

THE IMPACT OF REVERSIONARY RULES ON LAND USE IN HAWAII:
A PROPERTY RIGHTS PERSPECTIVE

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A large proportion of housing in the State of Hawaii is located on leased land. In 1986 approximately 33,644 owner-occupied units in Honolulu were on leased land, while 79,929 were on owned land.¹ Some leasehold land tenure in residential housing exists in other areas of the United States. Maryland and Southeastern Pennsylvania have tracts of residential leasehold which antedate leasehold in Hawaii. The Irvine Company originally planned the major housing development in Irvine, California to be 100 percent leasehold, but the plan was altered to allow for fee-simple holdings. Leasehold is used more extensively in other parts of the world, including Israel, Hong Kong, Singapore, New Delhi, Canberra, Amsterdam, Stockholm, and Liverpool.² In most cases, the municipal government is a non-monopoly owner-lessor of the land; by contrast, in Hawaii nearly all of the residential leased land is owned by private parties.

One of the major issues which must be resolved for leasehold to function efficiently is the disposition of residential improvements, e.g., a house, when the lease expires. The traditional rule of the common law has been that improvements revert to the landowner at the end of the lease, unless otherwise specified by the leasehold contract. In 1975 the Hawaii State Legislature changed this rule by enacting a statute (Hawaii Revised Statutes § 516-70) which required all lessors to purchase improvements at "a fair market price" from the lessee; the statute's provisions were retroactive, covering all leases negotiated prior to 1975 as well as future leases. However, the Supreme Court of Hawaii ruled in April, 1987 that the statute violated the Contract Clause of the United States Constitution. While the law still governs leasehold contracts entered into after July 1, 1975, the traditional reversionary rule now applies to leases negotiated prior to July 1, 1975.

Our analysis of reversionary rules begins (Section I) with an historical overview of the evolution of property rights in land since the nineteenth century in Hawaii. We compare the efficiency and consequences of various reversionary rules (Section II) and analyze the effects of *ex post* changes in the rule. To test the impact of the rule change on Hawaii's housing market (Section III), we examine a sample of condominiums in which a significant number of transactions has occurred prior to and after the Supreme Court of Hawaii's decision. The paper concludes with a brief discussion of the efficiency of leasehold tenure.

I. A BRIEF HISTORY OF LAND RIGHTS AND LEASEHOLD IN HAWAII

A. PROPERTY RIGHTS IN LAND AND LAND OWNERSHIP CONCENTRATION

The current distribution of land in Hawaii has its roots in the history of the nineteenth-century Hawaiian monarchy.³ In 1778 the first Western explorers to visit Hawaii discovered a kinship-based society producing agricultural goods under a feudal land system. The ruling chief (*ali'i'ai moku*) granted land to lesser chiefs (*ali'i*) who gave land grants to land managers (*konohiki*). The land managers sublet the land to extended commoner families (*'ohana*) who retained the right to continue to farm the land as long as they fulfilled their traditional tax/rent obligations (i.e., output shares and work obligations) to their ruling chief and land manager.

When a new ruling chief assumed power or upon the death of a lesser chief with a land grant, land was often redistributed among the ruling chief's retainers. With the unification of Hawaii's four chiefdoms in 1795, this pattern began to change. During the reign of the first king, Kamehameha I, property was never redistributed upon the death of a chief; it was retained by the chief's family. Kamehameha II and III also respected the inheritance of property by a chief's descendants and in addition did not redistribute land upon assuming power. These changes gave to the chiefs de facto rights to use land, to derive income from it, but did not give to them the right to alienate their holdings.

Responding to changing social and economic conditions as well as annexation worries, in 1845 the government established the Board of Commissioners of Land Titles to award alienable land titles to Hawaii's lands.⁴ In 1847 the king's Privy Council devised a set of rules which governed how the land would be divided among the claimants. The king retained his private lands as his individual property with one third of the remaining lands to be awarded to the Hawaiian government, one third to the chiefs, and one third to the tenants. During the winter of 1848, the king and 245 chiefs divided Hawaii's land between the king, the government, and the chiefs. While this division of lands (known as the Great Mahele) did not provide land for commoners, in August of 1850 the legislature allowed for land grants (*kuleanas*) to commoners. In 1855 the completed division of lands was as follows: Crown Lands, 984,000 acres; Chiefs' Lands, 1,619,000 acres; Government Lands, 1,495,000 acres; and Commoners' Lands, 28,600 acres.

When the Great Mahele was first proposed in 1845, the law did not allow for foreigners to hold land. This prohibition came to an end in 1850 when the legislature removed all restraints on foreign purchases, sales, and ownership of land. During the 1850s, when land prices were declining, foreigners purchased large tracts of lands from chiefs and commoners alike. Also leading Protestant missionaries (who arrived in Hawaii from Massachusetts in 1820 and had regularly served in the King's government) were awarded tracts of government land in the 1850s by the king.

Concentration of land ownership increased considerably during the next 100 years as operators of large-scale sugar plantations acquired considerable quantities of public lands (41 percent of which were sold between 1848 and 1888) and small land holdings from Native Hawaiians.⁵ Consolidation in the sugar industry after 1930 further concentrated land holdings.

Concentration was also facilitated by the large land holdings left by Princess Bernice Pauahi Bishop, heir to the Kamehameha estates. Upon her death in 1887, her will mandated that the lands be held in a charitable trust, the income of which would provide revenue for the education of Native Hawaiians at the Kamehameha schools. Since her will specified that the trustees should not sell the trust's land if at all possible, the Bishop Estate survives today as the largest private landowner in the islands, owning 9 percent of all land.⁶

With the overthrow of the monarchy in 1893, the king's lands were consolidated with the government's remaining lands by the new Republic of Hawaii. After annexation by the United States in 1898, the federal government assumed ownership of the 1,800,000 acres of public land. After statehood was achieved in 1959, the federal government returned 1,368,000 acres to the state while retaining 432,000 acres. By 1985 the federal government's land holdings had fallen to 327,406 acres while the state's holdings also declined to 1,194,852; thus from 1959 to 1985, the government's share of Hawaii's land area fell from 47.7 percent to 38.7 percent. Table 1 summarizes the private and public landholdings in 1964 and 1985.

B. RESIDENTIAL LEASEHOLD

Residential leasehold did not become a major factor in Hawaii's housing market until after World War II.⁷ In 1940 there were apparently fewer than 500 leases (with the Bishop Estate holding

TABLE 1. LAND OWNERSHIP IN THE STATE OF HAWAII FOR 1964 AND 1985.

Land Owner	1964	1985
Federal government	9.0%	8.3%
State government	38.0%	30.4%
6 largest private owners	27.3%	23.9%
All others	25.7%	37.4%

Data for 1964 come from Robert H. Horowitz and Judith B. Finn, *Public Land Policy in Hawaii, Report No. 3, Legislative Reference Bureau* (Honolulu 1967); data for 1985 come from *State of Hawaii Data Book: 1986* (Honolulu, 1987), p. 588.

472) on Oahu, and only 627 in the State as late as 1945. By 1975, some 30,543 owner-occupied units in Honolulu were on leased land, while 85,264 were on owned land.⁸ The Bishop Estate has the bulk of the residential leases (60 percent) followed by the Castle Foundation and Castle Estate (20 percent) and the Campbell Estate (10 percent).⁹ The remainder of the leased lands is widely dispersed among charitable institutions, other private trusts, old-line families, individuals, and small firms.

Lease lengths vary among different properties, but typically are set at 55 years (e.g., the standard Bishop Estate lease) with some leases containing options to renew for an additional 20 years to satisfy mortgage requirements. Land rent is usually specified as a constant monthly payment for the first 30 years with the rent for the next 25 years being determined by mutual agreement or appraisal.¹⁰ Most leases contain a provision which restricts lessees from making significant improvements without the consent of the lessor, but this provision has rarely been enforced by lessors or noted by lessees. Requirements to maintain property to reasonable standards are, unlike the improvement requirement, often enforced.

A buyer of an existing single family home or condominium may assume the existing land lease. Mortgagors will, however, usually not issue a new mortgage on a house or condominium located on leased land that is less than ten years from renegotiation or from expiration. A 1975 state law (HRS § 519) places ceilings on leasehold rents at renegotiation, but does not limit leasehold rents prior to the renegotiation date. The law limits renegotiated rents to 4 percent of the appraised value of the unencumbered land (minus the replacement value of the offsite improvements which are typically paid for by homeowners in Hawaii) and restricts the frequency with which lease rents can be renegotiated. The lease rent control law applies only to single-family homes and cooperatives and does not apply to leasehold condominiums.

C. THE 1967 LAND REFORM ACT

After World War II numerous attempts were made in the Hawaii State Legislature to use the State's eminent domain powers to condemn leasehold land and sell it to the lessees.¹¹ In 1967, when some of the earliest leases were being renegotiated, the Legislature enacted a law (HRS § 516) which enabled homeowners who were leasing residential land to acquire it in fee-simple. Upon the petition

of 50 percent of the owners (or 25 owners, whichever is less,) in a leased housing tract, the Hawaii Housing Authority (HHA) will condemn the land and then resell it to the lessees. The law only applies to single family residences; legislation which would extend its provisions to condominiums has been regularly introduced in the Legislature since 1975, but has failed to pass either branch. The Land Reform statute was not used until 1976 when lessees purchased 182 lots from the Pflueger-Cassady Trust in an uncontested action. In 1979 the Bishop Estate contested the constitutionality of the Act in State and Federal courts. It argued that the State's power of eminent domain was not being used to acquire land for a public purpose; instead it was being used to transfer land from one private party to another private party. The Estate alleged that this action violated the Fifth Amendment's Public Use Clause.¹² In the spring of 1984, the United States Supreme Court, in an 8-0 decision (*Hawaii Housing Authority v. Midkiff*, 467 U.S. 229), ruled that the law did not violate the United States Constitution. Justice O'Connor wrote that using the State's eminent domain power to "reduce the perceived social and economic evils of a land oligopoly" was indeed consistent with a public purpose.¹³ In 1985 the Supreme Court of Hawaii also affirmed that the Act did not violate Hawaii's Constitution (*Hawaii Housing Authority v. Lyman*, 68 Haw. ____, 704 P.2d 888 (Hawaii 1985)). Since these decisions, conversions from leasehold to fee-simple have proceeded at a greatly accelerated pace.

D. THE REVERSIONARY RULE

The 1975 State Legislature passed several amendments to the original Land Reform Act, one of which (HRS § 516-70) radically altered the reversionary provisions for residential improvements in *existing and future* leases. The "reversionary rule" refers to the disposition of residential improvements that have been attached to the land by the lessee. It specifies who receives ownership of the improvements when the lease expires and sets forth the obligations and rights of the respective parties. Prior to the adoption of HRS § 516-70 it was the law of Hawaii that a house erected on the premises of another becomes a fixture and part of the realty, and that any right of removal, given in the lease, had to be exercised as provided in the lease. In contrast, HRS § 516-70 required a lessor to pay to the lessee the fair market value of the improvements, regardless of whether the lessor wants,

can use, or can afford the improvements.¹⁴ The lessee also gains the option of removing any buildings which were erected on the land at his own expense. The statute applied to all leases regardless of whether they were negotiated and entered into prior to its 1975 passage.

In July, 1983, a lessee filed suit in Hawaii Circuit Court asking that the lessor be ordered to purchase the residential improvements erected on the leased land. On March 16, 1986 a jury ordered the lessor to pay to the lessee the fair market value of the improvements. On April 23, 1987 the Hawaii Supreme Court, in a 5-0 decision (*Anthony v. Kualoa Ranch, Inc.*, 69 Haw. ____, 756 P.2d 55 (1987)), overruled the jury's verdict, stating that it had "no hesitancy in holding that HRS § 516-70 very substantially impairs appellants' contractual rights."¹⁵ The Court's ruling stated that the Hawaii State Legislature had the power to regulate lease contracts, but that the retroactive application of HRS § 516-70 to leases entered into prior to the law's passage in 1975 violated the Contract Clause of the United States Constitution.¹⁶ The Court noted that the statute "has a substantial, material, and ... even a drastic, and confiscatory effect, on existing contractual obligations, and property rights."¹⁷ While changes in the terms of existing lease agreements "can be made in emergency situations and for limited periods," the Court was convinced that "there was no emergency and no limitation on the duration of the change."¹⁸

As a result HRS § 516-70 still applies to all leases negotiated after July 1, 1975, but does not apply to any leases negotiated prior to July 1, 1975. Since most residential leases were entered into prior to 1975, the change substantially affects the position of most lessors and lessees. The Supreme Court of Hawaii's ruling could be challenged in the future by appealing a similar case to the United States Supreme Court, as the Supreme Court of Hawaii found that HRS § 516-70 violated the Contract Clause of the United States Constitution. Such a case is, however, not currently pending in state or federal court.

II. AN ECONOMIC ANALYSIS OF REVERSIONARY RULES

A. ECONOMIC ANALYSIS WITHOUT TRANSACTION COSTS

The Coase Theorem provides an excellent benchmark for analysis of reversionary rules.¹⁹ Suppose we assume that transaction and information costs are zero. This implies a world with full

contracting, i.e., all dimensions of the transaction and all possible contingencies are covered by the contract. In addition, the provisions of the contract can be costlessly negotiated, specified, and enforced. Under these assumptions, it is irrelevant, *ex ante*, whether the lessor of the land obtains ownership to the residential improvements or whether the lessor must pay to the lessee the market value of the improvements when the lease expires. The particular form of the reversionary rule should not affect the allocation of resources. Let us analyze each of these two cases in turn, as the insights gained by this simple analysis provide a benchmark for investigating the more complicated circumstances addressed by the typical leasehold contract.

First, suppose that the lessor must pay to the lessee the market value of lessee-financed improvements when the lease expires. As long as this rule is known *ex ante*, competition between land owners and between individuals desiring to lease the land will ensure that the land rent will reflect the flow of services from the land to the lessee. Since the lessee will be compensated for any improvements made to the land, the lessee has incentives to undertake any improvement (which adds more to the value of the improvements than it costs) and to maintain it efficiently. If the improvements are specific to the land, then the contract will be structured to specify the maximum amount of site-specific improvements which can be present on the land at the end of the lease.²⁰ A maximum level of specific improvements must be specified or the lessee could engage in opportunistic behavior.²¹ If the lessor expects to redevelop the land (i.e., sell the current improvements for their offsite salvage value) upon the expiration of the lease, the lessee could threaten to undertake specific improvements which are profitable (in an accounting framework) but which must be purchased and removed for the lessor to realize the highest value of the land. Specifying the maximum amount of specific improvements present at the end of the lease solves this problem.²²

Under this regime, the lessee will erect and maintain the same improvements that a decision-maker who also owns the land would choose. This form of the reversionary rule will, therefore, be efficient, as the maximum value of the land/improvement package will be achieved.

Second, consider the case when the reversionary rule specifies that the lessor takes possession of improvements upon expiration of the lease without paying compensation. If the same contractual

terms were set as in the first scenario above, then the present value of a lease to the lessor would, at the margin, be positive. Competition between landowners for tenants would change the contractual terms in favor of the tenants until the present value of the lease to the lessor, at the margin, is zero. Assuming the other contractual terms do not change, then the lease rent will fall by an amount such that the present value of the rent differential is equal to the present value of the improvements at the time of expiration. The problem of opportunism arises (again) whenever it is efficient for the lessee to continue its business on the land and its improvements are site-specific. In this case, the lessor has the opportunity to expropriate the quasi-rent stream from the specific asset when the new lease rent is negotiated.²³ However, in a perfect information world this problem can be solved by extending the contract until redevelopment is optimal. At the end of the lease the wealth of the lessor and the lessee would be the same as in the first scenario described above, and the same improvements (and maintenances) would be made. Thus the allocation of resources would be unaffected by the particular reversionary rule adopted by the two parties or by the law.²⁴

In both cases, the efficient solution is to extend the lease until the land will be redeveloped. In the first case, a cap on the level of specific capital improvements present on the land must also be included in the contract. While opportunism is possible even in a zero information and transaction cost world, in both cases it can be resolved by *ex ante* competition in contracting.

B. ECONOMIC ANALYSIS WITH TRANSACTION COSTS

When we relax our assumption that transaction and information costs are zero, then the particular legal rule adopted to structure a contract is likely to alter the allocation of resources.²⁵ The major difference between the zero and the positive transaction and information cost analysis is that the two parties will make frequent errors concerning redevelopment of the land at the expiration of the lease. Depending on the direction of the error and the particular reversionary rule adopted, we will show below that the two parties have incentives to engage in opportunistic behavior. Given the possibility of opportunistic behavior, the two parties have incentives, *ex ante*, to choose a reversionary rule that minimizes the losses from opportunism. With this background let us once again consider each of the two reversionary rules in turn.

As our first scenario, suppose that the lessor must purchase the specific improvements at their "fair market value" from the lessee. To maximize the value of the land, the lessor would want, *ex ante*, to specify the type and the condition of improvements present on the land at expiration. However, the best use of the land 20-40 years from the date of lease negotiation is usually unknown; given the transition that a housing lot with a moderately priced house can make in 20-40 years (e.g., it could be in a slum, in an upper class neighborhood, or one parcel in a prime site for a shopping mall), several outcomes have a substantial probability of occurring. One possible solution to this problem is for the lease to contain a general clause requiring approval of lessee's improvements to the land.²⁶ As it becomes more probable that the land will be redeveloped, the lessor can notify the lessee that additional improvements to the land may not be made. However, such a clause also allows the lessor to "holdup" the lessee; it enables the lessor to veto desirable developments (which increase the market value of the land/improvements package) unless the lessor is awarded a portion of the gains accruing from the transaction.²⁷ Although two parties who can both gain from engaging in a transaction will usually strike a bargain, strategic considerations and the high transactions costs associated with bilateral monopoly can lead to a profitable transaction not occurring.²⁸

Cosmetic maintenance would also be a problem under this standard. If it is expected that the lessor will purchase specific assets in order to redevelop the land, then the lessee may make improvements that are difficult for the lessor to measure accurately. Has a wall that has just been wallpapered been properly prepared or will the wallpaper begin to peel off in a few months? Yoram Barzel has shown that the market will develop institutions to minimize this type of dissipation (e.g., records of wall preparation, building inspectors' reports, etc.), but the dissipation will only be minimized not eliminated.²⁹ If the true state of the wall cannot be discovered, then the lessor may be forced to pay a price which does not reflect the true condition of the asset and inefficient maintenance activities will be undertaken.³⁰

The compensation rule has one additional drawback; prices of site-specific assets will be determined by a nonmarket process specified by the contract's governance clauses (or by the common law). Such nonmarket price determination processes are usually characterized by high transaction costs and by substantial variations in the adjudicated price from the good's market value.³¹

This version of the reversionary rule (i.e., the lessor must buy back the specific improvements and there is no cap on specific capital investments) is likely to be efficient when land use is expected to be relatively stable over long periods of time. When site-specific improvements are expected to have an economic life beyond the life of the lease (assuming they are properly maintained), then under this rule the two parties would negotiate to renew the lease. A cap on specific capital improvements (and maintenance) during the last few years of the contract would be unnecessary, as redevelopment is not considered by the lessor. As the probability of redevelopment increases, the rule becomes increasingly inefficient, as it allows lessees to act opportunistically by adding site-specific capital which does not maximize the value of the land/improvements package.³²

As our second scenario, suppose that improvements revert to the lessor without compensation upon the expiration of the lease. Lessees will respond to this rule by acting to minimize site-specific capital remaining on the land at expiration. Lessees can adjust their behavior on two margins: (1) they substitute out of site-specific capital into general capital; and (2) they substitute into site-specific capital which has a shorter economic life. If general capital (or the site-specific capital with a shorter economic life) is less productive than the site-specific capital with the longer economic life, then these two substitutions create a deadweight loss, as the value of the land/improvements package falls.

Suppose there is a high probability that the asset will have an economic life longer than the length of the lease. If the lessee contracts to maintain the site-specific asset as a joint land/asset owner would, then the lessor can extract the specific asset's quasi-rent stream in the renegotiated rent. Since such extractions are expected by the lessee, the lease rent will be reduced "below-market" to compensate for the expected reversion of assets to the lessor.³³ However, since the asset reverts to the lessor at the end of the period, the lessee will not have incentives to properly maintain the asset. A general maintenance clause coupled with monitoring expenditures by the lessor ameliorates this problem somewhat, but the problem of "cosmetic maintenance" discussed above arises again. The lessor could resolve this problem by agreeing in the lease contract to be responsible for the maintenance of the site-specific asset, but this could lead to "holdup" activities by the lessor.

Now suppose there is a high probability that the land will be redeveloped at the end of the lease. This form of the reversionary rule gives lessees incentives to structure their site-specific capital investments such that residual site-specific capital at expiration is minimized. Neither party has the ability to engage in opportunistic behavior, as there are no further transactions between the parties. This rule is, therefore, efficient if the two parties expect that the land will be redeveloped in the future.

Choice between the rules is primarily determined by expectations of future changes in land use. Compensation for specific assets by the lessor will be efficient when the land/specific asset combination has an expected economic life longer than the term of the lease, while reversion to the lessor will be efficient when the specific asset has an expected economic life less than or equal to the term of the lease. When the parties' expectations are in error, then opportunistic behavior by one party becomes potentially profitable. The choice of a particular rule is as it reduces the losses imposed on society from opportunistic behavior.

Is the Hawaii Supreme Court's decision on the reversionary rule efficient? This largely depends on whether there is an expectation that most residential property in Hawaii will be redeveloped. We demonstrated above that the Court's decision to allow reversion without compensation is likely to be efficient if redevelopment is expected at expiration. Leasehold allows coordinated redevelopment of large tracts of land and the Court decision eliminates opportunistic behavior by both parties when the land is to be redeveloped after the lease expires. For most residential tracts in Hawaii, however, redevelopment seems unlikely. Neighborhoods in Hawaii have remained relatively stable since World War II. Given the likelihood that it will be efficient to have approximately the same form of housing on a lot 20 years from now as today, the Court's decision appears to be inefficient. The likelihood that it will lead to homeowners adopting suboptimal maintenance schedules on their homes is high; the effect of a deteriorating housing stock on the supply of housing in the nation's most expensive housing market is surely undesirable.

III. IMPACT OF THE COURT'S DECISION ON LEASEHOLD CONDOMINIUM PRICES

How did the Hawaii Court's decision in *Anthony v. Kualoa Ranch* affect the selling prices of leasehold condominiums in Hawaii? Our analysis suggests that the decision should have a negative impact on leasehold condominium resale prices. However, there are three reasons why the negative effect may not be detected in resale prices. First, few people in Hawaii appear to be aware of the Court's decision. A search through the daily newspapers for the months of April and May, 1987 found no stories on the decision. Second, most condominiums have many years remaining on their leases, and given the high personal discount rates which buyers are likely to apply to improvements at the end of the lease,³⁴ the decision may not affect prices until sales near lease expiration dates. Finally, if condominium owners expect that the Hawaii State Legislature will eventually extend the terms of the Land Reform Act to condominiums, they would attach little importance to the surrender clause in their lease contracts.

To determine how the Court decision has affected condominium resale prices, we estimate hedonic price equations on a sample of condominium resales in Honolulu. The sample consists of all sales between January, 1982 and May, 1988 of leasehold condominiums built before 1975 and with 40 years or less remaining on their leases. The closest expiration date is 2012, leaving 24 years remaining on the lease from the date of sale. The sample was restricted to shorter leases since the Court's decision would probably have the greatest impact on condominiums that are relatively close to expiration; this restriction increases the chances that the price effect would be detected. The data consist of 166 usable observations from 11 condominium buildings located in 8 neighborhoods in Honolulu.³⁵

We estimated two separate hedonic price equations (see Table 2 which also provides definitions of the variables). Equation (1) includes the monthly average selling price of all condominium resales in Honolulu to capture the effects of general home price inflation over time. The shortcoming with this price variable is that it does not control for changes in the quality mix of condominium resales. In equation (2) we replaced the average price variable with a time trend.

In addition to the usual variables included in hedonic price equations for housing, we have included additional variables (*Expire*, *Expire*²) to capture the effects on selling price of the years

TABLE 2. ESTIMATED HEDONIC PRICE EQUATIONS FOR OAHU
LEASEHOLD CONDOMINIUM SALES: 1982-1988

(Dep. Var. is \log_e Selling Price)

Independent Variable	Eq. (1)		Eq. (2)	
	Coefficient	t-value	Coefficient	t-value
Constant	12.421	1.42	14.583	1.50
Floor	.013	3.79	.014	4.00
Expire	.113	1.37	.621x10 ⁻³	.007
Expire ²	-.002	-1.94	-.446x10 ⁻³	-.33
No. Bdrms	.091	2.35	.069	1.75
No. Bathrms	.297	2.98	.363	3.58
Area (sq. ft.)	.623x10	1.20	.292x10 ⁻⁴	.54
Age	-.081	-9.25	-.092	-9.38
Pool	.184	3.15	.171	2.87
No. Prkg Stalls	.082	3.40	.056	2.19
Court	.605	1.70	.324	.90
Court x Expire	-.015	-1.38	-.005	-.46
Time			.005	3.26
Average Condo Price	.386x10 ⁻⁵	3.69		
Ala Moana	-2.331	-20.77	-2.508	-18.64
Kapiolani	-2.076	-20.85	-2.132	-20.61
Kahala	-1.922	-16.36	-2.174	-13.86
Kalihi	-1.774	-16.56	-1.853	-15.72
Waikiki	-1.781	-21.24	-1.877	-19.23
Waiiau	-2.364	-20.32	-2.498	-18.38
Makiki	-2.295	-20.84	-2.511	-17.65
R ²	.979		.979	
R ²	.976		.976	
D-W	1.831		1.821	
n	166		166	

Definition of Variables: Floor = floor level of the condo; Expire = years till lease expiration; Expire² = years to expiration squared; No. Bdrms = number of bedrooms; No. Bathrms = number of bathrooms; Area = condo area in sq. ft.; Age = age of the condo; Pool = 1 if the building has a pool, otherwise = 0; No. Prkg Stalls = number of parking stalls; Court = a dummy variable (1 for sales completed after July 1987); Court x Expire = the product of Court x Expire; Ala Moana, Kapiolani, Kahala, Kalihi, Waikiki, Waiiau, and Makiki are neighborhood dummies (Kapahulu = 0); Time = time trend, Jan., 1982=1, Feb., 1982=2, ...; Average Condo Price = average (monthly) selling price of all condos on Oahu, Jan. 1982 - May, 1988.

remaining until lease expiration. We also included two Court decision variables--Court and Court x Expire. A dummy variable (Court) with value equal to 1 was assigned to all sales recorded after July, 1987 (n=40) to denote sales which occurred after the Court decision. Since the Court decision was rendered in April, 1987 (and allowing for two months for closing), this means that all offer acceptances beginning in May, 1987 could have been influenced by the Court decision. The variables of interest are Court and Court x Expire.

Equations (1) and (2) were estimated in semi-log functional form. While the linear form provides coefficient estimates that are easier to interpret, recent research³⁶ suggests that the linear specification is inappropriate for hedonic housing equations. The estimated equations have excellent fit with most of the coefficients exhibiting the expected signs. However, the coefficients of the Court and Court x Expire variables are not significantly different from zero at the five percent level in either equation. This suggests that the Court decision has not had a significant impact on the selling prices of resale condominiums to date. However, as the time to lease expiration for most condominiums approaches, prices should eventually begin to fall.

IV. CONCLUSION

In spite of our conclusion that the compensation rule is probably the more efficient rule for residential improvements in Hawaii, from a property rights perspective it also seems clear that the Supreme Court of Hawaii's decision was correct. The 1975 amendments essentially prescribe the transfer of residual site-specific assets from the lessor to the lessee without *any* compensation. If the Court had upheld the retroactive application of the 1975 amendment, then rental markets in land and housing would be continually faced with the prospect of legislative interference with contractual terms. This type of uncertainty could have a chilling effect on the scope of these markets, as unnecessary risk premiums would be built into prices and more complex contracts would be devised to cope with the increased legal uncertainty.

Leasehold in residential land is an odd institution that is rarely observed in private land markets. Perhaps the will of Princess Bernice Bishop explains its foothold in Hawaii. The Achilles Heel of leasehold is the problem of reversion when the lease expires. Today, lessors and lessees

entering into leasehold contracts have little incentive to pay attention to reversionary rules. The impact of either rule is unlikely to be felt until 30 or 40 years into the future. The contribution of the reversionary rule to the present value of the lease (to the lessor or the lessee) is likely to be extremely small given that the site-specific assets change hands (or compensation is paid) so far in the future. It is not surprising, therefore, that few homeowners are aware of the reversionary rule in their lease contracts. Still time does march on and leases do eventually expire; and when larger numbers of homeowners are faced with imminent loss of their homes, they naturally lobby their legislators to change retroactively the terms of their lease contracts. Clearly, the current situation in Hawaii invites political intervention.

We have shown above that the efficiency of the two reversionary rules discussed in the text depends on the probability that land will be redeveloped. Yet it is difficult if not impossible to believe that the Hawaii State Legislature has a comparative advantage in forecasting how land in Hawaii will be used 55 years in the future; individual property owners are likely to be more knowledgeable about trends in their neighborhoods. Moreover, it is also not obvious that efficiency is best served when the political process is employed to impose a particular reversionary rule on all leasehold contracts. Land in different parts of the Hawaiian Islands surely differs as to the probability it will be redeveloped in the future. In retrospect, it seems unwise for the Legislature to have propounded a uniform reversionary rule.

However, a laissez-faire regime may also not lead to efficient results. First, a stipulation that lessors must clearly inform prospective home buyers of the specific reversionary rule in the lease contracts, i.e. whether or not compensation is to be paid to the homeowner for the improvements at the expiration of the lease, may be an improvement over the current state of affairs. The lack of attention paid to this clause by lessees and realtors is likely to cause political and economic problems in the Islands when the public becomes better informed about the current reversionary rules. If more attention had been paid to informing lessees about the clause, the turnover of residential improvements at expiration would be planned by more homeowners and thereby produce fewer unanticipated results and social problems. Second, a rule that a leasehold contract must contain a reversionary clause also appears reasonable. In the absence of such a clause, the contract could be

considered as lacking consideration. If the Legislature had adopted these rules, private parties with their specific information about time, place, and circumstances, could have adopted reversionary rules to suit their particular pieces of property.

REFERENCES AND NOTES

1. See *State of Hawaii Data Book: 1986* (Honolulu, 1987), p. 553.
2. See Ian J. McDonald, "The Leasehold System: Towards a Balanced Land Tenure for Urban Development," 6 *Urban Studies* 179 (June, 1969) for an analysis of residential leasehold in Great Britain.
3. See Ralph Kuykendall, *The Hawaiian Kingdom*, 3 vols. (Honolulu, 1968) and Gavan Daws, *A Shoal of Time* (New York, 1968) for more complete discussions of nineteenth-century Hawaiian history.
4. See Sumner J. La Croix and James Roumasset, "The Evolution of Property Rights in Nineteenth-Century Hawaii," unpublished manuscript, University of Hawaii, 1988 for a discussion of the economic, social, and political forces which led to the establishment of private property in Hawaii.
5. See J.M. Lydgate, "The Vanishing Kuleana," *Thrum's Annual* (Honolulu, 1915) for a discussion of sales of small land holdings by Native Hawaiians.
6. Princess Bishop's will states that "... my said trustees shall not sell any real estate, cattle ranches, or any other property, but to continue and manage the same, unless in their opinion sale may be necessary for the establishment or maintenance of said schools, or for the best interest of my estate." The Estate trustees on a few occasions have sold land to meet the operating expenses of Kamehameha Schools.
7. See H. Laurence Miller, Jr., "Leasehold Land Tenure in Residential Housing in Hawaii," unpublished manuscript, University of Hawaii, 1978 for a good discussion of the economics of leasehold land.

8. *The State of Hawaii Data Book: 1985* (Honolulu, 1986), p. 539.
9. While Princess Bishop's stipulation that the trustees should not sell the trust's land may be the main reason why residential leasehold has thrived in Hawaii, the potential loss of tax-exempt status and the ensuing requirement to pay capital gains tax also deter large scale land sales. The institution may also stem from the incentives encountered by trustees of a nonprofit trust. Trustees are unlikely to be able to expropriate the capital gains derived from sale of trust lands. The present value of the trustees' incomes may then be maximized by drawing salaries earned from the management of leased lands. In the case of Bishop Estate, trustee salaries are stipulated as a percentage of gross revenues. The trustees have agreed not to accept "commissions" from land sales resulting from the implementation of the 1967 Hawaii Land Reform Act (see below).
10. Some leases contain a payment schedule in which lease rents increase by fixed amounts at specified dates.
11. See Anne F. Lee, "The System of Land Ownership in Hawaii and its Political Implications," unpublished manuscript, West Oahu College, 1985 for a summary of events leading to the 1967 Land Reform Act. Robert H. Horwitz and Norman Meller, *Land & Politics in Hawaii* (Honolulu: University of Hawaii Press, 1966) provide a good summary of the legislative battles during the early 1960s for a leasehold condemnation law.
12. The Fifth Amendment of the United States Constitution provides that "private property [shall not] be taken for public use without just compensation."
13. 467 U.S. at 245.
14. 516-70 (b) reads as follows: "At the termination of any lease, or at the expiration of the lease term, the lessee may, if not then in default under the terms of his lease, remove all onsite

improvements on the lot which were constructed at the cost of, or otherwise paid for by, the lessee, without compensating the lessor

15. 736 P.2d at 60.

16. The Contract Clause (Article I, Section 10) of the United States Constitution states that "[n]o State shall pass any Bill of Attainder, ex post facto Law, or Law impairing the Obligation of Contracts".

17. 756 P.2d at 63.

18. *Id.*

19. Ronald Coase, "The Problem of Social Cost," 3 *Journal of Law & Economics* 1 (1960).

20. The dilemma faced by the owner of a fee-simple land-house package is also faced by a lessee: Should improvements be made which provide for a greater consumption flow to the owner, yet are not reflected in an increase in the market value of the house which is equal to or greater to the cost of the improvements? For example, adding a \$5,000 hot tub to a house may not add \$5,000 to the home's market value, but it may provide more than \$5,000 of utility to the home's owner. In both cases, as the owner (lessee) faces a shorter amount of time until the point of the expected sale (or the lease expiration), the contribution of the improvement to market price will dominate the choice.

21. General improvements pose less of a problem, as they can be removed from the site and sold for the same price that was paid to the lessee. Since asset specificity can take many forms, we should make it clear that we are referring to site-specificity. A site-specific asset is one which has a lower value when it is removed from the site. See Oliver Williamson, *The Economic Institutions of Capitalism* (New York, 1985), pp. 95-6.

22. If improvement costs are not additive, then the lease will specify the exact amounts and condition of improvements on the site. For example, if it costs more to renovate a house to a certain condition, then to maintain it in that condition, the lease will specify that the house be in that condition at the end of the lease.

23. See Benjamin Klein, Robert G. Crawford, and Armen A. Alchian, "Vertical Integration, Appropriable Rents, and the Competitive Contracting Process," 21 *Journal of Law & Economics* (Oct. 1978), pp. 298-302.

24. This result is stronger than the usual Coase Theorem result, as the reversionary rule specification does not create income effects. An *ex post* application of the rule would create income effects, but would not affect the allocation of resources.

25. See Harold Demsetz, "Some Aspects of Property Rights," 9 *Journal of Law & Economics* 61 (1966) for an elaboration of this basic principle first stated by Coase, *supra* note 21, pp. 15-9. See Robert Cooter and Thomas Ulen, *Law and Economics* (New York, 1987), chs. 6-7, for additional applications of this principle.

26. A clause which allows the lessee to add improvements which increase the market value of the improvements package would also be flawed. In this case the lessee could threaten to add specific improvements to the land which increase the amount which the lessor must pay the lessee at expiration, but which must then be removed by the lessor for the highest value of the land to be realized.

27. Armen Alchian and Susan Woodward have noted that Williamson's emphasis on the moral hazard resulting from opportunism should not blind us to the operation of equally important "holdup" actions. See "The Firm is Dead; Long Live the Firm: A Review of Oliver E. Williamson's *The Economic Institutions of Capitalism*," 26 *Journal of Economic Literature* 65 (March 1988), 67-70.

28. See Robert Cooter, "The Cost of Coase," 11 *Journal of Legal Studies* 1 (Jan. 1982).
29. Yoram Barzel, "Measurement Cost and the Organization of Markets," 25 *Journal of Law & Economics* 27 (April 1982).
30. A clause which specifies that specific improvements must raise the value of the land/improvements package would seemingly lead to efficient behavior, as it would force the lessee to act as if the lessee owned the land. Such a rule would, however, be difficult to enforce, as the effect of an improvement on the value of the land would be highly speculative and would likely lead to conflict and litigation.
31. See Richard A. Posner, *Economic Analysis of Law*, 3rd. ed. (Boston, 1987), ch. 19.
32. While this site-specific capital will generate a positive stream of profits for the lessor, other specific capital investments would generate a higher stream of profits. If courts use an opportunity cost framework, this problem does not arise, as the courts realize that the value of the land declines if the lower valued project is adopted. If courts use an accounting cost framework, then the higher stream of profits from an alternative project may never be considered.
33. The magnitude of the ground rent reduction is highly sensitive to the discount rate used. Imagine a condominium valued at \$100,000 of which \$30,000 represents the land value and \$70,000 the value of the improvements. If we assume that both appreciate at the same rate as the overall rate of inflation in the economy and the improvements are properly maintained so that they do not depreciate, the monthly market ground rent would be \$125 at a 5% *real* discount rate. The monthly ground rent reduction would have to be \$20.04, if the improvements are surrendered to the lessor at lease expiration 55 years in the future--a 16 percent reduction. At a 6 percent discount rate, the ground rent reduction would be 9 percent; at a 4 percent rate, the reduction would be 29 percent.

34. See Maxwell J. Fry and James Mak, "Is Land Leasing a Solution to Unaffordable Housing? An Answer from Fee Simple versus Leasehold Property Price Differentials in Hawaii," 22 *Economic Inquiry* (Oct. 1984), pp. 529-49.

35. Two condominium buildings were deleted from the sample due to the lack of sales in the post-Court decision period.

36. See, for instance, Peter Linneman, "Some Empirical Results on the Nature of the Hedonic Price Function for the Urban Housing Market," *Journal of Urban Economics* 47 (July 1980).