SHEEP, SQUATTERS, AND THE EVOLUTION OF LAND RIGHTS IN AUSTRALIA: 1787-1847

By

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> As well might it be attempted to confine the Arabs of the desert within a circle drawn of the sands, as to confine the graziers or wool-growers of New South Wales within any bounds that can possibly be assigned to them, and as certainly as the Arabs would be starved so also would the flocks and herds of New South Wales, if they were so confined, and the prosperity of the colony would be at an end.
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> Sir George Gipps, Governor of New South Wales, December 19, 1840

At the founding of the Botany Bay settlement in 1788, the British colonial government in Australia claimed all lands for the Crown. For 43 years, the colonial governors of New South Wales granted crown lands in and around Sydney to various categories of settlers and convicts.[1] In 1831 the British Colonial Office ordered the New South Wales colonial government to cease granting land and instead to auction selected parcels of land within a relatively small official settlement area. Settlers paid little attention to the new land policies. Indeed, they raced to begin grazing sheep on the enormous tracts of closed land beyond the official settlement area. Over the next 16 years, the colonial government, the British government, the sheep graziers, and the other settlers wrestled with the difficult question of redefining rights to the land. By 1847 the sheep graziers who had illegally occupied the land during the 1830s were able to convince Great Britain's Parliament to grant them reasonably secure property rights to the lands which they had occupied.

This paper focuses on the events triggered by the British colonial office's 1829 decision to restrict the area of settlement and its 1831 decision requiring the government to allocate land to settlers at an auction with a "high" upset price. The British government's policy of concentrated land settlement was mirrored by similar land policies adopted by the United States federal government during the nineteenth century.[2]

Restrictions on the development of new economic activity are particularly interesting to explore, as government are more often known for subsidizing infant industries. The analysis focuses on the economic and demographic factors inducing institutional change (Davis and North, 1971; North, 1981, 1990; Hayami and Ruttan, 1985; Feeny, 1988; Roumasset and La Croix, 1988, La Croix and Roumasset, 1990), yet also incorporates other important influences, such as Britain's changing goals for the colony, the intellectual presence of the colonial reformers, and the much admired land settlement laws of the United States.[3]

Regardless of the rationale behind the Colonial Office's policies, the New South Wales colonial government was either unable or reluctant to enforce the Colonial Office's policies. The colonial governor's initial acceptance of the squatters' presence on the closed crown lands in the 1830s is contrasted with his successor's reluctance in the early 1840s to grant the squatters expanded property rights to the sheep runs. Since the colonial government played only a small role in defining the nature and extent of land claims, we examine the informal rules which developed to limit and define the extent of land claims by sheep farmers.

Finally, the paper extends and uses the recent literature on efficient land settlement to consider whether the rush to settle lands outside the official settlement area dissipated the economic rents from the land or whether the rush was an efficient method for bringing highly productive land into production.

Section I outlines the evolution of land policies from 1787 through 1847. Section II summarizes the rapid growth of the pastoral industry and examines the settlers' rush

to occupy restricted land during the 1830s and 1840s. Section III analyzes three major aspects of land settlement: (1) the government's emphasis on concentrated settlement, (2) the economic factors inducing increasing definition of property rights, (3) the influence of Wakefield; and (4) the informal and formal rules which guided land allocation among the sheep farmers. Finally, Section IV considers how this analysis of the evolution of land rights in Australia contributes to a more general theory of institutional change.

I. LAND POLICIES IN NEW SOUTH WALES: 1788-1847

Land policies for New South Wales emanated from the British Colonial Office and were implemented and often modified by colonial governors to correspond to local conditions. This agency relationship is important in the analysis, as many of the policies emanating from London were ill-suited to the conditions of the colony (Burroughs, 1967). Governors faced the challenge of implementing policies that achieved the goals of the Colonial Office and garnered political support from colonists. Correspondence between Australia's Governors and ministers in the Colonial Office reveals a continuing tension between London's interest in concentrating population in urban areas and Sydney's interest in developing the continent.[4] Changing economic circumstances in New South Wales were often misunderstood in London, and developments in Britain's other colonies often produced autonomous changes in land policy that New South Wales governors were reluctant to implement.

The Government's land policies can be categorized into four regimes. In the first regime (1787-1831) the governor granted land to settlers. In the second regime (1831-1836) the government sold land to settlers at auction with a "high" minimum upset price.[5]

In the third regime (1836-47) the colonial government legitimized the squatters' presence by issuing licenses to sheep farmers occupying crown lands beyond the Nineteen Counties. In the fourth regime (1847-1865) the government awarded long-term leases to holders of sheep runs (farms); coupled with continued high minimum upset prices, the long-term leases provided graziers with secure property rights approximating private property Below we provide more detail on each of the regimes.

When the first settlers arrived in New South Wales in 1788, the British colonial government proclaimed crown ownership of all lands. The Colonial Office had given authority to the New South Wales Governor to make land grants to free settlers, emancipists (former convicts) and noncommissioned officers. Land grants usually stipulated that a quit rent of one shilling per 50 acres be paid after five years, that the grantee reside on and improve and cultivate the land, and that timber "deemed fit for Naval Purposes ... be reserved for the use of the crown." Governor Macquarie (1809-1821) made the first change in the land grant procedures when he inserted a clause in each land grant forbidding the settler to sell the grant for five years. Settlers usually ignored these restrictions, and the colonial government made little effort to collect quit rents. Governors made only small amounts of land available for settlement, as less than 1,000 square miles (32 miles square) of land had been granted when Macquarie left office in 1821. At the beginning of 1821, Macquarie decided that land grants should be proportional to a settler's capital, subject to a maximum grant of 2,000 acres. Immigrants bringing more than £3,000 to the colony could purchase additional land.

Governor Brisbane's land grants during his four years in office virtually doubled the

total amount of land in private hands In April, 1822 Governor Brisbane instituted a new land policy requiring that the grantee agree to maintain one convict per 100 acres, land grants were now restricted by the number of convicts available to be maintained. To expand the amount of land available to settlers Brisbane announced that settlers could purchase (with his permission) up to 4,000 acres at a minimum price of 5s an acre (with superior lots priced at 7s 6d) Governor Darling took office in December, 1825 with instructions from the colonial office to reduce the use of land grants and to sell crown lands at auction In September, 1826 Darling eliminated the requirement to maintain convicts and instituted a system of land grants to new settlers of moderate means and land sales at fixed prices in lots of 1920 acres. A shortage of land surveyors forced Darling to suspend land sales in November, 1826 and until 1831 grants remained virtually the only mechanism for obtaining crown land.

In 1829 the government issued regulations strictly limiting settlement in New South Wales to the 22,083,200 acres in the Nineteen Counties surrounding Sydney. This prohibition on settlement was followed up with the "Act for Protecting the Crown Lands of this Colony from Encroachment, Intrusion, and Trespass" which allowed the Governor to appoint commissioners of crown lands to enforce crown property rights against individuals, known as "squatters," who illegally occupied the land.

The experiment with land sales in 1826 foreshadowed major changes in land policy in 1831. The intellectual trigger for the change came in 1829 with the publication of a series of newspaper articles by Edward Gibbon Wakefield, later collected as a *Letter from Sydney*. Wakefield wrote the articles from his cell in London's Newgate Prison where he

was serving a three-year prison term for abducting the daughter of a prominent family from her boarding school, transporting her to France, and marrying her with her "consent." He had never traveled to Australia and had learned about conditions in New South Wales from convicts returned from the colony to Newgate Prison.[6] Wakefield argued that New South Wales development was hampered by an insufficient labor supply. The source of the problem was that too many settlers were allowed to purchase their own land too soon after their arrival. Wakefield advocated setting a high price on land to restrict land ownership and to increase the pool of labor available to land owners. The colonial government would use the revenue from land sales to subsidize immigration from Britain, thereby relieving the colony's labor shortage. The Colonial Office adopted many of his ideas when they issued the Ripon Regulations of 1831 which abolished land grants, replacing them with auction sales at a minimum upset price of 5 shillings per acre. Revenues from the sale of crown lands were to be used exclusively to finance immigration from Britain.

After settlers began to cross the Bass Strait from Van Diemen's Land and occupy pasture lands in Port Phillip, Governor Bourke convinced the Secretary of State for the Colonies, Lord Glenelg, to open Port Phillip to settlement and to begin the sale of land in the port town. In July, 1836 the Legislative Council relaxed its official policy of discouraging settlement beyond the boundaries of the Nineteen Counties by allowing individuals who had illegally occupied these lands to obtain annual licenses. The licenses cost £10 per year. In 1839 the Legislative Council passed a new law tieing taxation (rental payments) from squatters to the scale of their activities. The new law imposed a

"tax of 1d per annum for every sheep, 3d for every head of horned cattle and 6d for every horse, depastured on land beyond the Boundaries " in addition to the £10 license fee ~

In 1838 the Colonial Secretary, Lord Glenelg, wrote to Governor Gipps ordering him to raise the upset price on "ordinary" land to 12 shillings per acre. Gipps complied with his order in January, 1839. In early 1840 the British Land and Immigration Commissioners recommended raising the price of land once again, and the Colonial Office issued a new set of regulations requiring land to be sold at a fixed price of £1 per acre in most areas of the colony. Gipps presented the regulations to the Legislative Council in December, 1840, prompting a flood of protest from landholders and politicians. In August, 1841 the colonial government reinstated the auction system. In early 1843 the colony received the news that Parliament had passed legislation in June, 1842 raising the upset price at auction to £1 throughout the colony. At least 50 percent of the auction proceeds had to be spent on subsidizing immigration from Great Britain.

In 1844 Gipps issued two sets of new regulations that S.H. Roberts has labelled the "occupation regulations" and the "proposed purchase regulations" (Roberts, 1968). The occupation regulations (published on April 2, 1844) restricted sheep runs on crown lands to twenty square miles with a capacity of raising no more than 4,000 sheep or 500 cattle. Beginning in July, 1845 each station required a £10 license fee. Graziers occupying larger areas were required to take out additional licenses provided that they grazed a minimum number of sheep on the additional land. The proposed purchase regulations (published on May 13, 1844) allowed graziers who had occupied a run for 5

years to purchase a minimum of 320 acres of the run as a homestead at a minimum price of £1 per acre Purchase of a homestead secured the grazier's rights to the run for 8 years upon payment of the annual £10 license fee. After 8 years a second purchase of 320 acres at the minimum upset price of £1 per acre would secure possession of the run for another 8 years. If the grazier was outbid for the 320 acres at auction, he would receive full compensation for fixed improvements on the run from the winner of the auction, but would also be obliged to turn over the entire run. The sheep farmers strenuously opposed the 1844 regulations, with opposition fueled by the depression of the early 1840s which had increased the extent of and the burden of the debt of many sheep farmers.[8] Although the Colonial Office approved Governor Gipps' regulations in 1845, they were never implemented.

Parliament's passage of the Australian Lands Act in August, 1846 provided a dramatic reversal of fortune for the graziers. The Act established more secure rights for sheep farmers by providing them with long leases and retaining the high upset price of £1. In 1847 an Order-in-Council provided for the division of NSW into 3 classes of land: settled, intermediate, and unsettled. Leases not exceeding 14 years could be granted by the NSW government to persons occupying unsettled land for more than 12 months. Rent was set at £10 per year with an additional £2 10s paid for each additional 1000 sheep above 4000. The Order also granted each sheep farmer a preemption right to purchase large portions of the run at a minimum price of £1 per acre. The leases did not allow the holder to cultivate or sublet the leased lands. The Order-in-Council represented a substantial improvement for the graziers compared to the two sets of regulations

propounded by Governor Gipps The graziers' transformation from law-breaking squatters into a powerful, respectable political force capable of influencing legislation in Britain's Parliament is remarkable, and our analysis below focuses on how institutions responded to and in turn influenced the transformation

II. AUSTRALIA'S GREAT LAND RUSH: 1820-1840

Until 1813 settlers generally followed the property acquisition rules set by the NSW government The small world of the Colony was dramatically changed in 1813 when three young explorers crossed the Blue Mountains near Sydney and brought back news of a vast plain with scattered timber and adequate rainfall--in short, lands suitable for sheep grazing. As new immigrants became aware of the enormous expanse of potentially productive pasture land, they set out for the bush to begin grazing sheep on tracts of land as far as 300-400 miles from Sydney. Expansion proceeded in all directions around Sydney, and most settlers obtained the governor's permission to settle the new lands. However, some stockmen pushed south to the Murrumbidgee River and north to the Macleay River without official permission. The "sheep and cattle mania" of 1826 signaled the beginning of a full-blown rush to claim unoccupied crown lands without obtaining a land grant.

In 1824 the government commissioned its first survey of the settled lands. Armed with the results of the survey, the government began gradually to define areas of restricted settlement between 1826 and 1829. In 1829 it proclaimed the famous restriction on settlement to the Nineteen Counties, but there is no evidence that the pronouncement did anything to stop the flow of settlers to the bush. The graziers surely realized that the

government had no means of enforcing its restrictions, and that the few forces available to the government were more likely to be devoted to maintaining security in Sydney and its vicinity due to the presence of a large convict population

The transition from a system of land grants to an auction system with a high upset price on land neither stopped the growth of the pastoral industry nor the rush to settle new lands. In fact, it is more likely that by making marginal lands in the Nineteen Counties too expensive to settle, the new land regulations actually speeded up the exodus to the unopened lands (Buckley, 1957). By 1839 there were 649 "stations" (sheep farms) outside of the restricted area. Many of the stations occupied 20-50 square miles of land, and several were much larger. Throughout the 1820s and 1830s the discovery of new passes through the mountain ranges allowed settlers to scatter over 450 miles from Sydney by 1840. While most of the best lands in New South Wales had been occupied by 1840, during the next two decades settlers slowly filled in the less desirable lands.

From less than 30,000 in 1825, the number of sheep in New South Wales increased to approximately 1 million in 1848 (Table 1). In 1844 one-sixth (9,885) of the colony's population and two-thirds of the colony's sheep were located in the squatting districts. Wool shipments to Britain increased from 175,400 lb. in 1821 to 4 million lb. in 1835 to 26 million lb. in 1847 (Roberts, 1968; Kerr, 1962).

The rapid growth in the sheep population, the squatting population, and the value of wool exports transformed the squatters from a small group illegally occupying Crown land into a major constituency of the colonial government. The two sets of land

regulations proposed by Governor Gipps in 1844 were resisted by virtually all interest groups in the colony, the squatters took the lead in organizing to resist these measures. They hired a respected barrister and member of Parliament, Francis Scott, to organize support in London and to represent them before Parliament. He enlisted the support of the British woolens industry which had been revived by the stimulus of cheap, high quality wool from New South Wales. Although Lord Stanley, the Colonial Secretary, approved Gipps' two sets of regulations in January, 1845, lobbying in May, 1845 by merchants connected with the wool industry (banking, shipping, import, woolens manufacture) changed Stanley's position. He decided to settle the matter with an act of Parliament; in June, 1845, a bill proposed to issue seven-year leases without competition (Burroughs, 1967, p. 319). With the passage of the Australian Lands Act in August, 1846, the squatters finally achieved the de jure property rights that had been denied them since the 1829 restrictions on settlement.

III. ECONOMIC DEVELOPMENT AND LAND POLICIES

The numerous changes in Australian land policy illustrate many important themes running through the modern discussion of property rights formation. Comparisons with U.S. nineteenth-century land policy are instructive, but it is important to remember that Australia was a colony and that the British Colonial Office had its own objectives when it formulated land policy.

A. CONCENTRATION OF SETTLEMENT, LAW AND ORDER, AND PUBLIC GOODS

One objective of the Colonial Office's land policies during the second land regime (1831-1836) was to prevent dispersion of settlement over a large area. In July, 1834

Governor Bourke appealed to the Colonial office to extend the limits of settlement southward to Twofold Bay. The Secretary of State for Colonies rejected the request.[9]

> His Majesty's Government are not prepared to authorize a measure, the consequences of which would be to spread over a still further extent of Territory a Population, which it was the object of the late Land Regulations to concentrate, and to divert for a distant object, not immediately necessary to the prosperity of the Colony, a portion of its Revenues, the whole of which is barely sufficient to maintain in that state of efficiency, which it is so desirable, the various Establishments and Institutions required by the Inhabitants of the Districts already occupied.

The Secretary's rationale for concentration of settlement is similar to the explanations offered by modern economists for concentration.[10] Yoram Barzel (1989) and Douglas Allen (1991) have emphasized that governments possess incentives to restrict settlement to limited areas to reduce the cost to government of establishing law and order among the settlers. Since Great Britain provided extensive subsidies toward maintaining convicts in New South Wales, it had a direct interest in minimizing the expense devoted to establishing law and order in New South Wales. Given its interest in minimizing the dispatch of British troops overseas and the flow of revenue from the Exchequer, it is unsurprising that the British Colonial Office would insist that colonial governors establish institutions which reduced the cost of preserving law and order in a colony which had continuously received convict shipments from Great Britain's prisons since its founding.

Allen (1991) has also argued that restricted settlement areas allow a government to meet its "obligation" to provide protection from attack by groups outside the society. He cites the potential for attacks by Indian tribes on settlers at the American frontier as one rationale for the U.S. restricting the scope of allowed settlements. The threat of organized attacks by aboriginal groups in New South Wales was, however, generally

than in the United States, there is considerable evidence of the threat posed by aboriginals to newly arrived squatters unfamiliar with their ways Thomas Learmonth, who took up a sheep run about 20 miles from Geelong in 1837, wrote in March, 1937 that "as the aborigines were committing depredations with fifteen miles of Geelong) . ., settlers were afraid to penetrate into the interior in order to take up runs..." (Bride, p 94). John Hunter Patterson reports that "[i]n 1838 the Whyte Brothers travelled west, with their stock, in search of another run, and took up a country about the Wannon, but met with great difficulties from the determined ferocity of the aborigines, which ended in a conflict and great loss of life to the latter" (Bride, pp 151-2). George Faithfull wrote that in 1838 he "sent on my brother's sheep ... to the Broken River to await my coming up. Unfortunately, within a few days after their arrival there, they were attacked by the aborigines, many of his men murdered, the stock scattered through the country, and about £200 of property then in the drays taken away" (Bride, p. 219). The famous Myall Creek massacre of thirty "unoffending natives" (Roberts, p. 87) by a party of shepards prompted Governor Gipps to respond by pushing legislation in 1839 which increased the police presence in the squatting districts and delegated additional power to the Commissioners of Crown Lands. Thus the Colonial Secretary's concern that the government would have to "divert for a distant object ... a portion of its Revenues" if settlement was not concentrated proved rather prescient.

La Croix (1992) has suggested that governments may also desire settlement concentration because it reduces the costs of collecting taxes and rents from settlers. This consideration was particularly important in New South Wales, as the original land

grant system provided for grantees to pay quit rents to the colonial government Settlers rarely paid the quit rents, and the colonial governors put little effort into collecting the rents. This may have been a reasonable course of action in NSW, as tax collection is a labor-intensive enterprise, and in land-rich, labor-poor New South Wales, collecting quit rents may not have been worth the effort The government clearly had incentives to restructure the land system to reduce the amount of labor devoted to collecting taxes. The switch from a land grant system to an auction system with a limited scope of settlement enabled the government to collect rents at the point of sale rather than collecting a portion of the rents (via taxes) as they accrue over time. If collecting the land rents upfront reduces the costs of collecting the rents, then net revenues could rise even if the total revenue collected by the auction is less than the revenue collected from continuing taxes.

The Secretary's rationale for settlement concentration, that it is necessary "to maintain in that state of efficiency ... the various Establishments and Institutions" could be consistent with the tax collection hypothesis or could be linked to the efficient provision of public goods. There is some indication that the Secretary was implicitly arguing for the efficient provision of public goods:

> With concert and mutual assistance, the result of the same labor would probably have been a greater amount of produce; and the cost of transporting it to market would have been a less heavy item in the total cost of production. A different course has, however, been pursued, chiefly, as it appears, owing to the extreme facility of acquiring land, by which every man has been encouraged to become a proprietor, producing what he can by his own unassisted efforts.

An individual farmer would, however, choose a more distant tract of land only if the expected net revenues (adjusted for the higher transportation costs) were higher than the

net revenues to be earned by selecting land from within the Nineteen Counties Any social losses must be due to negative externalities imposed on farmers within the more concentrated area. One possibility is that expenditures on road are now spread over a larger area, and farmers in the concentrated area lose more than farmers beyond settlement limits gain.

Government has two choices in this case. First, the government could act as a first-mover and make commitments to undertake expenditures on public goods such that individual farmers are induced to make correct location decisions. Yet local governments are surely influenced ex post by the presence of distant settlers and may make politically efficient and economically inefficient decisions to provide public goods. Kydland and Prescott (1977) have carefully demonstrated that even a government which maximizes social utility will choose inefficient sequences of actions if it selects decisions which are best given the current situation. As long as individuals have the expectations that their collective migration to the frontier will change the public choice calculus for the government, then a commitment by the government not to provide public goods at the new frontier is sure to be weak.

Second, given government's difficulty in formulating time-consistent credible commitments, the government may find that a better solution to the problem is to limit the scope of its actions in future periods. A rule banning settlement may be easier to enforce over time than a precommitment not to provide public goods to new settlers on an always harsh frontier. Thus there are some instances in which government will not want to encourage the development of new, far-flung industries, but will, instead, find it optimal

to prevent or to tax heavily such new industries. In the ***infant industry hypothesis***, the state protects infant industries to enable them to overcome problems stemming from nonconvexity of the production function. In the ***inverted infant industry hypothesis***, the state tries to prevent the conception of new industries which distort decision-making with respect to public goods. Given the incentives of the British Colonial Office to minimize expenditures of tax revenue on the colony, the settlement regulations may well be based both on minimizing the cost of collecting taxes and on reducing the demand for government to provide public goods.

The tax collecting hypothesis easily blends into another hypothesis, that the colonial government desired to maintain as wide a scope of influence as possible. The possible growth of independent authority near its major economic center (Syndey) would increase competition for settlers and reduce the government's ability to raise revenue from asset sales or taxation. Governor Bourke wrote to Secretary Glenelg in September, 1836 that "the recognition of the rights of the Crown involved in taking out periodical Licenses and in the multiplication of Leases will be an important advantage" (Crowley, p. 509).

Finally, in 1836 a Select Committee of the British Parliament praised the 1831 Ripon regulations by remarking that they were modeled after the ostensibly successful American system of public land allocation. Given the numerous conflicts over public lands in the British colonies during the 1820s, the decision to copy a successful institution from a thriving former colony could be perceived as a more productive path for institutional change than attempting to forge *de novo* institutions (Feeny, 1988).

Moreover, the long travel time to Australia meant that few officials in the Colonial Office had any first-hand knowledge of Australia. Reports of the Governors usually mixed interests of the Crown and interests of the settlers. Confronted with high information costs, imitation of a successful land allocation institution could well be defended as a prudent course of action.

B. WAKEFIELD'S THEORY, CONCENTRATION, AND PREMATURE SETTLEMENT

Wakefield's booklet, Letter from Sydney, was dismissed by the British establishment upon its publication in 1829. Yet during the 1830s Wakefield's theories "won over the Colonial Office" and had enormous influence on Australian land policy (Philipp, 1960). Wakefield began by blaming the depression of 1828 (Butlin, 1986) on the disorganized system of allocating crown land in the colony. He argued that land grants to new immigrants allowed them to become landowners "too soon." Capital could not be productively applied to the land unless labor was freely available. To prevent new immigrants from becoming landowners "too quickly," he advocated selling land at auction at a minimum upset price. Proceeds from land sales would be dedicated to a fund subsidizing immigration from Great Britain. He believed that the system was self-regulating, for as land sales increased, more labor would be demanded. The proceeds from the additional land sales would then be used to bring more labor to the colony to satisfy the new demands for labor. The critical element in Wakefield's theory is the upset price of land. If the Governor sets the upset price too low, then settlement will be too dispersed and economic development will suffer; and if the Governor sets the upset price too high, it will be a drag on the colony's economic development.

Public subsidies to assist immigration have foundations in public economics when labor contracts are incomplete and costly to enforce and capital markets are imperfect. Immigrants have usually had difficulties borrowing money to immigrate due to the cost of enforcing the contract once the immigrant has arrived at the distant location. Employers may finance immigration if labor contracts allow for indentured servitude and are cheap to enforce. When labor contracts are costly to enforce, other employers have incentives to bid workers away from the employer who has financed the worker's emmigration. This type of free riding by employers presents a case for public subsidies of immigration. Political support for such measures is likely when the financing mechanism can be structured to minimize the impact of the extra taxes (required to finance the subsidy) on the community. Revenue from land sales fits this nostrum, as land sales do not produce deadweight losses -- individuals pay a price for land that is bounded by the rents which the land is expected to generate. The use of a portion of *new* land revenues to finance immigration would be efficient, as long as the benefits from additional immigration were higher than other uses of the funds. Given the colony's high land/labor ratio and the already visible prospects for the sheep industry in 1831, the benefits to the Colony from expanding the supply of labor were considerable.

As many commentators (e.g., Burroughs) have previously noted, Wakefield's intellectual influence on British policy was considerable, and the influence of his followers on the Colonial Office between 1831 and 1846 was at least partially responsible for the maintenance of the auction system and its high upset prices. Wakefield's emphasis on land sales at auction places him in the company of several modern theorists (Haddock,

1986 and Anderson & Hill, 1990) who have also expounded on the efficiency of allocating government lands by auction. Anderson & Hill emphasize the inefficiency of requiring investment or use of the land in order to claim property rights to the land. They argue, correctly, that individuals will have an incentive to use the land prematurely (i.e., when production yields negative land rents) if use allows them to establish property rights over future, positive-valued income streams from the land. In the limit such investment would fully dissipate the value of rents from the land. By contrast, sale of property at auction would not occur until the present value of the land becomes positive. While this would also often occur prior to the date when production using the land becomes profitable, there would be no incentive for the purchaser to begin production prematurely.

Perhaps the main difference between Wakefield's model and the models of the modern theorists is Wakefield's insistence on the importance of setting the upset price. By restricting the amount of land available to immigrants, the upset price influences the supply of and demand for labor and keeps the private stock of land from expanding as rapidly as in Anderson & Hill's model. By contrast, in the Anderson and Hill model, the timing of sales has no effect on the discounted value of revenue as long as the land is placed on the market prior to the time when its rent becomes nonnegative. Presumably the government would charge to the buyer the cost of defining the property rights and recording the transaction.

Both models suffer from some defects. If Wakefield's upset price is set too high, the land may not be brought into production even if the annual rent from the land is positive; the lack of sales in New South Wales after land became available at £1 per acre

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Wakefield's and Anderson & Hill's models both presume that the government has the foresight and the resources to survey its lands prior to offering them at auction and, more fundamentally, that it has discovered that it has productive lands.[12] In New South Wales, government surveyors had difficulties keeping up with the demand for their services during the 1930s. If it was profitable to place most of the land in New South Wales immediately into sheep farming, surveying the land would delay the onset of efficient economic activity. Assuming that the government and the sheep graziers could contract to minimize dissipation of land rents in the rush to occupy the land, then wealth would increase if the government allowed the sheep graziers to occupy the land. If, however, sheep grazing outside the Nineteen Counties was not profitable in the 1830s and the squatters merely wanted to claim the land prior to other potential claimants, then sheep farming would be an unprofitable endeavor. Of course, profits may be negative

initially if farmers have to prepare the land or acquire knowledge about sheep grazing over time.

Abbott's (1971, ch. 5) review of contemporary studies of the return from sheep farming indicates that the revenue from wool sales did not cover the total costs of sheep farming.[13] Nonetheless overall profits were generally positive (with the possible exception of the depression years, 1841-1844) because of sales of sheep and lambs to new sheep farmers in New South Wales and South Australia and because of the development of new technology for "boiling down" sheep for their tallow.[14] In sum, while data on the profitability of sheep farming is scanty, the existing evidence shows no evidence of persistent, large losses which would result from premature settlement of the land.

C. PRIVATE CONTRACTING FOR PROPERTY RIGHTS IN LAND

The rush to settle the lands of New South Wales was characterized by little violence between the settlers and by a set of formal and informal rules that developed to guide land allocation. One reason for the lack of violence was the abundance of land outside of the official settlement area between 1831 and 1837-8. A newcomer who had the choice between devoting time and labor to ousting an established settler from a portion of his land or pushing on to the vast expanse of unsettled lands faced high costs of confrontion. Confrontation could have provoked neighboring graziers to offer aid to the grazier facing occupation of his lands, thereby reducing the newcomer's probability of prevailing. In addition, the competition for lands would yield a smaller claim for the newcomer than could be obtained by moving to unexplored, unsettled lands with the

expectation of achieving the productivity of settled lands (Umbeck, 1982).

Settlers during the 1830s had little trouble choosing new runs. In fact, settlers with no close neighbors often encouraged settlement for mutual protection and friendship. As the productive lands were quickly occupied, a set of informal rules evolved to guide private contracting for land rights. Thomas Learmonth recalled (Bride, pp. 94-95) that

> there was a tacit understanding that no one was to take up a station nearer than three miles to another person, the intervening ground being equally divided; and this regulation, in general, was sufficient to secrue harmongy among the adventurers as they arrived. There being no Crown Commissioners, however, at that time, nor any recognized authority but that of the strongest, feuds and quarrels with regard to boundaries did take place, which in some cases resulted in blows, though in general more good feeling and consideration for the rights of others were observed in the then lawless state of the infant colony than might have been expected.

In 1833 one early settler mentioned an alternative method for avoiding, at least temporarily, disputes with neighbors (as quoted in Roberts, 1975, p. 278)

> It is of great importance not to embroil the Establishment by disputes with neighbors, and (without, however, weakly giving away to unreasonable objections, and though distance is no doubt an objective), I think an extensive good Run, not subject to be encroached upon, may sometimes more than compensate for remoteness.

Settlers often negotiated the boundaries between their settlements, using natural features of the landscape as boundary markers in lieu of a formal survey. Newcomers often recognized the privately established boundaries by purchasing the right to a sheep run from its occupant. A.F. Mollison, for example, purchased his run at Uriara on the Murrumbidgee (outside of the Nineteen Counties) in 1836.

One informal rule which developed was that the squatter could only claim what he could use. The presence of newcomers would often prompt the sheep farmer to deploy

and was likely to be handicapped if a newcomer threatened violence or took possession of the lands. The presence of newcomers would often prompt the sheep farmer to deploy his sheep to the outer boundaries of the sheep farm to convey the impression of full occupation The relationship between land claims and number of sheep on the land raises once again the specter of rent dissipation, as some sheep farmers may have invested in additional sheep to claim additional land. Such strategic action would, however, only pay if future use of the additional land for sheep farming could be foreseen by the sheep farmer.

The passage of the 1836 "Act to Restrain The Unauthorized Occupation of Crown Lands"[15] and the 1839 "Act to Restrain Unauthorized Occupation, and to Defray Expense of Border Police"[16] provided the squatters with more secure rights to the lands they occupied. The area outside the Nineteen Counties was divided into squatting districts and land commissioners were established to collect the license for the run (see Section II) and to decide disputes concerning run boundaries. The 1839 Act expanded the power of the commissioner, provided him with Border Police to enforce actions, and introduced taxation of stock to defray additional expenses.

The Commissioners were bound by few rules and were often criticized for their autocratic and arbitrary ways of resolving disputes.[17] Commissioners were often confronted with large land claims and petitions by newcomers for a portion of the run. For example, Gibson claimed 100,000 acres in the new Glenelg country in Victoria and the Commissioner granted the claim only if Gibson would stock 10,000 sheep on the property (Roberts, 1968, p. 290). The Commissioner's actions were consistent with a

simple rule of property rights allocation: individuals with the capital (i.e., sheep) to develop the land could claim the rents from the land. Even if the Commissioner granted an individual a right to a claim, only imprecise records were kept with vague descriptions of the run's boundaries. Newcomers arriving with substantial numbers of sheep would often wedge themselves into unclaimed land between stations and then place claims on portions of the established stations. Commissioners usually granted them a station right and allocated them a portion of the established squatters' lands.

The pattern described above is consistent with Umbeck's (1981) model of private contracting for property rights in gold fields. As more people arrive at the gold fields, individuals with large claims are forced to relinquish some of the claim given the potential for violence by the newcomers. The established miners find that it is more profitable to devote their labor to a smaller claim than to allocate some labor to defending the large claim and realizing a reduced yield from the claim. In New South Wales, the Land Commissioner's rules yielded similar results.

D. INCOME EFFECTS, GOVERNMENT OWNERSHIP AND THE COASE THEOREM

The evolution of land rights in Australia provides an illustration of an interesting limitation in Coase's original analysis. In his pathbreaking article and in most subsequent renditions of the Coase Theorem, it is assumed that the two parties to which the property could be assigned are both wealth maximizers. In his original example of a farmer and rancher owning neighboring tracts of land, the assumption is well grounded. Suppose, however, that one of the two parties that can be assigned the property right by the government is the government itself. The development of public choice theory over the

last 40 years has questioned whether government officials will choose to use their resources so as to maximize the government's wealth."[8] Since government officials who make decisions about the government's allocation of its resources cannot usually reap the full gains from wealth-maximizing decisions, they often choose to take decisions which maximize their own utility rather than the government's wealth The 1831 Ripon regulations in conjunction with the 1829 restrictions on settlement reflected the decision of the owner of the lands, the Crown, to restrict present use of these lands; the regulations were adopted, at least in part, to mollify Wakefield's colonial reformers in order to solidify the British government's domestic support. If the Crown had been able to enforce its 1829 decision to close the lands to settlement, the rapid growth of the sheep industry in New South Wales would not have occurred as rapidly as it did. The inability of the New South Wales government to enforce its property rights (given the enormous expanse of land, the high price of labor to the government, and the growing number and wealth of squatters) led to rapid growth of the pastoral industry. Of course, squatters may have started production merely to claim the land; if they were granted rights to the land they might have waited a considerable time before beginning production. However, in this case we would tend to observe minimal levels of production on the lands. Instead, we observe vigorous efforts to expand the size of flocks during the 1830s and 1840s (Abbott, 1971).

On the other hand, the analysis also reveals limits to nonwealth-maximizing uses of property by the government. If property rights are costly to enforce, it may not be feasible for the government to "assign" the property rights to one party. In New South

Wales the squatters' rush to occupy vacant lands immediately created a panopoly of interest groups in Sydney who were dependent on the wool industry. Any attempt to dislodge squatters from the land would be met by resistance from these groups as well as from the squatters. More generally, the differential income flows generated from the different uses of the land imply that political coalitions supporting each allocation will be different. One party will have incentives to ignore official assignments of property rights when it is supported by a stronger political coalition than the other party, and the relative strength of each party's coalition is likely to vary more when income flows change with the reassignment of the property.

Finally, the Australian experience illustrates the problem with assuming that governments are the first-mover in establishing and changing property rights. If the government has a monopoly on force and large portions of the population are unlikely to ignore de jure rights, then government is a first-mover. In Australia, the government could enforce its rights only at a high cost, and large numbers of settlers choose to ignore the government's policies. In these types of cases, discussion of efficient systems of land allocation are often irrelevant, as land is allocated outside the official system. If income flows change sufficiently to establish a viable political coalition for the private parties gaining from their appropriation of the land, then the unofficial mechanism may well mutate into the official mechanism for allocating land.

IV. CONCLUSION

The efficiency of various methods of allocating government lands has been extensively debated in the property rights literature. While theoretical models operating

in environments with zero transaction costs show that auctioning land is the most efficient allocation method, the robustness of this result in models with positive transaction costs is highly questionable. The standard model assumes that government can enforce its property rights in land at zero cost. In a large country with a small population, such as Australia in the first half of the nineteenth century, enforcement costs outside of urban areas are likely to be prohibitive. The United States learned this proposition the hard way when it continually tried to evict squatters from their settlements in the Ohio Territory. Soldiers would burn the settlers' home, and the settlers would return to rebuild as soon as the soldiers left the area.[19]

The new theoretical models also implicitly assume that the cost of surveying is zero or that the available government lands have already been fully surveyed. In a large country, like Australia, surveying can be a major constraint on legal land settlement and can lead to land being settled "too" slowly. The property rights literature (Barzel, 1989) has continually emphasized that propositions which hold in zero transaction cost models do not always carry over to positive transaction cost models. The rush to occupy lands during the 1830s may not have been inefficient, but merely another instance of private parties acting to negate inefficient specifications of property rights by government. The interesting message from this chapter in Australian history is that private parties ignored the existing de jure property rights, contracted among themselves for property rights in crown land, and from the success generated by their productive endeavors, brought about far reaching institutional change in de jure land rights. The government's lack of ability to enforce its rights is central to the analysis -- if the government surely would have

if it could have forced the first few squatters off the land and preserved its future revenue flows. Given its minimal forces the government was powerless to prevent absolutely weak private parties from contracting around an inefficient set of rights. Graziers' use of their private land rights lead to massive gains in wealth for Australia. In this case Umbeck's dictum that "Might Makes Rights" should be turned on its head to read "Rights make Might "

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Table 1

Land Sales, Land Revenues, and Immigration to New South Wales

Year	Lands Sold (in acres)	Revenue (s)	Immigrants
1831	-	-	457
1832	20,860	5,136	2,006
1833	29,025	14,133	2,685
1834	91,399	36,814	1,564
1835	271,947	87,097	1,428
1836	373,978	128,878	1,721
1837	368,483	121,963	3,477
1838	315,090	128,865	7,430
1839	283,130	166,714	10,549
1840	183,944	324,072	8,486
1841	86,092	92,637	22,483
1842	21,733	18,313	8,987
1843	4,660	12,206	1,142
1844	4,013	9,175	4,687
1845	5,513	18,026	1,096
1846	6,736	27,700	402
1847	18,649	62,801	816
1848	16,925	47,262	9,104

Table is taken from Burroughs (1968), p. 385. Data was compiled from Blue Books, Colonial Office Papers on New South Wales 206 and Parliamentary Proceedings 1847-8 (345) XLVII.

Table 2

Volume of Wool Imported into England in Pounds

Year	Australia	Germany	Spain	Total
1831	2,493,337	22,436,105	3,474,823	31,651,999
1835	4,209,301	23,798,186	1,602,752	42,168,142
1840	9,721,243	21,812,099	1,266,905	49,393,967
1842	12,979,524	15,612,749	607,239	45,581,274
1844	17,589,712	21,844,278	918,853	65,078,404
1845	24,151,287	18,465,131	1,074,540	75,551,950
1847	26,042,071	12,673,814	424,408	61,795,739
1850	38,590,413	9,153,583	440,751	72,674,483

Table is taken from Burroughs (1968), p. 383. Data was compiled from Customs Returns, Public Record Office Series, Customs 5/20-53.

Table 3

Population, Income, and Government Revenue in New South Wales

Year	Population (1000s)	GDP (1000 s)
1788	736	20
1805	6968	223
1819	26026	532
1828	36600	1169
1830	-	1500
1831	-	1556
1832	-	1573
1833	-	1927
1834	-	2819
1835	70000	3788
1836	-	4040
1837	-	3952
1838	-	4010
1839	-	4410
1840	-	4827
1841	83086	4246
1842	-	4064
1843	-	4195
1844	-	4525
1845	-	5176
1846	112573	5329
1847	-	5637

Data is taken from Butlin (1986), various tables.

Table 4

Official Wool Prices

Year	Pence per Pound
1827	14.3
1828	11 8
1829	15.2
1830	9.3
1831	13.0
1832	11.7
1833	14.4
1834	22.8
1835	18.5
1836	24.0
1837	18.0
1838	17.0
1839	14.6
1840	15.8
1841	14.8
1842	15.1
1843	12.9
1844	11.5
1845	13.9
1846	14.9
1847	13.6
1848	13.0

Data is taken from Abbott (1971), p. 64.

FOOTNOTES

1 Prior to May, 1851 Victoria was part of New South Wales.

2. Land policies for other colonies in Australia (South Australia and Western Australia) differed greatly from those adopted in New South Wales. While this paper does not consider policies in the other colonies, the success or failure of the policies in the other colonies surely influenced the British Colonial Office. See Burroughs (1967), Stephens (1968), and Clarke (1973), Vol. III for accounts of the early years of both colonies.

3 See Feeny (1988) for examples of how the stock of institutional arrangements and their performance affects institutional change.

4 The correspondence between the governors of New South Wales and the Colonial Office is collected in Historical Records of Australia.

5. The minimum upset price applied to the entire colony. The governor had no power to reduce the upset price for low quality lands or to increase it for high quality lands.

6. For more amazing stories from Wakefield's career, see biographies by Bloomfield (1961), Harrop (1928), and Philipp (1971).

7.

8. Butlin's (1986) figures on GDP per capita indicate substantial declines from a 1835-37 peak (an average of 24.93) to an 1842 trough (16.13). A slow recovery begins in 1843, but earlier peaks are not reached until 1847 (27.03).

9. Aberdeen to Bourke, 25 Dec. 1834, Colonial Office Papers, 202/32.

10. George Washington also favored concentration of settlement. Settlement "ought not be too diffusive. Compact and progressive settling will give strength to the Union, admit law and good government, and federal aids at an early period. Sparse settlements in the several new states, or a large territory for one, will have direct contrary effects." Washington to Hugh Williamson, March 15, 1785 as quoted in Hibbard (1939), p. 39.

11. Perhaps the main difference between Wakefield's model and the models of the modern theorists is Wakefield's insistence on the importance of setting the upset price. By restricting the amount of land available to immigrants, the upset price influences the supply of and demand for labor and keeps the private stock of land from expanding as rapidly as in Anderson & Hill's model. By contrast, in the Anderson and Hill model, the timing of sales has no effect on the discounted value of revenue as long as the land is placed on the market prior to the time when its rent becomes nonnegative. Presumably the government would charge to the buyer the cost of defining the property rights and recording the transaction.

12. Wakefield and Anderson & Hill also implicitly assume that the government will conduct the auction in an efficient manner. They assume that the rules of the auction will be transparent, that upset prices will be set an efficient level, that the auction will be held at a location that facilitates bidder participation, and that the pulic will be well-informed about the auction. Public choice theory could, of course, be applied to the manner in which governments conduct auctions and given the distortions often present in bureaucracies, another system of land allocation could be preferable. It is notable that complaints were rampant in New South Wales concerning high upset prices, bureaucratic regulation of auctions, and slow surveying of lands (Burroughs, 1967).

13. Contemporary estimates of returns to sheep farming showed high returns to sheep farming, but these estimates rarely included interest on the initial capital outlays.

14. The discovery of gold in 1851 and the ensuing migration from Great Britain opened up a third source of revenue: meat sales to the gold miners.

15.NSW Acts of Council, 7 William IV No. 4, 29 July 1836.

16. NSW Government Gazette, supplement, 6 April 1939.

17. See Curr (1968) for a colorful story relating the Commissioner's decision in a land dispute,

18.

19. See Gates (1968).