

To Capitalize or Not to Capitalize?

Public Agencies vs. Urban Residents

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Abstract

In recent decades, urban residents in various countries have faced the dilemma of whether to accept offers, made by public authorities' agencies, to increase their property rights in the housing units in which they live or to maintain their existing status and pay higher annual fees. These offers, involving a broad range of housing ownership policies, have often met with indifference or only marginal acceptance. In this paper we analyze the factors that seem to underlie the tenants' (or lessees') preferences and the housing authorities' proposals. To explain the results we use a sequential game approach, in which the two sides, the lessees and the authorities, base their decisions on their respective payoffs and the response of the other party. The data regarding the acceptance or rejection of the authorities' proposals are from the Israeli housing market, where fees and property rights are the key variables.

Keywords: Urban residents; public housing agencies; Israel; game theory; property rights; extensive sequential game

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1. Introduction

Over the last several decades, public housing authorities in various countries have offered urban tenants—with cooperative, rental, or leasehold contracts—economic incentives to increase their property rights in the housing units in which they reside. In return, the tenants would have to pay higher annual fees or a higher lump sum. Yet these seemingly attractive proposals have often met with indifference or only marginal acceptance. In general, the objectives of the public institutions were economic and administrative efficiency. The primary economic objective was to enrich the public coffers through the tenants' payments. The administrative objective was to reduce friction with the tenants and to streamline, simplify, and expedite the managerial and regulatory work of the public institution (Hason, 2006).

Since the 1990s, as part of the waves of neoliberalism and privatization, considerations of economic and administrative efficiency have been increasingly important factors in urban planning decision-making in many developed countries, such as Germany, Netherland, Great Britain, Sweden, and Israel (Alterman, 2001:23–35). The public authorities' offers that would enable residents to increase their property rights and reduce leasehold payments are manifestations of these trends.

Urban residents have had to choose between maintaining their existing status and increasing their property rights by paying the required sums. This paper shows that many eligible residents have may rejected the seemingly tempting offer of increased property rights primarily because such a move would involve a financial burden contrary to their individual economic interests.

In the United States, an example of the phenomenon is the Mitchell-Lama Housing Program in the state of New York, under which the owners of a housing cooperative had the option of “privatizing” their building. This would allow residents to sell their units at market rates, which would exceed the prices they had paid. Yet many residents chose not to privatize,

for fear that this might increase their rent on the housing unit (because the building would lose its tax abatement) and might increase the payments on a non-subsidized mortgage. The policy of housing privatization has become a major issue in the United States since the 1990s.³

In the United Kingdom, many social housing tenants have faced a similar dilemma since 1979, because of the massive privatization of social housing. This process has encouraged many middle- and low-income households to fulfill their dream of owning their housing unit, but has forced them to take larger mortgages than they can afford (Whitehead, 1993; 2014: 105–120).

In Israel, since the early 1970s the Israel Lands Council (ILC) has tried various ways to encourage urban lessees to capitalize their residential leasing contracts by offering them a “bundle of attractive benefits,” mostly in the form of increased property rights. Despite these offers, which have increased over time, for many years the lessees have generally been unresponsive (Hananel, 2010; 2013; 2015; Hananel and Alterman, 2015:156–161).

What is the explanation for this phenomenon? What accounts for the changes, over time, in the leasehold policies and the response of the target population? In this study, we focus on the relationship between the public housing institution and its clients, the lessees, with regard to leases and property rights. We focus on the Israeli case, for which we have detailed information, because it has affected a large sector of the urban population.⁴ The key questions in our study are: How have the lessees responded to the housing authority’s proposals over time? Why were the lessees indifferent to the housing authority’s policy despite the incentives offered over time? How did the authority respond to the lessees’ behavior? And what explains the observed changes in the number

³ See <http://www.nyshcr.org/Programs/mitchell-lama/>; <http://www.cu4ml.org/> (Retrieved, Dec.27.2015).

⁴ Nearly all (91.5%) of Israel’s population resides on urban land. *Statistical Abstract of Israel* 2013, Table 2.21 Localities and population, by type of locality and population group http://www.cbs.gov.il/reader/shnaton/templ_shnaton.html?num_tab=st02_21x&CYear=2013 (Retrieved, December 28, 2015).

of lessees who complied with the proposed policy? More generally, we try to explain changes in policy concerning the relationships between clients and public institutions in the context of housing.

In our attempt to answer these questions we use a game theoretic approach, namely that of an extensive-form game.⁵ We chose this approach because it is useful in examining the strategic behavior of the agents involved: the public institution and the urban lessees. Furthermore, it enabled us to track changes in each player's behavior over time, taking into account the other player's strategic decision in the previous round as well as the equilibrium results, which evolved accordingly.

The design of the paper is as follows: The next section briefly presents Israel's land policy and reviews basic terms of urban leasing. The third section analyzes the relationship between the urban lessees and the Israel Lands Authority, as a series of extensive-form games. The concluding section summarizes the findings and implications. We argue that these lessons, though emerging from the Israeli experience, are relevant to similar situations in which urban lessees must respond to proposals from agencies of public institutions.

2. Israel's Land and Housing Policy

Israel's urban land policy regarding the relationship between the public authorities and their clients has evolved substantially. To understand this evolution, it is necessary first to briefly examine the main characteristics of the policy. First, most (93%) of Israel's land is nationally owned. Consequently, Israel's public land policy affects, directly and indirectly, the majority of the country's population. Most Israeli citizens reside, work, and spend their leisure time on national land (Alterman, 2001, 2003).

⁵ In game theory this game form, also known as "extensive sequential form game," allows for sequencing the players' possible moves as well as their choices at each decision node. It assumes that each player has information about the other player's moves following his decision and about his payoffs for the game outcomes (Gilboa, 2010: 114–117).

Another important attribute of Israeli land ownership is that by law national land cannot be sold; instead, a public leasehold system is used (Hananel and Alterman, 2015: 71–86). Public land is administered by a governmental agency, the Israel Lands Authority (ILA), and its policy is regulated and enforced by a statutory body, the Israel Lands Council (ILC).⁶

The ILC's first decision, in May 1965, titled Land Policy in Israel, defined two different types of leases, one for urban areas and the other for rural-agricultural land.⁷ In this paper we focus solely on land policy regarding the urban sector.

The leasing terms for urban land are based on market forces. This means that the price “is determined by its actual market value agreed upon by a willing seller and a willing buyer” (first ILC decision, May 1965). Urban leasehold contracts involve two payments by the lessee: a partial single capital payment upon signing the lease (40%–80% of the land's value) and an annual payment of 5% applied to the remaining value.

The ILC's 1965 decision also refers to the duration of the lease: 49 years, with an option for the tenant to extend it for another 49 years. Only in the late 1970s did the ILC develop rules concerning the expiration of leasing contracts and renewal rights and set a renewal fee (Alterman, 2003:17).⁸

There are two more payments to the ILA that tenants make in order to expand their property rights. The first is a consent fee for the transfer of rights, when the property is transferred to a third party upon a sale or as a gift. Although the ILA almost always gives its permission for lease transfer, it use this opportunity to tax part of the added land value (Alterman, 2003: 27–29). The second payment is a permit fee for development rights, which the

⁶ Clause 3 of the Israel Lands Administration Law, 1960.

⁷ Since the 1990s, the differential urban and rural-agricultural land policies have been the focus of a public debate that centers on questions of social and distributive justice (Hananel, 2009, 2010, 2015; Hananel and Alterman, 2015).

⁸ The lessees have the right to extend the lease for another 49 years for only one-fifth of the annual rent payment charged for the initial lease (1% instead of 5% per year for the entire term) (Weisman, 1999).

ILA charges when the lessee seeks consent for additional development beyond the development rights that were in force at the time of the initial lease (Alterman, 2003: 30).

2.1 The Capitalization of Urban Residential Leaseholds

In 1973, the ILC decided to change the payment method for urban residential leasehold contracts, from two payments to one advance payment. This method is known as “capitalization.” Capitalization is a simple technical operation in which the annual lease payments for the remainder of the lease are converted into a one-time payment of a capital sum (Vitkon, 2001: 425). The annual interest rate of the lease contract was 5%, for all regions of the country (Hananel and Alterman, 2015: 153).

The stated reason of this policy change was administrative efficiency, namely “to simplify and expedite leasing processes and supervision of leasing conditions.”⁹ In practice, the increased number of urban lessees made it difficult for the ILA to administer the leases. The one-time advance payment method was intended to reduce the dependence of urban lessees on the ILA, thereby lessening the resulting friction. The secondary motivation for this policy was to collect more revenue from the lessees. Capitalization of the lease contracts required reassessment of the land’s value, and in most cases, this led to a substantial increase in the leasing fees (in some cases by hundreds of percentage points). At first, as shown in detail below, the capitalization policy did not provide sufficient benefits to the urban lessees, for many of whom it involved a substantial financial burden. As a result, urban lessees were not eager to capitalize.

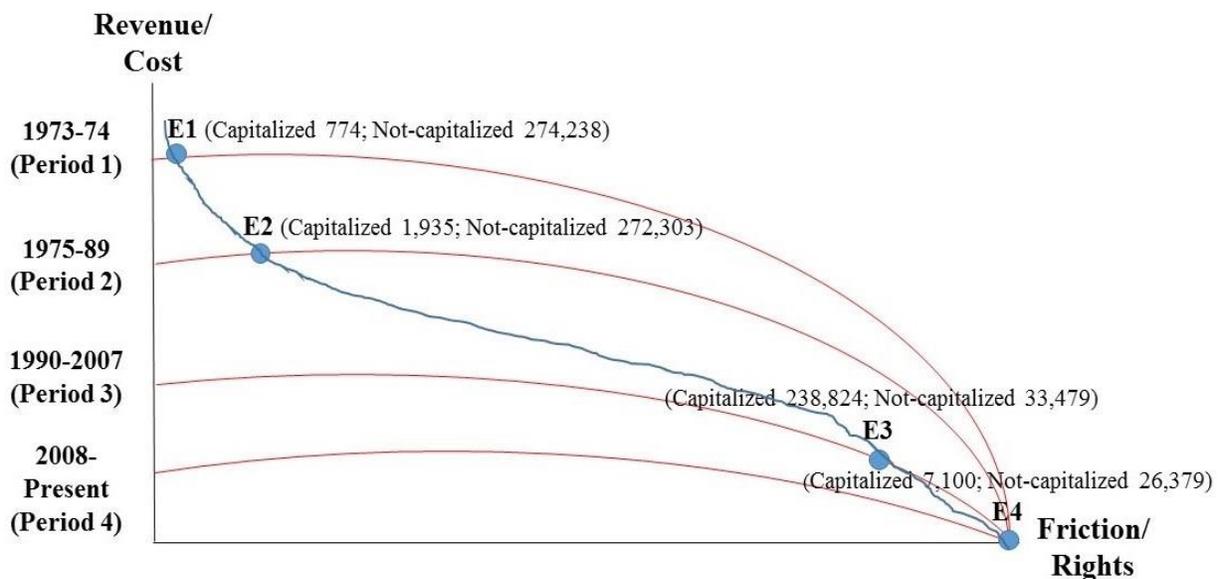
In response to the lack of interest in the capitalization option, the ILA proposed a series of new policies containing both carrots and sticks. The carrots included a decrease in the

⁹ ILC decision No. 130.

capitalization payments and an increase in the property rights. The sticks consisted of increased leasing fees for those who rejected capitalization. The urban lessees' main interest was financial, that is, paying the ILA as little as possible. They also wanted independence, that is, to reduce their friction with the ILA by gaining more property rights.

The adoption of the capitalization system has dramatically changed the lessees' relationships with the ILA by blurring the differences between leasing and ownership. This process, which has been called "creeping privatization" (Alterman, 2003) or "concealed privatization" (Weisman, 1991, 1999; Barak-Erez, 2008; 2012: 85–86), was conducted in a creeping manner, and was a significant step towards full privatization of urban land (Hananel, 2013, 2015; Hananel and Alterman, 2015: 153–191). The interests of each party are shown in Figure 1.

Figure 1: The ILA's set of offer curves and the lessees' willingness to accept curve



The figure shows the original offer curve (in red) made by the ILA (marked as period 1). It slopes from left to right to indicate the tradeoff between the property rights the ILA was willing to grant lessees and the ILA's expected revenues. The lessees' willingness-to-accept

curve (in blue) indicates that they favored more rights for lower cost. The figure shows that initially (period 1) the offer curve hardly intersects the lessees' willingness-to-accept curve, so that most lessees did not capitalize their leasehold contracts. Consequently, the ILA successively lowered its offer curve, agreeing to accept lower payment and to grant more property rights. The results were equilibrium points (marked by E1–E4), that show the number of urban lessees who accepted the ILA offers and those who declined, in each period. As the figure shows, these equilibrium points reflect reduced payments for expanded property rights.

What explains the evolution of the relationships between the ILA and the urban lessees? In what follows we use an extensive sequential game framework to model the behavior of these two agents: Both must make choices based on their respective interests. In each of the four periods, the ILA offered urban lessees property rights in exchange for capitalization. The urban lessees had to decide whether to accept the ILA's offer. In this game there is complete information, and the payoff matrix is calculated at the end of each period by backward induction. In each period we observe a different equilibrium, which reflects the division between those who agreed to accept the ILA offer and those who declined. These points—E1, E2, E3, and E4—are shown in Figure 1. Next we characterize the game and its results.

3. The ILA vs. Urban Residential Lessees: An Extensive Sequential form Game

In game theory parlance, the relationships between the authorities (ILA) and the urban lessees can be described by a matrix in which the rows and columns denote strategies and the matrix's entries specify agents' utilities. The "payoff matrix," contains the information regarding the relative benefits and costs to agents that emerge from each possible strategy vector of choices

(Gilboa, 2010:114–117; Riker and Ordeshock, 1973: 119–120).¹⁰ Yet, this game form allows no reference to the element of time, whereas the situation of interest to us has a chronological time line. Therefore, we use an extensive sequential form game that allows us to model the chronological order of moves by the players. The game is described by a decision tree: at each node one agent is expected to make a move. Edges coming out of the node represent the various moves that the players can chose from (Doron and Sened, 2001:150–151; Gilboa, 2010:114–117).

At each point, the leaseholders must decide whether to accept or reject the ILA’s capitalization offer. Following the lessees’ response, the ILA may changes its capitalization/ property-rights policy in the next set up of the game. The ILA and the leaseholders were engaged in this kind of game over several periods. In each period, a player considers the impact of his or her actions on future actions by the other player. The number of lessees who capitalize at each period represents the equilibrium of each of the series of games played over time (E1–E4, in Figure 1).¹¹

On the basis of the trajectory of the ILC policies concerning property rights that were linked to capitalization, we regard the 46 years since the initiation of the process (1973– present) as one extensive sequential form game, which consists of four distinct periods, described below. In each period, the ILA changed its policy in response to the urban lessees’ behavior in the previous period. Thus, each period is represented by a different payoff setup that players face. The four periods are: (1) 1973–1974: the first decision regarding capitalization; (2) 1975–1989: exemption from consent fees and renewal fees; (3) 1990–2007: discount offers and exemption from permit fees; (4) 2008–present: “conceptual capitalization” and ownership (explained below).

¹⁰ This is an extensive-form game, which contains relevant aspects of the game, including the sequencing of players' possible moves, their payoffs, their actual choices at each decision point, and the other player's moves when he or she makes a decision.

¹¹ Note that if every strategy has a payoff greater than the minmax payoff, namely, it minimizes the possible loss for a worst case (maximum loss) outcome, it is considered a Nash equilibrium strategy.

The ILA's data show that in 1988, about 275,012¹² urban lessees were encouraged to capitalize their leasehold contracts. Because the ILA has data starting only in 1988, we do not know exactly how many urban leasehold contracts existed in 1973, when the capitalization system began, and exactly how many leasehold contracts were capitalized during the first two periods. We estimated, however, that an insignificant number of leases (a few hundred annually) were capitalized during the first and second periods, most of them in the context of a transfer of property rights between lessees.¹³ Accordingly, in the first period (1973–1974) only 774 contracts were capitalized. In the second period (1975–1989) 1,935 contracts were capitalized. In the third period (1990–2008), for which pertinent data are available, 238,824 contracts were capitalized, and 7,100 were capitalized in the fourth period (since 2008). Currently, 26,379 contracts are still not capitalized. When we consider the number of lessees who capitalized their contracts over the years, we find that most of them (90%) chose to do so using the discount offers that were in effect during the third period. These data are presented in Table 1 below.

Table 1. Total urban residential leaseholds that were capitalized, by cause

Cause for capitalization	Total number	Percentage
Discount sales	222,954	90
Transfer of rights ¹⁴	6,643	2.5
Lease renewal	7,307	3
Conceptual capitalization	6,268	2.5
Other ¹⁵	5,461	2
Total	248,633	100%

¹² Until March 1988 the number of non-capitalized urban residential leasehold contracts was on the rise. Since March 1988 all new residential leases have been capitalized.

¹³ On the basis of interviews with ILC officials and ILA data we know that in 1988–1989, 774 leasehold contracts were capitalized (annual average of 387). On the assumption that this number applied throughout the first two periods, we multiplied this annual average by the number of years in each period.

¹⁴ The number in this group is probably larger, because in the 1970s and 1980s most of the lease contracts that were capitalized involved a transfer of rights. On the basis of an interview with the ILC, we estimate that the number was several hundred each year.

¹⁵ These are lessees who capitalized their lease contracts not as part of the discount sales, or due to transfer of rights or lease renewal.

To explain these results we use the extensive sequential form game, showing how the game and the corresponding equilibrium changed in each period.

3.1 The ILA's and the Lessees' Utilities

As indicated above, the ILA derived benefits from revenue (denoted by R) and from reduction of friction with the leaseholders (denoted by F). Over the years the weights of these factors, denoted respectively by w_1 and w_2 , ($w_1 + w_2 = 1$), have changed in favor of reducing friction (increased w_2). For the sake of simplicity, we assume a quasi-linear utility function, for example, $U_{ILA} = w_1(R) - w_2(\sqrt{F})$. As friction is reduced, the ILA's utility increases.

The lessees' benefits derived from a reduction in their payments (denoted by P) and the gain in property rights (denoted by G). Hence, we assume their utility to be expressed as: $U_L = r_1(G) - r_2(\sqrt{P})$; ($r_1 + r_2 = 1$). Note that the lessees' utility is gained from lower payments and that although R and P are not equal, they move in the same direction. As payments increase, so do revenues. The figures below are based on these utilities. In sum, the two policy variables are payments (P) and property rights (G), while revenue (R) and friction reduction (F) are the consequential objectives. Given the players' respective utilities, we specify the payoff to each player from each variable, resulting from different policies, to be in the range of (0, +10) or (-10, 0). Since each player's utility is derived from two different weighted variables (P , G) and (R , F), in theory, each player's total value can range from (-20) to (+20).

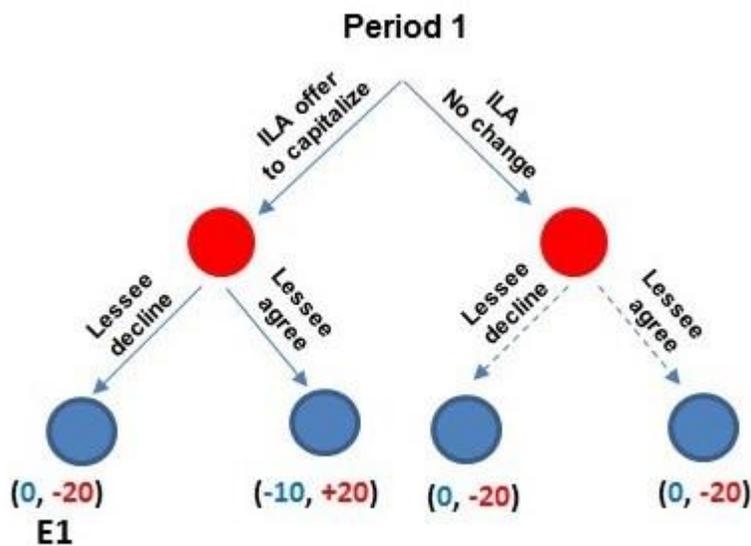
The payoff from each weighted variable changed over time. The values of each of the policy variables and their respective weights are as follows: Revenue was initially very high, yielding a payoff of (+10), but over the years it gradually decreased to (0). For the lessees, the payment for capitalization was initially high, but over the years it decreased gradually to zero.

The property rights that the ILA offered the lessees have increased over time. Thus the payoff ranges from no ownership (0) to full ownership (+10). The utility from reducing friction is the only one that remained consistently high over time (+10). Using extensive sequential form game we next examine these changes over the four periods indicated above.

Period 1. 1973–1974: The first decision regarding capitalization

During the first period, the ILC introduced the policy of capitalization, with the objectives of reducing friction between the ILA and the lessees and increasing revenue. During this period, the transition to capitalization was very slow. Since under the “old” rules the annual payment was much lower, the capitalization offered the lessees no significant benefit and therefore they were not eager to accept the ILA’s offer. During this period, the ILA placed much greater weight on revenue than on friction reduction. The payoffs resulting from different strategic moves by the agents are illustrated as follows:

Figure 2. Period 1: 1973–1974¹⁶



¹⁶ The urban lessee payoff matrix is in blue, and the ILA payoff matrix is in red.

Over the years, the lessees placed little weight on property rights but great weight on payments. Given the lessees' utility function, choosing to capitalize during this period meant that one paid much more (-10) and gained no rights (0); thus the utility would be (-10). Assuming equal weight for revenue and friction reduction, in this period the ILA would receive more revenue (+10) and reduce friction (+10), for a total utility of (+20). Lessees who chose not to capitalize would not pay more and would not gain more property rights (value 0), while the ILA would not receive additional revenue and would not reduce friction, for a total utility of (-20).

The information the ILA received at the end of the first period was the urban lessees' clear preference for not capitalizing (E1 in Figure 1: Capitalized, 774; Not capitalized 274,238). This led the ILA to revise its policy terms and offer, in the next period, a new "carrot and stick" policy.

Period 2. 1975–1989: Exemption from consent fees and renewal fees

The first "carrot" came off a policy change in 1975—exemption from the "consent fee."¹⁷ It applied when lessees who capitalized their contracts transferred the rights to other residents.¹⁸ The ILA also linked the capitalization with "renewal fees" following the initial 49-year period.¹⁹ From now on, urban lessees who capitalized could extend the lease for another 49-year period at a considerable discount. The "stick": starting mid-1970s the ILA updated the annual leasing fee

¹⁷ The consent fee in the urban sector is usually one-third of the difference between the original assessment of the property and its assessment at the time the application is submitted. In any case, when rights are transferred, the ILA assesses the property and derives the annual leasing fee from that assessment.

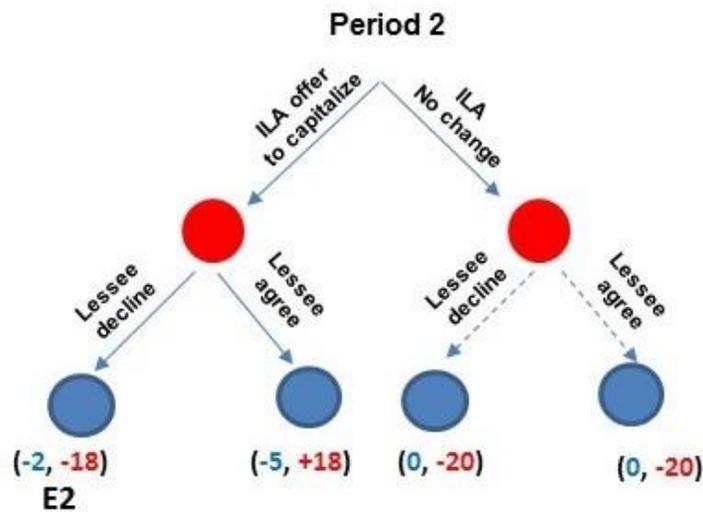
¹⁸ To encourage the lessee to capitalize the leasehold contract when the rights are transferred, the ILA offered residents two tracks. In cases where the consent fee was higher than the capitalization fee, the consent fee was considered also as the capitalization fee. In cases where the capitalization fee was higher than the consent fee, the ILA allowed the seller to pay one-third of the amount and took the other two-thirds from the buyer. This fee was called a "supplementary fee," and it was assessed by the ILA without any ILC decision in the matter.

¹⁹ Toward the end of the original lease term, the ILA assessed the property from which it derived the annual lease payments for 49 years. In the event of capitalization, from the assessment, calculating "capitalization factor" of 18.1 and multiply by 5. Only in the event of capitalization could the lessee request an early jubilee, i.e. seven years before the expiry of the original lease. In this case, the lessee pays for another leasing period of 49 years that begins before the end of the original period.

for lessees who did not capitalize their residential contracts and gradually increased the fee. However, the increases were so gradual they did not motivate many urban lessees to capitalize.

Finally, in 1988, the ILC expanded the capitalization policy, which had initially affected only apartment dwellers, to include all urban residential leaseholders, including those in single-family housing (Hananel and Alterman, 2015:153–161). The payoffs of this period are shown below:

Figure 3. Period 2: 1975–1989



In this period, lessees who chose to capitalize still had to pay a considerable amount of money, but a little less than in the previous period (-8). The lessees also gained some rights (+3), so the total utility is (-5). The ILA received less revenue (+8), but reduced the friction with the lessees (+10), for a total utility value of (+18). Lessees who chose not to capitalize paid a bit more (-2) and did not gain more rights, yielding a total utility value of (-2). The ILA did not receive more revenue (-8) and did not reduce friction with the lessees (-10), for a total utility value of (-18). Thus, although the ILA offered improved terms, they were not improved enough to induce the lessees to capitalize. During this period, only 1,935 leasehold contracts were capitalized, while 272,303 were not (E2, Figure 1).

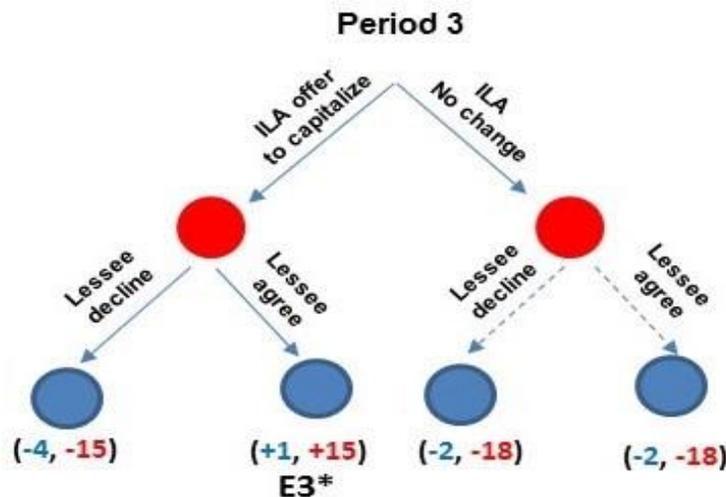
Period 3. 1990–2007: Discount offers and exemption from permit fees

In the mid-1990s, as part of the “carrot” policy and after realizing the failure of previous policies to induce capitalization, the ILA began a series of capitalization discount offers, which gave exceptional discounts and preferential terms for a limited period to lessees who chose to capitalize. The discount offers were not connected to the actuarial value of the lease, and in some offers the capitalization calculation was based on 3% per annum instead of 5% as the ongoing rate.²⁰

As additional carrots, during the 1990s the ILA gradually offered exemptions from “consent fees” and “renewal fees” for those who chose to capitalize. As part of the “stick” policy, the ILA substantially increased the annual lease fee for contracts that were not capitalized.

In 2007, the ILA introduced another capitalization discount offer, accompanied by an extensive media campaign. The offer included cancellation of up to 30% of the debt, cancellation of debt restructuring payments, and various payment options (including online, bank, and debit). The offer was valid only for six months. The policies effects on agents utilities are displayed in Figure 4.

Figure 4. Period 3: 1989–2007



²⁰ To demonstrate the economic viability for the lessees in capitalization of the leasing contracts, the ILA sent every lessee a detailed calculation of two amounts: leasing fees for contracts that have been capitalized and leasing fees for non-capitalized contracts.

Given the lessees' utility function, which put greater weight on fees, those who chose not to capitalize in this period would pay more than in the two preceding periods (-4) and would not gain more rights (0), thus attaining a total value of (-4). In this situation, the ILA would not get more revenue (-5) and would not reduce the friction with the lessees, which has greater weight in its utility function (-10), yielding a total value of (-15). However, lessees who chose to capitalize, given the discount offers, would pay less than in the two preceding periods (-5), though still a substantial amount, but would gain extensive property rights (+6). Given the weights in the lessees' utility function, the total utility of a lessee would be (+1).

As the data show, during this period (1990–2007) many lessees agreed to capitalize. In fact, 90% of the urban lessee contracts (222,954) were capitalized during this period.

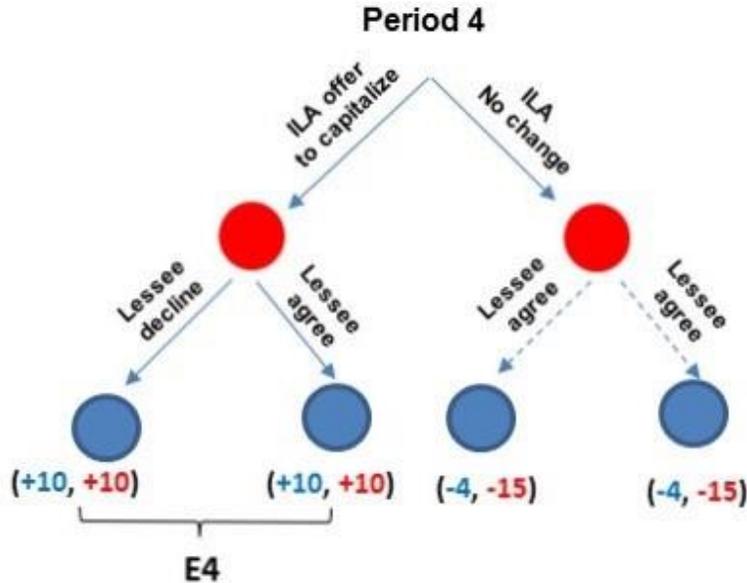
As for the ILA, in this period the ILA would gain some revenue (+5) and would substantially reduce friction with the lessees (+10), thus yielding a total utility of (+15). At this equilibrium point, a total of 238,824 lease contracts had been capitalized; 33,479 had not (E3, see Figure 1, and E3* Figure 4). Therefore, the fourth ILA proposal, which is presented below, focused solely on the 33,479 urban lessees who had not yet capitalized their residential leasing contracts (the distance between X₃ and X₄ in Figure 1).

Period 4: 2008–present: Conceptual capitalization and ownership

At the beginning of this period, the ILA increased the benefit of the lessees in relation to property rights and payments. In 2008, the ILA introduced a new policy titled “conceptual capitalization”: Instead of encouraging urban lessees to voluntarily capitalize their residential leaseholds, the ILA considered a contract capitalized once the lessee had paid seven years' annual leasing fees. A one-time payment in advance was no longer required.

In 2009, the Israeli parliament enacted a land reform²¹ to allow transfer of full private ownership to urban lessees on one condition that the leasing contract be capitalized (Hananel, 2010, 2013, 2015).²² Figure 5 describes the new payoffs associated with the revised version of the game.

Figure 5. Period 4: 2008–present



The strategic choices of the lessees and the ILA yielded an additional 7,100 leasehold contracts to be capitalized. 26,379 are still not capitalized (E4, Figure 1). The explanation for this lukewarm response by lessees is the indifference of all agents, at this point between capitalizing and not capitalizing. Both strategic choice yields the same payoffs to the lessees and the ILA. The ILA is clearly better off offering the change in policy as it reduces friction and discontent significantly but the it is indifferent to the lessees strategic response due to the small numbers involved and the automatic nature of the transfer of rights induced by the new policy.

²¹ ILA Law (Amendment No. 7), 2009. The 2009 reform adopted the recommendation of the public committee appointed to finalize proposals for a reform of the ILA (the Gadish Committee, ILC decision No. 1,066), namely, to grant full ownership of housing units in the urban sector after capitalization of the leasehold contracts.

²² On lots with an area of up to 540 square meters, there is no fee for the transfer of ownership; on lots with an area over 540 square meters, the transfer of ownership involves a small fee (ILC decisions: 1,185, 1,370).

In this period the lessees did not have to pay more (0) and gained ownership (+10), yielding a total value of (+10). The ILA did not receive more revenue (0), but it reduced friction with the lessees considerably. Thus every strategy gains +10, yielding a total value of (+10).

At present (2016), about 10% (26,379) of the peak number of urban residential leasehold contracts (275,012 in 1973) have not been capitalized, mainly because the lessees lack the means to pay the seven-year fees. The ILA is examining various options for handling these cases, but is leaning toward freezing the lessees' capitalization fees until the lessees ask to increase their development rights or sell their property.²³

4. Discussion and Conclusions

We analyzed the relationships between a public institution and its clients—the housing authority and its urban clients (the lessees). Such relationships are typical of many urban areas. We focused on the Israeli case, given the availability of data and the importance of such policies for the majority (91.5%) of the population in Israel.²⁴

The authority changed its policy over time to encourage urban lessees to capitalize their residential leasehold contracts. The ILA's main motivation was administrative efficiency, namely reducing friction with the lessees, and increasing revenue (at least initially). Over the years, the ILA gradually reduced the payments it required of the lessees in exchange for property rights. With each policy change some lessees decided to capitalize and receive increased property rights, while others decided not to. How can we explain these changes in behavior by the two sides, the ILA and the urban lessees, and what general conclusions can we draw?

²³ Based on interviews with ILA officials.

²⁴ See reference 2.

To answer these questions we reviewed policy changes and lessees' responses using an extensive sequential form game played between the parties, where the equilibrium is assessed based on the number of lessees who did or did not accept the ILA's policy offers.

The game is prompted by the strategic choices of the two parties. These choices are made based on the expected payoffs from each anticipated strategic vector of choices. The ILA objectives were to reduce friction with the lessees and collect revenues. The lessees' objectives were to reduced payments and increase property rights. The process was characterized by policy changes, which offered various mixes of payment and property-rights incentives.

We conclude that the urban lessees' interest—reduced financial obligation—was the dominant factor; increasing the lessees' property rights was of secondary importance. This is reflected in the respective weights placed by the lessees on these variables in their utility functions. Over the years, the ILA changed the mix of payments (revenue) in exchange for property rights by reducing the fees and increasing the rights, thus reducing friction with the lessees. Evidence of the lessees' preferences is found in the fact that ultimately 90% of the urban lessees who chose to capitalize their residential leasehold contracts were responding to “discount sales” (period 3), as shown in table 1.

The policy change of 2009 allowed the lessees to gain ownership almost automatically, with the only remaining condition that their urban residential leasehold be capitalized. However, even after the 2009 reform, about 10% (26,379) of the urban lessees still did not capitalize. Was it because they chose not to, or because they could not afford to?

A key policy conclusion that can be drawn from this analysis is that a public agency does not always correctly identify its clients' interests and needs. The ILA's lack of sensitivity to, and understanding of, the urban lessees' needs was a key factor in the relationship between the

parties. In our case, it took more than four decades for the ILA to give up the revenue objective and succeed in reducing friction with the lessees by realizing that the typical urban lessee's basic motivation was to pay less, rather than to increase their tangible property rights.

Similar to the cases of public housing tenants in England and the Mitchell-Lama Program in New York, we find that the residents' main aim is lower costs, rather than gaining additional property rights.

It is important to examine the implications of public institutions' imposition of restrictions, such as capitalization in the Israeli case, on clients' behavior in the housing market as individuals and on the collective level. Perhaps, if capitalization were not mandatory, individuals could change residential units more frequently and improve their housing situation. Perhaps the accelerated release of secondhand apartments for the housing market might have reduced costs and possibly averted the current crisis in the Israeli housing market. However, these important issues require and deserve a separate study.

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Appendix: List of ILC Decisions included in this study

	Decision No.	Date	Subject
1	1	May 17, 1967	Israel's land policy
2	130	Sep 10, 1973	Changes in terms of leasing urban land for high-density construction of housing projects
3	155	June 6, 1975	Changes in terms of leasing urban land for industrial and commercial purposes
4	158	Nov. 11, 1975	Changes in terms of leasing urban land for high-density construction of housing projects - join of new lessee, who signed on leasehold contract after April. 1 st , 1974
5	166	Feb 23, 1976	49-year leasing (jubilee)—means for evaluating urban land for high-density construction. New lessees signed after January 1, 1974
6	173	May 31, 1976	Changes in terms of leasing urban land for high-density construction of housing projects
7	174	June 14, 1976	Changes in terms of leasing urban land for high-density of industrial and commercial construction
8	201	March 28, 1978	Annual lease fee
9	217	Apr. 24, 1979	Land for hotels – change in terms of leasing [capitalization]
10	269	Aug. 22, 1983	49-year leasing (jubilee)—means for evaluating urban land construction
11	282	May 29, 1984	49-year leasing (jubilee)—means for evaluating urban land construction – amendment of ILC decision No. 269
12	299	Jan. 9, 1985	Annual lease fee
13	306	July 8, 1985	49-year leasing (jubilee)—means for evaluating urban land construction – amendment of ILC decision No. 269
14	316	Nov. 26, 1985	Annual lease fee
15	319	Dec. 24, 1985	Annual lease fee
16	345	Feb. 3, 1987	Updating of annual lease fees, urban land
17	379	March 29, 1988	Changes in terms of leasing urban land for residential
18	397	Nov. 8, 1988	Changes in terms of leasing urban land for commercial and offices construction
19	402	Dec. 19, 1988	Structural additions, changes of use, division of urban land – charge for permits
20	537	June 29, 1992	49-year leasing (jubilee)—means for evaluating urban land construction – amendment of ILC decision No. 269
21	633	Feb. 7, 1994	Updating of annual lease fees, urban high rise constructions
22	677	Nov. 25, 1994	Permit charges cancelled in high-density urban construction
23	678	Nov. 25, 1994	Decision regarding capitalization of annual leasing fees and agreement fees
24	713	March 29, 1995	Updating of annual lease fees and consent fees for urban high rise constructions
25	714	March 29, 1995	Discount sale for capitalization and renewal fee for residential constructions
26	715	June 20, 1995	Discount sale for capitalization for residential constructions
27	729	July 26, 1995	Discount sale for capitalization for residential constructions
28	747	Dec 12, 1995	Reevaluation of urban land
29	749	Feb. 27, 1996	Discount sale for capitalization for residential constructions
30	790	June 26, 1997	Structural additions, changes of use, division of urban land – charge for permits
31	791	June 26, 1997	Adapting the Israeli Government decisions regarding the lands of Israel
32	814	Jan. 9, 1997	Amendment for ILC decision No. 790
33	824	Feb. 10, 1998	Amendment for ILC decision No. 790, for structural additions, changes of use, division of urban land – charge for permits
34	828	Apr. 5, 1998	Updating lease fees and capitalization fees
35	833	Sep. 7, 1998	Leasing lands for residential and industrial constructions
36	840	Sep. 7, 1998	Discount sale for annual lease fees and consent fees, residential
37	843	Nov. 19, 1998	Leasing fees for residential constructions
38	844	Nov. 19, 1998	Leasing fees in residential construction
39	848	Nov. 19, 1998	Reevaluation of urban land

40	851	Nov. 19, 1998	49-year leasing (jubilee)—means for evaluating urban land for industrial, commercial, truism, and offices construction.
41	900	March 25, 2001	Discount sale for capitalization for residential purposes
42	901	Oct. 12, 2000	Amendments of ILC decision No. 824 terms for structural additions, changes of use, division of capitalized leaseholds urban high-rise constructions
43	933	July, 2, 2002	– charge for permits
44	950	Feb. 21, 2003	Amendments of ILC decision No. 933
45	968	June 9, 2003	Amendments of ILC decision No. 269 and 851
46	975	Oct. 22, 2003	Principles for ILA policy regarding leases for residential and employment purposes
47	1030	May 2, 2005	Freeze of residential annual lease fees
48	1060	July 27, 2005	Discount sale for capitalization of annual lease fee and consent fee
49	1061	July 27, 2005	Renewal residential leasehold contracts
50	1066	Jan. 11, 2006	Reforming the management of the Israel Lands
51	1076	Jan. 11, 2006	Discount sale capitalization of annual lease fee and consent fee – amendment of ILC decision no. 1060
52	1090	March 27, 2007	Discount sale capitalization of annual lease fee and consent fee – amendment of ILC decision no. 1076
53	1143	March 9, 2008	Structural additions, changes of use, division of urban land – charge for permits
54	1144	March 9, 2008	Allocation of ownership for industrial and commercial zones
55	1145	March 9, 2008	Conceptual capitalization of urban residential annual lease fees
56	1160	Sep. 9, 2008	Structural additions, changes of use, division of urban land – charge for permits
57	1184	March 12, 2009	Structural additions, changes of use, division of urban land – charge for permits
58	1185	Dec. 28, 2009	Reforming the management of the Israel Lands
59	1186	Dec. 28, 2009	Structural additions, changes of use, division of urban land – charge for permits
60	1245	Jan. 30, 2012	Structural additions, changes of use, division of urban land – charge for permits
61	1299	Nov. 6, 2013	Reforming the management of the Israel Lands
62	1318	March 18, 2014	Structural additions, changes of use, division of urban land – charge for permits
63	1369	June 22, 2014	Structural additions, changes of use, division of urban land – charge for permits
64	1370	June 22, 2014	Reforming the management of the Israel Lands