

THE COASE THEOREM AND THE ALASKA NATIVE CLAIMS SETTLEMENT ACT

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ABSTRACT

The focus of this paper is an application of the Coase theorem to the Alaska Native Claims Settlement Act (ANCSA). The ANCSA was a major event that settled issues of Native land claims and property rights in Alaska, and had profound implications for economic, social, political, and cultural aspects of life for Alaska Natives and non-natives alike. In particular, the issues of clearly defined and secure property rights, and positive transaction costs will be analyzed, as they both play a key role in the outcome of the negotiations. An analysis of the Coase theorem to the ANCSA is particularly relevant here, since the Coase theorem states that under a situation with minimal to no transaction costs, economic agents will bargain with one another to reach an agreement that is socially optimal. The introduction of economic frictions, including transaction costs and insecure property rights, is particularly relevant since they are reflective of the bargaining situation between the Alaska Natives and the United States federal government. These frictions had a profound effect on the bargaining outcome, as is evinced by the outcome and subsequent impact of the ANCSA on the Alaska Native people.

INTRODUCTION

The Coase theorem states that under a situation with minimal to no transaction costs, economic agents will negotiate with one another to reach an agreement that is socially optimal (Coase 1960). As long as property rights are fully enforced, this outcome will hold true, regardless of the initial allocation of property rights. As a consequence, disputes over so called market failures in the form of positive or negative externalities can be resolved by individual agents engaging in private transactions to negotiate for mutually beneficial outcomes.

The aim of this paper is to contribute to the law and environmental economics literature by examining for the first time the application of the Coase theorem and all its assumptions and implications toward the Alaska Native Claims Settlement Act (ANCSA, or “the Act”). The relevance of the Coase Theorem to the ANCSA is rich and varied. The ANCSA was a major event that settled Native land claims and had profound implications for Native law. It was unprecedented in terms of size and scope, with enormous influence on the economic, social, political, and cultural aspects of life for Alaskan Natives and non-natives alike. With so many issues including those of property rights, transactions costs, and complex negotiations, it seems relevant to apply an analysis of the theorem to the ANCSA. This paper will look at the role of economic frictions and how these affected the bargaining process between the US federal government and the Alaska Native peoples and the resulting outcome of the negotiations. In particular, the issues of clearly defined, secure property rights and nonzero transaction costs will be analyzed, as they both play a key role in the negotiations and settlement. This work is unique in that it is the first analysis of the Coase theorem as it applies to the Alaska Native Claims Settlement Act.

The structure of the paper is as follows. Section II provides an overview of the Coase theorem, with a discussion of its main aspects and brief summary of its various applications in environmental economics and law. Section III contains a brief summary on the history of Alaska and the main events leading up to the Alaska Native Claims Settlement Act. Section IV provides the theoretical model that will be applied toward the case of bargaining with insecure property rights with nonzero transaction costs, as was evinced in the negotiations between the Alaska Natives and the United States federal government. Section V concludes.

THE COASE THEOREM

In his 1960 paper “The Problem of Social Cost” Coase used an example of the cattle rancher whose grazing cattle cause damage to crops on a neighboring farmer’s field. The actions of the cattle generate a social cost (a negative production externality). Traditional economic theory regarded this as a market failure, whereby markets do not account for this externality, and private costs are not aligned with social costs. The typical response to address the externality was to implement a Pigouvian style governmental intervention, via either the establishment of a regulation or the imposition of a penalty to limit the amount of damage the cattle could cause to the farmer. In the traditional Pigouvian sense, a governmental intervention would resolve the discrepancy between private and social costs. The damaging party would be held liable for the damages caused and he would pay the damaged party a compensation for the damage done. Thus the externality would be internalized, and all would be well.

Coase’s view was different. He theorized that as long as each party had clearly defined property rights, the two of them could negotiate for a mutually beneficial and socially optimal agreement, provided that transactions costs were minimal or zero. A decentralized solution was perfectly adequate to address the externality problem, and in fact, could lead to an outcome that is the lowest cost solution, cheaper than the Pigouvian one. The damaging party (the rancher) can be held fully liable for the harms to the crops, and the pricing system works fully to determine the value of the damages. It is important to note that the farmer’s property rights over his fields must be strictly defined and enforced as Coase stated. If this is so, the farmer can request and receive compensation for the damage done to his fields.

In the decentralized solution, the rancher and farmer would privately negotiate to determine a socially optimal outcome. The end result would be that either the rancher would reduce the amount of cattle he raises in order to reduce the grazing herd’s damage to the farmer’s crops, the farmer would collect monetary damages from the rancher, or the rancher would bribe the farmer to reduce his crop fields. The rancher can choose whether he prefers to pay the fines or bribes, or reduce his herd, and he will choose the option that is the lowest cost to him. The externality is internalized in any case.

Alternatively, if the rancher is not held to be the damaging party, the farmer could bribe the rancher to reduce his cattle herd and thereby reduce the damages done to the farmer’s crops. The cost to the farmer would be the same: either cost of damages done by the cattle trampling his crops, or cost to bribe the rancher. The farmer will choose a payment level that is at most equal to the damages that can be incurred via the grazing cattle. The amount of cattle raised (or crops raised) will be exactly the same as before. No governmental intervention, either via the establishment of a regulation or the imposition of a penalty was even necessary to reach an outcome that was optimal for society. Private party negotiation was effective in achieving the least cost solution and the problem was solved in a satisfactory manner for both individuals.

Based on this analysis, Coase summarized the situation as follows. Coase never explicitly states his famous theorem in his 1960 paper, but what follows is the closest statement of it in the paper.

“It is necessary to know whether the damaging business is liable or not for damage caused since without the establishment of this initial delimitation of rights there can be no market transactions to transfer and recombine them. But the ultimate result (which maximizes the value of production) is independent of the legal position if the pricing system is assumed to work without cost.” (Coase 1960)

Other economic and legal scholars have stated the theorem in numerous ways. George Stigler was one of the first, followed by many others. The theorem has had many statements and explanations and the following is a selection of a few, starting with Stigler’s formal statement in *The Theory of Price* in 1966.

- “The Coase theorem thus asserts that under perfect competition private and social costs will be equal.” (Stigler, 1966)
- “If one assumes rationality, no transaction costs, and no legal impediments to bargaining, all misallocations of resources would be fully cured in the market by bargaining.” (Calabresi, 1968)
- “In a world of perfect competition, perfect information, and zero transaction costs, the allocation of resources in the economy will be efficient and will be unaffected by legal rules regarding the initial impact of costs resulting from externalities.” (Regan, 1972)
- “When parties can bargain together and settle their disagreements by cooperation, their behavior will be efficient regardless of the underlying rule of law” (Cooter and Ulen, 1988)

The statements of the Coase theorem are varied, with slightly different interpretations and implications based upon on the precise wording of each. However, an examination of each reveals two assertions that can be made about the main outcomes of the various statements of the theorem. The first claim, which can be deduced from all of the above statements, is that the initial allocation of property rights is irrelevant, since rational parties will bargain and reach an agreement about how the resources are to be best allocated. The final resulting allocation of resources will be efficient, and no outside intervention is necessary. This claim is often referred to as the ‘efficiency hypothesis’ (Medema and Zerbe 1999) and it can be seen as a conclusion of all the above statements of the Coase theorem. The second claim, which does not appear in all statements of the Coase theorem is the so-called ‘invariance hypothesis’ (Medema and Zerbe 1999). The invariance hypothesis states that no matter what the initial allocation of rights is, the end result of bargaining will result in an efficient allocation of resources.

Debates about the correctness or validity of the Coase theorem are centered on the validity of these hypotheses, with arguments based on different versions of the theorem: the strong version that includes both hypotheses and the weak version that includes only the first. (Medema and Zerbe, 1999). There have been many attempts to prove the theorem either theoretically, or empirically via a real world environmental issue.

In any of these analyses, the emphasis of the theorem is on the importance of clearly defined and enforced property rights and private party bargaining and negotiation. As a result, there is no need for state intervention to achieve a socially optimal outcome. Externalities can be internalized in the most efficient and least cost solution is counter to the traditional Pigouvian answer of governmental intervention.

Coase's theorem has had a wide range of applications in economics, law, and other fields. In particular, a clear analysis of property rights and Coasian bargaining are relevant to environmental goods and services, especially when property rights are insecure and contested. The issue of insecure property rights is especially relevant to a variety of environmental disputes. These can include endangered species protection or the restoration of wildlife to their natural habitats like the protection of elephants from poachers in Kenya or the reintroduction of grey wolves in Yellowstone National Park. Other examples of property rights insecurity include disputes over water use and appropriation in the western United States, watershed development and management around the world, and rights for gold mining in various regions of Alaska. Insecure property rights were a prime component of the discussion and debate over native land claims prior to the building of the trans-Alaska pipeline, since this issue had to be settled before the oil extraction and transport could begin. Further discussion of Native Alaskans' insecure property rights will be provided in section IV.

The application of property rights towards seemingly common property resources such as clean air, clean water, forests, and other such resources seems counterintuitive. The instinct is to put in place governmental regulations or penalties to either protect these resources or penalize the damaging parties for their actions. But an analysis via the Coase theorem shows that these actions are not necessary and will not lead to the most efficient, lowest cost solution. A number of empirical and theoretical studies have been done to interpret, model, and resolve issues that arise from either externality problems or property rights issues and the lack of clearly defined markets in environmental economics.

There have been many applications of bargaining and property rights to determine optimal allocations of environmental goods and services, and to resolve issues of externalities. A few examples from the literature are as follows. Ellickson (1986) gives empirical evidence in support of the Coase theorem with an investigation of the cattle vs. rancher parable from Coase's original 1960 paper. He finds that the parties involved cooperate and settle their dispute via informal means in order to minimize transaction costs. Social norms are relied upon to determine culpability and compensation for damages, with bargaining occurring in the "shadow of the law" (a phrase first coined by Mnookin and Kornhauser, 1979). Cheung's "fable of the bees" (1973) is one of the first attempts to provide empirical evidence on the validity of the Coase theorem. In it, Cheung studies whether the commoditization of a positive externality: orchard farmers contracting with beekeepers for the pollination services of their bees, and whether these contractual agreements are an efficient allocation of resources. Hanley and Sumner (1995) consider the problem of externalities in the case of the red deer population in Scotland. Rising deer populations cause economic damage to farmers and forest owners, and the authors suggests a Coasian bargaining solution to resolve the externality. Another study by Quiggin (2001) investigates increasing agricultural development in Australia and how it has resulted in pollution externalities for the Murray-Darling river system in the form of increased water salinity, harmful algal blooms, and waterlogging. The author includes an analysis of the conflict between private property rights and common rights, and how these affect the development of water markets to efficiently allocate water among competing uses.

In many of these works, economists and legal scholars discuss the role transaction costs and how they affect bargaining outcomes. The problem of transaction costs is an important one that cannot be easily overlooked. In reality, they are often large and have a significant influence on the outcomes of bargaining. Transaction costs can include “search, negotiation, monitoring, and enforcement” (Coase 1960), and/or “resource losses incurred due to imperfect information” (Medema and Zerbe, 1999). Other definitions make references to property rights including “the costs associated with the transfer, capture, and protection of rights” (Barzel 1989), and that they include “the resources used to estimate and maintain property rights” (Allen, 1991). One implication that can be drawn from these definitions is that if property rights are complete and well defined, there are no transaction costs involved in bargaining. Each party will have complete information and can make a fully informed assessment of the offers made by the counter-party, with zero cost. Therefore, the importance of clearly defined property rights cannot be understated, as they have enormous implications for bargaining efficiency and outcomes. Less secure property rights will impede efficient bargaining, with parties either opting for an outside option or engaging in costly bargaining battles. Both of these were possibilities or realities in the lengthy negotiations between the federal government and the Alaska Natives over native land claims.

Although transaction costs can overwhelm or impede the gains from trade and negotiation, this is not to say that the standard Pigouvian solution is necessarily the superior solution. Rather, it points to the importance of a proper accounting of transaction costs in all such externality and property rights situations. A due consideration of whether the remedy to the externality is better or worse than simply accepting the externality is necessary before making any final decisions. As with any case of bargaining over environmental goods and services, clearly defined property rights and nonzero transaction costs play important roles, in particular in the case of bargaining over lands and subsurface rights in Alaska, which culminated in the Alaska Native Claims Settlement Act. The next section covers background information on the ANCSA to properly establish the framework for understanding the connection to the Coase theorem.

BACKGROUND

Some background information on the Alaska Native Claims Settlement Act is necessary to set the stage and make the connection with the Coase theorem. In 1971, Congress enacted the ANCSA. Its purpose was to settle native land claims and provide clearly defined property rights for the ownership of land, subsurface deposits, and natural resources in the state of Alaska for its Native people. The impetus for its creation and indeed Alaska statehood stemmed from the discovery of oil reserves in the Kenai Peninsula and gold deposits in the northern part of the state. Prior to these discoveries, the United States’ purchase of Alaska from Russia in 1867 was initially scorned as “Seward’s Folly”, after U.S. Secretary of State William Seward who had advised Congress for the purchase of the lands. Public opinion quickly changed after the aforementioned discoveries, and spurred the push for Alaska statehood, as well as the settlement of Native land claims in the state.

When Alaska attained statehood in 1959, Congress gave the state the right to select and develop 102.5 million acres of federal land. However, controversy over the state’s land selections led Native Alaskans to file formal protests in 1961. The controversy led the Secretary of the Interior, Stewart Udall, to institute a “land freeze” in which no more land transfers would be granted to the state until the Native claims had been settled. During this time there were

additional discoveries of oil fields in Prudhoe Bay in the North Slope. The need to settle land claims once and for all was necessitated by the fact that oil extraction and transport from the North Slope necessitated the development of extensive infrastructure. Before oil companies could begin their construction projects, they had to know the ownership of the lands and subsurface rights to oil and other valuable deposits. Various parties including government officials from the federal and state levels, Alaska Native groups, and representatives from the oil industry and other business concerns worked together in an effort to determine land claims. The ANCSA was intended to clearly delineate the ownership rights once and for all before work would be started on the extraction and transport of the oil reserves in the North Slope.

In simple terms, the ANCSA involved the dissolution and relinquishment of all Native land claims to over 360 million acres of land in Alaska. In exchange for this, Alaska Natives would receive both a clear title to 45.5 million acres of land in other parts of the state, and payments totaling \$962.5 million. In addition, Native groups were required to form corporations at both the regional and local levels in order to oversee the management of the lands and the monies received in the settlement. With consideration to geography and heritage, twelve Native regional corporations were formed. These regional corporations also symbolically represented the Alaska Native communities and arguably provided a cultural and political structure for Native groups. A thirteenth corporation was also formed to represent the interests of those Natives who were not residing in the state. Each Native Alaskan who was alive on December 18, 1971 was issued 100 shares of regional corporation stock, based on their geographical residence. The regional corporations were for-profit institutions and on a local level, Native villages were required to incorporate with the regional corporations in order to receive any of the benefits outlined in the ANCSA. The ANCSA was a settlement designed to both satisfy and compromise with varied interests, including those of Alaska Natives, business interests, and state and federal governments. Further discussion of the various aspects of ANCSA can be found in Chaffee (2008) and the ANCSA USC.

THE COASE THEOREM AND THE ANCSA

The application of the Coase theorem to the ANCSA has several aspects and each will be investigated in turn. There are the issues of transaction costs, and secure and insecure property rights. Each of these will be investigated in turn, following the model of Coasian bargaining with secure and insecure property rights by Cherry and Shogren (2005).

Transaction Costs

The issue of transaction costs is particularly important to the ANCSA. Economic frictions in the form of nonzero transaction costs, and insecure property rights have a significant impact on the efficiency of Coasian bargaining outcomes. If transaction costs exist, they introduce a stumbling block to efficient and rational bargaining. Coase himself never assumed a zero transaction cost world. In fact, he explicitly stated “what my argument does suggest is the need to introduce positive transaction costs explicitly into economic analysis so that we can study the world that does exist” (Coase 1988). Transaction costs can include the “costs that arise from creating and evaluating offers and counteroffers that include meetings, search fees, legal fees, and computation fees” (Cheung, 1989, Williamson, 1982). Extensive work has been conducted on the effect of nonzero transaction costs on Coasian bargaining, including work by Cherry and Shogren (2005), Rhoads and Shogren (1999)

Since transaction costs play such an important role in actual bargaining, a careful analysis of them is necessary to see the impact on the resulting outcome. This work draws on previous work by Rhoads and Shogren (1999) and Cherry and Shogren (2005) on Coasian bargaining with transaction costs, and property rights security. This work is an extension of those previous works in that it is a specific application towards the ANCSA and the resulting effect on the Alaskan economy as a result of the Act. As Cherry and Shogren note, the level of property rights security has a significant impact on the efficiency of Coasian bargaining outcomes.

The Model

The model is based on the framework of Cherry and Shogren (2005) with their analysis of Coasian bargaining, transaction costs, and property rights security. In their work, they assert that economic friction (in the form of transaction costs, delays, or enforcement costs) matters less for bargaining efficiency if property rights are less secure. If property rights are strong, then bargaining efficiency is lessened; those property owners don't have much to lose when they are non-cooperative in a bargaining situation. They can always exercise an "outside option" and walk away from the negotiations, even though they may be leaving money on the table, since it is relatively cheap for them to do so. In addition, the strength of property rights (secure versus insecure) has an inverse relationship with bargaining efficiency. If property rights are more secure, then bargaining is less efficient, and vice versa.

In this bargaining environment, two players, A and U, bargain over lottery tickets γ_A and γ_U . These lottery tickets define the chance of winning a monetary payoff M. There are nonzero transaction costs associated with bargaining $C = c_A + c_U$, where $c_i = P^o o_i + P^e e_i + P^x x_i$, $i = A, U$, represents the cost each player bears, in terms of offers o_i , the cost to evaluate each offer e_i , and all counter-offers x_i , and the associated price per unit P. Each player also has an initial endowment of lottery tickets, ε_A and ε_U help offset the transaction costs, so the total number of lottery tickets is $\gamma_T = \varepsilon_A + \varepsilon_U + \gamma_A + \gamma_U + \gamma_H$, where γ_H represents the lottery tickets that are unclaimed and left on the table (i.e. when the "house" wins and money is left on the table when negotiations fail).

In terms of property rights security, assume that player U is the controller. Player U has an outside option he can choose at any time during the bargaining with player A. Thus, Player U has a "threat point" since he can quit negotiations at any time and choose the outside option. Player U has a fallback position and player A does not. The probability that player U will win the monetary reward is denoted by γ_U^o .

Next, it is necessary to define the strength of property rights. Property rights are secure when a strong government protects and defends the entitlements that represent ownership over a resource if and when those rights are challenged. Let $0 \leq r \leq 1$ represent the strength of property rights. Note that if $r = 1$, then property rights are secure and will be upheld if challenged, and if $r = 0$, there are no secure unilateral rights. When $0 \leq r \leq 1$, there are insecure property rights. We can define the expected payoff when secure property rights exist; for the controller, player U, it is merely his outside option and his initial endowment of lottery tickets, $\gamma_U^o + \varepsilon_U$, and for the non-controller, player A, it is his simply initial endowment ε_A .

If there are no property rights, or insecure rights, we must derive the expected payoff for the two players via a non-cooperative contest from Dixit (1987). Based on the logit contest-

success function from Tullock (1980), each player chooses an optimal level of effort z to maximize the expected payoff. His optimization problem is as follows.

$$\text{Max}_{z_i} \frac{z_i}{z_i + z_j} \gamma_U^o - z_i + \varepsilon_i \text{ for } i = A, U; j = A, U; i \neq j \quad (1)$$

Taking the first order conditions, we can solve for each player's best effort functions

$$z_i = \sqrt{z_j \gamma_i^o} - z_j \text{ and } z_j = \sqrt{z_i \gamma_i^o} - z_i, \quad (2)$$

and consequently arrive at the Nash Equilibrium levels of effort

$$(z_A^{NE}, z_U^{NE}) = \left(\frac{\gamma_i^o}{4}, \frac{\gamma_i^o}{4} \right) \quad (3)$$

Plugging these Nash Equilibrium effort levels into the expected payoff functions, we can calculate each player's expected payoff.

$$EP_i^{NE} = \left(\frac{\frac{\gamma_U^o}{4}}{\frac{\gamma_U^o}{4} + \frac{\gamma_U^o}{4}} \right) \gamma_U^o - \frac{\gamma_U^o}{4} + \varepsilon_i = \frac{\gamma_U^o}{4} + \varepsilon_i, \text{ for } i = A, U \quad (4)$$

Insecure property rights are represented by $0 \leq q \leq 1$. If player U exercises his outside option, we can calculate the two parties' expected payoffs as follows.

$$EP_U^o = r(g_U^o + e_U) + (1-r)EP_U^{NE} \quad (5)$$

$$EP_A^o = r\varepsilon_A + (1-r)EP_A^{NE} \quad (6)$$

Next, the Nash bargaining solution can be derived. The two players' face potential gains from bargaining. They negotiate with one another to obtain rights over an existing property, and are motivated to do so by the potential gains from the outcome. These gains are represented by the optimal number of lottery tickets each player will receive after the negotiations end. The potential gains from bargaining come from the following optimization problem.

$$\text{Max}_{\gamma_U} \left[(\gamma_U - c_U - EP_U^o + \varepsilon_U)(\gamma_A - c_A - EP_A^o + \varepsilon_A) \right] \text{ subject to } \gamma_T = \varepsilon_U + \varepsilon_A + \gamma_U + \gamma_A + \gamma_H. \quad (7)$$

The optimal number of lottery tickets for player U can be derived using the first order conditions from the above constrained optimization problem. They are as follows.

$$\gamma_U = \left[\gamma_U^O + \frac{\gamma_H}{2} \right] - \sigma + \omega \text{ where} \quad (8)$$

$$\sigma = \left[\frac{2\gamma_U^O + \gamma_H + \varepsilon_U + \varepsilon_A - \gamma_T}{2} \right] (1-r) \quad (9)$$

$$\omega = \left[\frac{c_U - c_A}{2} \right] \quad (10)$$

Note that the optimal number of lottery tickets for player U is affected by σ , which reflects the effect of insecure property rights when $0 \leq r \leq 1$. The impact of σ is negative on the optimal number of lottery tickets for player U; the more insecure the property rights, the smaller the value of r , and the bigger the impact on player U's optimal lottery tickets. The effect of transaction costs on player U's optimal number of lottery tickets is reflected in the value of ω , which represents the transaction costs that each player faces. The larger the difference in transaction costs between player U and player A, the bigger the impact on the optimal number of lottery tickets for player U. Overall, the equation for player U's optimal number of lottery tickets shows that he receives his outside option and half of the house's tickets (the bargaining surplus), but is penalized for insecure property rights and transaction costs. Player A, who has no outside option, has the following optimal allocation:

$$\gamma_A = \gamma_T - \gamma_U - (\varepsilon_U + \varepsilon_A) \quad (11)$$

Bargaining for is always preferred for both players. For player U, a comparison of equations (5) and (8) indicate that bargaining is better than taking the outside option.

The optimal allocation from bargaining leaves player U better off than not bargaining, since the payoff is higher than taking the outside option. No matter what the level of property rights security, this holds true, and the only case in which the controller prefers not to bargain is when transaction costs become too high to make bargaining worthwhile. Similarly, for player A, bargaining leaves him better off, as we can see from equations (4) and (6). Player A's expected payoff from bargaining is always larger than from not bargaining, based on the expected payoff given in equation (4). For player A, insecure property rights helps him, since his expected payoff will be bigger when $0 \leq r \leq 1$, and maximized when $r = 0$ (no secure property rights). But in any case, player A should always bargain since it leaves him better off, with a bigger expected payoff than his initial endowment ε_A .

The Coase theorem states that with minimal or no transaction costs, parties will bargain with one another to reach an outcome that is socially optimal. The assumption of minimal transaction costs is important, since the introduction of any economic friction can reduce bargaining efficiency (Rhoades and Shogren 1999). But we must introduce such frictions into the model in order to "study the world that does exist" (Coase 1988). We want to see how such frictions in the form of positive transaction costs and property rights insecurity can affect bargaining and efficient outcomes. In a perfect vacuum, rational bargainers will find the Nash equilibrium and minimize bargaining costs. However, bargaining in the real world rarely goes so smoothly. There are competing hypotheses for how economic frictions influence bargaining efficiency. Cherry and Shogren (2005) present two such hypotheses: the backsliding argument and the cost-of-non-cooperation counterargument. The first hypothesis, the backsliding argument, implies if a party has more secure property rights, this helps bargaining efficiency since that party can merely choose the outside option and avoid costly bargaining conflicts.

Although both parties lose out on unclaimed resources (e.g. what the “house” wins), that’s better than engaging in an expensive and possibly counterproductive bargaining conflicts. On the other hand, greater insecurity in property rights will lead to even lower efficiency, since parties will engage in costly and time consuming battles over the property right and both end up the worse for wear.

The second, the cost-of-non-cooperation counterargument, implies that greater property rights security leads to greater inefficiency. If a party has secure rights, non-cooperation becomes less costly since the property owner knows he can hold out for a higher payoff. Of course, a player can always take the outside option, with the resulting loss in efficiency being whatever the “house” wins. If a party has a secure outside option to fall back on, that party can merely choose that outside option and avoid the effort and expense of bargaining.

Application to the Alaska Native Claims Settlement Act

The discovery of vast oil reserves in the Prudhoe Bay oilfields in the North Slope of Alaska spurred the drive to settle Native land claims once and for all. The oil had to be transported from the North Slope to the southern port city of Valdez. But before construction could begin on the physical infrastructure needed by oil companies to extract and transport the oil, the question of ownership and rights over land and oilfields had to be determined. A pipeline field study team comprised of the Atlantic Pipeline Company, Humble Pipe Line Company, and BP Exploration U.S.A. worked together to study the problem and to propose a design for the Trans Alaska Pipeline Project. The planned Trans Alaska pipeline system (abbreviated TAPS) would be 800 miles long and run from Prudhoe Bay in the North Slope to Valdez, the southernmost port in the state that is ice free year round. The construction of the pipeline, pump stations, and drilling platforms would be a major undertaking, with considerable environmental impact. Initially, the plan was to construct a buried pipeline, but the extreme challenges of such an endeavor due to the weather and physical geography of the state made the plan impossible. In the end, the pipeline was built with part of the line buried and part of it built on elevated supports. The pipeline project was projected to have significant impact on the environment of the lands through which it was planned to run. An extensive environmental impact study was conducted by the U.S. Department of the Interior, which issued a report on the estimated effects on the pipeline construction and operation.

Property Rights

Since the idea of clearly defined and enforced property rights plays a predominant role in the Coase theorem and its application, it is relevant to start the analysis with this concept. One of the most important components of the ANCSA was to grant Alaska Natives sovereignty by giving them clear title to the lands they occupied. While it may seem obvious and self evident that the Natives should indeed already have a claim to the lands on which they had lived for generations, a closer examination of Native American law reveals why granting this clear title was necessary to begin with. In the landmark *Johnson vs. M’Intosh* case in 1823, the U.S. Supreme Court determined that European explorers’ “discovery” of America had voided all Native land titles and claims. As a consequence the federal government owned title and holds in trust all Native lands. Furthermore, the federal government had the “exclusive power to extinguish” the right of Native Americans to occupy the land (see 21 U.S. (8 Wheat.) 543), since the United States “owned Native American land by obtaining title through conquest, and Native

American tribes became legally dependent on the federal government for their continued existence” (Chaffee 2008).

The ANCSA reversed all this. The Alaska Native corporations established under the Act received clear title to agreed upon lands and the federal government would no longer hold these lands in trust, representing a shift towards clearly defined property rights for Native groups over these lands. In this respect, the ANCSA was, by comparison, advantageous to the Alaska Natives in that it represented a departure from historical treatment of the U.S. federal government towards Native Americans in the rest of the United States.

The assignment of property rights over Native lands was a lengthy and often contentious process. Competition between various interest groups, including the Alaska Native people, conservationists, and business development interests (including various oil companies and the state of Alaska as well as the federal government) led to extensive legal battles and debates in Congress as each group sought to protect its needs and wants. Both environmentalists and the oil industry had a major role in shaping the ANCSA as they exerted a profound influence on Congressional voting as the legislation was written (see Boyce and Nilsson 1999). Further discussion of the ANCSA land selection process can be found in Berry (1975), and Lazarus & West (1976), and, with a detailed discussion of the clash of interests from business, government, and Native groups in the land selection. In short, the negotiations between the Alaska Natives and the United States federal government represented a bargaining situation with the United States as the controller with the outside option available to it.

However, the ANCSA reversed *Johnson v. M’Intosh* by giving clear title to settlement lands to the Alaska Native corporations. Since the federal government no longer holds these lands in trust for them, Native Alaskans can now freely use the lands, or sell them as they deem necessary, and are not beholden to the Bureau of Indian Affairs for supervision. The ANCSA arguably provided economic sovereignty to the Natives by giving them this clear title, since the lands and monies received could be used as a means of continued economic independence and future financial security. Given the outcome of the *Johnson v. M’Intosh* case, the federal government could have exercised its outside option at any time and simply appropriated the lands without compensation to the Native groups. The United States could at any time exercise the outside option, via historic precedents in Native law and simply claim Alaskan lands based on the fact that they were deemed to be federal lands.

In any case, the ANCSA provided funds and resources to Native groups in order to support and sustain their lives in a modern market based economy. However, implementation and execution of the dictates of ANCSA have been complicated. The language of the Act is “frequently ambiguous, and serious difficulties already have arisen in its implementation” (Lazarus and West 1976). One chief problem was the initial assigning of land rights to native villages. Village eligibility was determined by the number of native residents (a minimum of 25) residing in the village, and one “possessing a modern, urban character the majority of whose residents are non-native” (43 U.S.C. 1606). Unfortunately, the eligibility cases represented one of many cases where the ANCSA was administered in a way which “granted less than the law and regulations seemed to promise” (Lazarus and West 1976). Boundary disputes were also a common problem, (see the *Central Council of the Tlingit and Haida Indians v. Chugach Native Association*, civil case no. A-198-72), with Native groups pitted against each other in legal battles, a marked contrast to the peaceful coexistence once experienced by the Alaska Natives. It is clear that the assignment of property rights, counter to the traditional Native way of life and living with the environment, was not only insecure but also a cause for contentious disagreement.

Further discussion of the impact of the positive transaction costs of the negotiation and subsequent legal battles over land claims and use can be found in Walsh (1985) and Chaffee (2008). It is clear that although the two parties, the federal government and the Alaska Natives engaged in lengthy and involved negotiations over land settlements, the resulting outcome was not necessarily one generated the optimal outcome from a social perspective.

Transaction Costs

Although the Act was meant to determine Native land claims and bestow upon Native groups clearly delineated properties and boundaries, it seemed also to herald an era of new and difficult, not to mention expensive, legal problems and challenges. Prior to its implementation, there were extensive legal battles waged over land use and distribution, with Alaska Natives, conservationists, and business interests at odds with one another. Three conservation groups, the Friends of the Earth, the Wilderness Society, and the Environmental Defense fund filed a suit against the Department of the Interior. Their claim was that the DOI was in violation of the National Environmental Policy Act of 1969, from the permits it had granted to the owners of the trans-Alaska pipeline. Native groups also waged legal battles against the TAPS, claiming that the company had not hired Native contractors as had been promised. These are just a few examples of the lengthy and costly legal battles waged even prior to its full implementation.

Even after its implementation, the legal battles and costs did not end. A prime example is the case of the Koniag Corporation, one of the twelve Native regional corporations formed under the Act. Koniag encouraged the merger of the village corporations with the regional corporations in order to cut administrative costs and promote unity among the members. The regional corporation would assume control over all the village corporations' land, including valuable timber on those lands. Unfortunately, the village corporations filed suit against the regional corporation. It claimed that the regional corporation had deceived them as to the value of timber assets on their lands, with misleading statements sent to village corporation shareholders, resulting in a favorable vote for the merger. Legal costs were estimated to be \$2.5 million dollars, a significant amount for a corporation that had received only \$24 million from the ANCSA.

It is interesting to note that the costs of settling legal issues came from the funds awarded under the Act. Any legal or consulting fees resulting from any issues of Native land claims or pending claims were to be paid from the settlement funds (43 U.S.C. 1619, 2000). In effect, the Native corporations were responsible for their own legal costs for preparing for and settling any land claims associated with the Act. On the one hand, this move may have reduced the moral hazard problem associated with excessive litigation. On the other hand, it represented yet another way that the accounting of transaction costs (in this case, set up in a way to undermine the Native corporations if lengthy legal battles arose) is a vital component of the analysis of the outcome of the ANCSA.

CONCLUSION

The Alaska Native Claims Settlement Act was an unprecedented piece of legislation that determined Native land claims in the state of Alaska. Issues of clearly defined property rights and transaction costs in bargaining were particularly relevant as groups with competing interests sought to find a bargaining outcome that was mutually beneficial. The importance of transaction costs and secure and well defined property rights cannot be understated, as interest groups waged

legal battles over the use and allocation of lands in the state. The application of the Coase theorem to real world legal and economic situations necessitates a careful analysis of each of these, as they have a profound impact on bargaining and the outcomes of bargaining. Insecure property rights, as in the case of the Alaska Native groups indicates that bargaining may lead to more efficient outcomes. The application of the Coase theorem to the Act is an interesting one that considers the theoretical analysis and implications of the theorem to a complex legal question.

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