policy 27 (3), 843–852. https://doi.org/10.1016/j.landusepol.2009.11.003.
Hooghe, L., Marks, G., 2003. Unraveling the Central State, but how? Types of multilevel governance. Am. Political Sci. Rev. 97 (2), 233–243.
Horak, M., Young, R., 2012. Sites of governance: multilevel governance and policy making in Canada's big cities. McGill-Queen's University Press.
Kaufmann, D., Sager, F., 2018. How to organize secondary capital city regions: institutional drivers of locational policy coordination. Governance 32 (1), 63–81. https://doi.org/10.1111/gove.12346.
Kaufmann, D., 2018a. Capital cities in interurban competition: local autonomy, urban governance and locational policy making. Urban Aff. Rev. 1–38. https://doi.org/10.1177/1078087418809939.
Kaufmann, D., 2018b. Varieties of capital cities: The competitiveness challenge for secondary capitals. Edward Elgar Publishing,.
Kaufmann, D., Arnold, T., 2017. Strategies of cities in globalised interurban competition: the locational policies framework. Urban Stud. 55 (12), 2703–2720. https://doi.org/10.1177/0042098017707922.
Kaufmann, D., Sidney, M., 2020. Toward an urban policy analysis: incorporating participation, multilevel governance, and "seeing like a city". Political Sci. Polit. 53 (1), 1–5.
Knoepfel, P., Larrue, C., Varone, F., Hill, M., 2007. Public Policy Analysis. The Policy Press.
Kübler, D., Pagano, M.A., 2012. Urban politics as multilevel analysis. In: Mossberger, K., Clarke, S.E., John, P. (Eds.), The Oxford Handbook of Urban Politics. Oxford University Press, pp. 114–129.
Langer, S., Korzhenevych, A., 2018. The effect of industrial and commercial land consumption on municipal tax revenue: evidence from Bavaria. Land Use Policy 77, 279–287. https://doi.org/10.1016/j.landusepol.2018.05.052.
Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019. Ontwerp Nationale Omgevingsvisie: Duurzaam perspectief voor onze leefomgeving. Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, Den Haag. Retrieved November 24, 2020, from. https://www.rijksoverheid.nl/binaries/rijksoverheid/documenten/rapporten/2019/06/06/ontwerp-nationale-omgevingsvisie/ontwerp-nationale-omgevingsvisie.pdf.
Monstadt, J., Meilinger, V., 2020. Governing Suburbia through regionalized land-use planning? Experiences from the Greater Frankfurt region. Land Use Policy 91, 1–12. https://doi.org/10.1016/j.landusepol.2019.104300.
North, D., 1990. Institutions, institutional change and economic performance. Cambridge University Press,.
OECD, 2017. The Governance of Land Use in OECD Countries: Policy analysis and recommendations. OECD Publishing,, Paris. Retrieved November 24, 2020, from. https://read.oecd-ilibrary.org/urban-rural-and-regional-development/the-governance-of-land-use-in-oecd-countries_9789264268609-en.
Scharpf, F.W., 1997. Games real actors play: actor-centered institutionalism in policy research. Westview Press,.
Scherf, W., 2010. Die kommunalen Finanzen in Deutschland. In: Kost, A., Wehling, H.-G. (Eds.), Kommunalpolitik in den deutschen Ländern. Springer.
Shao, Z., Bakker, M., Spit, T., Janssen-Jansen, L., Qun, W., 2020. Containing urban expansion in China: the case of Nanjing. J. Environ. Plan. Manag. 63 (2), 189–209. https://doi.org/10.1080/09640568.2019.1576511.
Tennekes, J., 2018. Negotiated land use plans in the Netherlands: A central instrument in Dutch 'active' and 'passive' land policy. In: Gerber, J.-D., Hartmann, T., Hengstermann, A. (Eds.), Instruments of Land Policy: Dealing with Scarcity of Land. Routledge, pp. 101–113.
van Oosten, T., Witte, P., Hartmann, T., 2018. Active land policy in small municipalities in the Netherlands: "We don't do it, unless…". Land Use Policy 77, 829–836. https://doi.org/10.1016/j.landusepol.2017.10.029.
van Zoest, J., 2010. Metropolitan landscapes as a test case for regional planning. In: Meijsmans, N. (Ed.), Designing for a Region. Sun Academia, pp. 105–114.
Wegener, M., 2016. Government or governance? The challenge of planning for sustainability in the Ruhr. In: Hartmann, T., Needham, B. (Eds.), Planning By Law and Property Rights Reconsidered. Routledge, pp. 157–170.
European Environment Agency (EEA), 2019. Land take in Europe. Indicator Assessment. (Accessed 7 May 2021) https://www.eea.europa.eu/data-and-maps/indicators/land-take-3/assessment.