Land pricing upon the extension of leases in public leasehold systems

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Abstract

Purpose – This paper aims to compare and review alternative ways to adjust public ground leases.

Design/methodology/approach – Based on principles derived from a review of scientific literature, alternatives for the extension of leases are discussed based on the case of Amsterdam.

Findings – Many alternatives lead public ground-lease systems to produce results that are the opposite of what they are intended to be (as inspired by Henry George): new improvements result in higher rent, but additional location values do not result in higher rent. One exception is the lease-adjustment-at-property-transaction alternative, which may nevertheless result in fewer transactions.

Social implications – Public leasehold systems are highly contested with regard to the extension of leases. Such systems are often aimed at capturing land-value gains. In practice, however, this tends to be more difficult than expected. Value capture by authorities, as intended by the system, results in counter-movements of lessees, who often gain public support to set lower leases. These political processes may even result in the termination of such public ground-lease systems. This paper reports on a search for possible solutions.

Originality/value – The comparison of various alternatives to ground-lease extension based on principles derived from literature is new, and it contributes insight into public ground-lease systems.

Keywords Land price, Ground lease, Land policy, Leasehold, Residual value, Synergistic value

Paper type Research paper

1. Introduction

Often inspired by George (1920, 1st ed. 1879), many public authorities have launched public leasehold programmes based on the idea that such programmes would allow for a fair harvesting of land values to the benefit of all. Experience has indeed shown that taxation is lower in cities, such as Hong Kong (La Grange and Pretorius, 2016), in which leasehold accounts for a large share of the public income. One problem, however, concerns the adjustment of land values to assure rent capture. As a result of this problem, the public leasehold system "as originally conceived in Israel and Canberra, has reached its end" (Benchetrit and Czamanski, 2004, p. 46). It has also generated fierce debates elsewhere (Tyvimaa *et al.*, 2015; Ploeger and Bounjouh, 2017), such that many ground-rent adjustments end up in court (Mandell, 2002). Nevertheless, interest in public ground-lease models is undergoing a revival as a way of providing affordable housing that allows for a separation between the affordable price paid by the lessee and an enduring claim on full future land values by the public owner (Bourguignon, 2013; Löhr, 2017; Shamsuddin and Vale, 2017).

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Although the initial allocation of land has been the subject of considerable research (Needham, 1992; Hong, 1998; Taşan-Kok *et al.*, 2013; Caesar, 2016), much less has been published on revaluation practices, which constitute the topic of this paper. Resetting the rent in the form of ground leases is an important issue, including within the context of private ground leases. In this context, rent-reset clauses have been identified as "land mines" (Stein, 2014, p. 22) or "time bombs" (Stein, 2007, p. 129) that could potentially have serious negative effects on lessees and their lenders. Moreover, it has proven difficult to draft clauses that anticipate all contingencies in rent adjustment (Stein, 2014).

In a democratic society, one specific feature of public ground leases is that the public authority that owns the land is not driven only by profit but also by the interests of its citizens, who are also known as "consumer-voters" (Tiebout, 1956, p. 417) who "pick communities" that best fit their preference patterns for public goods. In addition to being lessees, citizens are voters who have an impact on political majorities. For this reason, lease setting involves both a technical component (i.e. assessing the property value) and a political component (i.e. setting a tax), especially if the rent is to be paid over the land value of a citizen's home. Lease setting can be seen as "an approximate form of property tax" (Deng, 2005, p. 372). In relation to taxation, authorities are not driven by the goal of obtaining the highest legally feasible tax – which could be as high as 100 per cent, depending on legal circumstances – but by the objective of weighing interests with regard to taxation, the quality of public goods and the needs of "consumer-voters". In other words, "public authorities typically are supposed to maximize social welfare rather than profit" (Mandell, 2002, p. 154). Property taxes should "be regarded as being fair by the public" (Grover *et al.*, 2017, p. 100). According to George, land values cannot be avoided and, in contrast to taxes on improvement, taxes on land are unlikely to have an impact on behaviour. Despite these insights, however, the literature on municipal taxation (based on Tiebout, 1956) indicates that the taxpayers are likely to "vote with their feet", by moving to areas in which public goods and taxation have a better fit. A lower local public lease may be fully compensated by a higher property price, which does not make it less expensive to move to such an area. Alternatively, it would be logical to expect that low rents would convince consumer-voters to stay, as low rents would provide them with higher equity relating to their homes. This unearned increment, which is not fully incorporated into the rent, is part of the amenities that consumer-voters currently enjoy when living in certain communities. Consumer-voters may not appreciate if elected representatives pursue policies to capture these increments. If this is the case, citizens may prefer representatives who promise low rents. In a context in which public ground leases cover a substantial part of the homes of citizens, such political power could be substantial, as there is substantial pressure to keep taxes low. This situation could potentially result in practices in which the rents of public ground leases are set below what would be feasible in a context of private ground leases (Tyvimaa *et al.*, 2015).

A ground lease is a right that is attached to the land, which is a durable asset. The ground rent paid and its value may deviate over time. Neighbourhoods that were inexpensive at the time that the lease was set can become more expensive, and the other way around. The effect on the revaluation of land on the neighbourhood's ground rents will be different accordingly. Furthermore, households that do not move often are likely to be exposed to large differences over time. The development of their income may not keep pace with the rising locational value of the neighbourhood. This is more likely to occur in neighbourhoods in which the development of location value exceeds rent development. By

not moving, a household can realise a higher value of the public good (i.e. location value) without paying additional rent.

One specific feature of public ground-lease systems is that they are based on a differentiation between land values and the value of improvements. At the start of a ground lease, these two elements are relatively easy to differentiate. The lessee acquires a plot of land, and the rent is based on its value. Furthermore, the lessee is responsible for developing the building and all other improvements. At the time of renegotiating the rent, this distinction becomes much more complex (compare Grover, 2018). Given that the renegotiations are based on an enduring lease, the first and final elements in defining what must be covered in this land value are the provisions in the deed by which the lease is set. This document constitutes the relationships between lessor and lessee. The sharpest distinction is between a finite ground lease – in which all properties return to the landowner when the lease expires, without any compensation – and perpetual leases without rent adjustments. One inherent problem with such arrangements is that comparative transactions of the landowner's rights are particularly scarce in public ground-lease systems. The situation is even more complex than is the case in private leasehold systems, which also involve many issues relating to valuation (Grover, 2014). Because local authorities do not trade their ground-lease holdings on the market, it is difficult to find comparative prices. In some alternative methods of appraisal – including "rough approximation" (Mandell, 2001, p. 75) by establishing the residual value of land – the behaviour of the lessee could potentially have an impact on the land value. This is inconsistent with the notion that ground rent should cover land values, regardless of improvements.

In Section 2, these academic reflections and theories on the valuation of perpetual ground leases are elaborated into six principles. In Section 3, alternatives for ground-rent adjustments are introduced based on the case of Amsterdam. This is followed by a comparison of these alternatives according to the six principles (Section 4) and a discussion of the outcomes of these comparisons (Section 5).

2. Reflection and principles

Basic to the ideas on land rent is that for built properties an analytical distinction can be made between rent for land, based on the value of the location, and capital income from improvements, such as buildings, attached to this land. Rising land values may cause a downgrading value of current improvements if these improvements, such as low-rise buildings, stay in the way of making optimal use of the land (Tideman and Plassmann, 2018). The value of improvements can even be negative if alternative uses are more profitable. Making the distinction between land and improvements is in practice more difficult than in theory as transactions usually refer to the whole of a property and do not refer to partial interests in property. In the literature on property appraisals, residual property valuation is often used as a way to appraise partial interests in property. In this method, "[. . .] the value of the unknown component is the residual value left when the value of the independently estimated component is subtracted from the other value" (Lusht, 2001, p. 353). In relation to new-built property, residual land value can be set by subtracting building costs from the property value that can be created on the plot. In existing properties with different property rights resting on the same property, it can be used to establish the values of these parts in relation to the value of the property (based on Van Arnhem *et al.*, 2013, p. 457):

$$V - Vs = Vro + Vgl \quad (1)$$

V: Value of property in highest and best use;
Vs: Synergistic value;
Vro: Value of residual ownership; and
Vgl: Value of ground lease.

The valuation of property in its highest and best use is a well-known practice used by appraisers as "the use of an asset that maximises its potential and that is possible, legally permissible and financially feasible" (IVSC, 2018). A more specific concept is that of synergistic value (also known as "marriage value"), which is used in the British appraisal practice of private ground leases (Baum *et al.*, 2011, p. 160). It is defined as an "additional element of value created by the combination of two or more interests where the value of the combined interest is worth more than the sum of the original interests" (IVSC, 2018). Synergistic value emerges when splitting full ownership in ground lease and residual ownership would not be efficient in reaching the highest and best use of the land. Capozza and Sick (1991) have analysed finite ground leases, which prescribe that the land and all improvements will belong to the owner at the end of the lease term, with no compensation for the improvements to the leaseholder. In this context, lessees tend to refrain from making improvements the closer they are to the termination of the lease. As a result, the land is not likely to attain its highest and best use. The same applies to land improvements within a context of uncertain agricultural lease conditions (Myyrä *et al.*, 2007). Future lease adjustments may also result in uncertainty for buyers and lenders of ground-leased properties, thereby resulting in lower market values (Tyvimaa *et al.*, 2015). The synergistic value is understood as the difference between the value realised at the highest and the best use and the value created due to the conditions of the lease.

Synergistic value may also exist in other contexts of split ownership rights, such as the loss of the value of remaining land, if land is partly expropriated (Kalbro, 2007). Land assembly could yield additional value by merging different plots to allow a large building site, thereby enabling more efficient land use (Shapiro *et al.*, 2013). The existence of such synergistic values could potentially result in hold outs and lack of initiative, based on the idea that a large part of this value will become available to the last parties to join the land assembly, as the additional values will not become available until then (Miceli and Sirmans, 2007).

In the context of public ground-lease systems, authorities may use ground-lease deeds to limit property rights (e.g. in relation to affordable housing provisions or the number of buildings allowed) in the public interest. While limitations imposed by public powers are included in the appraisal of the highest and best use valuations of ownership, lease limitations are not included. Full owners of property rights are not restrained by these limitations. These restrictions are thus part of the synergistic value of the property.

The function presented above can be used to formulate a first principle for evaluating different systems. According to this principle, land value can be considered residual (i.e. the market value of the right of leasehold land plus the value of the land for the owner equals the value of land in its highest and best use, minus the synergetic value). The existence of this relationship can help to appraise property values and to test whether a certain system of ground-lease determination meets market principles or makes use of available market information to reset the rent.

A second principle is that the synergistic value is acknowledged and based on the limitations that the systems impose on the highest and best use of the property.

As indicated in the introduction, public ground-lease systems are inspired by George (1920, 1st ed. 1879), whose ideas on land-value taxation have been widely discussed (Dwyer,

2014; Fernandez Milan *et al.*, 2016). The step from George's ideas on taxation to public ground-lease systems can be made easily:

> [. . .] George argued that the rent-seeking behavior that arises when land is sold once and for all is socially destructive. He saw no benefit in allowing entrepreneurs to compete for a monopoly position. (Dwyer, 2014, p. 726)

According to George, the essential factor is not security of ownership, but security for the improvements. The idea that land value is such a good instrument derives from the insight that externalities "[. . .] are priced via land rent. Air pollution, noise pollution, highway improvements, complementary land uses, public spending—all have their effect on rent" (Dwyer, 2014, p. 727). This relates to the fact that land value is location value (Fernandez Milan *et al.*, 2016).

> The power of land values to reflect accurately external (off-site) economic activities (such as subsidies, pollution-causing production, or local infrastructure) derives ultimately from the spatial nature of land. (Dwyer, 2014, p. 727)

The insight that land value is essentially location value implies that a distinction must be made between the value of land in its natural state and with improvements.

> The real and natural distinction is between things which are the produce of labor and things which are the gratuitous offerings of nature [. . .] (George, 1920, 1st ed. 1879, VII 1 10).

This idea of a distinction between location value and improvement value is part of the principle that appraisers use, as "the value of a site is unaffected by its improvements" (Lusht, 2001, p. 356). This means that adverse effects on value from over-development and under-development must be reflected in the value of improvements or, if they relate to the leasehold structure, in the synergistic value.

The third principle relates to the "Georgean" principle that improvements have no impact on location value. According to this reasoning, the improvements of leaseholders are protected, and the rent paid is independent of these improvements. In this way, the lease would provide the tenants incentives to improve the property to its highest and best use as the rent is based on this use. A lease on improvement value, will do the contrary. Tenants may not improve their land as it will result in paying a higher lease. This principle does not hold for finite leases, in which improvement values are transferred to the landowner upon expiration of the lease, as they do not provide security of improvements.

A fourth principle is that locational values must be captured. This principle is based on the notion that, between the date on which the rent is originally set and the date of the revaluation, an unearned increment in land values can occur, and that this unearned increment must be captured. This is essentially one of the pillars on which ground-lease systems based on the ideas of George are built. For example, during an initial process of land disposal, locational values could be captured by holding auctions (Hong, 1998). This does not work for revaluation of enduring leasehold rights, as such auctions cannot separate location value from improvement value. The idea of revaluation is that locational values change over time, due to the external effects of urban development outside the land parcel. Public ground-lease systems proceed from the assumption that these values should go to the community. In essence, imposing taxes on unearned increments can minimise taxes on earned increments, thereby stimulating economic activity.

A fifth principle relates to the functioning of the property market. Lease adjustments may have a negative effect on the transaction volume of housing. For example, uncertainty relating to future lease adjustment may have an impact on the possibility of obtaining a mortgage (Sevelka, 2011). In a good system, ground-lease adjustment will have little impact on the marketability of properties.

A sixth and final principle relates to social aims that authorities may have to counter market processes. It has to do with the issue of gentrification. Although the normative appreciation of gentrification may differ according to political perspectives, it is relevant to distinguish leasehold systems that promote gentrification and those that do not. Issues of state-led gentrification as a means of capturing land values have been discussed in Hong Kong, where "[. . .] a proportion of leases [is] maturing at any time and creating for the state a range of potentially lucrative options to redeploy the assets and generate fiscal revenue from selling renewed rights" (La Grange and Pretorius, 2016, p. 512). One potential disadvantage, however, is that the process tends to displace current inhabitants from their homes, as they are not able to afford the increasing property prices in the neighbourhood. In the context of public ground-lease systems, these consumer-voters may not support the ground-lease system. In other words, residents may not support councils that decide to set their rent at unaffordable levels.

Although in some systems, inhabitants may have security of improvements in an economic sense, they do not have such security in a social sense (Becher, 2014). In an extensive case study on the use of eminent domain in the city of Philadelphia, Becher explains legitimacy failures in terms of the failure to recognise investment. In Becher's definition, investment involves both financial transactions and "the years that owners and residents have spent with their property" (Becher, 2014, p. 230). This means that legitimate security of improvements should "entitle people to government protection for many different kinds of value that they have invested, including but not limited to financial value" (2014, p. 256). Given the legitimacy issues associated with leasehold revaluation systems, it may be relevant to align such systems with these principles. For example, under such conditions, a family who had bought a house 30 years ago in a neighbourhood that was declining at that time would not be confronted with an unaffordable lease 30 years later if the neighbourhood were to have developed into a more expensive area. The underlying rationale is that the family had invested 30 years of their time and commitment to the neighbourhood, and their investment would eventually pay off as the neighbourhood began to prosper. Such a family would deserve security for this commitment (or investment, according to Becher, 2014), which, in practice, would be an affordable rent.

This argument may also be conceptualised in a different manner. External effects are important for locational value. High population turnover rates are considered to erode place attachment, which may relate to "concerns about crime, safety and anti-social behaviour in many deprived places" (Livingston *et al.*, 2010, p. 425). The commitment of a family living in a neighbourhood for 30 years could be seen as an external effect, in that it has contributed to the locational value of other properties in the neighbourhood. An affordable rent would therefore be a compensation for the external effect produced by this family. It is nevertheless unclear whether an affordable rent would always amount to an exact internalisation of such external effects.

Based on the arguments stated above, the following principles are used to analyse several alternative pricing arrangements for public leasehold systems:

- The system acknowledges the residual nature of land, with the market value of the ground-lease right plus the value of the remaining public ownership of the land being equal to the property value in its highest and best use, minus the synergistic value.
- The synergistic value is based on the way in which the public leasehold systems limit the highest and best use of the property.
- Improvements have no impact on land value.

- Land value is captured.
- The system has no negative impact on the marketability of property.
- There must be a mechanism that protects resident leaseholders from gentrification caused by excessive lease adjustments.

The fact that these principles do not necessarily point in the same direction reflects the political nature of public ground-lease systems.

3. Case study: Amsterdam – introduction and alternatives

In this section, the six principles elaborated above are used to analyse alternative options based on the case study of Amsterdam. Since 1896, Amsterdam has had a well-established public ground-lease system (Van Veen, 2005; Gautier and Van Vuuren, 2017; Ploeger and Bounjouh, 2017). As a result, a large part of the city has been developed through ground leases. Between 1915 and 2016, the system provided dwellers with an enduring leasehold right, in which lease conditions were set for an initial period of 75 years (for ground leases effected through the mid-1950s) or 50 years (for more recent ground leases). This initial period is followed by a new period, which is subject to new leasehold conditions (set by the municipality). It is also subject to a new rent, which is either based on a proposition by the municipality (beginning in 1966) or set (currently optional) by a committee of three experts: one appointed by the municipality, one by the leaseholder and the third by the two experts. The process of valuation is based on the conditions set in the old lease. In their valuation, the experts may take into account specificities that are set by the new general conditions. The general conditions are approved by the municipal council, and they are thus based on political consent.

As a result of this system, the City of Amsterdam proposed new, considerably higher rents at the end of a period. In response, tenants increasingly requested that land values be set by expert commissions, which tend to set lower rents than those proposed by the municipality (Rekenkamer Amsterdam, 2012). These rents were nevertheless much higher than they had previously been. This reflects the development of land values in Amsterdam, a city in high demand (Kadi and Musterd, 2015; Boumeester, 2017). This situation generated opposition from lessee-citizens against the city. The higher leases were perceived as unfair, and the municipality was portrayed as a greedy landlord, stripping inhabitants of the value that they had accumulated in their homes. One active non-governmental organisation uses the legal-expense insurance of its members to sue the city up to the highest courts for a wide variety of disputes (Ploeger and Bounjouh, 2017). In most cases, the Supreme Court of The Netherlands allows the cases to be discussed as part of cassation proceedings, meaning that there are sufficient matters of legal substance. These legal complexities involve the specific position of the experts, the system of new conditions that have been proposed and the standards and quality for the way in which the new conditions are set. European consumer-protection directives play a role as well (Ploeger and Bounjouh, 2017). As response to the critics the municipality offers up to 2020 a transfer bargain for households making use of the new system, and it has upgraded the partially compensation to poor households for difference in ground rent, which only applies in the situation that sale of their home would, due to the negative price effect of the higher ground rent, result in less proceeds than the current mortgage debt level (Gemeente Amsterdam, 2017a).

The remainder of this section consists of a comparison of several alternatives to this system that have been proposed, based on the principles set above.

Critics would prefer an alternative in which lessees acquire their rights at no additional cost after the first period has ended (as in Canberra and Israel). In practice, this alternative is

likely to result in tax increases to compensate for the loss of income. In The Netherlands, property taxes are structured within a one-tier system that does not distinguish between land and improvements. In Amsterdam, there is room for higher property taxes on houses, as they are currently very low (i.e. the second lowest in The Netherlands, following the island of Texel). Neighbouring communities have higher property taxes. For example, property tax rates in the city of Zaanstad and the new town of Almere are above average, being about three times as high as in Amsterdam, relative to the value of the dwelling. The low property tax rate in Amsterdam is also reflected in the fact that, in 2016, municipal income from the parking tax (€199m) – which is paid for street parking – exceeded income from property taxes (€168m, with only one third coming from housing) and tourist taxes (€65m; a percentage of per-night turnover, and thus related to rent) (Gemeente Amsterdam, 2017b, p. 463). Given that the property tax rate for housing is much lower than for other functions, property tax proceeds from housing are about €10m lower than the proceeds from the tourist tax. Compared to these figures the net result of the ground-lease programme (€37m in 2016) is relatively low (Gemeente Amsterdam, 2017b, p. 400). Although the actual proceeds from ground leases are much higher (€252m), a large share is used either to pay for interest (€107m) – in the case of annually payable rent – or to settle the land value for ground-lease holders paying the rent up-front (€108m). The results of the ground-lease system are thus highly dependent on the number of leases expiring in a given year, and their rent revaluations. Profits based on the redevelopment of land are accounted for at the land-development system and not at the ground-lease programme.

Most of the municipal income of Amsterdam comes from the central government through the municipal fund [€2bn in 2016 (Gemeente Amsterdam, 2017b)]. These funds are distributed nationally according to a complex system based on differences in the needs of the various local authorities. One remarkable feature of this system is that higher property values in the municipality are associated with lower allocations to the local authority (Allers and Vermeulen, 2016). Property values are used as a negative criterion in the allocation of central government funds, based on an average tax rate. In Amsterdam, the property tax rate for housing is about half this average rate (Gemeente Amsterdam, 2017b, p. 467), such that higher housing values result in less funds through traditional means. In other words, the loss of municipal-fund allocations due to higher housing values is not compensated by higher property taxation for housing, as the rate is too low. At the same time, more funds are generated by other means that are based on property markets, including income from land-development activities (Savini, 2017), parking taxes, tourism taxes and ground-lease renewals.

A former alderman of the City of Amsterdam, Van Poelgeest, concluded that the opposition to the current system was too fierce to continue. As an alternative, he proposed that lease renewal would occur only upon the transfer of a property to another party. This alternative would prevent current dwellers from being driven out of their dwellings, and the City could still profit from developments in land values at the time of transactions. One essential feature of this system is that the ground rent would be transparent. As such, property buyers would know the price of transferring the ground-lease right, as well as the ground rent to be paid to the city. As originally proposed, the land price would be based on the combination of the transaction price and the size of the dwelling. In this system, additional improvements would result in higher rent. This proposal drew heavy criticism, with the suggestion to develop a map of land prices set by a standing committee of experts (Frijns *et al.*, 2014). This system had not yet been implemented at the time of the 2014 municipal elections.

Following these elections, a different coalition came into office, with two liberal parties aiming to abolish the ground-lease system and one socialist party aiming to keep it. A

compromise was reached in the form of a perpetual ground-lease system in which holders of ground-lease right have the opportunity to pay off the lease in perpetuity, with the only additional payments being for improvements extending beyond the current use. Lessees may also choose to pay a rent in perpetuity, with adjustments corresponding to the consumer-price index.

The following section presents an evaluation of the four alternatives discussed in this overview, in light of the six principles developed in Section 2. First, in the *traditional* arrangement – the existing (and reference) system of enduring public lease-holding in Amsterdam – new leases are set after a period of 50 years. Second, in the *property tax* alternative, leases are renewed at no charge, with property taxes used to compensate for the loss of income. Third, in the novel system of *perpetual* leasehold rights in Amsterdam, which involves paying a rent to acquire this right and additional rent is paid when developments occur beyond the current use of a property. Fourth, the *transaction* alternative is based on the previously proposed system of setting the rent at every transaction in a transparent manner, thereby allowing a new rent to be set in every transaction.

4. Comparison of alternatives

Table I presents, using an ordinal scale, a comparison of differences between the *property* tax, *perpetual* and *transaction*, and the reference *traditional* alternatives, which are marked according to the six principles developed in Section 2. The scores corresponding to the principles are based on a ranking of the alternatives according to the principles. The principle scores do not indicate the size of these differences. The scores are explained as follows.

Property. Given that leases are extended at no charge, the value for the owner is set to €0, which does not acknowledge the residual nature of land. There is currently a difference in value between housing in ground leases and ownership within the same neighbourhood (Gautier and Van Vuuren, 2017). This model explicitly eliminates the synergistic value of ground leases. Although improvements have no impact on the rent, they do affect the property tax to be paid. This alternative therefore results in a higher tax on improvements. Setting the rent to €0 has a strong negative impact on the capture of land values. It does not affect property markets, however, as it eliminates rent payments. Current dwellers cannot be gentrified due to higher rent. This effect could potentially result in higher property taxes (which are based on the value for the highest and best use). Given that improvement value accounts for a larger share of this tax, however, higher land values have less of an impact.

Perpetual. The alternative of perpetual rights resembles the property tax system. In a way, it will eventually develop into a property tax system, as no additional land values will be captured through rent after the first transfer to this system. In general, therefore, this alternative performs between the traditional models and the property tax model, albeit with several exceptions. In the novel Amsterdam system, the synergistic value is not based on a

Principle	Property	Perpetual	Transaction
Acknowledgement of residual value	−2	−1	+1
Synergistic value is based on restrictions	+2	−1	+1
Improvements have no impact on land value	−1	−2	+1
Land value is captured	−2	−1	+1
Low impact on property market	+2	+1	−1
No displacement of current dwellers	+2	+1	+2

Table I. Ranking of alternatives in comparison with traditional model on an ordinal scale

sound calculation of synergistic value, and it is less well accounted for than it is in the current system, in which the valuation is set by experts. The valuation is thus not related to the way in which the system limits property rights. One major difference between the perpetual model and the other models is that, in this alternative, rent is paid in perpetuity (and adjusted to consumer price index, which also incorporates developments in the price of housing). In addition, improvements directly result in higher rent (and not indirectly through property taxes). The proposed system is intended to be most generous in terms of time (perpetual), although it is strict with regard to what is allowed. Because the floor area of a building is set in the deed, future rent readjustments will be based only on improvements (e.g. additional square metres or use for other functions), and not on changes in land value. Because improvements result in higher land values, lessees who invest in adding value to their homes (e.g. by adding another floor or extension) must pay a higher land value than do their neighbours who have not improved their homes. This is thus a negative development with regard to the third principle. Although land value is captured at the first transfer to this system, future land values will not be captured. The impact on market transactions is less than it is in the traditional system, in which uncertainties concerning future ground rents are likely to arise as the extension of a lease period approaches, thereby posing problems in obtaining a mortgage. Although the debate surrounding this system has generated considerable criticism with regard to the resulting gentrification issues, the same type of criticism could be levelled against the current system. In time, the termination of new rent adjustments could result in an improvement.

Transactions. Setting the rent at the time of the transaction is a promising alternative in terms of many of the principle scores. Transactions are the best time at which to reap benefits, as the system involves obtaining additional funds from a cash flow, resulting in transparency for all parties at the time of the transaction. Taxation of cash flows fits to the practice that taxation of flows is currently more accepted than taxation on assets (Mirrlees *et al.*, 2011). This system is based on the notion that the land values that will serve as a guide after new transactions are set and published by an independent body applying a transparent method of setting land prices throughout the city. This body also monitors transaction prices. Such an independent body is able to acknowledge the residual value between different elements of value. The regulations may also specify that the body should monitor the development of these values. The independent body could thus also set synergistic value based on the restriction of the lease. If the rules guiding the work of the committee clearly indicate that improvements may have no impact on land values, this may result in that this principle will be observed. Land values can be captured at every transaction, which is a moment at which decisions are taken and financing is arranged. This can protect existing residents from gentrification. Some gentrification may occur over time, however, as poorer households may not be able to buy in the area. The additional income obtained though the public authority also provides a public means with which to counter this development through affordable housing programmes. This alternative nevertheless has a negative score with regard to its impact on property markets. Studies on the stamp duty have revealed that taxation at transactions may have a considerable negative effect on household mobility (Hilber and Lyytikäinen, 2017). The system may make it very unattractive to move away from properties with low ground rents in areas that have become attractive. Because any additional value will go to the public landowner, lessees have no incentive to move. Moreover, alternative properties with the same location values will be expensive as well. Moving would thus result in a welfare loss, making it very unattractive, thus reducing the number of transactions on property markets.

5. Discussion and conclusion

Current political processes tend to step away from the idea that ground-lease systems are a good way to capture location values. In many contexts, the step taken is either to stop capturing values at all or to make one last transfer to a system of perpetual leasehold rights. In the Amsterdam case, this step is taken alongside more stringent regulation of square metres of buildings and criteria of use. The overall result is that ground-lease systems represent a shift away from the classic systems based on the ideas of Henry George. Such systems are based on the principle that location values are not the result of the improvements produced by the holders of the property rights, and that they can thus be captured without any effect on economic development. Moreover, capturing unearned increments can reduce the taxation of earned increments, thereby increasing productivity.

One of the main drivers of this change is the unpopularity of these programmes with lessee-voters. In this context, there has been a major shift from the situation of about a century ago, when many housing systems were based on landlords and tenants. In these systems, increases in land value resulted in higher rent for tenants to pay to their private landlords. Higher rents for ground leases ensure that these higher rents do not remain with the landlords, instead flowing to the community (i.e. the local authority). The situation is different in the context of owner-occupants. Higher land rents are associated with higher out-of-pocket costs for current dwellers. These costs are raised by local authorities that are responsive to voters.

From a systemic view, the step towards perpetual leases is not that different from one towards no adjustment at the end of the lease. It only postpones this step. The issue concerns the relative advantage of such a system over full ownership, which necessarily resides in additional control over land use, exceeding what can be achieved through public means. In this case, however, it is important to consider the relatively static nature of such controls. Public regulations can change over time, and many of these changes are part of the normal societal risks that owners must bear (Alterman, 2010). In most cases, lease conditions were set decades ago, and they cannot be changed without the consent of the parties involved. Moreover, there are restrictions on the types of agreements that can run with the land. This is related to the fact that, unlike contracts, such conditions that run with the land are also binding on parties who have not signed the contract, but who are holders of the right. This is a doctrinal principle in civil code systems, as it is associated with the movement beyond feudality (Akkermans, 2008). According to this principle, these conditions may not impose obligations to act in a certain way. Owners may not set *droits du seigneur* (manorial rights) to compel tenants to act to meet the requirements of the owner. Rights to tolerate or to condemn certain acts are acceptable. The right to condemn certain acts is likely to be well-suited to specification in public law, provided that there is sufficient confidence that it will not be prohibited by the legislature. For public authorities that do not have much confidence that the legislature will provide them with sufficient public powers in the future, setting lease conditions could be a feasible alternative to ascertaining that these kinds of conditions may be valid over time. In this sense, ground leases are a relatively static instrument.

An alternative system of setting prices in a transparent manner at every transaction is promising. This situation also leaves several details to be worked out, including issues concerning whether the standing committee has set the proper value. In some cases, parties might not be satisfied with the value that has been set, thus necessitating the organisation of review proceedings, which may result in uncertainty distorting the property market. Another negative effect could result from a freeze of the property market. The main negative point is that such a system would limit supply of housing on the housing market. The

additional locational value that becomes available after a sale would go to the local authority, and not to the holder of the ground lease. On the other hand, a ground-lease holder purchasing another dwelling would have to pay the full price to both the local authority and the supplier of right. The result would therefore be that the welfare of long-term lessees would deteriorate if they were to move. This effect has also been identified in contexts in which houses are subject to stringent rent control. Under such conditions, people tend to remain in their current housing for much longer (Munch and Svarer, 2002). Although this is part of the aims – if people are not forced out of their housing due to large rent adjustments, they will be less likely to move – it may have negative effects on housing and land markets. Experiences with rent control have demonstrated that more refined rent-control systems, which allow for limited rent increases, have less negative effects on the functioning of housing markets than do more stringent systems (Skak and Bloze, 2013; Lind, 2015). A transaction-based system, which captures only a part of any value increases, may therefore provide a middle ground.

A transaction-based system could also resemble the functioning of a transfer tax, in which a certain percentage of the transaction price is due. Recent research suggests that lock-in effects of transfer taxes are low (Slemrod *et al.*, 2017). It must be noted, however, that such taxes have a relatively low percentage of the value (2.9 per cent of the sale price in the study of Slemrod *et al.*, 2017). In certain neighbourhoods, however, real changes in location value that accumulate over time as a resident lives in the location may reach a much larger percentage, thereby resulting in a larger lock-in effect. Payment at transaction increases the cost of transactions, thereby reducing the number of transactions and possibly having a negative effect on the functioning of the property market.

Overall, public ground-lease systems face issues relating to public land-value capture. There is no quick fix, as none of the systems examined in this analysis score better on all of the principles addressed. The transformation of ground-lease systems into systems that capture only improvement values can be seen as an opposite development with regard to the principles on which ground-lease systems are based. Novel introductions of ground lease to support affordable housing make a fit to this transformation. Ground-lease systems are no more a neutral, "Georgean", way to capture ground values without impacting behaviour, but are used as a land policy tool to steer land use.

The long-term character of ground leases makes that terms and conditions set long ago, must be applied much later. In many contexts, citizens have been able to politicize this application and public authorities have charged less ground rent than would be allowable by the terms and conditions of the lease. This process is relevant for current decisions on novel introduction of ground lease to facilitate affordable housing.

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