# *The Evolution of Private Property in Nineteenth-Century Hawaii*

SUMNER J. LA CROIX AND JAMES ROUMASSET

Population pressure has been identified as a major force behind the transition from traditional property rights in land to exclusive, transferable property rights. This article examines the case of Hawaii where the transition to private property in land occurred while its population was rapidly declining. That transition was driven by new market opportunities and considerations of public finance. The shift in comparative advantage to sugar production increased the rents associated with private land rights, while declining tax revenues prompted the king and his government to pursue property rights reform to gain additional revenues.

When Captain James Cook made the first western contact with the Hawaiian Islands in 1778, he found several small political entities with a common cultural and institutional heritage. Hawaii's agricultural economy was organized around a hierarchical kinship system. A ruling chief controlled the land and distributed revocable land grants to lesser chiefs. The grants specified certain rights of use for the chiefs and allowed them to collect taxes from extended families of commoners who also retained restricted rights of occupancy and use. Yet by 1855 the land institutions observed at contact had disappeared, replaced by a system of exclusive, transferable private property rights. Historians have pointed to a variety of forces which placed pressure on traditional institutions governing land use. The influence of western ideas, pressure by western governments, fears of annexation, and the desire to secure capital investments specific to land have been identified by various observers and authors as the critical factors.[1] Historians have, however, ignored the possible influence of other demographic and economic factors that had major impacts on Hawaii's economy and governmental institutions. Our review of historical sources provides some support for the traditional explanations but also provides evidence that powerful

*The Journal of Economic History*, Vol. L, No. 4 (Dec. 1990).  ISSN 0022-0507.

The authors are Professors of Economics, University of Hawaii, Honolulu, HI 96822.

Comments which significantly improved the article were received from several anonymous referees, Harry Ball, Richard Dowell, David Feeny, D. Bruce Johnsen, Pauline King, James Mak, John Palmer, Mark Plummer, Subroto Roy, John Wallis, Thomas Weiss, Calla Wiemer, and participants in seminars at the University of Hawaii, the University of Canterbury, the University of New South Wales, the University of Newcastle, Flinders University, the East-West Center, the 1983 meetings of the Western Economics Association, and the 1986 meetings of the Public Choice Society.

[1] See R. S. Kuykendall, *The Hawaiian Kingdom* (Honolulu, 1938), vol. 1, pp. 269–98; Gavan Daws, *Shoal of Time* (Honolulu, 1968), pp. 124–28; Edward D. Beechert, *Working in Hawaii* (Honolulu, 1985), pp. 29–36; and Theodore Morgan, *Hawaii: A Century of Economic Change: 1778–1876* (Cambridge, MA, 1948), pp. 123–39.

demographic and economic forces influenced the course of institutional development.

Economists have often portrayed the transition in property rights to land as an efficient response to changing economic and demographic factors.[2] Population pressure, which usually brings an appreciation of land rents and a decline of real wages and thus an incentive to define property rights more precisely, has frequently been regarded as a major force behind the transformation. In the case of the English enclosures, Douglass North and Robert Paul Thomas concluded that the transition from a system of open field property rights to one of exclusive, transferable property rights was driven at least in part by rising population; Ricardian forces drove up land rents and the negative externalities of open field systems became large enough to warrant the costs of changing to more efficient institutional arrangements.[3] For Thailand, Burma, India, and the Philippines, David Feeney concluded that "the growth of population [and the increase in the terms of trade] were indeed associated with a rise in real land prices" and that land scarcity induced changes in the institutions governing its use.[4]

In those cases population was increasing and land was becoming more scarce relative to the population. In Hawaii, however, private property emerged during the 1840s and 1850s after a 75-year period of severe population *decline*. As a result, the Hawaiian case presents an opportunity to explore two other economic factors that enhance the advantages of private property over collective arrangements. First, an economy's comparative advantage may turn away from goods that can be efficiently produced under traditional property rights. Hawaii's rapid transition from a closed to an open economy removed the close association between land rents and population density. In an open economy land rents are linked to movements in the terms of trade as well as to changes in population.[5] Second, the timing of the property rights transition may be influenced by considerations of public finance. Changes in population and the terms of trade affected the income earned by members of various social groups as well as the king and his government. These effects prompted the king and his government to promote a change to private property rights to allow net government revenue collections to increase.

The specific episode investigated here is the evolution and redistri-

[2] We define efficient actions as those which maximize the society's wealth, without regard to the actual distribution of the gains and losses.

[3] Douglass C. North and Robert Paul Thomas, *The Rise of the Western World: A New Economic History* (Cambridge, 1973); Douglass C. North, *Structure and Change in Economic History* (New York, 1981); and J. D. Chambers, "Enclosure and Labour Supply in the Industrial Revolution," *Economic History Review*, 2nd series, 5 (1953), pp. 319–43.

[4] David Feeny, "The Development of Property Rights in Land: A Comparative Study," in Robert H. Bates, ed., *Toward a Political Economy of Development* (Berkeley, 1988).

[5] Ibid., pp. 273–82.

bution of property rights in Hawaiian land over the period 1778 to 1855. These changes in land tenure began with the dismantling of the traditional structure of rights of use and ended with the establishment of exclusive, transferable property rights in land. To understand why the institutional structure changed so rapidly, we sketch a picture of the changes in Hawaii's economy and property institutions from 1778, the year of "contact" with the outside world, to 1855, when the "Great Mahele" (Division) was completed. We also examine traditional explanations for the transformation of property rights and analyze how changes in factor scarcity and product prices affected that process and how considerations of public finance provided incentives for the king to capitalize rights in the land. Finally, we discuss how this case study may contribute to a more general understanding of institutional change and the evolution of property rights.

## I. THE PRE-CONTACT ECONOMY AND POPULATION DECLINE

In 1778 Captain Cook's ships encountered a group of eight small tropical islands populated by a people with social and political institutions remarkably similar to those in other more distant Polynesian societies. Although several distinct political entities actively competed with each other, the people of Hawaii participated in a common culture. In each polity the populace was divided into three classes: chiefs (*ali'i*), commoners (*maka'ainana*), and priests (*kahuna*).[6] Each polity was led by a ruling chief (*ali'i'ai moku*), who held title to all lands and goods. In the manner of a feudal society, the ruling chief gave temporary land grants to lesser chiefs (*ali'i'ai ahupua'a*), who then gave temporary land grants to their land managers (*konohiki*). The *konohiki* then subleased the land to commoners to grow sweet potatoes and taro.[7] Usually the managers retained an active role in the management of their diverse lands (*ahupua'a*) which extended from the mountains to the coral reef fishing grounds. The common people worked in a variety of occupations (canoe building, home building, bird catching, fishing) with the bulk of the work being the cultivation of the land.

Work, like most other activities, was organized around an extended family unit, the *'ohana*. The term *'ohana* was used to cover relatives by blood, marriage, and adoption.[8] Many communal activities were conducted by the *'ohana* such as planting and harvesting crops, clearing land, constructing irrigation works, and fishing beyond the shoreline's coral reefs. Land managers collected the chief's share of output from the family's headman (*haku*) rather than from individual farmers. The

[6] There was also a third very small class of slaves (*kauwa*).

[7] See William Davenport, "The 'Hawaiian Cultural Revolution': Some Political and Economic Considerations," *American Anthropologist*, 71 (Feb. 1969), p. 5.

[8] Some controversy exists as to whether the *'ohana* represents a single extended family or a group of extended families. See Beechert, *Working in Hawaii*, p. 7.

*'ohana* facilitated specialization in work activities and ensured the ability to consume a somewhat varied market basket of goods and, in the absence of organized market institutions, acted to reduce the cost of exchange among family members. In a similar fashion, the inclusion of diverse lands in the *ahupua'a* helped to make this production unit generally self-sufficient; without extensive market institutions linking the *ahupua'a*, organization of production under the auspices of one large diversified firm further facilitated the expansion of opportunities for individual workers and consumers. While occasional market fairs (where participants exchanged cloth, mats, baskets, pigs, dogs, dried fish, vegetables, poi, canoes, paddles, and spears) allowed for some regional specialization in production, the institutions of the *'ohana* and the *ahupua'a* were vital given the rough geography and shifting political boundaries in Hawaii.

Two missionary observers believed that the chiefs managed, via taxes, arbitrary confiscations, and voluntary offerings, to appropriate about two-thirds of the *'ohana's* output.[9] There is some evidence that the net appropriation may have been lower, as the chiefs stored and ultimately redistributed a large fraction of their share of the produced goods. Marshall Sahlins has speculated that the storage and redistribution of goods was intended to redistribute income, to provide revenue for public works projects, and to ensure adequate stores during times of war and famine.[10] In any case, even with these substantial taxes and land rents, the common people lived well above subsistence levels. Even if the chiefs did appropriate two-thirds of the physical goods produced, a significant portion of income in the Polynesian economic system is leisure, which is excluded from the tax base. Tales of starvation are absent from the renderings of pre-1778 Hawaiian history. Theodore Morgan has observed that "[i]n good times the food supply was adequate in quantity and variety."[11] Ralph Kuykendall has emphasized that the common people "were probably less downtrodden than

[9] See William Richards, letter to Charles Wilkes, U.S.N., Commander of the U.S.A. Exploring Expedition (Mar. 15, 1841), in Marshall Sahlins and Dorothy Barrere, "William Richards on Hawaiian Culture and Political Conditions of the Islands in 1841," *Hawaiian Journal of History*, 7 (1973), p. 23; and Sheldon Dibble, *A History of the Sandwich Islands* (Honolulu, 1909), p. 74. Since Richards's letter was written in 1841, the two-thirds figure may not be applicable to earlier periods. Unfortunately, his figure is not based on empirical investigations, and there are no other contemporary sources with which to compare his estimate. It should be noted that the two-thirds share is considerably higher than the one-half share commonly observed in modern share-tenancy contracts.

[10] A more complete discussion of the role of the *ali'i* in the Hawaiian economy can be found in Marshall Sahlins, *Stone Age Economics* (Chicago, 1972).

[11] See Morgan, *Hawaii*, p. 51. An evaluation of the nutritional merits of the ancient Hawaiian diet reveals that it meets modern (1927) standards. See C. D. Miller, *Food Values of Poi, Taro, and Limu*, Bernice P. Bishop Museum Bulletin (Honolulu, 1927).

the lower classes of Europe in the eighteenth century," noting that they "regularly had time for cultural activities, sports, and games."[12]

Common people were not bound to the soil, unlike the serfs in Europe during the Middle Ages, and their relative mobility understandably contributed to their real incomes. While migration was infrequent, the common people were free to seek better opportunities or escape oppressive conditions. Some families worked plots of land under different chiefs (or on different islands) as insurance against both arbitrary behavior by their landlord and local famine or drought.[13] The commoners' ability to vote with their feet placed constraints on the ability of chiefs to extract all income above subsistence levels; at the same time, the high transportation costs associated with moving to another district allowed chiefs to extract a portion of the common people's income above the subsistence level.

If the chiefs attempted to extract additional income, commoners had an additional option besides moving. The historical record contains numerous stories of rebellions against chiefs who oppressed the common people. David Malo, an early chronicler of ancient Hawaii, wrote that "[f]or this reason . . . some of the ancient kings had a wholesome fear of the people." [14] As in other societies, competition between the ruling chiefs was not confined to the labor and product markets. Constantly waging war on each other, the ruling chiefs attained power by assembling loyal armies composed of large numbers of chiefs. In pre-contact Hawaii, chiefdoms expanded and contracted, formed and broke alliances, and apparently maintained this state of affairs for many centuries.

Thus, on eight small isolated islands in the middle of the Pacific Ocean, without mineral resources but with a complex agricultural technology, there existed for many centuries four to six competing polities in a common cultural and economic environment. The Hawaiians cultivated numerous tropical root, tuber, and tree crops in "irrigated valley lands ranked among the most productive agricultural ecosystems anywhere in Polynesia."[15] While the commoners were poor, competition between the chiefs for their services prevented their incomes from being pushed to subsistence levels. Numerous institutions, such as the *'ohana* and the *ahupua'a*, were developed to exploit

[12] Kuykendall, *The Hawaiian Kingdom*, vol. 1, p. 9.

[13] See Sahlins and Barrere, "William Richards," p. 23. They qualified Richards's statement with the observation that testimony "before the land commission (1848–1854) will not support the contention that people commonly held land in different *ahupua'a*. What sometimes occurs is that siblings and first cousins from locally important families are dispersed among several *ahupua'a* of a district (such as *'Ewa*). On the other hand, ordinary *maka'ainana* did often have claims in different [parts] of the same *ahupua'a*, a distribution which . . . might place them under two or more chiefs at once" (p. 38).

[14] David Malo, *Hawaiian Antiquities* (Mooelo Hawaii) (Honolulu, reprinted 1971), p. 195.

[15] Patrick Vinton Kirch, *Feathered Gods and Fishhooks* (Honolulu, 1985), p. 2.

economies of scale in food production. To some observers, Hawaii's complex civilization with its highly developed technology, hierarchical, social, and political organizations, art and culture, religious beliefs, and temple rituals was an amazing achievement for a group of people isolated in the middle of the Pacific Ocean.[16]

Contact with the western world set in motion forces that rapidly changed the society of pre-contact Hawaii. Among other things, it led to the formation of the nation-state in 1795, while access to western markets increased the benefits of a cartel among the chiefs.[17] Access to western military technology lowered the costs to the chiefs of maintaining a political coalition, with one of the chiefs, Kamehameha I, dominating the others.[18] The king maintained the cartel by allocating several *ahupua'a* on different islands to each of his chiefs, thereby making it more difficult for a particular chief to acquire a strong base of support on a single island. Kamehameha, by requiring powerful chiefs to join his court on Oahu and to travel with him to other Hawaiian Islands, prevented his rivals from accumulating power.[19] After unification, the chiefs' cartel made it feasible to enforce higher labor taxes, thereby pushing the commoners closer to subsistence.[20]

The decline in population of indigenous Americans and Pacific Islanders after contact with westerners was a universal and tragic occurrence. Exposure to western diseases and reduction of living standards after contact also led to a massive decline in the native population of Hawaii. While the population estimates at the time of contact vary, the extent of the population decline is enormous regardless of which figure is adopted (see Table 1). Two officers on Cook's

[16] See, for example, ibid., p. 7.

[17] Sumner J. La Croix and James Roumasset, "An Economic Theory of Political Change in Premissionary Hawaii," *Explorations in Economic History*, 21 (Apr. 1984), pp. 151–68. The island of Kauai remained independent until 1810.

[18] See D. Bruce Johnsen, "The Formation and Protection of Property Rights Among the Southern Kwakiutl Indians," *Journal of Legal Studies*, 15 (Jan. 1986), pp. 41–67, for an analysis of a similar response to western contact. He argued that the opportunities presented by trade and the threat presented by the new settlers in Canada would increase expenditures to enforce property rights in fishing and hunting territories. Johnsen observed that the use of violence to settle disputes about property rights fell as a result of the decline in the Kwakiutl population. His explanation for the change was that violence is "a relatively labor-intensive input in protecting exclusive property rights" (p. 65). The Canadian government's sanctions on violence between tribes also contributed to a shift away from its use.

[19] The system of separated strips also facilitated the king's monitoring of each chief's managerial efforts.

[20] See accounts of the commoners' burden in Kuykendall, *The Hawaiian Kingdom*, vol. 1, pp. 89–90. The decline in population probably had mixed effects on living standards. In a simple Malthusian general equilibrium model, population decline should lead to increased wages and higher standards of living. The decline in population may, however, also generate a host of effects that would reduce living standards. Incentives to accumulate human capital and to work intensively on the job may be impaired and individual specialization may decrease as market size declines. Long-term sequelae of the diseases (or their treatments) can adversely affect health status and labor productivity and therefore living standards.

TABLE 1
POPULATION BY ISLANDS, 1778–1849

| Island | 1778 (Schmitt) | 1778 (Nordyke) | 1778 (Stannard) | 1805 (Youngson) | 1823 (Census) | 1832 (Census) | 1836 (Census) | 1849 (Census) |
|---|---|---|---|---|---|---|---|---|
| All Islands | 225,000 | 310,000 | 795,343 | 264,160 | 142,050 | 130,313 | 108,579 | 80,641 |
| Hawaii | 90,000 | 120,000 | 403,800 | 100,000 | 85,000 | 45,792 | 39,364 | 27,204 |
| Maui | 52,500 | 70,000 | 125,021 | 48,000 | 20,000 | 35,062 | 24,199 | 21,047 |
| Lanai | 3,500 | 4,000 | 13,950 | 7,000 | 2,500 | 1,600 | 1,200 | 604 |
| Molokai | 9,000 | 15,000 | 44,387 | 25,000 | 3,500 | 6,000 | 6,000 | 3,540 |
| Oahu | 42,500 | 60,000 | 121,540 | 40,000 | 20,000 | 29,755 | 27,809 | 25,440 |
| Kauai | 25,000 | 40,000 | 82,995 | 40,000 | 10,000 | 10,977 | 8,934 | 6,956 |
| Other | 750 | 1,000 | 3,650 | 4,160 | 1,050 | 1,127 | 1,073 | 714 |

*Sources*: Robert C. Schmitt, *Demographic Statistics of Hawaii: 1778–1965* (Honolulu, 1968), p. 42; and David E. Stannard, *Before the Horror: The Population of Hawai'i on the Eve of Western Contact* (Honolulu, 1989), table 1.

ships offered very different estimates. Captain James King estimated the population at 400,000, while Lieutenant William Bligh suggested the correct figure was closer to 200,000. Three recent reviews of historical sources have arrived at vastly different population estimates: Robert Schmitt proposed between 200,000 and 250,000; Eleanor Nordyke, 310,000; and David Stannard, 795,000.[21] Since Schmitt's figures form the lower bound among the three modern estimates and are the least favorable to our analysis, we adopted his mean figure (225,000) as our benchmark.

The first missionary census in 1831–1832 revealed a population of only 130,313 people, a sharp decline from the 1778 level.[22] Battlefield deaths during Kamehameha I's wars of unification, starvation during famines, and human sacrifices contributed to the decline but were probably minor factors. Since the Hawaiian language was first transcribed in 1823, records of these events do not exist and their importance cannot be quantified. A substantial portion of the decline can be attributed to a series of epidemics beginning after contact. The epidemic of 1804 (the *oku'u*) decimated an army assembled by Kamehameha on Oahu to invade the last independent island, Kauai. This dysenteric disease, thought by modern analysts to have been cholera, took between 5,000 and 15,000 lives.[23] Schmitt related that in 1825 and 1826

[21] Robert C. Schmitt, "New Estimates of the Pre-Censal Population of Hawaii," *Journal of the Polynesian Society*, 80 (June 1971), pp. 237–43; and David E. Stannard, *Before the Horror: The Population of Hawai'i on the Eve of Western Contact* (Honolulu, 1989).

[22] The 150,000 figure is the "official" missionary estimate. Other estimates are as low as 130,000. James Jackson Jarves's estimate of 142,050 has been widely cited. See Robert C. Schmitt, *Demographic Statistics of Hawaii: 1778–1965* (Honolulu, 1968), pp. 22–25.

[23] Robert C. Schmitt, "The *Oku'u*: Hawaii's Greatest Epidemic," *Hawaii Medical Journal*, 29 (May–June 1970), pp. 359–64. Schmitt disputed accounts that the 1804 epidemic killed 175,000 people. He presented evidence indicating that historians' accounts of the episode have become increasingly exaggerated. Two visitors to Hawaii in 1822 (17 years after the epidemic) indicated that a yellow fever "swept away more than two thirds" of the 8,000 assembled troops. See Daniel

thousands "died of an epidemic of 'cough, congested lungs and sore throats.' A net population loss of 22,000 between 1832 and 1836 has been attributed to whooping cough, measles, or social disintegration, depending on the source."[24] In 1839 an epidemic of mumps spread through the populace, and in 1848 outbreaks of measles and whooping cough were followed by epidemics of diarrhea and influenza. Contemporary observers believed that "[t]en thousand would be a low estimate for 1848 and 1849 which those epidemics took away."[25]

Another factor which contributed significantly to the population decline was the decrease in the crude birth rate. Schmitt argued that "crude birth rates must have remained below 30 per 1000 most of the time and may have fallen to as low as 15 per 1000. Specific factors probably included sterility (caused by gonorrhea), a high proportion of fetal deaths (from syphilis), and induced abortion."[26] Introduced by Cook's crew, venereal disease was previously unknown in the Islands. In addition to the fall in the crude birth rate, infanticide may also have contributed to the population decline, although contemporary observers disagreed as to its significance.

The demand by visiting foreign ships for seamen also reduced the resident population. Romanzo Adams estimated that the number of Hawaiian men absent from the Islands "increased from 200 in 1823 . . . to 600 in 1836, 3,500 in 1848, and 4,000 in 1850. The latter figure amounts to almost 5 percent of the total Hawaiian and part Hawaiian population at that time, and 12 percent of all Hawaiian males 18 years of age."[27] Immigration was insufficient to offset this outflow; by 1850 only 1.9 percent of the population was foreign-born. The first accurate census conducted in the Islands revealed a population of 80,641 in 1849. The native population reached its nadir in 1900 when the U.S. census revealed only 37,656 full or part Hawaiians.

## II. CHANGING LAND TENURE: 1795–1855

Prior to the establishment of a unified Hawaiian kingdom by Kamehameha I in 1795, several competing political entities existed, all with similar land institutions. The ruling chief made revocable land grants to lesser chiefs, who hired land managers to oversee production by commoner families residing on the land. Land rights were not hereditary, and the ruling chief could redistribute land at a chief's death or at any other time. Commoner tenants were required to labor on the ruling chief's (and his retainers') lands and fish ponds. In addition, commoners

Tyerman and George Bennet, *Voyages and Travels*, compiled by James Montgomery (Boston, 1832), vol. 2, pp. 48–49.

[24] Schmitt, "The *Oku'u*," p. 363.

[25] *The Friend*, vol. 7, no. 10 (Nov. 15, 1849), p. 79, as quoted in Schmitt, "The *Oku'u*," p. 363.

[26] Schmitt, "New Estimates," pp. 238–39.

[27] As quoted in Schmitt, *Demographic Statistics*, p. 39.

owed a portion of their production to the *ahupua'a* chief. Rights to collect taxes from commoners on the land and to use the land could not, however, be transferred between chiefs. While commoners were free to move to other districts or islands, Malo observed that the commoners "were the fixed residents of the land; the chiefs were the ones who moved about from place to place."[28]

Abraham Fornander related that "[i]t has been the custom since the days of Keawenui-a-Umi on the death of a Moi (King) and the accession of a new one, to redivide and distribute the land of the island between the chiefs and favorites of the new monarch."[29] Following this ancient practice, Kamehameha I (who united all but one of Hawaii's small polities in 1795) redistributed rights in land to chiefs in his army after conquering islands governed by rival chiefs. Samuel Kamakau and John Ii, two contemporary Hawaiian observers, told us who got what in many cases.[30] Yet during Kamehameha's subsequent long reign (1795–1819), "the leading families of chiefs enjoyed a greater degree of permanence and security in the possession of their lands than had been previously known."[31] This conclusion is based on the observation that Kamehameha I implicitly recognized hereditary rights to property (by allowing the deceased's family to retain the property) and did not arbitrarily redistribute land. The rationale for Kamehameha's change in practice is unknown.

The second major change in the land tenure system came in 1819 with the death of Kamehameha I and the transition to the rule of Kamehameha II. Instead of redistributing land to form a viable coalition of chiefs to support his rule, the new king chose to solidify his support among the existing coalition of chiefs by relaxing his control over the chiefs' sandalwood trades with foreign merchants.[32] By ignoring one of the major options open to a new king, Kamehameha II weakened the prerogative of redistributing land for future rulers. This de facto security of tenure in the land was reinforced in 1825, when Kamehameha II and his queen succumbed to measles while visiting London. Neither the regent, Kaahumanu (who governed until the successor reached age 18), nor the young king, Kamehameha III, redistributed property during their reigns.

[28] As quoted in Beechert, *Working in Hawaii*, pp. 9–10.

[29] Abraham Fornander, *An Account of the Polynesian Race: Its Origins and Migrations*, 2 vols. (Tokyo, 1969), vol. 2, p. 300. Fornander, a newspaper editor and judge, was a dedicated student of Hawaiian history in the middle to late nineteenth century. In his 1878 work he compiled genealogies and recorded oral traditions for many pre- and post-contact events. His accounts are only as reliable as the oral traditions.

[30] See Samuel M. Kamakau, *Ruling Chiefs of Hawaii* (Honolulu, 1961), p. 175; and John Papa Ii, *Fragments of Hawaiian History*, edited by Dorothy B. Barrere (Honolulu, 1959), pp. 13–14, 20, 26, 69–70.

[31] See W. D. Alexander, "A Brief History of Land Titles in the Hawaiian Kingdom," in Thomas G. Thrum, ed., *Hawaiian Annual for 1891* (Honolulu, 1890), p. 108.

[32] La Croix and Roumasset, "An Economic Theory of Political Change," p. 164.

In 1845 a proposal to convert customary rights in land into private property rights came from Hawaii's Minister of the Interior, Dr. Gerrit Judd; a constitutional monarchy having been established in 1840. Judd called for a law permitting the sale of land "as freehold property forever" to Hawaiian subjects.[33] Later that year the legislature passed a law establishing a board of commissioners which would award title to various tracts of land. A valid claimant would receive a "Land Commission Award," which could be exchanged for a title upon payment to the government of one-third of the value of the unimproved land. But how was the Land Commission to divide land among the three parties (king, landlord, tenant) holding an interest in the land? After several meetings of the King's Privy Council in December 1847, the council adopted a set of rules to facilitate the land division. They are aptly summarized by John Chinen:

(1) The King was to retain all of his private lands as his own individual property, subject only to the rights of the tenants. (2) One third of the remaining lands was to be for the Hawaiian Government; one third for the chiefs and the konohikis; and one third to be set aside for the tenants, the actual possessors and cultivators of the soil. (3) The division between the chiefs and konohikis and their tenants under Rule 2 was to take place whenever any chief, konohiki, or tenant desired such a division, subject only to confirmation by the king in privy council. (4) The tenants of the King's private lands were entitled to a fee simple title to one third of the lands possessed and cultivated by them, which was to be set off for the tenants in fee, whenever the king or any of the tenants desired such a division. (5) The divisions prescribed in the foregoing rules were not to interfere with any lands that may have been granted in fee simple by the king or his predecessors. (6) The Chiefs and konohikis were authorized to satisfy the commutation by either the setting aside of one third of their lands to the government or by the payments of one third of the unimproved value of their lands. (7) The lands of King Kamehameha III were to be recorded in the same book as all other allodial titles, and the only separate book was to be that listing the government lands. It was Kamehameha III who insisted upon the seventh rule, as a means of protecting his private lands in the event of an invasion by a foreign power.[34]

[33] Kuykendall, *The Hawaiian Kingdom*, vol. 1, p. 278. After the Declaration of Rights of 1839 and the constitution of 1840 transformed Hawaii's government, several missionaries entered the king's government service including Judd, Lorrin Andrews, Richard Armstrong, and Edwin Hall. Daws observed that each man, "as a condition of his employment, had signed an oath of allegiance to the king. Among the noisy expatriates of the foreign community this was enough to ruin any man's reputation." See Daws, *Shoal of Time*, p. 108, and pp. 106–12 for a full discussion of the role of the missionaries in Kamehameha III's government. R. C. Wyllie, the minister of foreign affairs, also argued in a report dated Dec. 1, 1847 (in *Reports of the Minister of Foreign Affairs, 1852–62*, p. 67) that land reform would have salutary effects on Hawaiians. "Thus even the poorest of Your Majesty's subjects would stand on a footing of independent right—he would know that the land which he cultivated was his own, and could not be taken from him; and he would have the powerful stimulus of self interest to improve it, and to put a good dwelling on it; every child would be of value to him as he grew up, to help him in cultivating the ground; laborers would be induced to marry, in order to have children to help them; those children would be better taken care of, and would become more moral by being removed from the haunts of vice in the seaports."

[34] Jon J. Chinen, *The Great Mahele* (Honolulu, 1958), pp. 15–16. Other important renditions of the Great Mahele are Kuykendall, *The Hawaiian Kingdom*, vol. 1, chap. 15; Morgan, *Hawaii*, chap. 8; and Daws, *Shoal of Time*, pp. 124–27.

On January 27, 1848, "245 landlords came forward to arrange their lands and divide with the King."[35] By March 7, 1848, the "Great Division" or "Great Mahele" was completed. The next day the king divided his lands into Government lands and "Crown lands," the latter and smaller portion to be his private lands. The process of division between the king and his landlords ended in the summer of 1850. "Many of the chiefs surrendered to the government portions of their land, which were accepted by the privy council as full commutation of the government's interest, and fee simple titles were accordingly given to those chiefs for the lands which remained to them."[36]

The Privy Council resolutions of December 21, 1849, specified procedures for tenants to claim land shares. These resolutions provided for

> fee simple titles free of commutation, (to) be granted to all native tenants for the lands occupied and improved by them, but not including houselots in Honolulu, Lahaina and Hilo. . . . The resolutions further provided that some government land on each island should be set aside to be sold in fee simple in lots of from one to fifty acres to such natives as were not otherwise furnished with sufficient lands at a minimum price of 50 cents per acre.[37]

The housing lots carried a commutation fee of one-fourth their unimproved value. 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; Kuleanas, which were the land grants to commoners, 28,600 acres. The Mahele principles provided for commoners to receive one-third of the lands they occupied and cultivated, yet their final allocation was only a very small proportion of the total arable land. There are three reasons behind this disproportionate allotment. First, some commoners were unaware of the Mahele process and/or did not understand how to file claims. Second, many surveyors allocated only one-third of the tenants' *cultivated* lands to the tenants. Lands lying fallow were not counted as being under cultivation by some surveyors, and, consequently, large errors were made in the actual allocation of land. Third, the lands received by commoners were valuable agricultural lands. Although commoners received only a small proportion of the Islands' acreage, they received a higher proportion of total land value.[38]

[35] Kuykendall, *The Hawaiian Kingdom*, vol. 1, p. 288.

[36] Ibid., p. 289.

[37] Ibid., p. 291.

[38] Ibid., p. 294. This allocation is consistent with John Umbeck's prediction about property rights allocation. See John Umbeck, "Might Makes Rights: A Theory of the Foundation and Initial Distribution of Property Rights," *Economic Inquiry*, 19 (Jan. 1981), pp. 38–59. On p. 46 he showed that when property is being allocated among a group of individuals, those people receiving "more productive land will get less land than others whose holdings are not so productive." See also James Roumasset and William James, "Explaining Variations in Share Contracts: Land Quality,

In 1847 the legislature passed an act allowing foreigners to keep lands which they possessed, but they could sell such land only to native subjects. New lands could not be acquired. Kuykendall argued that the boom in the demand for Hawaii's agricultural products between 1848 and 1850 prompted a reconsideration of earlier positions regarding foreign ownership. The editors of the *Polynesian*, the major weekly newspaper, supported plans to allow foreign acquisition and conveyance of land to attract foreign capital and enterprise to agriculture. Legislation allowing foreigners to hold and convey land was rejected in 1848 but approved in 1850.[39]

## III. INSTITUTIONAL CHANGE: TRADITIONAL AND ECONOMIC EXPLANATIONS

The traditional explanations offered by Hawaii's historians identified the major forces behind the evolution of land rights, but we argue that two economic forces were also important determinants of the transition in land rights: the effect of an open economy on factor and product prices; and the effect of population decline on factor prices, public finance, and social organization.

According to some historians, the intellectual influence of western visitors and missionaries after 1822 was important in the transition to constitutional government and in the transformation of land rights.[40] The proposal for the Great Mahele came from Interior Minister Judd, formerly an American medical missionary. William Richards, an American missionary living in Lahaina since 1823, became the king's teacher and advisor in 1838 and was an important influence on the transition to constitutional government. He regularly delivered lectures to the king and chiefs on government and political economy, emphasizing the advantages of free trade. Moreover, numerous young Hawaiians who became advisors to the king were educated by American missionaries at the Lahainaluna school. Visiting ship captains regularly advised the king to adopt liberal economic policies, including the establishment of secure rights to property.[41]

Pressure by the British, French, and American consuls to institute fee simple titles for foreigners' building lots and farms caused numerous unpleasant episodes for the king.[42] Conflicts with British Consul Rich-

Population Pressure and Technological Change," *Australian Journal of Agricultural Economics*, 23 (Aug. 1979), pp. 116–27.

[39] *Penal Code of the Hawaiian Islands, Passed by the House of Nobles and Representatives on the 21st of June, A.D. 1850; to which are appended the Other Acts Passed by the House of Nobles and Representatives during their general Session for 1850* (Honolulu, 1850), pp. 146–47. See the discussion in Kuykendall, *The Hawaiian Kingdom*, vol. 1, pp. 294–98.

[40] Kuykendall, *The Hawaiian Kingdom*, vol. 1, pp. 153–69.

[41] See the discussion in ibid., pp. 153–59.

[42] Earlier disputes between the Hawaiian government and foreign governments had resulted in foreign warships visiting the Islands to "influence" the course of negotiations. Two American

ard Charlton led to a provisional cession of the Islands to Great Britain on February 25, 1841. While the king's sovereignty was restored on July 31, 1841, the episode surely left an indelible impression on the king and chiefs.

The nontrivial probability of an unfriendly annexation in the 1840s undoubtedly increased the king's desire to secure his land holdings. If Hawaii had been annexed by a foreign power, "public" lands would have been appropriated by the new authorities, and the king would have lost his main source of income—land rent. This explanation is credible because the probability of annexation by a foreign power was significant when private property was established in the 1840s.

Foreigners also pushed for alienable property rights on economic development grounds. Some missionaries who responded to R. C. Wyllie's questions on the subject concluded that an influx of foreign capital could not be expected until transferable ownership rights were secured. Other missionaries responding to Wyllie's survey believed that establishment of private property rights in land was one way of motivating Hawaiians to work.[43]

While these explanations all have relevance, most of them concentrate on outside cultural and political influences and fail to examine the broad array of economic and demographic forces transforming Hawaii's economy that also played a significant role in the evolution of a system of private land rights. Between 1778 and 1857 structural change in Hawaii's economy was driven by two forces: changes in the terms of trade and persistent population decline. Both forces affected factor and product prices which, in turn, induced institutional change. Unfortunately, in Hawaii, as in other Asian/Pacific economies, there is a paucity of factor price time-series data so our analysis is indirect, arguing that changes in factor endowments and the terms of trade affected Hawaii's economy.[44]

The change from autarky to trade after 1778 induced major changes in Hawaii's economy. The observations of contemporary observers made clear that living standards of commoners fell from the early 1790s until the sandalwood trade effectively ended in the late 1820s.[45] The decline in living standards was unusual as the change from autarky to trade, the expansion of a labor-intensive sector of the economy (sandalwood

warships arrived in 1826 to press for the repayment of debts incurred by the chiefs in the course of sandalwood trading. Ships returned later in the year and in 1829 to remind the chiefs of their unpaid obligations. Questions about the treatment of native Catholics, French priests, and foreign consuls produced a succession of visits by American, French, and British ships during the 1830s.

[43] R. C. Wyllie, *Answers to Questions Proposed by R. C. Wyllie* (Honolulu, 1848), pp. 7–13.

[44] See David Feeny, *The Political Economy of Productivity: Thai Agricultural Development, 1880–1975* (Vancouver, 1982), chap. 3, appendix 2, for a more complete discussion concerning the inference of factor prices from sparse data.

[45] La Croix and Roumasset, "An Economic Theory of Political Change," pp. 161–64.

harvesting), and the decline in population were all forces that normally should have produced higher living standards.

The lot of the chiefs was improved by the sandalwood trade. While sales to foreigners were maintained as a monopoly by Kamehameha I, 60 percent of the revenue was given to the chiefs who harvested the wood. Kamehameha II gave up control of the trade to enhance his support among the major chiefs. He allowed individual chiefs (instead of the king) to negotiate sales, but the king retained 40 percent of the gross revenue. Given their revocable land grants the chiefs vigorously competed to remove sandalwood from the mountainous regions of their *ahupua'a*. The additional income from sandalwood sales was welcome to the chiefs, as the decline in population had led to many agricultural lands being abandoned. Since most chiefs were granted an *ahupua'a*, a thin slice of land stretching from the mountains to the ocean reef, the decline in the value of portions of their agricultural land was offset by the increased value of sandalwood in the mountains of the *ahupua'a*.

When the sandalwood industry began to decline, Hawaii became the base for the northcentral Pacific whaling trade. The impetus for the new trade was the 1818 discovery of the "Offshore Ground" west of Peru and the 1820 discovery of rich sperm whale grounds off the coast of Japan. The first whaling ship visited the Islands in 1820, and by the late 1820s over 150 whaling ships were stopping in Hawaii annually. Table 2 documents this new sector's importance to Hawaii's economy.[46] Although the number of whaling ships visiting Lahaina and Honolulu fell from over 200 in 1832 to less than 90 in 1840, by 1843 over 350 whaling ships annually visited both ports.

One consequence of this growth was an increased demand for labor to service the ships.[47] Foreign traders and entrepreneurs, mostly from the United States, competed with the chiefs for labor, thereby reducing and finally eliminating the chiefs' monopsony power. The continuing decline in population, the collapse of the chiefs' labor cartel, and the replacement of one labor-intensive traded good (harvested sandalwood) by another (services to ships) points to increasing wages for commoners. In

[46] Morgan, *Hawaii*, p. 76. In addition, he noted: "By 1838, with diminishing returns from the Japan and Yellow Seas, the rich Kodiak or Northwest Coast ground off the Russian possessions had been discovered, 30 days sail from Hawaii." With the exhaustion of the Northwest Coast grounds in the late 1840s, ship visits declined until news of the 1848 opening of the Arctic Ocean north of the Bering Strait brought forth a renewed round of visits in 1852. Whaling ship visits began to permanently decline in 1859 and, with the exception of a brief revival in the late 1860s, continuously declined thereafter.

[47] Growth in whaling ship visits varied (see Table 2). From 1824 to 1833 ship visits increased from 104 to 189, but then declined steadily over the next seven years, bottoming out at 86 in 1840. From 1843 to 1854 an average of 419 ships visited Honolulu and Lahaina annually. While the decline during the 1830s is substantial, it is important to remember that whaling ships did not visit the Islands prior to 1820. The period 1820–1842 might be characterized as the "establishment" period of the industry in the Islands, while the decade after 1843 might be identified as the industry's "mature" period.

TABLE 2
WHALERS AND TRADING SHIP ARRIVALS IN HAWAII, 1824–1847

| Year | Whalers | Traders | Total |
|---|---|---|---|
| 1824 | 104 | 17 | 121 |
| 1825 | 78 | 18 | 96 |
| 1826 | 138 | 37 | 175 |
| 1827 | 98 | 23 | 121 |
| 1828 | 157 | 37 | 194 |
| 1829 | 173 | 32 | 205 |
| 1830 | 157 | 39 | 196 |
| 1831 | 159 | 37 | 196 |
| 1832 | 198 | 37 | 235 |
| 1833 | 189 | 35 | 224 |
| 1834 | 111 | 31 | 142 |
| 1835 | 76 | 33 | 109 |
| 1836 | 73 | 39 | 112 |
| 1837 | 129 | 32 | 161 |
| 1838 | 148 | 23 | 171 |
| 1839 | 116 | 33 | 149 |
| 1840 | 86 | 31 | 117 |
| 1841 | 133 | 31 | 164 |
| 1842 | 172 | 46 | 218 |
| 1843 | 383 | 37 | 420 |
| 1844 | 490 | 42 | 532 |
| 1845 | 542 | 41 | 583 |
| 1846 | 596 | 53 | 649 |
| 1847 | 406 | 67 | 473 |

*Notes and Sources*: Theodore Morgan, *Hawaii: A Century of Economic Change: 1778–1876* (Cambridge, MA, 1948), appendix 2, pp. 225–26. The traders data included only ships arriving at Honolulu while the whalers data included ships arriving at both Honolulu and Lahaina. Whalers data for 1834 to 1836 included only ships arriving at Honolulu.

the agricultural sector the decline in population reduced product demand, which, coupled with increased competition for labor, should have led to a decrease in land rents.[48] There is no systematic evidence concerning land rents and wages during this period, but lower land rents can be inferred from the large amount of agricultural land abandoned during the first 45 years of the nineteenth century.[49] The change in population and comparative advantage points to the conclusion that throughout the 1830s and early 1840s the income of the king and the chiefs fell, while the lot of the commoner improved. Without sufficient skills and capital to begin new enterprises and with epidemics periodically affecting all native Hawaiians, the chiefs began to consider new commercial ventures that would increase their incomes.

The first major attempt to grow sugar commercially in Hawaii was by the American mercantile firm of Ladd & Company in 1835. While this

[48] Demand by visiting ships for food supplies offset some of the decline in demand from other sources.

[49] See Andrew Lind, *An Island Community: Ecological Succession in Hawaii* (Chicago, 1936), pp. 61–62.

venture cannot be judged a success as it lasted only until 1844, it stimulated interest in sugar production. Numerous small sugar mills were established by missionaries and chiefs between 1835 and 1840. Sugar grown by commoners on chiefs' lands was milled on shares by these establishments. Population increases in Oregon and California created potentially large markets for commercial agricultural products, thereby enhancing the comparative advantage of exporting sugar.

While the Hawaiian government and the missionaries were adamantly against foreign ownership throughout the 1830s and 1840s, vigorous discussion took place over the necessity of stimulating the interest of the common people toward commercial agriculture. Considerable capital investment was required to mill and manufacture sugar. Changes in the methods of milling and manufacture came rapidly in the early nineteenth century, and J. H. Galloway stated that the new technology "created larger mills and factories than the industry had known before and they demanded a more extensive hinterland of cane-pieces."[50] Without alienable land, however, it was difficult for a chief or commoner to assemble enough land to enable the new mills to operate near capacity. Commoners, who had traditional use rights in the lands which they occupied, could not be compensated for the loss of these rights, as they were inalienable. Moreover, chiefs who did not have a comparative advantage in producing sugar or organizing sugar milling and manufacture could not capitalize their rights in the land. Given the declining income of chiefs during this period, the opportunity to move their lands into more valuable uses gave additional impetus to the movement to define alienable land rights. Even without such rights 11 mills for the manufacture of sugar had been established by 1846: two on Kauai, six on Maui, and three on Hawaii.[51]

The declining demand for agricultural products came to a halt in the late 1840s due to the sudden appearance of a market for agricultural products in California during the 1849–1851 gold rush.[52] After 1851, as California's demand for Hawaii's agricultural exports fell, there is evidence that land rents resumed their downward path. Letters written by prominent residents of Hawaii to Joel Turrill, U.S. consul in Hawaii

[50] J. H. Galloway, *The Sugar Cane Industry: An Historical Geography from its Origins to 1914* (New York, 1989), p. 135.

[51] See Kuykendall, *The Hawaiian Kingdom*, vol. 1, pp. 315–16.

[52] Morgan, *Hawaii*, pp. 154–58, presented data on exports of important agricultural products which indicate that the increased "[d]emand was bunched into a three-year interval, from the fall of 1848 through part of 1851, though it continued at a higher level after 1851 than it had before 1849." An additional effect of the gold rush was to stimulate migration of Hawaiians to California and southern Oregon. See G. V. Blue, "Early Relations Between Hawaii and the Northwest Coast," *Hawaiian Historical Society Report No. 33* (Honolulu, 1924), p. 20.

from 1846 to 1850, repeatedly indicated that land prices continued falling until 1858.[53]

Economic changes in the early 1800s then tended to undermine the traditional Hawaiian social structure. First, agriculture was in decline due to a smaller population and increased competition for labor from the whaling services sector. These forces point to a decline in rental income for the king and chiefs and an increase in the real incomes of commoners. Second, prospects for commercial sugar production became evident as the population of the North American West Coast increased. Hawaiian land-use rights were, however, not structured to facilitate large-scale sugar production.

Other changes were occurring in social institutions that contributed to the transition in land rights. Hawaii did not have any substantial urban population in 1778, and given the subsequent decline in population, there seemed little prospect of urbanization. Yet three large, growing villages (Honolulu on Oahu, Lahaina on Maui, and Hilo on Hawaii) arose in the 1820s in the midst of the continuing population decline.[54] Declining population and its increasing concentration in growing villages meant, of course, a decline in rural population. The shift in population from rural to urban areas had two important repercussions. The movement to urban areas disrupted the relationship between chiefs and commoners, inducing the development of new governmental institutions, and the rural population decline stimulated competition between chiefs for tenants. Chiefs competed to increase tenant compensation by adjusting the traditional package of tenant obligations and taxes.[55]

Changes in Hawaii's government were prompted by the necessity to devise new institutions capable of governing and providing services to an urban population. Traditional systems of governance based on the hierarchy of common people and chiefs broke down with the rural exodus. As more common people pursued activities outside the traditional economy and divisions over the development of a code of law among chiefs grew, the enforcement of the law by local chiefs began to break down in the late 1820s. When the regent, Kaahumanu, died in 1832, the new king and his Council of Chiefs responded to the confusion over law enforcement by promulgating new laws designed to protect public order and settle private disputes. Informal district courts had

[53] See the letters sent to Joel Turrill by his friends in Hawaii in "The Turrill Collection, 1845–1860," *Hawaiian Historical Society Report No. 66* (Honolulu, 1957).

[54] Reliable population estimates do not exist for any of the three villages.

[55] The term "wage rate" refers to the shadow price of a commoner's time, not to the actual method of compensation for agricultural work. Since a worker on the land owed labor dues (which are not fixed in value) to the chief and to the king, workers could be characterized as sharecroppers. "Rents" refer to a combination of taxes and rents prior to the constitution of 1840, as the finances of the chiefs, king, and the government were not separated until 1842. After 1842 rents refer to the shadow price of the land's services.

already been established in 1829 and were formally instituted in 1840. The existence of a rudimentary court system was important to land reform, as it provided a mechanism of rights enforcement and dispute resolution, thereby lowering the transaction costs associated with the innovation in property rights.

Kamehameha III, with the approval of Hawaii's important chiefs and the assistance of Richards, promulgated the "Declaration of Rights and the Laws of 1839," which defined and secured certain rights for the people, including protection of property. Government by the king and his ministers was formalized by the establishment of the 1840 constitution; while most existing institutional arrangements were retained, a House of Representatives chosen by the people was established as one branch of a two-branch legislature that included the existing Council of Chiefs.

Establishment of the rule of law in urban areas and the rise of constitutional government reduced the power of the chiefs over the common people. Tenants who were dissatisfied with their role in the traditional economy migrated to urban areas. Moreover, rising tenant compensation, prompted by increased competition for labor from urban areas, reduced land rents earned by chiefs. Thus the decline in the chiefs' power was accompanied by a decline in their income.

The decline in land rents also reduced government revenues. Taxes collected by the king were directly tied to the number of commoners working in agriculture, as agricultural workers were obligated to work in the king's fields. With increased competition from the whaling services sector for labor and a declining total population, it was in the chiefs' interest to adjust the traditional obligations and taxes paid by tenants. In addition, since government is a labor-intensive enterprise, higher wages increased expenditures just as revenues were falling.

In response to the rising budget deficit, the new legislature enacted a series of sweeping tax laws. Two distinct stages of change in the taxation system were important components of these institutional developments. First, the "Laws of 1839" codified the tax owed by various individuals, while (partially) converting most taxes from in-kind obligations to monetary payments. Taxes and land rents were collected in several ways; commoners usually worked 52 days on the king's land (taxes), 52 days on the land manager's land (rents), and made harvest "offerings." North and Thomas have argued that the shift from in-kind to monetary taxation can usually be explained by the growth of factor and commodity markets.[56] Rulers could then use the proceeds from

[56] North and Thomas, *The Rise of the Western World*, pp. 39–40, argued that part of the shift from in-kind to other forms of taxation is explained by the growth of commodity and factor markets. Rulers could more efficiently collect money taxes and then use the proceeds to purchase the goods and services they needed as markets became better developed relative to the earlier period in which taxes in kind may have been used to minimize the transaction costs of revenue

money taxes to purchase required goods and services. In pre-contact Hawaii in-kind taxes were used to reduce the higher transaction costs associated with contracting in the absence of well-functioning markets. Given the absence of such markets in Hawaii prior to the sandalwood trade and their subsequent development, North and Thomas's analysis is consistent with the timing of this shift in taxation methods.

Second, the "Laws of 1842" reduced the overall level of taxes owed by rural agricultural families and increased that owed by urban families. From 52 days owed to the landlord (for help on large projects and work on the landlord's fishponds and fields) and an equal number to the king, the Laws of 1842 reduced the required number of days to 36 for each.[57] The effect of the law was to reduce a tenant's rental and tax payments by equal amounts, thereby increasing real wages in agriculture. These changes provide corroborating evidence for our earlier inference of rising real wages during this period.

The establishment of a poll tax in the 1839 declaration and its continuing presence in the Laws of 1842 is a product of this migration of workers from their traditional residences in the fertile mountain valleys to urban areas.[58] The new tax was supported by the Council of Chiefs as a measure to maintain land rents and taxes (as migrants to urban areas did not owe the in-kind taxes) by stemming the flow of migration from the rural areas. Other provisions in the Laws of 1842 reinforced this goal by prohibiting tenants from leaving the land without cause.[59] These attempts by the chiefs and the king to ameliorate problems stemming from rising wages and declining land rents were not unusual; similar laws were common in Europe in the late fourteenth century when wages were increasing and land rents were falling.[60] Such laws are consistent with our earlier inference that wages rose and land rents fell as Hawaii's population declined.

Another provision of the Laws of 1842 provided a total exemption from taxes for families with more than three children.[61] A reduction in the cost of raising additional children stimulates population growth and tends to stem the upward pressure on wages and relieve the downward pressure on rents, thereby improving the future lot of the chiefs. These changes in Hawaii's institutions and laws suggest that rents had

collection. While North has recently acknowledged (*Structure and Change*, pp. 129–31) timing problems with the application of his analysis to Europe, the criticisms do not apply to the Hawaiian case.

[57] Lorrin A. Thurston, ed., *Constitution and Laws of 1842*, in *The Fundamental Law of Hawaii* (Honolulu, 1904), chap. 3, sec. 3.

[58] Ibid., chap. 3, sec. 1.

[59] Ibid., chap. 3, secs. 5 and 6.

[60] See, for example, the Statutes of Labourers considered by virtually every English Parliament between 1350 and 1380.

[61] *Constitution and Laws of 1842*, chap. 3, sec. 4.

declined and that the chiefs, whose income was primarily derived from land rents, influenced the legislature to prevent further declines.

The adjustments in traditional tenant obligations reduced rents available to the chiefs and taxes paid by the chiefs to the government. In 1842 revenue collected to finance the king's and the government's expenditures amounted to only $41,000. To increase government revenues the legislature approved an ad valorem duty of 3 percent on all imports, effective at the beginning of 1843. Tax revenue increased to $50,000 in 1843, while government expenditures increased to $80,000. Although a bond issue was floated to cover the shortfall, a debt of this magnitude could not be regularly financed by the government unless it wished to compromise its independence from foreign powers. Other taxes were subsequently imposed. A tax on whaling activities was collected by arresting sailors from whaling ships for no apparent reason and then releasing them upon payment of a fine. The tariff was raised from 3 to 5 percent in 1845, and in 1855 some imported articles had duties of 10 and 15 percent imposed on them, with heavier charges imposed on wines and spirits. Chattel taxes on horses, mares, cattle, dogs, and cats were imposed in 1846.

The possibility of creating alienable property rights provided two new potentially additional sources of revenue to the Hawaiian government. First, the capitalization of the right to receive land rents enabled the government to sell a large proportion of its land during and after the Great Mahele. Indeed, W. D. Alexander stated that "between the years 1850 and 1860, nearly all the desirable Government land was sold, generally to natives."[62] Kuykendall supported this view, noting that evidence of active sales of public land was documented in "official records and in the newspapers, letters, and other contemporary writings."[63] These anecdotal reports are corroborated by more direct, quantitative evidence found in an 1881 private compilation of government land sales (also known as "royal patent grants") and the 1858 Report of the Minister of the Interior.[64] The 1881 survey indicates that 654,622 acres, or 44 percent of the original 1,495,000 acres awarded to the government, were sold between 1841 and 1886.[65] The bulk of the sales occurred between 1846 and 1861 when the government sold 420,781.76 acres, approximately 31 percent of its total holdings. The 1858 interior minister's report contains annual data on acreage sold and revenue received from sales on each island (see Table 3). A significant

[62] Alexander, "A Brief History," p. 119.

[63] Kuykendall, *The Hawaiian Kingdom*, vol. 1, p. 298.

[64] See Surveyer General, comp., *Index of All Grants Issued By the Hawaiian Government Previous to March 31, 1886* (Honolulu, 1887). The two sets of data correspond almost exactly. The only discrepancies are in the 1849 Maui acreage and the 1857 Molokai acreage. Review of these entries indicates that the private report probably double counts acreage for those two observations.

[65] A small amount of acreage was sold prior to the institutional reforms in 1847, but we have been unable to discover how such sales were executed.

TABLE 3
GOVERNMENT LAND SALES, 1846–1857

| | Oahu | Hawaii | Maui | Kauai | Others | Total |
|---|---|---|---|---|---|---|
| 1846 | | | | | | |
| Acres | 850.54 | 10.00 | 0.00 | 0.00 | 0.00 | 860.54 |
| Revenue | 526.00 | 50.00 | 0.00 | 0.00 | 0.00 | 576.00 |
| 1847 | | | | | | |
| Acres | 171.53 | 763.75 | 1,365.00 | 0.00 | 0.00 | 2,300.28 |
| Revenue | 2,207.88 | 752.15 | 1,839.41 | 0.00 | 0.00 | 4,799.44 |
| 1848 | | | | | | |
| Acres | 488.40 | 14.00 | 213.36 | 201.51 | 0.00 | 917.27 |
| Revenue | 1,782.25 | 50.00 | 207.97 | 366.50 | 0.00 | 2,406.72 |
| 1849 | | | | | | |
| Acres | 2,022.22 | 232.75 | 4,867.76 | 8.50 | 0.00 | 7,131.23 |
| Revenue | 12,935.78 | 303.07 | 4,596.61 | 17.50 | 0.00 | 17,852.96 |
| 1850 | | | | | | |
| Acres | 15,330.66 | 1,859.15 | 6,988.87 | 1,028.50 | 1,371.00 | 26,578.18 |
| Revenue | 17,626.13 | 4,215.55 | 11,165.75 | 3,243.29 | 489.00 | 36,739.72 |
| 1851 | | | | | | |
| Acres | 5,567.81 | 5,285.10 | 6,569.55 | 2,634.38 | 92.46 | 20,149.30 |
| Revenue | 6,933.60 | 5,568.00 | 11,100.99 | 3,004.86 | 164.88 | 26,772.33 |
| 1852 | | | | | | |
| Acres | 7,938.87 | 20,790.93 | 2,599.32 | 301.72 | 358.45 | 31,989.29 |
| Revenue | 7,765.22 | 19,075.55 | 4,402.29 | 274.00 | 1,128.12 | 32,645.18 |
| 1853 | | | | | | |
| Acres | 1,447.01 | 3,260.82 | 6,142.59 | 834.31 | 316.14 | 12,000.87 |
| Revenue | 3,739.25 | 2,624.04 | 6,468.08 | 551.88 | 579.00 | 13,962.25 |
| 1854 | | | | | | |
| Acres | 1,610.13 | 3,976.11 | 16,930.87 | 710.00 | 0.00 | 23,227.11 |
| Revenue | 8,181.08 | 2,595.00 | 18,885.30 | 428.22 | 0.00 | 30,089.60 |
| 1855 | | | | | | |
| Acres | 3,842.42 | 15,753.37 | 3,616.12 | 3,960.60 | 646.44 | 27,818.95 |
| Revenue | 4,839.77 | 8,570.86 | 6,242.63 | 1,058.09 | 1,062.05 | 21,773.40 |
| 1856 | | | | | | |
| Acres | 1,889.90 | 14,427.23 | 3,329.87 | 119.90 | 331.70 | 20,098.60 |
| Revenue | 5,367.80 | 6,111.89 | 3,745.90 | 389.95 | 365.31 | 15,980.85 |
| 1857 | | | | | | |
| Acres | 478.10 | 8,115.87 | 320.39 | 44.42 | 1.64 | 8,960.42 |
| Revenue | 6,724.68 | 4,420.72 | 514.87 | 153.90 | 1.75 | 11,815.92 |
| Grand Totals | | | | | | |
| Acres | 41,637.59 | 74,489.08 | 52,943.70 | 9,843.84 | 3,117.83 | 182,032.04 |
| Revenue | 78,629.44 | 54,336.83 | 69,169.80 | 9,488.19 | 3,790.11 | 215,414.37 |

*Notes and Sources*: Data, which are from Sept. 1846 to Dec. 1857, are taken from *The Report of the Minister of the Interior* (Honolulu, 1858). Revenue is in U.S. dollars, the unit of account in Hawaii.

proportion of government revenues during this period was derived from land sales (see Table 4).[66]

Second, the change to alienable private property rights also created *additional* land rents. Governments seldom encounter such favorable

[66] The figures from 1853–1857 should be interpreted cautiously. In 1856 the government halted the sale of large tracts of land. It adopted a policy of leasing the remaining lands in response to the lower land prices prevailing during this period. The land sales reported for 1855 and 1857 were actually made in 1854 and 1855 but were reported in later years due to a delay in the issuance of royal patent grants.

TABLE 4
GOVERNMENT REVENUE AND LAND SALE REVENUE, 1846–1857

| Year | Government Revenue | Land Sale Revenue | Land Commission Net Revenue | Revenue from Land Sales as a Percentage of Government Revenue |
|---|---|---|---|---|
| 1846 | $75,000 | $576 | | 0.77% |
| 1847 | 127,000 | 4,799 | | 3.78 |
| 1848 | 155,000 | 2,407 | | 1.55 |
| 1849 | 166,000 | 17,853 | | 10.75 |
| 1850 | 194,000 | 36,690 | | 18.91 |
| 1851 | 284,000 | 27,772 | | 9.78 |
| 1852 | 278,934 | 32,645 | −$3,232 | 10.54 |
| 1853 | 326,620 | 13,962 | 523 | 4.43 |
| 1854 | 323,393 | 30,090 | −214 | 9.24 |
| 1855 | 419,228 | 21,773 | 3,454 | 6.02 |
| 1856 | 319,521 | 15,981 | | 5.00 |
| 1857 | 319,521 | 11,816 | | 3.70 |

*Notes and Sources*: Government revenue data are taken from *The Report of the Minister of Finance*, various years, 1847–1860. The remainder of the data is taken from *The Report of the Minister of the Interior*, various years, 1847–1860. Government revenue for 1852 was calculated by adding one-fourth of the revenue from the Mar. 1851 to Mar. 1852 revenue to the reported data for the period Mar. to Dec. 1852.

opportunities. In his neoclassical model of the state, North analyzed the trade-off usually encountered by governments seeking to raise additional revenue.[67] He found that "the property rights structures that will maximize rents to the ruler (or the ruling class) are in conflict with those that would produce economic growth."[68] To survive the state must encourage economic growth and generate sufficient flows of tax revenue to maintain its position against competitors.

As North observed, declining land rents and increasing wages tend to generate a budget deficit in agrarian societies where property taxes are an important component of state revenue and state expenditures are labor-intensive. North cited several instances of these induced deficits, such as the fiscal crisis faced by European kings in the fourteenth century in the wake of Europe's declining population. He concluded that tax revenues were in "[d]ecline . . . as a result of the fall in land rents due to a declining population . . . at precisely the time when more revenues were required for survival."[69]

In Hawaii the fiscal crisis also was due, at least in part, to a fall in land rents stemming from a declining population. That crisis, however, coincided with economic changes that rendered alienable property rights in land more attractive. The Hawaiian rulers were able to sell land to commoners partly because commoners could resell the land to

[67] North's theory was presented in detail in *Structure and Change*, chap. 3.
[68] Ibid., p. 28.
[69] Ibid., p. 139.

foreigners in the face of new prospects for commercial agriculture. The revenue from land sales and tax revenue from an expanding agricultural economy enabled the government to finance its increased expenditures without resorting to the instruments of mercantilism. This contrasts with the European case where monarchs did not face the same favorable opportunities encountered by the Hawaiian king. In Europe they sold licenses, monopoly rights, and other restrictions on commerce to raise revenue, thereby sacrificing economic growth for the maintenance of the state.[70] Their maximization of tax revenues was generally in conflict with efficient incentives for private economic activity. The Hawaiian case provides an interesting counterexample wherein the revenue-seeking interests of the monarch had a positive effect on private investment and economic growth.

## IV. LESSONS FOR THE NEW POLITICAL ECONOMY

Early contributions to the new political economy have been criticized as "spontaneous order" theories for relying on efficiency as the primary engine of change.[71] Our framework relies instead on generalized rent-seeking as the engine of change. Rent-seeking may be broadly construed as creating rents as well as capturing them. By changing property rights in land and selling public land, the Hawaiian monarchy was able to raise additional revenue without imposing dead weight losses on producers and consumers. Pursuit of self-interest by government officials accelerated the transition from a complex system of traditional use rights to a system of exclusive, transferable property rights. Thus while the rent-seeking objectives of the ruling class are ordinarily in conflict with efficient economic growth, occasions may arise in which the conflict is absent.

The evolution of private property rights in nineteenth-century Hawaii also illustrates that the comparative efficiency of private property depends on external market conditions as well as population pressure. In Hawaii the transition to alienable, private property rights was driven by new market opportunities rather than population growth. The shift in comparative advantage toward sugar meant that agricultural production would be more capital-intensive and would require land improvements. Since capital-intensive production is usually more efficient with commercial cultivation, the increase in sugar cultivation opportunities led to a greater demand for the institutions of private property.

[70] Ibid., pp. 138–42.

[71] The "new political economy" is an umbrella term for public choice, economics of property rights, law and economics, political economy of regulation, the new institutional economics, and the new economic history. See James M. Buchanan, *Explorations into Constitutional Economics* (College Station, 1989), p. 61; and Robert P. Inman, "Markets, Governments, and the 'New' Political Economy," in Alan J. Auerbach and Martin Feldstein, eds., *Handbook of Public Economics* (New York, 1987), vol. 2.

In conventional welfare economics, central government control and free markets are viewed as alternative forms of economic organization. This may be misleading since, as we have suggested above, the evolution of private property and market exchange may be highly interdependent with the evolution of government. New external trading opportunities may induce, in combination with other factors, increased centralization of government *and* simplified, private property rights. As the gains from specialization grow, so does the role of central government in providing the institutional prerequisites for market exchange.[72] Thus growth of governmental institutions may be a coevolutionary phenomenon which accompanies the rise of private property rights.

[72] This perspective suggests due caution in generalizing about the minimal efficient degree of central control independent of an economy's state of development. See James Roumasset and Sumner J. La Croix, "The Coevolution of Property Rights and Political Order: An Illustration from Nineteenth-Century Hawaii," in Vincent Ostrom, David Feeny, and Hartmut Picht, eds., *Rethinking Institutional Analysis and Development* (San Francisco, 1988), pp. 315–36.