
In Canada, the Crown has maintained ownership of important natural resources while allocating rights to exploit those resources to the private sector. Satisfying public demands for parks and wilderness areas, settling Aboriginal land claims and addressing resource depletion have led to the withdrawal of private rights. Knotty compensation issues have arisen. This paper sets out some basics for an efficient, equitable compensation policy. Examples of contemporary policy involving withdrawals of rights to hardrock minerals, timber, and Pacific salmon are reviewed. They reveal that the current policy is flawed, particularly regarding the basis for calculating compensation. Recommendations follow.

**INTRODUCTION**

A number of forces, including environmental activism, resource depletion, and settlement of Aboriginal land claims, have led to increasingly frequent withdrawals of, or restrictions upon, private rights to public natural resources. These have resulted in demands for more parks and wilderness areas, stricter controls on property use (with particular emphasis on pollution control and habitat preservation), reduced harvesting levels of some resources, and the reallocation of rights to Aboriginal groups. The withdrawal of rights and the imposition of regulations on property use that have diminished (in some cases extinguished) the value of the property in private use have raised knotty compensation policy issues.

There are two core questions that every compensation policy must address. First, what is a compensable taking? Second, if the taking is compensable, how is the level of compensation to be calculated? This is not new. Any regime accepting the notion that the state should compensate when it takes property must contend with the definitions of “take,” “property,” and “compensate.” Policy, jurisprudence
and institutions have evolved to deal efficiently with conventional takings. Daily, roads are widened, freeways built, subway lines extended, schools constructed, and airport runways lengthened. Most of these activities involve expropriations to a greater or lesser extent. Generally, the process is not newsworthy, in part because most property taken over for roads, other public rights-of-way and so forth, is acquired by purchase with no litigation over price.

Arguably, defining an effective, operational compensation policy, from both the legal and economic perspective, has become more difficult as public pressure for reallocation and regulation of private property has increased. In effect, students of both law and economics have had to contend with increasingly complex and subtle distinctions over what constitutes a taking, what is property, and what is appropriate compensation.

For example, environmental concerns have led to more stringent regulations that often reduce the value of property to its owner. At issue is the point at which this diminishment is a taking. The US courts have grappled with this but have been unable to set out a bright line. In 

Keystone Coal (1986) the issue was whether a regulation requiring coal mines to leave some deposits in place (to avoid surface subsidence) constituted a taking. The US Supreme Court held that the regulation was not a taking because, while it did reduce mine yield, it did not make mining economically impracticable, and in this specific instance foreclosed exploitation of only 2 percent of the total coal deposit. Earlier, a zoning ordinance which reduced the value of some real property by as much as 75 percent was held not to be a taking because some construction could still be undertaken. More recently, the court found in 

Lucas (1992) that a regulation eliminating all commercial use of a property did constitute a taking.

Nor has a bright line between expropriation and “mere regulation” been established in Canada. Several cases suggest that when regulations completely extinguish the private value of property, and when government obtains a corresponding benefit, this constitutes a compensable expropriation. However, in a situation similar to Lucas, Ontario’s 1992 wetlands policy restricted development on designated wetlands and thereby reduced their value by up to 90 percent. No compensation was paid (Brubaker 1995, 190).

The definition of property has also caused problems in compensation cases. This is of particular relevance to Canadian natural resources because for many (including timber lands, mineral lands, and fish stocks) the Crown opted not to grant fee simple title, but rather provided access for the private sector through complex systems of licences, claims, and leases. These private rights to exploit publicly owned natural resources fall short of full-blown property, and this leads to disputes over compensability when the rights are revoked.

Finally, even when agreement is reached that the state has taken private property there is disagreement over the appropriate level of compensation. It is in this area that economists have contributed most to the debate (or to the confusion). Credible arguments have been made that could support very different public policies. For example, some argue that market value (the most common compensation basis) of the taken asset often understates its true value to the owner (the owner’s reservation price). (See Knetsch 1983) The policy implication is that fair compensation might well be above market value. Others view compensation for expropriations as government-provided insurance against government risk, and push the logic to ask why government is in the business of providing such insurance and whether compensation introduces insurance-related problems such as moral hazard. The policy implication is that government should cease compensating, thereby allowing private sector insurers to provide efficiently this service. Still others, citing Coase’s theorem, suggest that in the event of regulatory takings it really does not matter whether the state compensates the regulated, or the regulated compensates the state for an exemption from the
regulation; as long as a property right is established, an efficient outcome is assured (see *Harvard Law Review* 1993).

Public choice economists have pushed the analysis even further by analyzing the effects of different compensation regimes on the incentives of public and private sector decisionmakers. For example, overcompensation might induce private overinvestment in assets in hopes of their being expropriated. Undercompensation might infect public sector decisionmakers with "fiscal illusion," leading to excessive reallocations to public use. Pushed even further, fiscal illusion might serve as an antidote to what some believe is a propensity by government to understate the benefits and overstate the costs of resources in public use. Conversely, others see the potential for a general policy of uncompensated takings to lead to victimization of citizens by the government that, in turn, gives rise to costly rent seeking and general disorganization of society (on this latter point, see Usher 1995).

The aim in this paper is not to define what is a compensable taking or to refine specific economic arguments for or against government compensation. We acknowledge that policies affecting "what is compensable" will ultimately affect compensation payments made by governments. In the limit, a decision never to compensate is equivalent to adopting a compensation payment rule of "zero-value" for any asset. Furthermore, broader or narrower standards for what is compensable will affect both private and public sector investment decisions, as noted above. Nevertheless, issues of when to compensate, and how to compensate are conceptually separable. In our view, more attention has been paid in the literature to the first issue than to the second.

We also believe that governments will continue to compensate for takings, and therefore that the rules of compensation are pragmatically what is at stake. This belief does not imply a value judgement on our part that all collective actions restricting or revoking private property rights require or justify compensation by taxpayers. Our main thesis is that practical rules for calculating compensation should be sensitive to the case-at-hand. We illustrate this thesis with a subset of the "hard" cases — the taking of private interests in public natural resources. Moreover, we attempt to show that practical rules can be guided by standard criteria of economic efficiency and equity, whereas compensation policy in the resource sector is currently characterized by neither.

**ECONOMIC POLICY CRITERIA**

There are two broad economic criteria against which public policy initiatives are traditionally evaluated: allocative efficiency and distributional equity. Allocative efficiency is broadly concerned with ensuring that economic resources are used in those activities giving rise to the greatest net social benefits. In this context, allocative efficiency is being maximized when it is impossible to increase net social benefits by shifting resources from one economic activity to another, for example, from the private sector to the public sector. Alternatively, allocative efficiency can be improved whenever some activities have greater net social benefits, on the margin, than others.

A critical issue is whether the costs associated with transferring resources between activities are less than the net social benefits achieved by the transfer. The costs associated with transferring resources take two main forms. Direct transactions costs include the value of resources expended in negotiating and implementing the transfer of resources. They also include delays in effecting the transfer that reduce the present value of the wealth gain realized by society from the transfer. Indirect costs arise from changes in future behaviour that reduce society's overall economic welfare in future periods. Such costs are associated most notably with altered incentives to save versus consume, as well as changes in the willingness of investors to take risks.
In the area of compensation, one broad public policy goal is to minimize the economic costs of resource transfers from the private to the public sector. In this regard, paying too high a level of compensation, on average, could encourage future private sector investments motivated by hopes of realizing financial windfalls from expropriation, rather than by fundamental supply and demand conditions in the economy. Paying too low a level of compensation, on average, could discourage highly (socially) beneficial private sector investments from taking place, while encouraging politicians and bureaucrats to support public sector investments with real social costs exceeding their corresponding social benefits. Too low a level of compensation might also promote costly negotiations (or litigation) along with delays in implementing socially beneficial transfers of resources from the private to the public sector.

The impacts of compensation rules on allocative efficiency are complex and subtle. However, it seems fair to assume that, all other things being constant, the direct and indirect costs associated with transferring resources from the private to the public sector should be minimized, and that a compensation rule with low transactions costs is superior to one with high costs.

Equity (or fairness) tends to be addressed by policy analysts in horizontal and vertical dimensions. Horizontal equity requires that individuals in like circumstances be treated identically. Vertical equity is satisfied when policies lead to greater equality of income and wealth.

Compensation policies that result in different amounts being paid for very similar types of asset transfers would violate a horizontal equity standard. Moreover, they are likely to have adverse indirect allocative consequences. Specifically, violations of horizontal equity may make compensation rules less transparent to private investors which, in turn, could discourage private sector investments by risk-averse investors.

With respect to vertical equity, it is not obvious how a conventional takings policy would systematically redistribute income and wealth from lower to higher income individuals or vice versa. Rather, any redistribution is likely to vary from case to case. In some cases, taxpayers may benefit while wealthy property owners lose. In other cases, taxpayers may benefit while lower income workers lose. Or the reverse patterns are possible. Hence, the equity concern of practical relevance in setting a compensation rule is to avoid making different payments to owners in like circumstances.

Applications of Criteria to Takings Policies

In this section, we apply the policy criteria described above to takings policies. The relevant question is, if compensation is to be paid, what rule should be used to determine appropriate compensation in any specific case. And there are other potentially relevant aspects of this issue. In particular, the credibility of the government’s compensation policy may depend upon how the policy is administered or (equivalently) whether government is perceived as bound by its announced compensation scheme. If government policy is seen to be easily changed, there will be greater subjective risk surrounding any compensation rule than if government is restrained from opportunistically altering its policies.

Another related issue is the relationship between transactions costs and the administration of compensation policy. The more subjective and complex is the process of identifying and paying appropriate compensation, the greater will be the associated legal and related haggling, and the higher the transactions costs.

An obvious compensation rule would be to pay the market price for all takings, including takings in resource industries. The somewhat less obvious caveat is that the assets in question, particularly those related to resource activities such as mineral
claims and timber harvesting rights, are often not exchanged in repetitive circumstances by large numbers of participants. In effect, prices for these assets are often not available directly from transactions undertaken in relatively efficient and competitive markets. Hence, market prices may either be unavailable or, if uncritically accepted, oblige the government to pay prices that do not accurately reflect the net social value of the asset(s) in question. For example, the compensation paid might include monopoly rents for the resource owner.11

It is impossible to say how common are takings that involve assets that are not regularly traded in efficient, competitive markets. Certainly, even in the natural resource sector, there are often market-generated signals that provide fairly reliable guides to the net social value of specific assets in alternative applications. If prices are available or can be directly inferred from competitive market transactions, they have a compelling claim to be used as the basis for calculating appropriate compensation. When unavailable, the merits of alternative estimation approaches have to be carefully weighed. Two approaches have been primarily discussed in the literature: discounted net present value and compensation for costs already incurred.

**Discounted Net Present Value**

The approach frequently suggested by resource companies to infer market value is to estimate discounted net present value (NPV). Discounted NPV is presumably the maximum price that other investors would pay, on the margin, to acquire the asset(s) in question. Furthermore, assuming no “attachment” value to the property that would make its subjective value to the current owner higher than its value to the most interested buyer, discounted NPV should also equal the seller’s reservation price.12

Under a specific set of circumstances, discounted NPV compares well against the criteria described above. Specifically, to the extent that it closely approximates the (unobservable) competitive price for the asset, it has the desirable efficiency properties of competitive pricing. That is, it is consistent with government paying neither too little nor too much for the asset which, in turn, should neither discourage private investment that has positive net social benefits nor encourage private investment motivated by prospects of generous government buyouts.

NPV-based compensation is also horizontally equitable because individuals in like circumstances are treated similarly. These favourable attributes, however, depend upon discounted NPV being fairly readily calculable with, at best, relatively modest margins of error. In practice, the uniqueness of the assets involved may contribute to relatively high variance among NPV estimates. In these cases, even if the mean value of any “representative” NPV calculation is “unbiased,” the relatively large variance may itself render the NPV decision rule less desirable than some other second-best rule.13

At the most basic level, increased variance in the potential compensation for a taken asset increases the riskiness of that asset, all other things being constant. At the next level of analysis, the relevant issue is whether such increased risk is diversifiable across the set of assets in question. For example, imagine that a government announces that it will begin reserving harvestable forest land for parks. It also announces that it will pay estimated discounted NPV. The variance surrounding the returns to any individual forest holding is high because of the uniqueness of the timber stand. To the extent that individual takings are statistically independent, overall variance induced by uncertain compensation policy can be reduced by holding a larger “portfolio” of timberland.14 That is, some of the risk associated with variance in compensation can be reduced by companies holding larger portfolios of lands likely to be taken. However, any consolidation of timber holdings induced by risk reduction maxims might itself be undesirable from a social policy perspective and will also generate transactions costs associated with restructuring timber holdings.15

To be sure, investors typically hold a diversified portfolio of assets which may include timber-owning
companies as one subset of assets. In this case, the relevant risk to investors associated with holding an asset is the impact of that holding on the riskiness of the entire portfolio. If the application of an “imperfect” discounted NPV rule increases the portfolio risk of timber holdings, and if such holdings were previously offering returns just sufficient to justify inclusion in efficiently constructed portfolios, other costs or disadvantages of timber assets would have to decrease in order to increase the expected returns to timber holdings. If not, investors, on the margin, would reduce their accumulation of forest assets which would be socially inefficient.

The adverse consequences of an NPV compensation rule would be exacerbated if publicly available information about compensation settlements were biased. It seems reasonable to believe that companies compensated below the “unbiased” measure of NPV will be much more likely to advertise the outcome than those compensated above. Since by definition the unbiased value is unknown, private investors would have to assess whether the complaints were truly the outcome of random processes or whether they reflected opportunistic departures from the compensation rule by the government. A preponderance of complaints might lead them to conclude the latter. This, in turn, would presumably lead to a reduction in expected rates-of-return to the relevant asset class holdings, since the mean expected compensation is now less than discounted NPV.

There is yet another potential adverse allocative consequence of an imperfect NPV compensation rule. Namely, there is an incentive for opportunistic interventions by owners of assets likely to be taken to alter perceptions about the probable path of future output and input prices, or about future productivity levels, in order to increase the mean expected NPV for an asset class. That is, the NPV rule invites relatively high transactions costs, since the information required for the calculation is intrinsically highly subjective.

**Compensation for Costs**

Another potential compensation rule is to compensate for documentable costs. In this case, companies subject to takings would be compensated for all costs that become unrecoverable as a result of a taking. In some cases, the only costs involved will be explicit or “out-of-pocket.” In other cases they will include an imputed rate-of-return to capital. A cost-based compensation rule would presumably use an average historical return to capital rather than inferring a project-specific cost-of-capital as would an ideal NPV approach.

From an efficiency perspective, the main concern about using cost recovery as a compensation rule is that it is not a forward looking measure as is (presumably) the market price of an asset. This might lead to systematic underestimation or overestimation of the economic value of the asset in private sector use, especially to the extent that technological and economic trends are working to increase or decrease the future values of those assets when used in the private sector. Any such bias, in turn, could encourage too little or too much private sector investment in potentially expropriable assets.

The main advantage of a cost-recovery rule is that it is relatively unambiguous. That is, there is little variance around the expected outcome. Expenditure records are auditable and subject to public scrutiny. Historical rates of return, while subject to concerns about their economic relevance, are readily extrapolated from historical financial performance. Hence, at any time, private investors pretty well know what they will be paid in the event of a taking. Transactions costs should be low, since it is relatively difficult for either the government or private investors to “game the system” by claiming that a higher or lower price would be fairer. Costs were either incurred or they were not.

A cost-recovery rule clearly has the potential to be unfair in specific cases. For example, two mines might be at the same stage of development, yet one
has proved reserves while the other does not. Assuming that explicit costs are equal, compensating each owner the same would clearly not be treating them identically in any meaningful way. The owner of the rich mine has a higher “attachment” value to the mine because the value of maintaining ownership is higher.

Synthesis

In summary, both the discounted NPV rule and the cost-recovery rule have undesirable properties from a social welfare perspective as proxies for nonexistent competitive market prices. It is impossible to state on \textit{a priori} grounds that one compensation rule is necessarily superior to the other in the preponderance of cases.\textsuperscript{16} Rather, on pragmatic grounds, it is suggested that the choice of compensation rule should be conditioned by circumstances. Specifically, where biases created by using cost recovery can be mitigated, it would seem to be a preferable second-best compensation rule given the low transactions costs surrounding its use and the small variance it yields in terms of expected compensation. Where such biases are difficult to mitigate and where discounted NPV can be estimated with reasonable confidence, the NPV rule is preferable.\textsuperscript{17}

Implementing the Compensation Rules

In this section, by way of elaborating upon our preceding discussion, we consider hypothetical circumstances under which one or the other compensation rule would be preferable.

Partial Takings

A partial taking involves a situation where the income stream of a private investment is altered but not completely truncated by a taking. For example, imagine that a vertically integrated factory has access to a relatively low-cost raw material source that is taken by the government. Assume further that the company can replace the raw material at a higher cost, for example, by incurring greater transportation expenditures. Presumably, the higher costs of replacing the raw material can be documented in advance of the taking. Equivalent replacement of the raw material would preserve the \textit{ex ante} return to the asset owner. If the return was a competitive return to start with, compensating for additional costs would preserve the first-best competitive price signals given by returns to the industry in question. Neither government nor investors would be misled about future private returns to the activity by the taking.\textsuperscript{18}

In many cases it may either be impossible or excessively costly to replace the taken resources. For example, transporting logs a great distance to maintain an existing mill at full capacity may be inefficient compared to allowing the mill to contract to a smaller size and reconfiguring the plant so that it is again earning a normal return while processing a smaller throughput. In this case, a cost-based compensation standard would pay the firm for any higher unit costs incurred as a consequence of reducing throughput. This is clearly a more complicated calculation than estimating the replacement cost of the resource, yet it may be a more tractable calculation than estimating the reduced NPV associated with the taking.

Full Takings

In the case of a complete taking, the assets in question are rendered worthless as holdings in private investment portfolios, although they may still have value from a social perspective. Critical to one’s preference for a specific compensation rule in this case is whether it is more reliable to impute a return-to-capital, or infer it from historical experience. In some cases, public policy considerations outside the compensation realm may be relevant. For example, if the Crown has a policy and practice of resource rent capture, historical rates-of-return may be acceptable proxies for the implicit cost of capital of the relevant firms. On the other hand, if resource rents have been inappropriately captured by private sector investors, it is arguably improper to
embody such rents in compensation payments. As another example, historical rates-of-return to mining ventures will be inappropriate in the (few) cases where commercial reserves have been proven and development is underway. In these cases an NPV approach seems more sensible.

PRIVATE INTERESTS IN PUBLIC RESOURCES: CHARACTERISTICS AND COMPENSATION POLICY

This section traces out in summary fashion the nature of private rights to three public natural resources (hardrock minerals, timber, and salmon) in British Columbia, the compensation regimes that have been implemented, and a critique of those regimes based upon the preceding discussion of sound compensation principles. British Columbia was chosen because this province has witnessed numerous, contentious withdrawals of private resource rights, and, with impending Aboriginal land claims settlements, will undoubtedly witness many more. Major withdrawals have involved the three resources reviewed. However, as noted earlier, we consider the issues identified by the examples to be generic to compensation cases, especially those in the resources sector.

Mining
Like most common law jurisdictions, the Canadian provinces have a policy of alienating surface, but not mineral, rights to lands. The policy objective is to structure mineral rights in order to encourage exploration for and development of mineral properties. Because of the extreme difficulty of locating viable hardrock mineral deposits from basic geological data (unlike petroleum and coal) prospectors in the more recently settled common law countries (e.g., Canada, Australia, and the United States) have been given easy access to large tracts of both public and private lands.

It is generally accepted that rights to minerals should become progressively stronger as the certainty of a deposit increases. Weak, but relatively easy to obtain rights (such as claims) are usually adequate at the initial exploration stage. The objective is to stop claim-jumping. At the other extreme, property rights (such as leases) to developed properties (operating mines) need be nearly full-blown in order to justify the investment.

In British Columbia there are three types of private rights to minerals on public lands: claims, leases, and Crown-granted mineral claims. Broadly, claims provide the explorationist with enough security to carry on through the exploration process (initial concept, preliminary exploration, and deposit evaluation). Claims are valid for one year but may be renewed indefinitely as long as the holder satisfies the annual work requirements or pays cash in lieu of work. Production is restricted to levels compatible with proving up the deposit. The basic rights conferred by the claim, exclusivity and the right to explore for minerals, are common to most of the provinces, however, the statutory definitions of the interest under a claim are not (Barton 1993, 383). In British Columbia mineral claims are said to be chattels, in Ontario the claim holder is “merely a licencee of the Crown,” while in Quebec mineral interests including claims are “immovable real rights” and are subject to compensation if expropriated.

Crown-granted claims are holdovers from the past. Early on, claim holders could apply for a freehold Crown grant of minerals. These early grants included rights to surface land, water, timber, and precious and base minerals. Over time, the Crown
progressively narrowed the breadth of rights contained in new grants and ceased their issuance altogether in the 1950s. As a result, entitlements vary grant by grant depending upon the date of issue. The grants remain in force for as long as the annual land taxes are paid.

The establishment of new parks and the upgrading of existing ones have required the withdrawal of mineral rights. Compensation practice for the taking of mineral interests in British Columbia exhibits many elements of bad policy. Succinctly, the core questions of what constitutes a taking, what is compensable, and how compensation is to be calculated are being answered painfully slowly and at great expense to the public and private sectors. The compensation issue has been fought out in the courts. 24

An early precedent-setting case is British Columbia v. Tener (1985). Tener held Crown-granted mineral claims in an area that subsequently became Wells Grey Park. The claims were maintained in good standing but were not worked. In 1965 legislation was enacted that called for issuance of a park use permit before mineral extraction could proceed. In 1973 the park was upgraded and in that year Tener applied for permits. Eventually Tener was informed that no permits would be granted and no exploration or development would be allowed. Tener made a claim for $4.5 million based upon past expenditures and foregone opportunities. The Crown took the position that there had been no formal expropriation, hence, no compensation was due. The Supreme Court of Canada held that while there had been no formal expropriation, there was a compensable taking.

While the grant or refusal of a licence may constitute a mere regulation in some instances, it cannot be viewed as a mere regulation when it has the effect of defeating the respondent’s entire interest in the land (British Columbia v. Tener 1985, 24).

Tener was allowed to explore his claims. These efforts were futile, Tener died, and the Crown settled privately with his heirs for an undisclosed amount.

The facts in Casamiro (1991) were similar with one sharp distinction. The Crown-granted mineral claims in this case were obtained in the mid-1940s on lands that were already within Strathcona Park (the park was established in 1911). Subsequently the park was upgraded and in 1988, by Order in Council, the issuance of resource use permits in Strathcona Recreation Area was barred. Casamiro claimed $24 million compensation. The Crown argued that because the interests were obtained after the establishment of a park the claimant knew that mining might not be possible.

As I understand the thrust of the argument of counsel for the Attorney General, it is, first, that the grantee took these grants knowing that the claims in question were in a park and his rights might some day be effectively rendered nugatory by legislation concerning parks, and second, that, underlying the judgement of the Supreme Court of Canada, to use counsel’s words “is a sense that it would be inequitable if these, i.e., Tener’s prior existing right of the plaintiffs’ predecessor in title could be removed without compensation.” There is nothing inequitable here because the park already existed (Casamiro 1991, 10).

Put differently, the Crown argued that the claimant knew the risk to pursuing mining activity in an established park and yet proceeded. The court dismissed this argument, holding that government action had turned the claims into meaningless pieces of paper. Casamiro was awarded $340,000 on the basis of the purchase price of the claims.

The final case in the trilogy is Cream Silver which was decided upon appeal in 1993. The fact pattern here was similar to Casamiro (claims established in a pre-existing park) but again with one significant difference. Cream involved Mineral Claims, not
Crown grants. The British Columbia Supreme Court found no difference between claims and grants and noted that the Crown had “conceded that all three companies [Tener, Casamiro, and Cream] would have to ‘jump through exactly the same hoops’ to continue the exploitation of their claims and that Casamiro had no more rights than Cream Silver” (Cream 1991, 279). The BC Court of Appeal held differently, saying that Mineral Claims were chattels and not interests in land, and that the rule of statutory construction (i.e., the presumption of compensation in the event of a taking unless expressly denied by the statute) could not be applied to property so broadly defined. In concluding this decision, Southin, J. opined on an appropriate compensation scheme for the taking of claims.

I would be happier about this conclusion if the legislature had offered to claim holders a choice between surrendering their claims and receiving compensation for the expenditures made before the passing of the Orders in Council [which precluded working the claims] and keeping the claims in the hope of a change in the political winds (Cream 1993, 208).

At the time of the 1993 Cream decision, the province was embroiled in another compensation controversy involving the Windy Craggy mining property, a copper project in northwestern British Columbia, close to the Tatshenshini River. Environmentalists stridently opposed the development on the grounds that it threatened a unique wilderness area. Subsequently, the provincial government designated the area a provincial park putting an end to the project. Claims for compensation ranged up to $1 billion. However, Windy Craggy was only a Mineral Claim. Presumably if the Cream decision were applied, no compensation was required. This was not the case. In August 1995, the press announced a settlement between the province and the claim holder that involved over $100 million. Apparently the compensation package was the result of prolonged negotiation. There is no indication that it was based upon cost, NPV, or legal requirement.

It can be fairly said that compensation policy with respect to mineral rights is seriously flawed. The courts are just now sorting out what is a compensable right, and the basis for calculating compensation remains unclear. Indeed, compensation practices do not appear to be part of any coherent policy. In the litigated cases, government has attempted to pay as little as possible by denying that the holder had a compensable right, while claimants have demanded exorbitant sums. The transactions costs incurred in settling these claims have been very high. As it now stands, Mineral Claims are not compensable (but compensation is being paid), Mineral Leases as interests in land presumably are, and Crown grants definitely are. Further, disputes over the level of compensation are resolved by the Expropriation Board, a body with little expertise in the valuation of mineral properties, or by direct negotiations between government and the claim holder.

Applying our earlier conclusion that the choice of compensation rule should be conditioned by specific circumstances, it seems reasonable to make a distinction between exploration properties and developed properties. The value of an exploration property, whether a Mineral Claim or a Crown grant, is extremely difficult to determine. This explains in part the enormous differences commonly observed between the Crown and the claimant’s valuations, which in turn lead to very high transactions costs in pursuing settlements. These conditions strengthen the case for adopting a cost-based compensation rule for exploration properties.

At the other extreme, developed mines, which are generally held under a Mining Lease, can be more easily valued, albeit assumptions must be made about metals prices, exchange rates, and the like. In these cases discounted NPV can usually be estimated with “reasonable” confidence.

The trick, of course, is to set the bright line between exploration and developed properties. Without the line, holders of taken exploration properties with poor prospects would opt for cost-based
compensation, those with very good prospects would claim developed status and NPV compensation. An opportunistic government might claim the reverse, and the result, once again, would be high transactions costs to reach settlement. One way to draw the line would be to make a sharp distinction between claims and leases. Claims could be restricted to exploration properties that, by rule, would only be eligible for cost-based compensation in the event of a taking. Leases could be limited to developed properties and, if withdrawn, compensation would be NPV based. In order to avoid opportunistic conversions of claims to leases (and, even in the absence of takings issues, to justify the stronger property rights characterizing leases) applicants could be required to provide comprehensive feasibility studies of project development. Such studies are well understood in the industry and are referred to as “bankable.” They are also quite expensive, require professional input (self-serving “puffery” is held in check) and are unlikely to be undertaken simply to game the compensation regime, especially since they are capable of being vetted by experts. In effect, rights holders would self-declare the status of their properties. Such studies would not constitute an additional regulatory burden.26 Most bona fide developments require them for financing anyway.

Timber

Canada is unlike most other important softwood timber producing countries in that the forest land base is largely publicly owned. In each of the top four producing provinces, the Crown owns over 80 percent of the forest land (see Table 1). British Columbia is the major producer and this province has witnessed the most acrimonious forest land-use disputes.

In British Columbia, harvesting rights are embodied in various types of licences that comprise the forest tenure system. Over the years new forms of tenure have been introduced, and old forms extinguished or significantly modified. The result is a complex set of licences that vary in terms of the rights they convey and the obligations they impose.27

Two of these, Tree Farm Licences (TFLs) and Timber Licences (TLs) have been the object of recurring, bitter land-use quarrels and, when withdrawn, compensation disputes. Together they accounted for 22 percent of the 1993-94 harvest (British Columbia 1995). However, this belies their importance to compensation issues for two reasons. First, unlike other tenures, they are area based. That is, licensees have the exclusive right to take timber from lands within their licence. If land is removed (e.g., for parks), the allowable harvest will fall and the licensee bears the full burden of the withdrawal.28 Second, these tenures, or their predecessors, were among the earliest granted. They are concentrated on the Pacific coast in some of the most accessible, richest, old-growth forests on the continent, perhaps in the world. Environmentalists have sought the preservation of some of these forests, and confrontations with logging interests have drawn wide media attention.29

Historically, when forest lands were taken for alternate uses, rights holders were compensated through in-kind payments. Simply, hitherto unencumbered timber was conveyed to the licensee. Presently, the resource is fully allocated (indeed in some

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<th>Province</th>
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NOTE: Provincial ownership refers to forest area.
Canadian production refers to production of industrial roundwood.
SOURCE: Forestry Canada (1992) and Natural Resources Canada (1994).
instances overallocated), hence this solution is no longer feasible.

The Forest Act, which regulates forest tenures, explicitly sets out compensation policy. Section 63 precludes compensation when the cut is reduced for a variety of reasons, most involving non-performance by the licensee. Section 50 allows the government to take back 5 percent of the allowable cut (or the value of the timber) without compensation when a licence is exchanged between private parties. Section 53 allows for removal from a licence of forest lands to an equivalent of 5 percent of the allowable cut over each term of the licence (e.g., each 25 years for a TFL) without compensation. Section 53 further states that compensation will be paid when withdrawals for non-timber uses exceed the 5 percent limit, but does not specify what compensation means. Amounts are to be determined by negotiation by the parties, with recourse to arbitration in the event of stalemate. The Forest Act expressly precludes application of the Expropriation Act, except when forest lands are taken for road construction.

A review of recent forest licence takings provides little insight into the basis for calculating compensation. A case in point is the highly publicized establishment of the South Moresby National Park in the Queen Charlotte Islands. The issue involved the withdrawal of lands (reducing substantially the allowable cut) from Western Forest Products’ TFL 24, and a much smaller taking of five TLs from MacMillan Bloedel.

In October of 1991, Western Forest Products announced through the media that it expected compensation of $65 million for its loss of harvesting rights. The claim was based on “an independent appraisal” and, apparently, upon a “letter of comfort” from the British Columbia forest minister (Bohn 1991, 1). On 2 January 1992 the press announced that a settlement had been reached at $37 million. The BC minister of finance commented that the settlement did not constitute a costly precedent because a federal-provincial agreement “promised the forest companies full market value for timber they could not cut” (Bohn 1992, D1). Presumably, without such an agreement companies were not assured of full market value. The basis for the negotiated settlement was never disclosed. Negotiations over compensation for the taken TLs were unsuccessful and the matter went to arbitration. The issue remains unresolved to this day.

In short, neither the Forest Act nor recent experience provides a clear guide to how compensation is to be calculated when private rights to harvest public timber are taken. Obviously it is difficult to critique a public policy when it is not at all clear what the policy is. Nonetheless, some recommendations for an appropriate policy can be made.

In the South Moresby takings, licensees were apparently promised “full market value” for the lost timber. However, based upon media reports, the TFL holder initially claimed a market value of $65 million and ultimately accepted $37 million (some 43 percent less than its initial demand). Apparently markets were not providing unambiguous signals on the value of harvesting rights.

In fact, there are two broad classes of problems in using market-generated prices to value harvesting rights. First, there are too few private sales of licences to provide a basis for valuation, and many transactions are contaminated because they include significant assets in addition to harvesting rights (e.g., lumber, pulp, and paper mills). It is estimated that private transactions involving only cutting rights amount to less than 0.5 percent of the allowable cut annually (Reed and Saunders, 1991, 8). Further, timber stands can be very heterogeneous, making it difficult to find direct comparables.

A second, and potentially far more serious, problem with using market prices to calculate compensation is the charge that these prices include values to which the licensee is not entitled. Specifically, it is argued that licences have market value because they allow the holder to collect resource rents.
These rents, known as stumpages, rightfully belong to the Crown. The allegation that the Crown fails to collect these rents is politically charged as it is the basis for the ongoing softwood lumber disputes between Canada and the United States.33

The forest industry argues that market values are not attributable to rents, but rather reflect the value of incremental throughput to underutilized processing facilities. A mill operator with idle capacity will purchase additional timber as long as its marginal cost is below its marginal revenue.

A simple analysis suggests an appropriate compensation scheme for taken harvesting rights. When the taking extinguishes the asset’s value (e.g., a permanent logging camp in a newly established park) the licensee should be paid the cost of the asset. When the taking impairs, but does not extinguish the asset’s value (as will commonly be the case for large-scale processing mills), the licensee should be paid the present value of the cost penalty imposed upon the asset over its life.34 Finally, when the asset is not site specific and can be fully employed elsewhere (e.g., a truck), no compensation is called for.

We do not suggest that calculating cost penalties to partially idled assets will be an easy task. However, adoption of the principle might help dispel some of the confusion surrounding the basis for compensation for the taking of private interests in public timber. And there is confusion. In its submission to the 1992 commission reviewing compensation for takings, the industry put forward the incremental value explanation for tenure values. It went on to recommend that compensation should include both the fair market value of the taken tenure, and the decline in value of the licensee’s remaining assets (British Columbia Forest Industry Task Force on Resources Compensation 1992). This is tantamount to “double indemnity.”

Salmon

Like many other coastal nations, Canada operated its saltwater fisheries on an open access basis until the symptoms of common property market failure became widespread and undeniable. In the late nineteenth century it was well recognized that overfishing could destroy salmon stocks. The collapse of runs in California and Oregon provided clear examples. For the first half of this century regulators sought to protect the salmon stocks with a policy of stinting the catch (placing restrictions on types of fishing gear, fishing time, and fishing locations). By the late 1950s the problem of excess harvesting capacity was reaching crisis proportions, as reflected in depressed incomes for fishers and intense pressure on the stocks. The federal government commissioned an economist, Sol Sinclair, to inquire into the state of the fishery and make policy recommendations. By that time the economics of open access fisheries were well understood. When fish are owned in common, fishers will continue to expend harvesting effort as long as each individual’s marginal benefits exceeds the individual’s marginal costs. Each ignores the fact that this increased effort makes it more difficult for others to catch fish. If unconstrained, effort will expand until all resource rents are dissipated.

Sinclair (1960) identified three ways to solve the problem: create exclusive rights to the rents (e.g., impose a monopoly); tax the rents out of the system; and/or restrict entry and effort through licence limitation. He dismissed the first option as politically impossible, and the second as economically impractical (the financial situation of fishers was so precarious that they could not bear any additional tax). He proposed the third option, licence limitation, and his recommendation was acted upon in 1968, thereby establishing exclusive private rights to public fish.

Salmon “A” category licences were allocated on the basis of previous participation in the fishery. Licences were attached to the vessel and 5,870 were issued at the outset. Unfortunately, licence limitation did not solve the overcapacity problem. Salmon prices rebounded and fishers continued to increase the catching capacity of the fleet despite licence
limitation. This was done through “capital stuffing” which involved replacing inefficient licensed vessels with efficient ones, and investments in very sophisticated and expensive vessel improvements such as bow thrusters and electronic fish finding devices.

The fishery was reviewed by another commission (Pearse Commission) in the 1980s (Pearse 1982). Little had changed and once again the fishery was in a crisis state. Pearse recommended Sinclair’s second option, extraction of the rents. To that end, he proposed establishing landing royalties and a licence auction scheme. Neither proposal was implemented and the problem of severe overcapacity remains to this day. With nearly four and a half thousand vessels still fishing salmon, there is at least twice (some would say four times) the necessary harvesting capacity.35

In 1991 the federal government embarked on a policy of increasing Indian participation in the salmon fishery. This was motivated by the Supreme Court of Canada’s holding in R. v. Sparrow (1990) that Aboriginal rights to fish salmon had not been extinguished, notwithstanding the absence of a treaty specifically granting the right. The government understood this decision to mean that Indians were entitled to a greater share of the salmon catch and initiated the Aboriginal Fishing Strategy (AFS) to achieve this.

The salmon resource was already fully committed, probably overcommitted, and there were disputes over allocations between the commercial and sports fisheries, and within the commercial fishery between gear types (i.e., seine, gillnet, and troll). In order to defuse opposition to the policy, the government proposed to retire commercial harvesting capacity commensurate with the amount of fish allocated to the Indian fishery.36 To accomplish this the government implemented a buy-back program.

The British Columbia Fisheries Commission, which represented vessel owners, the union, processors, and sports fishermen, was asked to address the compensation issue and provide recommendations for buy-back procedures. The commission set out the following objectives for the program.

Retirement of Commercial salmon fishing licences will be on a voluntary basis, from a willing vendor, and at real market values. Licence retirement must compensate the licence holder for the market value of the retired fishing operation. This includes an ex gratia payment for the retirement of the licence itself plus the reduced value of the vessel and gear when it is stripped of the retired licence (1992, 2).

Payments for the licence were to be ex gratia because the federal government does not view the licence as property. Rather, it is viewed as a privilege.37 Generally the courts view this type of licence as merely an instrument that makes lawful something that otherwise would be unlawful (i.e., fishing without a licence). The licence does not convey rights nor vest rights, and is thus not viewed as a property right nor a contract entered into by the Crown. (See Huestis 1992.)

The commission recommended payment of the “real” market value of the licence. Unlike mineral and timber rights, market values for salmon “A” category licences are easily observed and they are significant. The Department of Fisheries and Oceans estimates that about 10 percent of all licences are traded annually.

The actual 1993 pilot buy-back program incorporated the commission’s recommendations. A bidding system was set up whereby licensees submitted offers to relinquish their licences. From these, a total of 31 gillnet, 11 seine, and 33 troll vessels were selected for buy-back at a cost of $5.95 million.38 While this was just a pilot program, it set a significant precedent. Buy-backs were consummated on the basis of full market values.

After a very poor 1995 salmon harvest (landed value was less than 40 percent of the 1991-94 annual
average), and increasing evidence that excess harvesting capacity made effective management difficult if not impossible, the newly appointed minister of fisheries and oceans announced an $80 million licence buy-back program to take place prior to the 1996 season. A bidding system similar to the earlier pilot program is to be used. Presumably fishers will offer to retire their licences at market values, and these values are high. At the end of 1995, notwithstanding the previous poor season, the average gillnet/troll licence was valued at $40,000, and the average seine licence at $203,000. The total value of licences was about $238 million.

In the case of commercial salmon licences, government has voluntarily opted to provide compensation for rights that appear not to be compensable. Further, compensation is at full market value. Is this sound policy? An examination of the source of licence values suggests that it is not.

The market value of the licence reflects the present value of the future stream of benefits gleaned from working the licence (i.e., fishing salmon). Several benefits have been identified. Most importantly, the licence confers access to resource rents. Arguably these rents do not belong to fishers. The current policy of compensating for licence values is therefore ill-advised in that it entrenches the perceived property right over these rents. This precedent will certainly compromise adoption of any future policy of rent extraction.

Another private benefit provided by participation in the fishery is access to unemployment insurance (UI). While most employed Canadians are covered by UI, fishers receive preferential treatment under the system, a preference that would be lost upon exit from the industry. Access to these benefits is reflected in the market value of licences.

one repercussion of UI coverage of fishermen is that the program tends to increase the attractiveness of fishing as an occupation, since benefits paid to fishermen far exceed their contributions. This feature bids up the price fishermen are willing to pay for vessels, licences and equipment above levels that would be paid if fishermen were not covered. In this sense, UI coverage of fishermen tends to increase investment in the fleet.

Again, it seems ill-advised to entrench the perception that preferential access to the UI system is in any way a compensable right. Full payment of the market value of licences implicitly does just this.

In summary, compensation policy should not add to the perverse incentives that have led to chronic excess fishing power. If payments must be made to facilitate exit from the fishery this should be framed explicitly as social policy and not as compensation policy. Otherwise, expectations will become entrenched that will encourage further inefficient investments in the industry.

**Conclusions**

Commenting on the expropriation issue, Susan Rose-Ackerman noted that, this is one legal area in which almost any consistent, publicly articulated approach is better than none. Clear statement, even if not backed by clear thinking, will do much to preserve the investment-backed expectations the Court talks so much about (1988, 1711). We suggest in this paper that in the difficult area of natural resource takings, Rose-Ackerman’s admonition is appropriate. Compensation policy appears to be ad hoc and characterized by high transactions costs and considerable uncertainty for both public and private sectors.

Our review of the application of compensation policy in British Columbia’s salmon fishery and mining and forestry sectors indicates that there are
problems both in defining compensable takings and in calculating appropriate compensation. We have focused on the calculation issue and noted that ambiguity over the ownership of resource rents, particularly in forestry and fishery, complicates the process. Notwithstanding the resource rent issue, consideration of specific cases suggests that a cost-based compensation rule is tractable, and not obviously inefficient or unfair. In other cases, a discounted NPV rule would appear to be preferable, and (furthermore) the distinction between a cost-based compensation rule and an NPV rule is capable of ex ante definition in major activities such as mining. In short, the specification and implementation of a clear policy for computing compensation seems quite feasible. It also is clearly required.

NOTES

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1 Due to sustainability concerns, both timber and Pacific salmon allowable harvests have been reduced in British Columbia.

2 The term “taking” comes from the fifth amendment to the United States Constitution which declares that private property cannot “be taken for public use, without just compensation.” The legal term in Canada is “expropriation.” Much of the economics literature in the area uses the term “takings.” For purposes of convenience, we treat the terms as synonyms in this paper.

3 The Village of Euclid (1926) decision set out the notion that regulations restricting use are generally non-compensatory.


5 The issue is not unique to Canada. In the United States unpatented mining claims on federal lands are valid (and therefore compensable in the event of a taking) only if a “discovery of valuable minerals” can be shown. When, in 1984, mining activity was prohibited in national forest wilderness areas much debate ensued over what threshold had to be met to pass the “discovery test.” See Large (1986).

6 By “full-blown” we mean that the rights are extensive, including critical elements such as durability (at the extreme, a perpetual term), transferability, excludability, the right of use or non-use, rights to all benefits generated by the property and the absence of significant restrictions on use.

7 The idea is that since individuals are insured against expropriation they will ignore the risk, or at the extreme, put their property in the way of an expropriation. See Fischel (1995, 158-59).

8 For a discussion of these issues see Fischel and Shapiro (1988), and Blume and Rubinfeld (1988). Self-insurance is also a possibility, and could take the form of reduced levels of investment in the activity subject to risk of taking. Some have argued that it is efficient for private investors to bear compensation risk since it aligns private and social expected rates of return given government propensities to expropriate. See, for example, Blume, Rubinfeld and Shapiro (1984).

9 Epstein (1985, 332) argues that “the specter of the Hobbesian sovereign is averted” by the requirements that the state only take property for public use and pay just compensation.

10 While the bulk of the cases are drawn from experience in British Columbia, the underlying discussion is relevant to other jurisdictions in Canada and elsewhere.

11 Incorporating monopoly rents into compensation payments effectively overvalues private sector assets relative to their social value in the public sector. This, in turn, will lead to “too little” public sector acquisition of private sector assets from the perspective of economic efficiency. This assessment ignores “second-best” situations where it is sometimes efficient for sellers to charge non-competitive prices.

12 Assuming that attachment value is less relevant to commercial than personal property.

13 By an unbiased price we mean the price that a
completely omniscient (i.e., perfect knowledge of all relevant future prices of both outputs and inputs, as well as the future output rates of the property) investor would pay.

Assume that the only relevant variance is that induced by compensation policy. Then the variance surrounding a portfolio of timber holdings is \( S_t^2 = \text{Summation} W_i^2 \times S_i^2 \), where \( S_t \) is total standard deviation of returns, \( W_i \) is the share in the overall portfolio of the ith holding of timber and \( S_i \) is the standard deviation of the ith holding of timber and assuming the compensation risks are uncorrelated across takings. Assuming that each \( S_i \) is the same and each \( W_i = 1/N \), \( S_t^2 = S^2/N \). Thus, the variance confronting the pool of timber holdings declines as the pool held by the “average” company rises.

We have in mind here adverse potential consequences of increased ownership concentration.

It is important to emphasize here that while an NPV rule can conceptually encompass more information than a cost-recovery rule, it also invites much greater “rent-seeking” in the form of opportunistic forecasts of future supply and demand conditions with associated higher transactions costs.

The fairness of a cost-compensation rule is supported by evidence suggesting that people feel it is acceptable for sellers to pass on necessary costs associated with an activity, even if the additional costs did not contribute to creating economic value. See Franciosi et al. (1995).

Note also that the company has no incentive to exaggerate the cost consequences of the taking, since it will have to document expenditure of the monies received.

This discussion is limited to hardrock mining and excludes exploration for and exploitation of fuel deposits such as petroleum and coal.

Interestingly, the newly elected government in South Africa seeks to reverse that country’s policy of alienating sub-surface with surface rights to land. The argument is that the major mining houses have bought up expansive tracts of high potential mineral lands with no commitments to explore. This curbs entry into the industry. See the Economist (1994).

This is reflected in the mineral rights regimes in many Canadian provinces and Australian states. See Schwindt (1992, Appendix A-1).

“The higher level of security that a lease affords is called for at such a time because the claimholder will need to invest substantial sums in sinking a shaft, removing overburden, and constructing a mill, access roads, and other permanent facilities” (Barton 1993, 333).

The relevant statutes for British Columbia, Ontario, and Quebec are: Mineral Tenure Act, S.B.C. 1988, s. 24; Mining Act, R.S.O. 1990, s. 50; Mining Act, R.S.Q., c. E-24, s. 19.

That British Columbia has been the scene for most of the precedent setting cases does not imply that other Canadian jurisdictions have efficient compensation policies for mining rights. British Columbia is the bellwether because presently and in the recent past, land-use disputes have been more numerous and acrimonious than elsewhere. Other jurisdictions will confront the same issues when faced with demands for withdrawals. For examples of contentious resource expropriations in other provinces see Brubaker (1995, 184-205), and Barton (1993, 169-91).

The actual terms of the settlement are somewhat muddled. Apparently the province paid $29 million in direct compensation, and agreed to spend an additional $138 million on infrastructure (e.g., hydroelectric lines, airport and health facilities, and roads), exploration subsidies and workforce training and recruitment. These latter investments are intended to help the claim holder develop three other mining properties. The basis for the compensation package was not explained. See Cernetig (1995), Damsell and Kennedy (1995), and Hamilton (1995).

Such regulations have existed in New Brunswick since 1985. In order to acquire a lease, the claim holder must submit a feasibility study, documentation that surface rights issues have been resolved and security for reclamation. See Barton (1993:334).

Tenure arrangements in the other major wood producing provinces are considerably simpler than in British Columbia. However, they are similar in that the major tenures allow for very limited uncompensated withdrawals. (See Haley 1990.) In the event that harvesting rights are withdrawn, these other jurisdictions will face the same issues faced in British Columbia.

Other harvesting rights are volume-based in that licensees have the right to harvest a specified volume within a broadly defined forest area. If land is removed from the
area, all licensees in the area may share the burden.

29 The TFL and TL holdings of one of the oldest forest products firms in the province, MacMillan Bloedel Ltd., have been involved in many high-profile land-use confrontations. They include Meares Island, Clayoquot Sound, Moresby Island in the Queen Charlottes, and the Carmanah Valley.

30 Most Crown forest lands are managed according to sustained yield principles and Section 7 of the Forest Act empowers the chief forester to set allowable annual (sustainable) cuts (AAC) for each licence. AACs were increased dramatically in the 1960s and early 1970s, but are now in the process of being reduced. The Crown neither claims compensation when AACs are increased, nor pays it when reduced. The Act is silent with respect to compensation for these “givings” and “takings,” and no licensee has offered or demanded compensation.

31 Both parties appealed the arbitration award and both were dissatisfied with the court’s decision in its review of the award. An appeal to the Supreme Court of British Columbia is pending.

32 For estimates based upon private sector licence sales of these resource rents, see Canadian Western Capital (1991).

33 There is a voluminous literature, but no consensus, on who captures (or dissipates) timber resource rents in British Columbia. See the bibliographies in Schwindt (1987), and Uhler (1991).

34 The Crown should be allowed to choose other, lower cost methods of mitigating the cost penalty if available. For example, it may be possible to maintain the mill’s capacity utilization by harvesting currently non-economic (i.e., high-cost) timber stands. Alternatively, it may be cost effective to downsize the mill, making it compatible with a reduced throughput. Clearly this type of cost analysis is more difficult than simply relying upon historical costs estimates.

35 The total vessel figure includes both Native and Non-Native licences. The Native licences have unique characteristics with respect to transferability and fees.

36 This was done in terms of “sockeye equivalents.”

37 The Department of Fisheries and Oceans defines a fishing licence as follows.

A “fishing licence” is an instrument by which the Minister of Fisheries and Oceans, pursuant to his authority under the Fisheries Act, grants permission to a person (an individual or a company) to harvest certain species of fish, subject to certain conditions attached to the licence. A licence is in no sense a permanent authority to fish; what the licensee essentially acquires is a limited fishing privilege rather than any kind of absolute or permanent right (Canada 1990, 2).

38 Personal communication, DFO, Pacific Region.

39 These refer to “full fee” (i.e., not Indian owned) licences. Source: “An Analysis of Current Fishing Licences and Vessel Values; West Coast Fishing Fleet,” unpublished report prepared for DFO, Pacific Region, 31 December 1995.

40 In fact, the value of licences has increased dramatically since the end of 1995. As of this writing (April 1996) industry sources claim that seine licences are trading for up to $400,000 and gillnet/troll licences for up to $60,000. The escalation in prices is understandable given the increase in demand (the government), the expectation that as the fleet is reduced the average harvest for remaining licensees will increase, and implementation of area licensing (fishers must acquire an additional licence to work the entire coast).

41 Unassigned rents in the fishery are the source of the common property market failure that has led to severe overcapacity in the fleet and consequent pressure on the salmon stocks. As noted, the Pearse Commission (1982) recommended that government capture these rents through landing taxes and licence auctions, thereby curtailing private rent-seeking behaviour. Presumably fishers believe that they are entitled to these rents because government has failed to claim them.

42 Fishers are the only self-employed group eligible for UI payments. Further, the number of weeks worked required to qualify for UI payments are fewer than for other occupations.

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