ECONOMIC ANALYSIS OF RISK TO GOODS IN TRANSIT

BY

HAROLD ANDREAS ANDERSON

B.A. (Honours), Acadia University, 1979
LL.B., DALHOUSIE UNIVERSITY, 1979

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Department of Graduate Studies

The University of British Columbia
Vancouver, Canada

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ABSTRACT

The rules governing risk to goods in transit contained in the British Columbia Sale of Goods Act are based on a statute enacted in 1893. Although the method of transport as well as the types of goods being transported have changed significantly since that time, the rules have not been modified. The hypothesis explored in this thesis is whether rules governing risk to goods in transit drafted in the late nineteenth century represent efficient rules in the late twentieth century.

The thesis applied economic analysis to the rules to test their efficiency. The rules were tested in the ocean transit environment. It was concluded that the rules were not efficient and required substantial modification. An efficient set of rules governing risk to goods in transit was advanced.
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CHAPTER ONE

INTRODUCTION

Goods will almost always undergo some change during their transit from the seller's warehouse to the buyer's location. Often these changes are anticipated by the parties. In some cases the changes may even be desired. An example of this is the sale of unripe fruit which will ripening during transit and be ready for sale upon arrival. When the changes are known in advance the price paid for goods will reflect their value at the end of the transit.

The buyer will receive goods which do not conform to what he expected to receive and as a result, the buyer suffers a loss. However, in cases where changes are not desired or anticipated, the price paid for the goods will not reflect their value when received by the buyer.

There are several choices for the disposition of this loss. The loss could either be left with the buyer, transferred to the seller or shared between the two. Each option has its own benefits and costs for both the parties and society.

Such losses are allocated between the parties according to the terms of the sales contract or the relevant sales law. If the allocation is made according to contract, it means that the parties had the forethought to settle the potential
dispute in advance. If the allocation is made according to the relevant sales law, the parties either ignored the possibility or trusted the sales law to solve this type of problem.

In either case, it is essential for the calculation of the costs of the exchange that the parties understand how such a loss would be distributed. If sellers are responsible for damage, the prices they charge for their goods would reflect the cost of the risk. Sellers would be encouraged to make an effort to ensure that goods survived transport unharmed. On the other hand, if buyers are held responsible for the loss, the price they would be willing to pay for goods would reflect the risk of receiving goods of a lower value. In such a case buyers may be encouraged to provide extra protection for the goods.

Responsibility for damage to goods during transit may be made allocated for any number of reasons and on a large number of basis. However it is done, it is essential that buyers and sellers be aware of the rules and that the rules respond to the needs of the parties in ensuring a successful sale and to society in improving the way sales are transacted.

Even when the rules are clear calculating the risks that goods will be damaged in transit is no easy task. Very often sales involve the transportation of goods over great distances from the seller's factory or warehouse to the buyer's location. The transportation phase of the transaction is
frequently occasioned by the use of different methods of transport, each with its own set of specific risks. At any point in a sale scenario the goods could be damaged by internal as well as external causes which may not be discovered until their arrival at the buyer's warehouse.

Naturally, at the initial stages of the transaction, the seller bears responsibility for all of sources of damage and consequently for any damage which occurs to the goods. This changes during the course of the sale. At some point between the time the goods leave the seller's location and the time they reach the buyer's warehouse, the total responsibility for the different types of risk of damage pass from the seller to the buyer.

This risk to goods environment is further complicated by the conflict between the ability to protect goods and the responsibility for doing so. From a common sense perspective, responsibility for damage ought to be somehow related to ability to protect the goods. But in fact under many sales law regimes the responsibility for providing protection for goods is related to other factors. Merchants trading under such regimes are faced with either ignoring the obvious absence of logic in the situation or alternatively negotiating terms which provide for its correction.

Whatever the basis for the rules on responsibility for damage to goods in transit and the complexity of the transit environment, these rules are very complex. These rules play a
large part in the structuring of every sales transaction and thus tend to make sales very complex.

However, in spite of the apparent complexity, the structuring provided by these rules are of critical importance to the success of a sale. Often this aspect these rules are of greater importance than the rules governing price or time.

A successful and mutually profitable sale requires at a minimum that responsibility for the actual and calculable changes the goods will undergo during each phase of transit be specifically assigned in advance and that the parties be forewarned of the responsibilities undertaken. If reduction of damage of the goods is a goal, the party in control of the potential source of damage to the goods ought to be responsible for its control.

In Canada the allocation of responsibility for damage is governed by provincial Sale of Goods Acts. British Columbia's Sale of Goods Act governs all sales which occur within the province and which due to the rules of private international law are governed by British Columbia law.

The Sale of Goods Act was drafted during the latter part of the nineteenth century and thus represents a solution for problems as seen during that period. A pertinent question is whether these same rules are a solution to modern problems.

The British Columbia Sale of Goods Act sets up a risk regime which separates ability to protect goods from the
responsible for doing so. Presumably merchants in this province must either ignore their risks or contract out of the risk provisions. In either case, merchants operating under this law suffer the disadvantage of doing business with uncalculated risk or negotiating risk in each and every trade.

On its face, this regime adds unnecessary costs to doing business. Thus, at this level it is apparent that these solutions of the nineteenth century are not appropriate for our modern times. However, this point ought to be examined in depth to determine exactly how the Sale of Goods Act is inefficient and what can be done to correct it.

The purpose of this paper is to explore this point. The operating hypothesis states that the risk rules designed to operate in the last century do not represent efficient rules for the allocation of responsibility for damage to goods in transit in the late twentieth century.

Since this paper is looking at the efficiency of risk rules the first goal ought to be to examine the meaning of the word. Chapter Two of this paper presents a detailed review of the concept of economic efficiency and the analytical method called economic analysis. The paper will consider the various meanings of the term as well as the breadth of its explanatory power. In addition, the paper will consider the tools provided by the economic approach with an eye to their use in evaluating risk rules.
In order to evaluate the sources of damage to goods in transit and the abilities of the parties to protect goods during transit, this paper conducts an examination of the most common forms of transit for goods and legal regime. Theses issues are considered in Chapter Three.

Chapter Three takes a detailed look at the type of sale called the "sale and arrangement of delivery". The setting chosen is the ocean transit environment due to both its empirical relevance and the concentration it receives in the British Columbia Sale of Goods Act.

The evaluation of legal rules involves a comparison between the subject rules and a standard. Economic analysis provides the tools for such a comparison through models and comparative states. Chapter Four details the creation of the models and identifies the parameters and variables considered in the models.

This part of the research is of critical importance to the conclusions reached. The legal rules being considered must be evaluated according to conformity to a specific and defined standard. Models and comparative statics allow for such a comparison.

Chapter five through Seven present an exhaustive analysis of the Sale of Goods Act risk rules with a comparison to the standard called by this paper optimally efficient risk rules. These chapters detail the analysis of each individual rules
under the statute which relates to risk to goods in transit. The analysis leads to a number of important conclusions regarding the efficiency of the Sale of Goods Act Rules and the content of optimally efficient rules.

Chapter Eight concludes the research by discussing the results of the comparison. This chapter takes the conclusions reached in the analysis to their logical ends. Conclusions are reached on the value of the analytical method to the study of risk rules. An inherent problem with the Sale of Goods Act rules is highlighted and discussed. A summary is provided of the differences between the Sale of Goods Act models and the optimal models and an explanation is offered as to the causes of the differences. Finally, an optimal set of rules is outlined and discussed.

The conclusions of this thesis are that the Sale of Goods Act does not provide and efficient set of rules for the allocation of responsibility for damage to goods in transit. The problem with the rules are that for historical reasons the rules do not adequately take protection of the goods into account. This requires rational merchants to negotiate out of the statute each and every time that a sale and delivery contract is created.
CHAPTER TWO

THEORETICAL APPROACH

A. The Advantages of the Economic Approach

The process of drawing conclusions entails the use of perspective. Generally, a perspective is an approach which allows for the ordering and sorting of information. In effect, perspective is a vantage point from which the observer can judge the value of information. Drawing conclusions would be impossible without this advantage.

Frequently, legal researchers have ignored the perspective through which they structure their work. They seem to take the attitudes and values through which they value information for granted. The defence of conclusions are often based on "sound legal reasoning and common sense". This is short hand for the invisible application of the researcher's own point of view.

This approach suffers from a number of disadvantages. The most important is that without a known perspective it may difficult to compare conclusions.¹ Another disadvantage is that if perspective is ignored the perspective itself cannot be subjected to test.

An alternative to assuming the perspective used in research is to set the perspective up as a major part of the research project. That is, the purpose of the research is as much the testing of the perspective as it is the exploration of the subject matter of the study. This approach provides an opportunity to understand the effect of perspective on research conclusions. Further, the research conclusions may be compared to other conclusions which used the same perspective.

There are a number of perspectives available to the legal researcher. They include historical, logical psychological and economic. Each perspective possesses its own set of advantages and disadvantages. The researcher must choose the perspective which will address the selected problems and provide the desired conclusions.

This paper has chosen the economic perspective. The reason for this is that the economic perspective possesses a great deal of explanatory power regarding purely commercial phenomenon. As will be explored later in this chapter, the underlying basis of the approach parallels the assumed goals of the commercial world. Its principle weakness of an inability to explain the moral side of the law has little effect in a commercial setting.
B. The Basis of the Economic Approach

The underlying basis of the economic approach is that law, in its operation and effect, is governed by economic principles. Although there are numerous secondary assumptions, the central theme of the discipline is the concept of economic efficiency. Economics applied to law is in essence a study of the efficiency of law.

There are at least three criteria for efficiency, pareto, allocative and kaldor-hicks. Each defines a state which has the characteristic of maximized resource use. The criteria are different because of the need to account for different means of arriving at the efficient state.

1. Pareto Criterion

The pareto criterion was created to allow for quantitative comparisons between competing states of utility. It comprises three related concepts, the optimal, superior and inferior state.


4. Murphy, supra, note 2, p.212.

The optimal state is that state from which any improvement for one party will cause a detriment to another. Both logically and practically, optimal states are not comparable on efficiency grounds. This is because once the optimal threshold is reached, position is determined by internal distribution which has no relevance for efficiency purposes.

The comparative states of pareto superior and inferior, are defined in relation to each other. The superior state is any state which is an improvement over a previous state for at least one competitor and no competitor is made worse off by the change. The inferior state is one from which a superior state can arise. The positions are comparable inter se in that the total value of the exchange increases with each superior move. Pareto superior moves are possible until the optimal state is reached.

2. Allocative Efficiency Criterion

Allocative efficiency also describes the state of maximized productive resource use. It is the state from which any change would decrease the net aggregate value of a


8. Murphy, supra, note 2, pp. 218.

9. Ibid.

Market models test for allocative efficiency. That is, equilibriums always represent the point where two or more forces are counter balanced or maximized.12

An allocative efficient state is by definition pareto optimal. According to Professor Jules Coleman, the only difference between the two states is the absence in the former of a historical or comparative dimension.13

3. Kaldor-Hicks Criterion

A failing of both the pareto and allocative efficiency criteria is that they do not account for involuntary transfers.14 The kaldor-hicks criterion was formulated for precisely that situation.15 The kaldor-hicks criterion holds that a distribution is efficient if the gain of the benefited party exceeds the loss of all disadvantaged ones.16 In other words, if a party is injured by the operation of law then the benefits must be so great that in theory the injured party could be compensated.17 The state of kaldor-hicks efficiency

11. Ibid.

38. Stigler, supra, note 3, p. 33.


15. Ibid.

16. Murphy, supra, note 2, p. 218.

is a potential pareto superior state in that the benefited party could distribute his gain thus creating a pareto superior state. However, it is not necessary that he do so.

The kaldor-hicks criterion has the capacity to define efficiency when market exchanges fail to occur or when the markets fails to operate efficiently. Professor Coleman indicates that there are only two occasions when kaldor-hicks efficiency is justified. The first involves weeding out inefficient competitors in an existing market. For example, there is no legal entitlement to compensation for an inferior competitor who has been driven out of business. The second occasion described by Professor Coleman involves correction of market failure. For example, there is no legal entitlement to compensation for monopolists once the impediments to competition have been removed.

The kaldor-hicks criterion creates an allocative efficient and pareto optimal outcome because the final net position cannot be changed without injuring at least one party. In other words, a kaldor-hicks solution graphically

19. Ibid.
21. Ibid.
22. Ibid.
23. Ibid.
falls on the optimal frontier. Since optimal states are not comparable on efficiency grounds, any kaldor-hicks state is as efficient as any allocative efficient or pareto optimal states.

C. The Role of Efficiency in Analysis

There are several reasons why efficiency theory plays such a large role in economic analysis. One reason is based on the normative weight attached to efficiency. The other is based on the apparent similarity between rational human behavior and the behavior necessary to achieve an efficient state.

The normative argument holds that efficiency is a desirable state for society.\(^\text{24}\) That is, society benefits if the total amount of resources available for distribution increases or is at a maximum position. The comparative pareto states define increases in total resources available for distribution while the three optimal states of pareto, allocative and kaldor-hicks efficiency define the perfect state.

Even the kaldor-hicks criterion with its obvious penalty to one party is a desirable state. The rational for this is based on an individualistic ideology. It holds that if an individual is going to be deprived of property by society, it

is only just if the net benefit to society is greater than the corresponding loss to the individual. This is another way of saying that optimal efficiency requires the maximization of resources regardless of their internal distribution.

The behavioral justification is based on the observation that a common feature of human behavior is the desire to acquire resources. Assuming rationality and finite resources, human beings must compete among themselves. Thus, humans are competitive and rational and in competition will always maximize their positions.

The limiting factor to achieving a maximization is the availability of information. That is, in a world where there are no secrets, every rational competitor will pursue his position to its maximum.

Since efficiency defines states of maximized positions every time two or more individuals compete in a situation where access to information is not at issue, the outcome will always be defined as efficient. Thus, to an economist the behavioral constant is safely assumed to be rational maximization.


As we have seen, rational maximization is tautological with two of the three definitions of efficiency. Kaldor-Hicks efficiency is only state which has difficulty being defined in terms of rational maximization. This is because rational maximization assumes consent and no rational person would consent to have property taken from him without compensation. Its justification is derived in states where consent is overridden by the needs of society.

D. Economic Theory and the Limits of its Power of Explanation

The apparent vulnerability of the economic approach lies in its inability to explain the justice component of the law. To the extent that this is true, economic theory may be difficult to rationalize in terms of justice.

The gist of the argument is whether efficiency and justice are in any way comparable. The concept of justice is empirically empty. It cannot be quantified nor can it be empirically tested. Rather, justice only describes an emotive response to an event.

This is illustrated by the common legal definition of justice as, "The constant and perpetual disposition to give

27. Posner, supra, note 14, p. 3 and Coase, supra, note 1, 203.

every man his due." The components of uniformity of time and subject treatment are quantifiable and thus empirically meaningful. However, this is not true for the component of what a man is 'due'. In a world of finite resources, deciding what a man is due involves a comparison between individuals. It is highly likely that every individual has his own idea of what he is due as well as what others are due. Given the complexity of the decision-making process, it is even doubtful that a consensus exists in society as to how to define what a man is due.

This is contrasted with the concept of efficiency. The concept of efficiency does not aspire to account for what a person is due. Efficiency defines a quantifiable state of equilibrium between two or more competing forces. It exists in a relationship with forces such that a change in one force, changes the point at which efficiency is achieved.

Thus, justice and efficiency are different types of concepts. Efficiency describes phenomena while justice states an emotive opinion of the speaker. It is conceivable that a person or an ideology might hold that an efficient result is a just result, but the reverse is certainly not true. Judge


31. Ibid.
Posner suggests that inefficiency is morally wrong in a world of finite resources. However, this does not imply that everything efficient is morally right. For example, no one would consider it just that rich and productive people flourish while poor unproductive people starve. However, this situation may describe an efficient relationship between competing parameters.

The fact that economics and justice are incomparable should not detract from the value of the economic analysis of law. A theory rarely explains everything. It remains valid as long as it is not superseded by another with greater explanatory power. However, it is essential to appreciate the explanatory limits of a theory to ensure that conclusions derived from it are placed in their proper perspective.

The inability of economics to explain justice does not pose any problem for the analysis of risk rules. This is because the principles of distributive justice would rarely impact on the purely commercial arrangements between contracting participants in the sale and arrangement of delivery of goods.


55. Professor Jules Coleman recognizes this point and describes the dichotomy this way: ... the economist sees the domain of efficiency as the size of the "pie" and the domain of justice or morality as the shape and distribution of its pieces. (Murphy, supra, note 2, pp. 215.)

56. Ibid.
Contracting parties are presumed to consent to the distributional characteristics of their relationship. Unless there is a problem with the consent of a party, justice ought not to effect the settlement of a dispute. Benefits and costs can be distributed ex ante according to which party would have purchased the benefit or sold the cost at the inception of the transaction.  

E. The Technique of Economic Analysis

1. The Role of Assumptions and the Creation of Models

Economic analysis uses models to explain economic behavior. A model is a representative simplification of a phenomenon, and thus presents its abstraction. The relationship between theory and models is complex and frequently low level theories are expressed in modular terms. As a general rule, a model is less abstract than a theory and tends to have greater empirical content.

The key to creating workable models is to simplify the model's environment by making assumptions regarding matters not at issue. Assumptions can be either theory based,  

35. Coleman, supra. note 5, pp. 242-249
57. Stewart, supra, note 30, p.197.
37. Ibid, p. 144.
38. Ibid, p. 197.
39. Ibid.
40. Ibid, p.143.
referred to as postulates or axioms,\textsuperscript{41} or empirically derived and simply referred to as assumptions.\textsuperscript{42} The term assumption is usually used for all low level statements and the terms postulate or axiom are reserved for higher level ones.\textsuperscript{43}

Because a model's capacity to produce realistic conclusions is based on its degree of empirical accuracy, it is important to minimize distortion of the empirical world in the model by the assumption-making process.\textsuperscript{44} This leaves open the question of whether a model's level of realism can be enhanced through the use of unrealistic assumptions.\textsuperscript{45} In spite of the risk of distortion, economics like other scientific disciplines utilizes unrealistic assumptions which seem to produce realistic conclusions.\textsuperscript{46} An explanation may be that use of the unrealistic assumption may in effect represent a short-cut through an empirical thicket that the science is too imprecise to properly address.

\begin{itemize}
\item \textsuperscript{41} Ibid, p.136.
\item \textsuperscript{42} Ibid, p.135.
\item \textsuperscript{43} Ibid, p. 73.
\item \textsuperscript{44} Polinsky, A.M. An Introduction to Law and Economics, Boston: Little Brown, 1983, p. 4.
\item \textsuperscript{45} There is an ongoing debate in economic methodology literature regarding the value of unrealistic and unprovable assumptions in model building.(Stewart, supra, note 30, pp.132-136.).
\item \textsuperscript{46} Posner, supra, note 14, p.12,
\end{itemize}
a) Equilibrium and Comparative Statics

One of the most important assumptions in economics is the existence of equilibrium. Equilibria are used to simplify the conclusion drawing process by putting the model into a static state.\(^{47}\) An equilibrium describes a state from which there is no net tendency to move.\(^{48}\) It represents a balance between the various forces in the model. For example, in the traditional demand-supply model, an equilibrium is reached when the price of goods demanded equals the marginal\(^{49}\) cost\(^{50}\) of their production. The supplier has no incentive to increase production when he will lose money for every unit produced beyond the equilibrium point. Likewise, the consumer will not purchase goods if they are priced beyond their marginal value to him. A static or equilibrium exists at this point. It is possible to draw conclusions from the model based on where the equilibrium is established. For example, in the above model it is possible to determine the volume of goods which could be produced and consumed at various costs and prices.


\(^{49}\) Marginal is a perspective on benefit or loss which corresponds to each additional unit as it is produced or consumed. (Murphy, *supra*, note 2, p. 219.)

\(^{50}\) Cost means opportunity cost which is the benefit foregone by passing up the next best use of the resource. (Posner, *supra*, note 14, p. 6.)
Another purpose of the assumption of equilibrium states is to facilitate comparisons between models. Models can be more conveniently compared if they have the same dynamic status. The process of comparing equilibriums is referred to as comparative statics. The transitional process from one state of equilibrium to another is not explicable by this type of comparison. Instead, the characteristics of the two or more equilibrium states may allow for conclusions regarding the effect of manipulation of either assumption or data.

An example of the use of assumptions, models and comparative statics is the rancher-farmer dispute in Coase's "The Problem of Social Cost". Coase compares two models to illustrate that externalities are internalized by market forces.

51. Stewart, supra, note 30, p.142.
56. Externalities are in Coase's words "...those actions of business firms which have harmful effects on others."(Ibid, p. 1.) That is, externalities are a type of effect produced by an activity which causes a reduction in the value of another activity. (Demsetz, H. "When Does the Rule of Liability Matter?" (1972), 1 Journal of Legal Science 13, p. 13.)
57. Internalization of an externality means to allocate the value (negative) to the private cost of the activity of its creation.
The models concern the economic relationship between two competitors for land use. The rancher uses his land to feed cattle and the farmer uses his to grow corn. As there are no fences, the cattle are free to wander over both pieces of property, but they apparently prefer to remain on their master's property until most of the good feed is devoured. An increase in the number of cattle beyond the number which the rancher's land will comfortably support causes the cows to fill their excess demand for food at the expense of the farmer's corn.

The first model assumes that the rancher is responsible to the farmer for all the damage caused by his marauding cattle. The rancher profits by each additional cow he maintains. However, additional cows cause additional damage. Coase postulates that the rancher will not increase the size of the herd beyond its profitable level in relation to crop damage. There is an optimal number of cows which provides maximum profit in spite of having to compensate the farmer. That point is the balance between the rancher's profit and compensation margins or the equilibrium point in the model.

The second model assumes that the rancher is not responsible for any of the damage caused by his cattle. That is, no matter how much damage the cows cause the farmer, the rancher is not required by any rule to compensate him. All other factors are identical to the first model. The farmer

59. See below.
will compensate the rancher for maintaining the herd at a level which provides the farmer with the greatest profit. This point is the point that the marginal value of an additional cow to the rancher is less than the damage the farmer will suffer as a result of the addition. An equilibrium is reached at the point where the marginal value of the additional cows equals the marginal damage dome to the corn.

A comparison of the two equilibrium points indicates that the points are identical. In other words, in a perfect market externalities would be internalized by the bargaining between the parties regardless of the original allocation of rights.  

Coase incorporates a number of assumptions in the models to eliminate matters not at issue. Two examples are the elimination of the effect of a decrease in production of corn or cows on the price of the commodity and the elimination of the effect of the annual cost of land. Both assumptions affect the equilibrium position by changing the value of the products from variables to constants and making the cost of land nil. Neither reduces the model's efficacy to illustrate the phenomenon. This is because the values of the assumed

60. This conclusion is conditional upon the existence of a perfect market which entails perfect knowledge, zero transaction costs and cooperative bargainers.

61. Coase, supra, note 55, p. 4.

62. Ibid. This assumption is made by assuming that the land is owned by the farmer.
variables are relatively low in relation to variables being tested in the model.

A more problematic assumption is the existence of zero transaction costs. Transaction costs are often critically important in negotiations. By excluding their effect, Coase highlighted their importance. This illustrates another use of assumptions in models.

2. Theoretical Postulates or Axioms

As indicated above, postulates or axioms play the role of theoretical assumption in economic analysis. That is, postulates are both logical extensions from theory and general observations about the empirical world.

The use of postulates and assumptions assist in simplifying the model building process by promoting distinction between variables which can be assumed and those which cannot. For example, in the farmer-rancher model the postulate Coase assumed was that neither competitor would act

63. Polinsky, supra, note 44, p. 12.

64. Stewart, supra, note 30, p. 73.

65. Ibid, p. 136. [Postulates can be tautologically related to theory. These high level statements are generally called theorems and are only susceptible to empirical proof under unusual conditions. Or they can be closer to the real world in which case they may be called behavioral generalizations or in some cases simply "assumptions". Assumptions are open to empirical proof under most conditions. According to Samuelson, a meaningful theorem is one which could be refuted under ideal conditions. (Samuelson, supra, note 47, p. 4.)]
in a manner detrimental to their interests. This eliminates
the need to consider psychological elements, as well as,
highlighting the need to test for the maximum position of each
party. A number of important postulates are detailed below.

a) Competitive Rational Maximization

As illustrated by the rancher-farmer model, economic
analysis utilizes a postulate or assumption describing the
motivational character of the basic behavioral unit of the
analysis, which is human behavior. Man is theorized and
assumed to be a rational maximizer of wealth. According to
Posner and many others, this is the central assumption in
economic analysis of law. Without it, any conclusion
derived from a model would be contingent on the specific type
of emotion displayed by the human subjects.

Arguably, a model's accuracy is diminished by making such
a broad sweep of the whole range of human emotions and
intellect. In fact, the most persuasive criticism of economic
method is its oversimplification of human behavior. Economists attempt to overcome the apparent inaccuracy of this
assumption by dealing with phenomena only at the level of

66. Stewart, supra, note 30, p. 73.
68. Posner, supra, note 14, p. 3.
69. Dworkin, R. M. "Is Wealth a Value?" (1980), 9 Journal
of Legal Studies 191, p. 220, and Leff, A. A. "Economic
Analysis of Law: Some Realism About Nominalism" (1974), 60
aggregates. Naturally, this means that any conclusions developed using this assumption are only general statements about behavior.

Some writers have pointed out that rational maximization may itself have more than one dimension. A distinction must be made between short and long term interests. Strategic behavior is a form of long term interest wherein the actor links two or more transactions to promote improved bargaining position in the later transaction at the expense of the former position. In other words, it may be both rational and resource maximizing to act irrationally in one transaction to promote another.

b) Finite Resources and The Rule of Resource Gravitation

Closely aligned with the assumption of rational maximization are the assumptions of finite resources and resource gravitation. Finite resources means that all resources are scarce and thus parties compete for their acquisition. The rule of resource gravitation holds that

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71. Stigler, Ibid.

72. Murphy, supra, note 2, p. 232.
resources will be acquired by the party which values them most.\textsuperscript{73}

From an empirical point of view, it is quite obvious that the quantity of all resource is finite. It is equally obvious that resources tend to go to the party who is willing to pay the most for them. In most cases that party has the capacity to maximize the profitable use of the resource.

c) The Law of Supply and Demand

The law of supply and demand holds that there is an inverse relationship between the price charged and quantity demanded.\textsuperscript{74} The rule expresses an obvious behavioral generalization. The inverse relationship of quantity and price is commonly illustrated in the real world.\textsuperscript{75}

The theoretical generation of the rule is a little more complicated. The rule of supply and demand (as well as many other economic rules) is contingent upon the existence of a market.\textsuperscript{76} A market is a spatial and temporal event wherein

\begin{itemize}
\item[\textsuperscript{73}] Value is defined as the price that a party is willing to pay for a resource. (Posner, \textit{supra}, note 14, p. 11.) Price is the same as cost. Both are defined in terms of foregone opportunity. That is, "... the use of resources for any purpose incurs a cost which is equal to the value of the best foregone alternative use." (Burrows, \textit{supra}, note 70, p. 4.)
\item[\textsuperscript{74}] Posner, \textit{supra}, note 14, p. 5.
\item[\textsuperscript{75}] Stigler, \textit{supra}, note 3, pp. 43-44.
\item[\textsuperscript{76}] For example, the Coase postulate.
\end{itemize}
competing forces operate to make exchanges. A perfect market occurs whenever the forces operate in such a way to allow for perfectly simultaneous and consistent exchange. The more representative a model is to a perfect market, the more precise the operation of illustrated economic principles. In order to effect a model of a perfect market, the elements of zero transaction costs and perfect knowledge must be in existence. If a model fails to allow for exchanges, it is reflecting a situation of a failed market which may be caused by imperfect knowledge and/or excessive transaction costs.

Within this context, the theoretical basis of the rule may be explained as follows. Since each decision-making unit is attaining efficiency in the market by acting in a resource-maximizing manner, each unit acquires the most resources at the least cost. The value of resources inter se is a function of their comparative scarcity. That is, as the quantity of

77. Stigler, supra, note 3, p. 55.
78. Ibid.
79. Ibid.
80. Transaction costs are resources employed in the process of bargaining, obtaining information and concluding agreements. (Hirsch W.Z. Law and Economics An Introductory Analysis, New York: Academic Press, 1979, p. 5.)
81. Coleman, supra, note 5, p. 223.
82. Stigler, supra, note 3, p. 80.
one resource increases, its value in relation to a static resource decreases and vice versa.\textsuperscript{83}

d) The Coase Theorem

Ronald Coase in "The Problem of Social Cost" illustrated that the forces of a perfect market will create an allocative efficient result regardless of the initial allocation of rights or any externality.\textsuperscript{84} In the Coase analysis, rights and externalities are essentially the same. Both rights and externalities infringe on other people.

Empirical proof of the postulate is difficult owing to the lack of examples of perfect markets. However, Coase points out that the postulate can be illustrated by looking at business firms.\textsuperscript{85} The goal of a business firm is to enhance its total allocative efficiency. That is, it promotes a maximization of revenue with a minimization of cost.\textsuperscript{86} Within a firm which comprises a number of different and conflicting activities, the more valuable activity will purchase the right to operate from the less valuable activities regardless of the

\begin{footnotesize}
\begin{enumerate}
\item Ibid.
\item Coase, \textit{supra}, note 55, p. 16.
\item Ibid.
\item Ibid.
\end{enumerate}
\end{footnotesize}
firm's internal rule structure. The firm's desire for maximum profitability will require this behavior.

This postulate is tautologically related to allocative efficiency and pareto optimality. Allocative efficiency describes the state of maximum productive resource use. Competing forces in a perfect market affect maximum resource use. Hence, perfect markets are always allocative efficient. Since externality causing activities are by definition inefficient, such activities do not exist in perfect markets.

e) The Reciprocal Relationship Between Rights and Duties

An essential element of the Coase theorem is the postulate that rights and duties are reciprocal. The theoretical support for the relationship arises by definition. Every right implies a corresponding duty. The empirical point is illustrated in Coase's analysis of the rancher/farmer model.

87. Ibid.

88. Coase's point is advanced by Professor C.R. Knoeber's article concerning the effects of vertical integration. Knoeber suggests that vertically integrated relationships eliminate the need for law. Instead, the vertically integrated structure itself ensures an efficient relationship between competing activities. (Knoeber, C.R. "An Alternative Mechanism To Assure Contractual Reliability" (1983), 12 Journal of Legal Studies 333, pp. 333-4.) Professor Calabresi points out that vertical integration is merely a restatement of the coase theorem. (Calabresi, G. & Melamed, D. "Property Right, Liability, Rules and Inalienability: One View of the Cathedral" (1972), 85 Harvard Law Review 1089, p. 1095.)

89. Coleman supra, note 5, p. 225.

90. See Coase, supra, note 55, pp. 2 and 13.
discussed above. Coase viewed externalities as caused by both participants.\(^91\) If corn was not grown or cattle not raised, there would be no nuisance. Both are equally responsible for the harm.\(^92\)

F. The Contract Paradigm

1. The Function of Contract Law

The function of contract law is to enhance the efficiency of exchanges of goods and services.\(^93\) Efficiency in this sense means that goods and services are both transferred to their most valued uses\(^94\) and that the exchange is completed in an efficient manner.\(^95\)

An efficient contract implies that the values exchanged are both equivalent and configured in different forms.\(^96\) That is, the exchange value of a resource may include items such as risk\(^97\) and information.\(^98\) For example, a contract for

\(^{91}\) Ibid, p. 13.

\(^{92}\) Ibid.

\(^{93}\) Polinsky, supra, note 44, p. 118.


\(^{96}\) Ibid, pp. 83-84.

\(^{97}\) Ibid, p. 91.

the sale of goods to be exchanged in the future involves the risk that the value of the goods may change prior to delivery. Naturally, a change in value will benefit one party at the expense of the other.

In every exchange the information and risk components are traded along with the goods. The value of a risk about the future can be calculated by multiplying the anticipated loss times the probability of its occurrence. Information about the present and future value of the goods is likewise accounted for in the contract. In sales of goods such information is often in the form of a warranty that the goods will meet a certain expectation in the future.

Contract law promotes the efficiency of exchanges in a number of different ways. First, it tends to allow the enforcement of only efficient exchanges. Inefficient exchanges are penalized and the behavior discouraged. For example, a contract will not be enforced according to its terms when one or both parties are sufficiently mistaken about the subject matter or conditions so to radically change the bargain made by parties. In this example, contract law


100. Posner and Rosenfield, supra, note 95, p. 88.


sets a limit on allowable information error which ought to encourage the acquisition and sharing of information essential to the bargain.

Second, contract law provides an optional set of default terms which the parties may or may not incorporate in their contracts. Reliance on the terms reduces the cost of contracting by saving both the time spent acquiring information and the time spent bargaining. These default terms may be incorporated by choice or by a failure to contract out of the existing law.

The assumption of rational maximization holds that parties will use the default terms contained in the law as long as their use promotes efficient results. Naturally, this proposition assumes that the parties possess sufficient information about the terms of the law to make that judgement.

Third, contract law provides the framework for ex post resolution of disputes by tribunals. Thus, inefficient exchanges due to information errors can be corrected by ex post adjustment of the agreement. Provisions which incorporate objective tests are good examples of the structuring provided by contract law.

104. Polinsky, supra, note 44, p. 27.
2. The Function Of Contracts

The contract device allows people to clarify expectations and decide in advance how to resolve potential disputes.\textsuperscript{106} Assuming perfect information, a deductive conclusion of the rational maximization assumption is that parties will choose contract provisions which appear ex ante to enhance efficiency.\textsuperscript{107} Hence, contracts to the extent of specification and perfect knowledge are guaranteed to be efficient.\textsuperscript{108}

However, since the cost of specifying numerous contingencies is very high, few contracts approach this precision.\textsuperscript{109} Moreover, it is theoretically impossible to account ex ante for all possible contingencies. Consequently, contracting parties necessarily rely to a large part on the default terms provided by contract law to fill out their exchanges.\textsuperscript{110}

\textsuperscript{106} Polinsky, \textit{supra}, note 44, p. 25.
\textsuperscript{107} \textit{Ibid}, p. 31.
\textsuperscript{108} \textit{Ibid}, p. 29.
\textsuperscript{109} \textit{Ibid}, p. 25.
\textsuperscript{110} \textit{Ibid}.
G. Contract Analysis

1. Generally

The purpose of economic analysis is to test for efficiency. The common feature of all the definitions of efficiency is the maximization of the total value of the exchange irrespective of individual success. Subject to perfect knowledge, individual success is accorded by the rational maximization presumption.

Because the act of contracting distributes the risk of an exchange, the efficiency of a contract or of contract law can be measured by comparing models of risk configurations. This method of testing for efficiency is referred to as risk analysis.

2. Risk Analysis

The competition between parties to assume risk for the highest price or pass it on for the least cost facilitates contractual efficiency.\(^{111}\) The value that a party places on a risk is dependent upon that party's relative aversion to it.\(^{112}\) That is, assuming perfect information, the party with the least concern over the likelihood of the occurrence of the risked event or of its consequences will accept the risk at the lowest cost.

\(^{111}\) Posner and Rosenfield, supra, note 95, p. 88.

\(^{112}\) Polinsky, supra, note 44, p. 119.
This party who will charge the least for assuming a risk has the superior capacity to either the prevent the occurrence of the risk or insure against its consequences. Thus, an efficient exchange requires that the most efficient preventer or insurer ought to bear responsibility for that specific risk.\textsuperscript{113}

The superior preventer is the party with the most control over the risked event.\textsuperscript{114} In the sale of goods setting, that means the party with possession of the goods or control over the person with possession. In any case the party who is neither in possession nor in control has little opportunity to ensure that risked events do not occur.

A superior insurer is a party best able to absorb the costs of the occurrence of the risked event.\textsuperscript{115} The superior insurer has the best ability to determine the probability and magnitude of the event and to distribute the expected loss.\textsuperscript{116}

Posner and Rosenfield point out that in the event of conflict between the two parameters of superior preventer and insurer, the risk should be allocated according to the empirical importance of the parameter.\textsuperscript{117} However, in most

\textsuperscript{113} Kronman, \textit{supra}, note 98, p. 9.
\textsuperscript{114} Posner, \textit{supra}, note 14, p. 45.
\textsuperscript{115} Posner and Rosenfield, \textit{supra}, note 95, p. 90.
\textsuperscript{116} \textit{Ibid}.
\textsuperscript{117} \textit{Ibid}, p. 102.
cases, risk would be allocated to the superior risk avoider as common sense dictates prevention is more efficient than insurance. Moreover, in sale of goods transactions many risks are not insurable.

According to risk analysis, a contract ought not to be enforced if the promisor (the party guaranteeing the performance) is less able than the promisee to perform the obligation. The reason for this is that a contract ceases to be efficient when the promisee is the superior risk bearer.

Obviously, a promisor's informed express acceptance of the risk of performance should be enforced. However, as stated at the outset, expressed terms are assumed to be efficient and thus this situation is not likely to occur without the occurrence of an information error by the promisor.

From the point of view of risk to goods in transit, a legal regime is efficient if it allocates risk to the party least adverse to it. This formula is justified by looking at it in terms of legal clarity and conformity to commercial practice and the reduction of avoidable losses.

118. Ibid.
119. Ibid, p. 90.
120. Ibid, p. 98.
a) Clarity and Conformity to Common Expectation

In a short statement, clarity in a law means that the risks allocated by the law are discernable in advance. Closely associated with that is that knowledge of the law's allocation of risk is synonymous with conformity to common expectation. Obviously, with enough legal research almost any set of laws becomes clear. However, the truly clear law is one which conforms to common expectation and thus saves the cost of the legal research.\textsuperscript{121} The common expectation is that the party with the lowest insurance cost should bear the associated risk.\textsuperscript{122} Insurance costs are measured in terms of knowledge of the risks (probability and cost), ability to prevent the risk from occurring and an ability to diversify the costs of bearing the risk.\textsuperscript{123}

If the parties are aware from the onset of who bears what risk then there is less of a chance of inaccurate pricing. That is, the party who knowingly bears a risk stands a better chance of recovering its cost ex ante than he would if the risk was not discovered until it manifested itself.

\textsuperscript{121} Note, "Risk of Loss in Commercial Transactions: Efficiency Thrown Into the Breach" (1979), 65 Virginia Law Review 557, p. 557.

\textsuperscript{122} Ibid, p.558.

Alternatively, if the party bearing the risk is more risk adverse, then he can exchange the risk as part of the overall negotiation. The most efficient risk bearer would find it in his interest to assume the risk for a cost which exceeds his costs of assumption but is less than the opposing party's cost. If neither party is sufficiently risk neutral to absorb the risk, the party allocated the risk should have sufficient knowledge to make an efficient purchase of insurance.\textsuperscript{124}

\textbf{b) Reduction of Avoidable Losses}

The goal of preventing loss is superior to insuring against its occurrence.\textsuperscript{125} Preventing avoidable losses has several aspects. The first aspect is that overall losses will be reduced if the person in control of the goods is responsible for them.\textsuperscript{126} Making the party in control of the goods responsible for their safety combines both the ability and the incentive to protect the goods in one party.

The second aspect is that the party who is the superior mitigator ought to bear responsibility for any loss.\textsuperscript{127} The most efficient loss mitigator is also the superior preventer

\textsuperscript{124}. Note, "Risk of Loss in Commercial Transactions: Efficiency Thrown Into the Breach" \textsuperscript{supra}, note 121, p. 558.

\textsuperscript{125}. Bishop, \textsuperscript{supra}, note 101, p. 257.

\textsuperscript{126}. Note, "Risk of Loss in Commercial Transactions: Efficiency Thrown Into the Breach" \textsuperscript{supra}, note 121, p. 560.

\textsuperscript{127}. Posner, \textsuperscript{supra}, note 14, p. 108.
of avoidable losses which arise after the goods are damaged or lost.

The third aspect is that if performance of the contract results in a party incurring a loss, then that party ought to be able to terminate performance without either party suffering a disproportionate share of loss. The costs of breach cannot exceed an amount which appropriately compensates the promisee.128

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CHAPTER THREE

THE TRANSIT ENVIRONMENT

A. Commercial Sales Involving an Arrangement of Delivery by the Seller

In a sale and arrangement of delivery contract the seller undertakes to arranges transportation of the goods to the buyer and delivers the goods to the first carrier.\(^{129}\) The buyer usually pays for the carriage and the insurance coverage for the goods.\(^{130}\) In most cases the buyer does not see the goods until they arrive at his location.\(^{131}\)

Within the scope of the standard commercial sale involving a sale and arrangement of delivery there are a number of possible arrangements for the distribution of responsibility. They range from the seller accepting the total responsibility for transportation to the seller accepting none. In most cases the parties agree on a division of risk. Frequently this division of risk is facilitated thought the insertion of a trade term into the contract.\(^{132}\)

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\(^{130}\) Ibid.


However, contracts rarely account for all the risk of transit. Moreover, there may be occasions when the contract is completely silent on risk. When either of these two events occur, the risk is allocated according to the default provisions contained in the relevant domestic law.\textsuperscript{133}

B. Methods of Transportation

Buyers and sellers tend to transport goods by the least expensive means available. Generally, the lower the cost, the greater the stress on the goods. For example, ships are less expensive than aircraft but they are slower and their passages more arduous. The roughness of the sea takes its toll on cargo. In spite of the risks occasioned by ocean transportation it is the most common means of transporting goods long distances.\textsuperscript{134}

Trucks or rail transport is frequently used to get the goods to the dock for loading on to the ocean vessel. At the point of departure or some point during the transit the goods may be loaded into containers and the goods will remain in containers for a period of the transit.

\textsuperscript{133}. The nationality of the relevant domestic is determined according to the domestic rules of private international law. The effect of private international law will be briefly discussed later in the paper.

\textsuperscript{134}. \emph{Ibid}, p. 8.
In some cases the method of transportation may switch back and forth between truck, rail and ocean vessel. For example, goods may be loaded on a truck in Surrey, Great Britain delivered to an ocean vessel in South Hampton and loaded into a container at the dock side. From there the goods are shipped by ocean vessel to Halifax where they are off loaded and removed from the container. The goods may then be loaded back on a truck for an across Canada trip to Vancouver. In Vancouver the goods could be loaded back on to a ship for transport to a destination in Asia.

C. Contractual Events

A sale like any other business project involves a sequence of events starting with the making of the contract and concluding with the expiration of the various limitation periods. There are a number of events which occur along the critical path of every sale. Some of these events are physical and some are nonphysical.

The critical physical events which occur in sales are the identification, preparation for delivery, delivery and inspection of the goods by the buyer. The nonphysical events are the passage of property, the passage of risk and the act of the buyer's acceptance.

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1. Physical Events

In the course of the normal sale of goods, the buyer places an order with the seller. This leaves it up to the seller to select the goods with which to fill the order. Identification occurs by the sellers' act of separating the goods from a bulk by marking or arranging of storage.

Once the goods are identified, the seller will prepare them for delivery. This may involve completing the manufacturing and packaging the goods for the intended voyage. As part of this step the seller may adjust the goods level of durability to the anticipated rigors of the intended voyage.

The next physical step on the critical path is delivery. Frequently, the act of delivery has nothing to do with putting the buyer in actual possession of the goods. Instead, in the most common case the seller simply puts the goods on board the method of transportation chosen by the parties and notifies the buyer of that fact. The significance of the event is that it determines when conformity of the goods to the contract is judged.

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136. Sassoon, supra, note 1, p. 203.

137. Ibid.


139. Ibid.
Even if inspection occurs at a later time, defects in the goods must have existed at the point of delivery. A buyer's capacity to reject the seller's performance is determined by the state of the goods as at the time of delivery.\textsuperscript{140}

The buyer may reject goods which do not perfectly conform to the description in the contract as at the time of delivery. Inspection does not usually occur until the goods arrive at the buyer's location.\textsuperscript{141} However, it is possible that the parties might agree that the goods be inspected prior to shipment or that the goods obtain a third party certification prior to delivery. In the event of the latter two options, the point of delivery is also the effective point of inspection.

2. Non-physical Events

Once the contract has been made and consideration paid, the next nonphysical event is usually the passage of property. Passing of property is determined at the time the goods receive identification or ascertainment according to the contract.\textsuperscript{142} No property can pass until that time. The parties may delay the passage of property until a later time

\textsuperscript{140} Ibid. p. 450.
\textsuperscript{141} Ibid. p. 203.
\textsuperscript{142} Ibid, pp. 205-206.
as for example when the seller wishes to maintain a security interest in the goods.\textsuperscript{143}

There are three different types of risk under Anglo-Canadian law. They are the risk of externally caused damage, the risk of internally caused damaged and the risk of damage which ought to have been anticipated. The responsibilities for them pass from the seller to the buyer at different times. Control over the goods has nothing to do with the transfer of any of the risk. However, no risk will pass until after the passage of property in the goods.\textsuperscript{144}

Under Anglo-Canadian law some of the risks pass simultaneously with property. The risks of anticipated damage and externally caused damage pass at this point. By contrast, the risk of internally caused damage may not pass until after the buyer has actually received and inspected the goods.

The buyer's act of acceptance occurs when delivery takes place. Delivery may occur when the goods are handed over to the buyer's agent or the seller's agent becomes the agent of the buyer.\textsuperscript{145} The buyer's right to inspect the goods has nothing to do with acceptance.

\textsuperscript{143} Ibid, p. 208.


\textsuperscript{145} Ibid.
D. The Legal Environment

Risk rules for purely domestic transactions are controlled by domestic law. However, when a sales transaction takes place between parties residing in different jurisdictions, the rules of private international law govern which set of domestic rules will apply. Moreover, if the parties reside in different countries, private international law may dictate that the rules of an international convention governs the transaction.

1. Domestic Law

In British Columbia the Sale of Goods Act governs the transfer of risk to goods. The Sale of Goods Act is a relatively old statute which codified the law existing as of 1893. The risk to goods sections have not been substantially amended since codification. The Sale of Goods Act presents an interesting case of 19th century law which has not been updated to deal with complex problems occurring in the late 20th century.

a) The Definition of Risk

The Sale of Goods Act uses what appears in the late twentieth century to be a simplistic approach to the definition of risk. The statute breaks risk down into two

146. Ibid, p. 4.
147. Ibid.
categories. The first category is the overall risk of the transit. The second category is the risk of the anticipated damage the goods will undergo in every transit. The breakdown occurs in section 37.

37. Where the seller of goods agrees to deliver them at his own risk at a place other than that where they are when sold, the buyer must nevertheless, unless otherwise agreed, take any risk of deterioration in the goods necessarily incident to the course of transit.

Over the past one hundred years the courts have fine tuned the categories. The refinement has been due to an emphasis on the cause of the damage to the goods. The common law recognizes that damage may be attributed to either the action of the seller or the action of the carrier in both categories.

b) Externally Caused Damage

Perhaps owing to the importance of private property in the 18th and 19th centuries, the Sale of Goods Act allocates risk to goods on the basis of ownership. This is covered in section 25.

25. Unless otherwise agreed, the goods remain at the seller's risk until the property in them is transferred to the buyer, but when the property in them is transferred to the buyer the goods are at the buyer's risk, whether delivery has been made or not; provided that where delivery has been delayed through the fault of either buyer or seller, the goods are at the risk of the party in fault as regards any loss which might not have occurred but for such fault; provided also that nothing in this section shall affect the duties or liabilities of either seller or buyer as a bailee or custodian of the goods of the other party.
The act of delivery which entails the seller giving up control of the goods only impacts on risk if the intended time sequence of the sale is upset by a default of a party and the delay causes damage to the goods. Otherwise, control is irrelevant to risk.

If risk passes to the buyer prior to control passing, the seller would become the bailee of the goods. His duties as bailee are dependent on the common law of bailment which holds a bailee for hire to the standard of reasonable care of the goods. If the seller transports the goods to the buyer's location after property has passed, the seller has the duty of a bailee of reasonable care unless the seller undertakes a greater responsibility than is envisioned in section 37.

2. Passage of Property

Property cannot pass until the seller's performance has come to an end. This may require anything from the ascertainment of the goods to their delivery to the buyer. This is covered by section 23 which is quoted below in its entirety.

23. (1) Unless a different intention appears, the intention of the parties as to the time at which the property in the goods is to pass to the buyer is governed by the rules set out in subsections (2) to (7).

(2) Where there is an unconditional contract for the sale of specific goods in a deliverable state, the property in the goods passes to the buyer when the contract is made, and it is immaterial whether the time of payment or the time of delivery, or both, be postponed.

(3) Where there is a contract for the sale of specific goods, and the seller is bound to do something to the goods for the purpose of putting them into a deliverable state, the property does not pass until such thing be done and the buyer has notice of it.

(4) Where there is a contract for the sale of specific goods in a deliverable state, but the seller is bound to weigh, measure, test or do some other act or thing with reference to the goods for the purpose of ascertaining the price, the property does not pass until such act or thing be done and the buyer has notice of it.

(5) When goods are delivered to the buyer on approval or "on sale or return", or other similar terms, the property passes to the buyer

(a) when he signifies his approval or acceptance to the seller or does any other act adopting the transaction;

(b) if he does not signify his approval or acceptance to the seller, but retains the goods without giving notice of rejection, then, if a time has been fixed for the return of the goods, on the expiration of such time, and, if no time has been fixed, on the expiration of a reasonable time. What is a reasonable time is a question of fact.

(6) Where there is a contract for the sale of unascertained or future goods by description, and goods of that description and in a deliverable state are unconditionally appropriated to the contract, either by the seller with the assent of the buyer, or by the buyer with the assent of the seller, the property in the goods thereupon passes to the buyer. The assent may be express or implied, and may be given either before or after the appropriation is made.
(7) Where, in pursuance of the contract, the seller delivers the goods to the buyer or to a carrier or other bailee, whether named by the buyer or not, for the purpose of transmission to the buyer, and does not reserve the right of disposal, he is deemed to have unconditionally appropriated the goods to the contract.

The most important act for the purpose of transferring property is the identification of the goods to the contract. The Sale of Goods Act recognizes two states or conditions of the goods. Goods are either specific or unascertained. The stated assumption of subsections (2), (3), (4), (6) and (7) of section 23 is that the buyer cannot acquire goods which have not been identified or separated from the mass of goods owned by the seller. Ascertainment requires that the goods be identified or set aside and that the buyer receive notice of their ascertainment.

Another condition required by section 23 is that the goods be put in a deliverable state or actually be delivered to the buyer or a third party for transmission to the buyer. The statute is silent on what constitutes a deliverable state. The possibilities range from completion of manufacture to fully packaged and protected for transit. A reasonable assumption is that the quality of the deliverable state is dependent upon where the delivery will take place. For example, if the delivery is to take place at the seller's location, then no packaging or preparation for transit is required. Alternatively, if the seller is to deliver the goods to the buyer's door, the deliverable state would require packaging to withstand the trip.
3. Sale versus Sale and Arrangement of Delivery Contracts

The two categories of sales contracts define the obligation undertaken by the seller regarding transit. They are the simple sale contract which could include a shipment contract and the sale and arrangement of delivery.

The simple sale contract is presumably the standard envisioned by the Sale of Goods Act owing to the relative amount of statutory language on the subject. In the simple sale contract property and risk pass when the goods are put in a deliverable state and the buyer has actual notice. This is covered in subsections (2), (3) and (4) of section 23 quoted above.

Adding an obligation to arrange shipment entails a duty that the seller make appropriate arrangements regarding the transit. This might include notice to the buyer that the goods have been put aboard a ship so that the buyer can obtain insurance.

36. (1) Where, in pursuance of a contract of sale, the seller is authorized or required to send the goods to the buyer, delivery of the goods to a carrier, whether named by the buyer or not, for the purpose of transmission to the buyer is deemed, in the absence of evidence to the contrary, to be a delivery of the goods to the buyer.

(2) Unless otherwise authorized by the buyer, the seller must make such contract with the carrier on behalf of the buyer as may be reasonable, having regard to the nature of the goods and the other circumstances of the case. If the seller omits to do so, and the goods are lost or damaged in course of transit, the buyer may decline to treat the delivery to the carrier as a delivery to himself, or may hold the seller responsible in damages.
(3) Unless otherwise agreed, where goods are sent by the seller to the buyer by a route involving sea transit, under circumstances in which it is usual to insure, the seller must give such notice to the buyer as may enable him to insure them during their sea transit, and if the seller fails to do so the goods shall be deemed to be at his risk during the sea transit.

Section 36 (2) may require that the seller's contract of affrayment properly value the goods for the purposes of limitation of the liability of the carrier. Under the Hague Rules\textsuperscript{149} which are appended to the Carriage of Goods By Water Act\textsuperscript{150} the liability of the carrier is limited to a per package valuation of the goods unless otherwise specified in the contract of affrayment.\textsuperscript{151}

4. Effect of Breach on the Allocation of Risk

There are only three occasions when a failure of the seller's performance will prevent risk from passing. One is when the seller fails to give notice that either the goods have been delivered to a sea going carrier or that the goods have been ascertained and put in a deliverable state. The second occurs when the seller fails to make an appropriate arrangement of transport with a carrier in a sale and shipment contract. The third occurs when due to some act of the

\textsuperscript{149} The Hague Rules are rules which limit ship owner liability. They originated in 1924 as a result of a conference held at the Hague in 1921. The rules attempt to balance the rights of ship owner's against shippers of goods.

\textsuperscript{150} R.S.C. 1970, c. 15.

\textsuperscript{151} Ibid, Art. IV, s. 4, ss. 5.
seller, the delivery is delayed and the risk occasioned by this failure is limited to damage caused by the delay itself.

The onus on the seller to protect goods specified in the contract from perishing before risk has passed is minimized by section 11. Section 11 provides that the seller must be at fault in order to treat destruction of the goods as a breach of contract.

11. Where there is an agreement to sell specific goods, and subsequently the goods, without any fault on the part of the seller or buyer, perish before the risk passes to the buyer, the agreement is avoided. The burden on the seller for goods specified in the contract is much the same as the duty of a bailee for hire, a role the seller undertakes once property in the goods has passed to the buyer.

We see from the wording of section 23 that a delivery of nonconforming goods does not effect the passage of risk so long as the goods are in a deliverable state when turned over to the buyer or carrier. This wording presents obvious difficulties which are remedied by an assumption that only property in conforming goods can pass to the buyer. The buyer must be given an opportunity to examine the goods to ensure conformity. The concept of acceptance is relied on to provide the remedy of rejection to the buyer.

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38 (1) Where goods are delivered to the buyer which he has not previously examined, he is not deemed to have accepted them unless and until he has had a reasonable opportunity of examining them for the purpose of ascertaining whether they are in conformity with the contract.

Acceptance or rejection occurs at the point of delivery. In the case of a sale and arrangement of delivery contract, the buyer's inspection might not occur until the arrival of the goods at the buyer's location. This is in spite of the fact that delivery and the transfer of risk and property occurred upon the delivery to the carrier. In this case the buyer's legitimate rejection based on the fact that the goods were nonconforming at the point of delivery, acts to retroactively block the transfer of property and risk.

A breach by the buyer only has effect on the transfer of risk if the seller withholds delivery or reacquires possession of the goods after delivery. The seller's authority to delay performance or actually intercept the goods after his performance is provided by section 43.

43 (1) Subject to this Act and of any Statute in that behalf, notwithstanding that the property in the goods may have passed to the buyer, the unpaid seller of goods, as such, has by implication of law

(a) a lien on the goods or right to retain them for the price while he is in possession of them;

(b) in case of the insolvency of the buyer, a right of stopping the goods in transit after he has parted with the possession of them; and

(c) a right of resale as limited by this Act.
(2) Where the property in goods has not passed to the buyer, the unpaid seller has, in addition to his other remedies, a right of withholding delivery similar to and coextensive with his rights of lien and stoppage in transit.

The delay caused by the seller's withholding or repossession would be the responsibility of the buyer and thus according to section 25, the goods would be at the buyer's risk during the whole period. Presumably, the buyer would bear the risk for the goods in the seller's possession until the seller abandoned the intention to transfer the goods to the buyer either by selling them to another buyer or by assimilating them into his inventory.

51 (1) Subject to this section, a contract of sale is not rescinded by the mere exercise by an unpaid seller of his right of lien, or retention or stoppage in transit.

(2) When an unpaid seller who has exercised his right of lien, or retention or stoppage in transit, resells the goods, the buyer acquires a good title to it as against the original buyer.

(3) Where the goods are of a perishable nature, or where the unpaid seller gives notice to the buyer of his intention to resell, and the buyer does not within a reasonable time pay or tender the price, the unpaid seller may resell the goods and recover from the original buyer damages for any loss occasioned by his breach of contract.

(4) Where the seller expressly reserves a right of resale in case the buyer should make default, and on the buyer making default resells the goods, the original contract of sale is thereby rescinded, but without prejudice to any claim the seller may have for damages.

153. The Sale of Goods Act, s. 25
a) Internally Caused Damage

The category of risk of deterioration precipitated by internal causes is not specifically mentioned in the Sale of Goods Act. Instead, the rules have been developed by the courts using as a starting point the implied warranty sections of the statute.

There are two implied warranties as to the quality of the goods, namely the warranties of merchantability and fitness for purpose. They are set out in section 18:

18. Subject to this Act and any statute in that behalf, there is no implied warranty or condition as to the quality or fitness for any particular purpose of goods supplied under a contract of sale, except as follows:

(a) where the buyer, expressly or by implication, makes known to the seller the particular purpose for which the goods are required, so as to show that the buyer relies on the seller's skill or judgment, and the goods are of a description which it is in the course of the seller's business to supply, whether he is the manufacturer or not, there is an implied condition that the goods are reasonably fit for such purpose; except that in the case of a contract for the sale of a specified article under its patent or other trade name, there is no implied condition as to its fitness for any particular purpose;

(b) where goods are bought by description from a seller who deals in goods of that description, whether he is the manufacturer or not, there is an implied condition that the goods shall be of merchantable quality; but if the buyer has examined the goods there is no implied condition as regards defects which such examination ought to have revealed;

(c) an implied warranty or condition as to quality or fitness for a particular purpose may be annexed by the usage of trade; and
(d) an express warranty or condition does not negative a warranty or condition implied by this Act unless inconsistent with it.

Interestingly, neither warranty addresses quantity of the goods. Presumably the drafters of the statute assumed that quantity is always a conformity issue. However, it is possible that goods could shrink during transit even though they were of the right quantity at the point of delivery where conformity is judged.

5. INCOTERMS

INCOTERMS provide a means of contracting out of the default provisions of the Sale of Goods Act. INCOTERMS are the creation of the International Chamber of Commerce.\textsuperscript{154} They represent nine trade terms used in international trade. Their purpose is to standardize and clarify the responsibilities of the seller and the buyer in transferring goods.\textsuperscript{155}

INCOTERMS cover the whole spectrum of seller responsibility for delivery from a simple sale, through sale and delivery to a sale and destination contract. They are predominant in international trade and as well are frequently used in domestic trade.\textsuperscript{156}

\begin{itemize}
\item \textsuperscript{154} International Chamber of Commerce. \textit{International Rules for the Interpretation of Trade Terms}. Incoterms (1980).
\item \textsuperscript{155} Schmitthoff, \textit{supra}, note 4, pp. 102-103.
\item \textsuperscript{156} Sassoon, \textit{supra}, note 1, p. 8.
\end{itemize}
Private international law is domestic law which determines what law will apply in a case which has an international element. International elements could include such items as the location of the buyer or seller in another jurisdiction or the fact that the goods were damaged in another province or country. For sale of goods cases the default term in the law is that contract shall be governed by the law which has the closest connection to the contract.\textsuperscript{157} Generally, courts hold that in the absence of a specific choice of law in the contract, the law of the seller's jurisdiction will apply.\textsuperscript{158}

6. Third Party Limitation of Liability

The rules for limitation of third party liability are contained in domestic law. Frequently these rules have international origins. For example, for international air cargo, the rules are governed by the International Convention on Air Transportation scheduled to the \textit{Carriage by Air Act}.\textsuperscript{159} For goods transported out of Canada by water the rules are based on the Hague Rules scheduled to the \textit{Carriage of Goods by Water Act}.\textsuperscript{160} Since the bulk of international trade is

\textsuperscript{157} Ibid.
\textsuperscript{158} Ibid. p. 9.
\textsuperscript{159} R.S.C. 1970, c. 14.
\textsuperscript{160} R.S.C. 1970, c. 15.
carried by water, the Hague Rules have important effects on the allocation of risk in sales.\textsuperscript{161}

The two areas of greatest impact on risk allocation are the limitations on the categories of carrier liability and the per package value limitation in the event the carrier is liable. Carrier liability is essentially limited to failure to exercise due diligence in making the ship seaworthy (art III, s1) and to properly stow the goods on board the vessel (art III, s2). The per-package limitation rule holds that in the event of carrier liability, the carrier's liability is limited to $500.00 (Canadian) per package unless the nature of the goods and their higher value is specified prior to shipment most commonly in the contract of affraightment (art III, s 5).

The extent to which the Hague Rule limitation of liability extends to non-carriers such as stevedores and warehouseman is dependent upon the wording in the contract of affraightment. The default rules do not provide for their protection.

E. Types of Risk

Risk, with reference to goods in transit, refers to any change to the goods occurring in transit which diminishes the value of the goods to their recipient. The buyer being the recipient in the normal case would recognize that the goods

\textsuperscript{161}. See below.
have been subject to a transit risk by comparing the delivered goods against the contract description.

In many cases distinguishing between the manifestation of risk (i.e., damaged goods) and nonconformity will be difficult as the definitions of the two are overlapping. That is, in the event that nonconforming goods arrive the buyer may assume that the goods were never conforming in the first place.

Likewise, if the goods do not arrive at all, the buyer may assume that they were never delivered to the carrier. In the situation where the seller retakes possession of the goods after they experienced the transit environment, it will be obvious to the seller that a change in the goods is the result of a transit risk.

There are three categories of causes of risk to goods. The first is that the goods will be subject to an abnormal transit. The second is that the goods will be shipped on an inappropriate means of transportation or that the means of transportation may be appropriate but that the arrangements were not appropriate considering the nature of the goods. The third is that due to an insufficiency of durability the goods cannot survive a properly arranged normal transit. In the often complex world of transportation of goods it is difficult to distinguish between the durability factors of goods and the quality of the events of transit. In fact, in many cases factors in all three categories interact to become the cause or causes of the damage.
1. Risk of an Abnormal Transit

a) Normal versus Abnormal Transit

The vast majority of transits occur without incident. However, even in the normal case goods deteriorate as a natural consequence of the voyage. Packaging and inherent durability of the goods are factors which tend to minimize the expected bumps and jars expected in every transit.

Abnormal transits are those where something unexpected occurs. For example, goods may be subject to water damage if hatches are not properly sealed or the vessel springs a leak. Goods may be dropped over the side loading or unloading.

b) Third Party Liability

There is only one category of event which allows for recovery against the carrier for damage to cargo. That is damage resulting from a failure of due diligence on the part of the owner or crew of the vessel in the stowage or preparation of the vessel for the voyage.¹⁶²

¹⁶². This is set out in Article III paragraphs 1 and 2 and Article IV paragraph 1 of the Carriage of Goods by Water Act, supra, note 22.

Article III

1. The carrier shall be bound, before and at the beginning of the voyage, to exercise due diligence to,

(a) make the ship seaworthy;

(b) properly man, equip, and supply the ship;
Even in the event that absence of due diligence is established, the per-package limitation rule limits recovery to five hundred Canadian dollars unless the parties contract otherwise.

All other events on board the vessel do not give rise to third party liability. This means that the vast majority of events which could give rise to a claim for damages in transit are not actionable against the carrier.

2. Risk of an Inappropriate Arrangement of Transit

a) Means and Stowage

The party responsible for arranging the means of transit must choose not only the type of transit but also how the goods are to be stowed on the vessel if the choice is by sea.

(c) make the holds, refrigerating and cool chambers, and all other parts of the ship in which goods are carried, fit and safe for their reception, carriage and preservation.

2. Subject to the provisions of Article IV, the carrier shall properly and carefully load, handle, stow, carry, keep, care for and discharge the goods carried.

Article IV

1. Neither the carrier nor the ship shall be liable for loss or damage arising or resulting from unseaworthiness unless caused by want of due diligence on the part of the carrier to make the ship seaworthy, and to secure that the ship is properly manned, equipped and supplied, and to make the holds, refrigerating and cool chambers and all other parts of the ship in which goods are carried fit and safe for their reception, carriage and preservation in accordance with the provisions of paragraph 1 of Article III. Whenever loss or damage has resulted from unseaworthiness, the burden of proving the exercise of due diligence shall be on the carrier or other person claiming exemption under this section.
The packaging of the goods, as well as their degree of durability, affect both the choice of the type of transport and whether the goods can withstand inferior stowage.

Factors such as the speed of the vessel, the route it will follow, its ability to withstand expected weather and its capacity to properly stow the goods ought to be considered. Arranging for proper stowage of the goods is critical as goods stowed on deck incur no carrier liability for damage done during the transit.\(^\text{163}\)

Obviously, the type of transport chosen for the transit is critical to its success.

b) Proper Valuation

Another factor in the appropriate arrangement of the means of transport is the proper valuation of the goods for purposes of the Hague Rule per-package value limitation.\(^\text{164}\) If the party arranging transport does not specify the proper valuation of the goods in the contract of affraightment then, even if the carrier commits an actionable wrong, the person bearing the risk of the voyage cannot recover more than a nominal amount.

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\(^\text{163}\) Ibid, Art. I, s. (c).

\(^\text{164}\) Ibid, Art. IV, s. 5.
3. Risk that the Goods Lack Sufficient Durability to Withstand a Normal Transit

In addition to bumps and jars, most goods will deteriorate a certain amount in transit due to internal causes. Perishables ripen and age. Nonperishables are affected by the changing environmental conditions experienced during the transit. The producer of the goods may have an opportunity to increase durability by processes of manufacture and/or packaging.

The required amount of durability interacts with the mode of transport selected. That is, if the seller is aware of or is responsible for the selection of a difficult carriage, he may be able to build in sufficient durability to withstand the trip or alternatively package sufficiently to ensure survival. Claims against water carriers cannot be successful if the cause of the deterioration is inherent to the goods or their packaging.

Durability and packaging are interrelated. Fragile goods require extra packaging while sturdy goods do not require as much.
A. Experimental Question

This analysis will examine whether the Sale of Goods Act presents an efficient allocation of risk to goods during transit. The analysis will review the risks occurring during transit in relation to the effect on the behavior of the parties. The analysis will address the effects of the rules on clarity and conformity to common expectation, and reduction of avoidable losses.

To allow for conclusions based on the effect of the inefficiency of the Sale of Goods Act, an optimally efficient model will be created for comparison. An optimally efficient model allocates risks to the party best able to deal with them. Such an allocation minimizes the effect of the risks on the parties' behavior.\textsuperscript{165}

The risks discussed in the previous chapter were grouped into the three categories. The following analysis will follow that categorization.

\textsuperscript{165} Notes, "Risk of Loss in Commercial Transactions: Efficiency Thrown Into the Breach" (1979), 65 Virginia Law Review 557, p. 560.
B. Assumptions

To simplify the environment for the purposes of analysis only sale and arrangement of delivery contracts will be considered. The reason that this type of sale was selected is twofold. First, it is a common form of sale when goods travel long distances. Thus, it presents a realistic testing ground for an efficiency evaluation. Second, the sale and arrangement of delivery contract presents a relatively complicated sale scenario. This provides the analysis with a number of relevant factors with which to test the efficiency of the rules.

This thesis will assume that the goods will at some point travel by ocean transport. The reason for this assumption is also twofold. The first is that ocean transport is a common means of transit for many goods traded in British Columbia. Therefore, the inclusion of ocean transport is realistic. The second is that the rules which govern the liability of ocean carriers are biased against the shippers of goods. Thus, they present a harsh backdrop against which the effects of risk rules have greater clarity.

In the model, we will make the assumption that damage is preventable on the margin. This assumption implies another assumption. That is, when responsibility for factors which

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167. See op.cit. p. .
have a causal connection to the risked damage are allocated according to the parties' respective control over them, the party with the best chance of preventing the damage at the least cost will have an incentive to do so.

A reduction on the margin implies that only a certain amount of damage can be economically controlled. This subset is composed of damage which can be eliminated by the parties' exercise of control costing less than the return. For the parties to do otherwise implies a motivation to not act in their rational best interests.

C. Risk Factors

The parties have a limited capacity to reduce the financial loss resulting from the risks of transit. Of course, the limiting factor is economics. The cost of eliminating some risks exceeds the value gained by the exercise. A good example is what the Sale of Goods Act calls necessarily incidental deterioration which by definition is the predicted deterioration which cannot be economically eliminated.

Elements of sales determine the incidents of damage. These elements are the method and arrangement of carriage, the type of goods and their preparation for the transit. Additionally, the control of damage once it has occurred is dependent upon mitigation and the availability and efficiency of a remedy.
1. Distance, Route and Time of Year

The distance the goods must travel, the route taken and the season when the goods are being transported have a bearing on anticipated damage. For example, one expects more damage to occur during a long sea voyage in the north Atlantic in midwinter than trucking goods a short distance within British Columbia during the month of July.

To some extent both parties control distance, route and time of year. The buyer seeks out a specific seller knowing that any goods will have to travel over a certain route to get to his location. The buyer also selects the time of year for the transit. For example, a purchase order made in October involving a four month manufacturing time means that the goods will be delivered in midwinter.

The seller may have some control over the route the goods will take to get to the buyer's location. When the seller makes the transit arrangements with the carrier there may be options over routing. The choices may be between direct and indirect routes. The direct routes may be more expensive. However, this is a minor control as the type of goods and the arrangements made between the parties as to the cost of transportation will to a large part determine routing.

2. Means of Transportation

In spite of the importance of the selection of the means of transportation, neither party has exclusive control. The
means of transportation is generally determined by the type of goods being transported and the distance of the transport. For example, coal requires a very different type of transport than does fruit. Short distances over land may be conveniently completed by truck. Longer distances may require rail or ocean transport.

The parties can vary the means of transportation to a minor extent. However, the available range of variation is determined by the economics of the exchange. That is, the parties would not agree to increase the costs of transportation beyond the point where it exceeded the additional benefit gained.

3. Class of Vessel

The selection of a specific class of vessel within the transport group is also important. As one might expect, a modern liner plying the North Atlantic would occasion less externally caused damage than would a pre-World War II vintage tramp steamer. However, greater security means greater cost and thus the two are frequently traded off.

The seller has a limited control over the selection of the class of vessel. The seller's familiarity with the goods being sold provides him with knowledge regarding their specific fragility and the risks occasioned by transport. This knowledge ought to be revealed during the negotiation over the cost of the product and the costs of transportation.
In addition, since the seller arranges the transport he may have the option to contract with a carrier using a better class of vessel.

The seller's ability to effect the selection of class of vessel is limited by the buyer's willingness to pay the additional costs of transport. The buyer's control over the costs of transport implies a joint control over this factor.

4. Vessels Within Class

Within a class of vessel some vessels have better records than others in the amount of damage which occurs during a normal voyage. Stevedores and crews may be provided greater incentive and training by the transport company to improve performance and thus minimize the inevitable bumps and scrapes that goods are subjected to during loading and unloading. The incentives and training may also lead to a reduction in the incidents of negligence causing damage to the goods.

The navigator and master may be encouraged to plot and steer a course through safer waters. This means that the voyage may be more expensive measured in time and fuel, but it would reduce the wear and tear on the goods and the risk of their loss during the trip.

To the extent that the seller's choice of vessel within the class is not limited by the buyer's unwillingness to pay for superior service, the seller controls the choice of vessel. The seller's knowledge of the goods coupled with his
experience in transporting goods out of local ports provides him with an ability to select the vessel with the best loss prevention record available. In addition, the seller's responsibility to arrange the shipment puts him in direct control of the decision making process.

5. Method of Stowage

The method of stowage on board the vessel is another factor which may determine the level of damage during a transit. The location and condition of the stowage has a direct bearing on the expected risks to the goods.

Goods stowed on deck are more likely to deteriorate than goods safely placed in a stowage compartment. Naturally, deck stowage is less expensive than the alternatives below deck.

There are a variety of arrangements of below deck stowage. Each possesses a cost/benefit in relation to the expected risks. The quality of ventilation and refrigeration available in the stowage compartment may have an impact on the goods. This is especially true of perishables. The costs of stowage in special compartments are usually greater than in general stowage.

The actual placement of the goods has an impact. For example, goods on the bottom of piles have a greater likelihood of being crushed than do goods at the top.
Since the seller has the responsibility to arrange the carriage, he ought to be responsible for the type of stowage. However, the buyer may be unwilling to pay for superior stowage if the return does not justify the expenditure.

6. Valuation

Valuation under the Carriage By Water Act has little direct impact on anticipated damage. The reason for this is that the carrier's responsibility must be based on showing at a minimum some negligence. Negligence is always unexpected. However, since a realistic valuation of the goods makes the carrier an insurer against his own negligence, a realistic valuation may encourage the carrier to exercise greater care over the goods. This may reduce the likelihood of any damage occurring during transit.

The seller ought to be responsible for valuation since he makes the contract with the carrier. A realistic valuation raises the costs of the carriage. Hence, this cost may be justified simply to provide an indirect control on anticipated damage. Although, the buyer may be unwilling to pay the additional carriage costs.

7. Packaging and Durability

The level of packaging and inherent durability of the goods has an impact on damage. The level of damage which occurs during a voyage may be decreased by improvements in the level of packaging and durability.
The seller has exclusive control of the goods during their preparation for transit. Thus, the seller has the only opportunity to provide sufficient packaging and durability to ensure a transit free of any type of damage.

However, the cost of additional packaging and durability which would eliminate or reduce anticipated damage adds to the cost of the goods. The buyer may be unwilling to pay for protection that costs more than it is guaranteed to return in reduction of damage.

8. Inspection and Mitigation

The buyer is the only party present at the end of the transit. Thus, he has the exclusive opportunity to inspect the goods and take whatever action is necessary to salvage them.

This provides the buyer with an ability to determine if the carrier has been at fault for any damage to the goods. The deterrent of inspection may provide the carrier with incentive to improve its overall performance which would presumably reduce the level of damage.

In addition, if the goods have become unsuited for their original purpose due to damage suffered during the voyage, the buyer is in the best position to mitigate the loss. That is, the buyer being in the business of buying the specific goods for resale or further manufacture is in the best position to sell goods which are below the standard he requires.
Moreover, the buyer presumably has local knowledge regarding markets in his area and thus is better suited to resell damaged goods.

9. Remedy

Closely associated with the physical positioning of the buyer at the end of the transit is the fact that he has the best opportunity to seek a remedy against the carrier. It may be very difficult for the seller to institute a law suit against a carrier due to problems of jurisdiction and service of process. The buyer's advantage is that the carrier and the damaged goods are in the same place at the same time.

Moreover, under many domestic maritime law regimes, the owner of goods has a right to lien an offending vessel for damage done to goods during transit. As this type of procedure is facilitated by immediate action and a high level of supervision, presence at the point of delivery is very important.

10. Summary of Risk Factors
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CHAPTER FIVE

ANTICIPATED DAMAGE

A. The Optimal Model

The parties cannot insure against anticipated damage due to the fact that its occurrence is by definition a certainty. The concept of insurance is only valid as long as the event is a probability. Thus, the parties' capacity to self insure or to obtain third party insurance is not relevant.

Since the occurrence of the risk cannot be completely controlled, the only efficient way to deal with risk is to lower the incidence of its occurrence and to reduce its impact when it does occur. This is achieved by making parties responsible for factors under their exclusive control. This provides an incentive to the parties to act in ways which decrease the occurrence and impact of the risk.

1. Decreasing Risk of Occurrence

There are two sets of factors which bear on decreasing the occurrence of the risk. The first set deals with reducing the exposure of the goods to hazardous conditions. This set includes the factors of distance, time of year, class of vessel, durability, packaging, specific carrier, stowage and

valuation. The second set deals with stimulating the market place to discriminate against poor performing carriers. This set is composed of the specific carrier factor.

Distance, routes and time of year are factors which have some influence on the occurrence of anticipated damage. To the extent of their influence, the buyer's decisions of when and from whom to purchase goods have an impact on the risk. However, if the buyer is saddled with the responsibility for the effects of these decisions his costs will vary on a seasonal basis and with the location of the seller.

The consequence of this is that buyers in general will be deterred from purchasing goods for delivery over long distances and during the winter months. In sales involving long distance carriage, the buyer is already saddled with the increased costs of transportation. Adding the risk of anticipated damage provides an even greater disincentive.

Packaging and durability are factors which have the theoretical capacity to eliminate the risk of anticipated deterioration. However, as indicated above, these factors are jointly controlled through the process of cost sharing. That is, any increase in the cost to the seller of packaging or durability is passed on to the buyer. If he refuses to pay for the added protection, the seller obviously will not provide it. Hence, an allocation of responsibility because of these factors will not lead to a more efficient outcome regarding anticipated deterioration.
The factors of class of carrier and specific carrier within the class bear directly on decreasing the risk of anticipated deterioration. The former factor is jointly controlled and thus suffers from a problem discussed above. That is, the buyer must agree on an increase in the cost of transportation before the seller will be willing to purchase a higher quality carrier. Hence, to allocate responsibility for anticipated deterioration based on this factor would be to no avail.

The choice of the specific carrier is another matter. Within a given cost structure a number of carriers are available for hire. The seller's choice of carrier may based on a number of criteria including historical relationship, promotion or advertising. By making the seller responsible for the risk of anticipated deterioration the seller will be encouraged to base the choice on the reduction of his risk. Thus, vessels with records of high incidents of damage to goods will be weeded out of the industry.

The final factors in this category of stowage and valuation bear on the prevention of anticipated deterioration as well. The seller arranges stowage and valuation as part of his arrangement of transport. An increase in the quality of stowage or valuation will entail an increase in the cost of shipment. Since the buyer is responsible for the cost of carriage, the seller cannot purchase an increase in quality without the concurrence of the buyer.
2. Decreasing Consequence of the Damage

The consequences of the damage may be minimized by fast action on the part of one or both of the parties. First, if it is economically possible the damage must be stopped if continuing and repaired. Second, the goods ought to be sold at the highest value in the circumstances.

The buyer's position at the end of transit puts him in the most appropriate position to effect both goals. It would be impossible for the seller to duplicate the buyer's advantage by maintaining a presence at the location of each of his buyers.

The buyer's exclusive opportunity to inspect the goods upon their arrival provides the opportunity for immediate action to prevent further damage to the goods. Water damaged goods may be salvaged by cleaning and drying. Ripening perishables may be refrigerated.

The buyer's superior knowledge of repair facilities and markets at his location provides the buyer with the opportunity to salvage damaged goods at their best value. Duplication by the seller would require travel to the buyer's location and time to become acquainted with local facilities.

Without the responsibility for immediate action the buyer would not intercede to protect the goods. The buyer would either negotiate with the seller regarding consideration for
his services or back off from the sale to seek a legal remedy. In either case the goods would continue to deteriorate.

3. Division of the Risk

The risk of anticipated deterioration ought to be divided between the parties. There are four reasons for this.

The first is that there are a great number of risk factors which are under both parties' control. They are class of vessel, stowage, valuation, packaging and durability. If the total risk was passed on to one party or the other, the factors under joint control may receive unequal treatment.

The second is that both parties have exclusive control over factors which influence the occurrence and severity of the risk. The buyer controls distance, time of year, routing, inspection and mitigation. The seller controls the specific carrier. Making one party solely responsible for the risk decreases the incentive to the other of exercising care over the risk factors under their control.

The third is if the buyer is saddled with the risk buyers will be provided an incentive which may distort purchasing behavior. Buyers would be encouraged to purchase locally. If a local purchase is not possible, buyers would tend to purchase on a seasonal basis. Neither behavior is in the interest of universal and continuous trade.
The fourth reason for a division of risk is based on the fact that in most cases the carrier will not be held liable for anticipated damage. Thus, the only method of internalizing the cost of a lackluster performance on the part of the carrier is to make the selection process dependent upon a record of low levels of this type of damage. This is only accomplished by making the seller bear some risk over the hiring of the carrier.

A division of the risk may be effected by two devices. The first is to require only an approximate performance from the seller. That is, rather than require that the goods perfectly conform at the conclusion of the transit, the optimal model ought to require only general fitness for the purpose for which they were intended. The result of requiring a lower level of performance on the part of the seller takes into account the fact that the goods will suffer some deterioration in transit.

The buyer knows at the outset that the goods when they arrive at his location will only approximate the contract description. Thus, the buyer will provide a description which requires a sufficiently high level of performance that even an approximation will serve his needs.

The second device is to make the seller responsible for any anticipated deterioration which makes the goods fail to conform to their approximate description. Coupled with this is to make the buyer's right to receive approximately
conforming goods a damage right instead of a property right. If the buyer is provided the right to reject goods that suffered from anticipated deterioration beyond an approximate performance, then the buyer's capacity as the superior mitigator would not be taken into account.

B. The Sale of Goods Act Model

The Sale of Goods Act and Common Law divide necessarily incidental deterioration into two categories. The first is defined in section 37 and includes deterioration which can be attributed to the events of the transit itself. The second is defined as deterioration which results from an internal cause.

This latter category is highlighted in the case of Mash, and Murrell Ltd. v. Joseph I. Emanuel Ltd.169 Diplock J. defined the rule that anticipated deterioration due to an internal cause is the responsibility of the seller:

...there is an implied warranty not merely that they shall be merchantable at the time they are put on the vessel, but that they shall be in such a state that they can endure the normal journey and be in a merchantable condition upon arrival.170

Although a sales contract requires perfect conformity, Mr. Justice Diplock did not require that standard of the defendants Joseph I. Emanuel Ltd. Instead, His Lordship

169. [1961] 1 W.W.R. 862, (Q.B. The decision was reversed on factual grounds in the Court of Appeal; [1962] 1 All E. R. 770)

required only merchantability. Merchantability requires that the goods be of a quality capable of sale under the description.171

In contrast, the former category, deterioration which can be attributed to the events of the transit itself, is the responsibility of the buyer. This rule is illustrated by the old but still authoritative case of Bull v. Robinson.172 Forty years before the Sale of Goods Act was enacted the Exchequer Court in Bull v. Robinson decided that even when the seller takes the responsibility for risk during transit, the buyer bears the responsibility for anticipated deterioration occurring during a normal transit due to the course of transit itself.

The case involved hoop iron which rusted to a unmerchantable state during a canal voyage from Staffordshire to Liverpool during winter. The Exchequer court found as a fact that no iron could survive a winter trip on the canals without rusting to the same extent that this iron did. The Court held that the seller could not be expected to do the impossible and deliver conforming hoop iron by canal in midwinter.173

172. (1854), 10 Exchequer Reports 341 (Exchequer Court)
173. Ibid, p. 344.
The Court's rational was based on the buyer's knowledge of the risks when he contracted. The Court made the assumption that the buyer ought to have been aware of the probable state of the iron after such a transit. Apparently this awareness should have come from the buyer's experience in travelling from his home in Liverpool all the way to Staffordshire to buy the goods.

Further, the Court made this assumption ignoring the seller's knowledge of the rigors of the trip and in spite of the fact that the seller had agreed to accept the risks of transit. Presumably the buyer negotiated with the seller and paid for the privilege of receiving conforming goods in Liverpool.

In summary, it is clear that decisions under the Sale of Goods Act requires a determination of the cause of the damage in order to allocate responsibility. According to Mash and Murrell anticipated damage due to internal causes is the responsibility of the seller. Whereas, according to the rule stated in Bull v. Robinson, externally caused deterioration is the responsibility of the buyer.

174. Ibid.
C. Comparison of the Sale of Goods Act and The Optimal Models

1. General Comparison

Interestingly, the Mash & Murrell formulation for internally caused deterioration is identical to the optimal model. That is, the seller is responsible for all damage which detracts from the goods merchantability or approximate conformity except in situations where the damage results from a cause external to the goods. The remedy for breach of warranty is damages instead of rejection. The buyer is responsible for the difference between the perfect state (conforming state) and the approximate state (merchantable state).

The difference between the Sale of Goods Act and the optimal model concerns the existence of the causal distinction in the former. In the Bull situation the buyer is responsible for anticipated damage caused by the carriage. Under this formulation each and every time a court decides a deterioration case, a distinction is made based on the cause of the damage.

Making this distinction is very difficult. For example, in the Bull decision, the Exchequer Court could have easily determined that the iron rusted due to internal instead of external causes. Thus, on that basis the seller would have been responsible for the rusting of the iron.
2. Legal Clarity and Conformity to Common Expectation

The risk rule formulation as illustrated in the Bull decision lacks legal clarity. In addition, it does not correspond to the common expectation.

The allocation of responsibility based on causation complicates the rule. It is very difficult to distinguish between deterioration caused by the transit and other causes of deterioration. Generally, anticipated deterioration is caused by an interaction of a number of factors. Some of these factors are related to the carriage and some are related to the goods. For example, a rough voyage and special fragility may interact with an inferior arrangement of carriage to cause damage to the goods. Thus, attributing responsibility to any one cause is very difficult. Moreover, to do so in some cases may be impossible.

The exercise of attempting to predict the potential causes of anticipated deterioration and account for them ex ante greatly increases the uncertainty of a contract. In addition, isolating causes of damage after a loss has been discovered increases the costs of resolving disputes ex post.

Another component of the clarity issue is that the Sale of Goods Act rule forces the buyer to engage in costly research in order to predetermine the exposure of good to anticipated damage. In the Bull case for example, the buyer obviously thought that the hoop iron would arrive in a usable
form. Otherwise he would never have purchased it. The seller possessing a greater awareness of his product may have known that the iron would not survive the trip on the canals. However, he apparently was under no duty to disclose this to the buyer.

From the point of view of businessmen the rule in Bull comes as a bit of a surprise. Basing responsibility on causal distinctions may seem arbitrary to traders unacquainted with the law. To the businessman causal distinctions make little sense. They do not assist in the prediction of risks ex ante nor to the resolution of disputes ex post.

The fact that the buyer ought to bear the risk of anticipated damage when the seller knows more about the product and arranges the transit is also surprising to the businessman. First, common business sense dictates that the person who possesses the best ability to perform ought to bear the risk of nonperformance. The seller has greater familiarity with the product and arranges the transport. Thus, he appears to have a superior ability to prevent losses due to causes related to the transport. Second, businessmen count on the proper working of a competitive market. Rules which enhance the operation of the market gain their highest acceptance. Relieving the seller of responsibility for his choice of transit company detracts from the optimal operation of the market. Thus such a rule will find little acceptance.
3. Reduction of Avoidable Losses

The rule in Bull does not promote a reduction of avoidable losses. Since the seller is not responsible for anticipated deterioration caused by the transit he has no incentive to hire carriers and arrange stowage to reduce its risk of occurrence. Nor is he provided incentive to package and install durability in such a way as to reduce the occurrence of anticipated damage.

Moreover, the uncertainty as to responsibility due to the causal distinction dilutes the incentive provided by the rule in Marsh & Murrell. That is, the seller may be less inclined to properly prepare the goods if he foresees confusion over the responsibility for damage.
CHAPTER SIX

UNANTICIPATED THIRD PARTY DAMAGE

A. The Optimal Model

The risk of third party damage is a risk of harm resulting from actions of people other than the parties to the sale. Although the buyer and the seller cannot economically eliminate this risk they can to some extent decrease its severity.

The first priority of the optimal model is the control of the offending parties' actions. This is accomplished by ensuring that behavior which has a negative effect on the goods while in transit is internalized by the responsible party. The model's second priority is to minimize the consequences of the harm once the goods have been damaged.

1. Internalization of the Damage

The parties possess different capacities to enforce internalization of harm by the carrier. All the capacities should to be exercised as long as they are nonconflicting.

The seller has control over two factors which internalize the carrier's harmful activities. They are the capacity to discriminate in the hire of carriers and require that a higher value for the goods be reflected in the shipping documents.

The buyer has superior control over one very important factor. That is, the capacity to sue the carrier for damages.

The seller's capacity to discriminate in the hire of a carrier has both specific and general effects. The specific effect is that the seller has the capacity to hire vessels with good records over those which do not possess good records. The obvious consequence is that the goods will receive a higher standard of care during the transit. This will reduce the probability of harm.

The general effect concerns the seller's capacity to effect the carrier market. The seller's choice of carrier provide incentive to conform to his selection criteria. If he selects only vessels with superior performances, those vessels will ultimately drive the poorly performing vessels out of business.

The seller's actions in placing a high value on the goods in the shipping documents has only limited effect on carrier behavior. A valuation above the statutory presumption makes the carrier an insurer for the full value of the goods. However, due to the fact that the carrier is only liable for a small portion of any harm occurring during carriage, a high valuation only provides the incentive to make the vessel more seaworthy at the onset of the voyage and to improve care over the stowage of the goods.
The damage internalizing factor under the buyer's control is his capacity to obtain a legal remedy against the carrier. As this factor is controlled by both a proper valuation of the goods and the carrier committing specific acts or omissions, the remedy has a limited impact.

Naturally, both the seller and the buyer have the capacity to sue the carrier for damages. However, an enhanced ability means that it can be done with lower transaction costs and thus the marginal value of the lawsuit is enhanced. Enhanced ability to seek a remedy effects the general market by forcing inefficient companies out of business. This is achieved by making inefficient companies pay damage awards for losses occurring during transits. The resulting increase in insurance premiums has a negative effect on accident prone carriers.

The capacity of the parties to make the carrier bear the responsibility for harm to the goods may be grouped into two categories. The first category concerns both the general and specific effects of discriminating in the hire of the carriage. The second category concerns the ability of the parties to put pressure on the carrier to perform through the use of high valuation and accessible remedy.

Responsibility in the second category is shared by the parties. Additionally, efficiency requires that capacities in both categories be exercised to ensure internalization. The problem is finding a suitable mix of responsibility.
Both parties cannot simultaneously bear the risk of third party damage. Nor can this risk be broken down into components which can be shared by the parties according to their capacities. The alternative is to allocate the risk of a specific performance to either the buyer or the seller.

The seller's duties under the heading of arrangement of transport could be specifically defined as requiring a reasonable selection of vessel and the correct documentation of value for the goods to be shipped. The justification for this is the seller's ability to influence the market and to arrange reliable transport for the goods. Additionally, the seller can improve the efficacy of the remedy as a tool by properly evaluating the goods.

The buyer ought to be responsible for damage caused which is actionable against the carrier. The justification for this is the buyer's superior ability to effect a legal remedy.

2. Minimization of the Consequences of the Damage

A major factor controlled by the buyer is mitigation. The buyer's superior ability to mitigate damage weighs heavily in making him responsible for the minimization of the consequences of damage.

However, some of the factors bearing on the minimization of damage are controlled jointly by the parties, e.g., the factors of stowage, class of vessel, packaging and durability. If one party is assigned exclusive responsibility for
minimization of damage, the other's incentive to perform his share of the joint responsibility will be diminished.

The solution to the problem of allocating the residue of the risk is its division between the parties. The justification for this is that an exclusive assignment of the risk provides a disincentive to one or the other party for proper performance.

3. Dividing the Risk

A division of the risk between the parties could be based on one of two approaches. The first is to make each party absolutely responsible for the specific factors under their control. This approach assumes that all the risk is controlled by the factors outlined above. That is, there is no residual risk left to be allocated. The second is to assign a residual risk to one of the parties and require that the other party perform his responsibilities to either a variable or a fixed level.

The former approach has the advantage of eliminating the assignment of the residual risk of the transit. This means that issues such as the time of risk passing and contributing factors would be eliminated.

This approach is based on the assumption that all damage is caused by an actionable failure of performance by either the parties to the sale or the carrier. The problem with this proposition is that goods may suffer some casualty which is
beyond the control of either the buyer or the seller. For example, if the ocean vessel sinks with a total loss of the cargo and the sinking was not predictable by either the seller nor the buyer, neither party could be held responsible.

In this example the sole causal element which might be related to a risk factor controlled by a party would be the appropriate arrangement of transport. However, if this factor was assumed to control the relatively unpredictable events which occur during an ocean, the seller would be in effect the insurer of the goods during transit. This would make every sale and arrangement of delivery contract a sale and delivery.

The second approach requires two events. First, the approach requires an assignment of the residual risk to one party. Second, the other party ought to be responsible to perform to a predetermined standard. The residual assignment ought to be made to the party with the superior capacity to deal with a general unpredicted loss.

The buyer is probably the party who should bear the residual risk. There are two reasons for this. First, since most occurrences of damage and loss raise the issue of carrier liability, the buyer's superior capacity to bring an action against the carrier makes the delegation of this responsibility to him efficient. Second, in the event that the damage or loss is not actionable against the carrier, the buyer's superior mitigation capacity makes him the likely choice.
A number of specific risks ought to be assigned to the seller. The seller should have responsibility for factors under his control.

An important question concerns the level of required performance. Obviously, there are two possible levels, strict or absolute responsibility and a lesser standard based on tests such as a degree of foreseeability or custom.

Requiring absolute standards has the disadvantage of making each performance depend upon the circumstances of the individual case. In effect it would be making the seller strictly liable for damage resulting from a failure of one of the factors under his control. For example, for each shipment, the level of packaging and durability would have to depend upon information about the infinite number of potential risks to which the goods may be subject. This level of responsibility greatly increases the information costs of the seller. These costs must be passed on to the buyer and they may not add to the efficiency of the transaction.

The alternative to strict liability is to set limits on the seller's performance. The options for limits are that they can be set according to either fixed or determinable standards. A fixed standard could be gauged by reference to industrial practice or custom. Determinable standards might be set by reference to some degree of foreseeability.
A fixed standard has the advantage that it would be known throughout the industry. It could be readily established ex ante and its cost taken into account in the sale negotiations.

The principle disadvantage of a customary standard is that it may require a high degree of expertize for its ex ante determination. Moreover, customs change from area to area. The acquisition of the required expertize may increase the costs of entering into a sales transaction and thus its existence may discourage new entrants. A second disadvantage of the customary standard is that it may not prove adequate to protect the goods in every transit situation. That is, a customary standard may not account for particularly hazardous transits or normal transits with novel types of goods.

A standard based on some form of foreseeability has the advantage in most cases of providing superior protection for the goods while at the same time not placing an onerous burden on the seller. There are two options to the foreseeability standard, namely objective and subjective. Each has advantages and disadvantages.

The objective standard more closely approximates an industrial standard. That is, it requires the seller to perform to and the buyer to expect the general standard in the

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industry. The seller is responsible to protect against risks known by the average seller in the industry. Thus, it generally presents a similar economic profile as a customary standard with the exception that the performance may vary slightly to account for specific variables. This may increase the information costs of the transaction.

The subjective standard is dependent upon the knowledge of the specific seller. The seller is not required to acquire information about the specific risks of the intended transit nor is he required to possess any knowledge about his product's durability. The advantage of this standard is that it reduces the transit risk information costs of the transaction to zero. Further, it presents no bar to new entrants into the industry. The knowledge of each seller determines the standard for performance. Its disadvantage is that the standard would be difficult to determine ex ante and almost impossible to establish ex post. In addition, it may increase the information costs of buyers who may have to research the experience of a specific seller before entering into a transaction.

Regardless of the standard chosen by the optimal model, industrial practice eventually allows for the establishment of a custom recognized by common law. The objective standard would increase the speed of the process.

Each standard produces its own economic effect. Custom has the advantage of certainty and thus its use would reduce
transaction costs. The objective standard closely approximates the customary standard and provides the added advantage of reducing avoidable losses in unique cases. The subjective standard has the advantage of zero information costs for sellers but increases the information costs for buyers.

A reasonable solution to the choice between variable standards is to require the seller to perform to an objective standard. This is justified by the need to minimize the buyer's disadvantage by holding the residual risk. That is, by requiring a higher standard from the seller, the likelihood of loss falling into the residual risk of the buyer is decreased. Further, a higher standard for the seller has the advantage of decreasing the capacity to avoid losses. Finally, the fact that the objective standard is the familiar standard for duties in the common law world, businessmen in North America will be familiar with it.

B. The Sale of Goods Act Model

The allocation of risk for third party damage is covered by the Sale of Goods Act in sections 23, 25 and 37. The Act makes the passage of risk and property coincidental.\textsuperscript{177}

Neither property nor risk can pass until the seller completes his performance. The duty of performance requires the seller to identify the goods, prepare the goods for

\textsuperscript{177} s. 25.
delivery and give notice to the buyer of the completion of performance\textsuperscript{178}.

A remarkable feature of the Sale of Goods Act coverage of third party risk is that risk may pass to the buyer at different points in the transaction depending upon when the seller completes his performance. For example, if the goods are ascertained and prepared for delivery, risk passes upon notice being given to the buyer. This could occur while the goods are in the seller's warehouse or while in transit to the ocean carrier or it could occur when the goods are delivered to the ocean carrier.

The situation is further complicated by provisions in the Sale of Goods Act which subdivide risk based upon the category of goods involved, the type of transportation selected and its arrangement.

Passage of risk in specific goods may differ from that of unascertained goods. In certain circumstances the seller is not responsible for loss which occurs without fault even before risk has passed. Section 11 provides that if specific goods perish without the fault of the seller before risk passes to the buyer, the agreement is avoided.

This protection for the seller makes the distinction between specific goods and unascertained goods of critical importance.\textsuperscript{178} ss. 23 (3) and (4). The cost of insurance and the possibility of a bilateral insurance monopoly will deter buyers from entering the market.
importance to the passage of risk in a sale. The statute defines specific goods as "... goods identified and agreed on at the time a contract of sale is made."\(^{179}\) This implies that specific goods are those which existed at the time the contract was made. In effect, if the buyer agrees to purchase this type of goods, the seller's risk is limited to a responsibility to exercise reasonable care.

An inappropriate arrangement for the contract of carriage has the effect of making the seller responsible for all the risks of the voyage. It is possible for risk to pass to the buyer when the goods are still in the seller's warehouse and for the risk to return to the seller when the goods are loaded on board the vessel. In fact, in this type of situation the scope of the seller's risk may be higher while the goods are at sea than when the goods were safely in his warehouse.

In addition to arranging proper transport, the seller must give notice of pending ocean transit to the buyer. A failure to do so will cause the risk of the voyage to remain with the seller. As in the case above, this may represent not only a reversion of the risk but also an increased risk burden on the seller.

Any delay in delivery which causes damage to the goods is the responsibility of the party causing the delay regardless of who has the risk at that point in time. Delivery is

\(^{179}\) s. 23 (2).
defined as turning over possession of the goods. The Sale of Goods Act presumes that delivery to a carrier is delivery to the buyer.

Hence, if for some reason the goods are delayed in their transfer to the carrier, damage caused by the delay is the responsibility of the party at fault. The provision has little effect if the buyer is responsible for a delay in delivery as the risk would pass to him in any event. However, if the seller is at fault, risk might very well revert back to him if it has already passed.

Under the Sale of Goods Act the seller does not have a specific duty to package the goods and to provide necessary durability. If the contract is silent on packaging and durability, the seller will not be liable for their failure in regards to third party liability. Under the Sale of Goods Act the buyer is saddled with the necessity of making a separate contract with the seller for packaging and assuring specific protection against third party damage.

C. Comparison of the Sale of Goods Act and the Optimal Model

1. Generally

The most pronounced characteristic of the Sale of Goods Act allocation of the risk of third damage is its absence of certainty. On many occasions the parties are unaware of who bears the risk at given points in time. The timing of transfer of risk may depend on a number of factors.
The reason for the uncertainty in the Sale of Goods Act is the association of risk and property. Property unlike risk is a complex subject. The ownership of goods is dependent on a number of variables. Its passage during a sale is based on historic criteria such as the type and the physical state of the goods. Risk on the other hand is simply the responsibility for damage to the goods. Passage of risk ought to be based on the ability to protect the goods rather than ownership.

In the optimal model, risk from ownership of the goods. In fact ownership is not mentioned in the discussion on the model. Passage of risk is based on control over the factors which may cause damage, or once damage has occurred, its limitation.

2. Legal Clarity and Conformity to Common Expectation

The unnecessary complexity of the Sale of Goods Act rules makes the law unclear. Not only is the passage of risk dependent upon the nature of the goods and their state of readiness but it is possible that risk can flip flop back and forth between the parties. For example, if the sale involves ascertained goods which are prepared for delivery, risk passes upon notice being given to the buyer. If for some reason the seller is unable to turn the goods over on the delivery date, the risk reverts back to him until delivery is completed. After the goods are loaded on an ocean vessel the risk cannot pass until the seller notifies the buyer of the loading.
Hence, even after delivery, if the seller fails for some reason to notify the buyer, the risk may remain with him after the control of the goods has passes to a third party. Finally, if the arrangement of transport is not reasonable, the risk of the specific voyage reverts back to the seller until the buyer takes delivery of the goods in the port of destination.

Even after risk has finally passed to the buyer, there may be uncertainty as to the level of packaging and durability required by contract. Since the Sale of Goods Act is silent on the issue, the packaging and durability terms may have to be read into the agreement ex post to resolve disputes.

The uncertainty and variability causes confusion for both the buyer and the seller. It is advisable for both parties to maintain insurance coverage from the time the goods are identified until the risk has clearly and finally passed. The parties may not be certain of this until the goods are safely aboard the ocean carrier and the selection of the carrier is accepted by the buyer as reasonable.

The insurance costs, both in terms of acquisition and in terms of coverage, are higher due to the uncertainty. An insurer will require a great deal of detail in order to determine the risk to be covered. If the parties are to provide this information they must remain involved in the events of the sale until its conclusion. Additionally, to be safe a certain amount of excess insurance will be required by
the seller to cover the possibility that risk may revert back during the transit.

The potential for problems ex post is heightened by the fact of double insurance coverage. That is, with multiple the two or more insurance companies may be provided an opportunity to deny liability and point to each other as the appropriate source for relief.

The profitability of sales is reduced due to the high information requirements. Information costs are increased by the requirement that the parties more clearly define the type of goods involved in the transaction, the type of packaging and the amount of durability. Moreover, the seller's various notice requirements increase his need to manage the goods once they leave his warehouse.

Businessmen must find the complex nature of the Sale of Goods Act rules to be unusable. The criteria for the passage of risk is unfathomable to all but the expert legal advisers. The only solution open to businessmen is to contract out of the rules.

3. Reduction of Avoidable Losses

If the risk passes while the goods are in the possession of the seller, the buyer is saddled with the risk of goods which are not in his possession. Having no control, the buyer has no opportunity to protect the goods. Moreover, since he has no knowledge of the seller's physical plant and less
specific knowledge of the goods themselves, even if he had the opportunity to intervene and protect the goods, the buyer lacks the knowledge to do so.

The buyer's ability to self insure or acquire insurance at a reasonable price is hindered by his lack of knowledge about the specific risks facing the goods. The only economical alternative for the buyer is to purchase insurance from the seller. This option presents the difficulty of allowing the seller to create a bilateral monopoly.

Additionally, since risk to the goods may pass before their delivery to the buyer, the seller will have possession of the goods without responsibility of their safety. Thus, the seller will have less incentive to provide for protection of the goods.

The optimal model does not allow risk to pass before possession. Further, even after passage, the optimal model requires party performance according to control over packaging, provision of durability and arrangement of transit. Through this means, the party with the superior capacity possesses the duty to perform.
There are several reasons why a failure of packaging and durability is considered a risk of transit. The first is that from the buyer's perspective at the end of transit, a failure of durability or packaging is indistinguishable from the manifestation of any other risk. That is, when the goods arrive at the buyer's location in a damaged state, the buyer may be unable to distinguish a packaging failure from damage caused by a third party. Moreover, the inexperienced buyer may be unable to distinguish such a failure from anticipated damage.

A second reason is that in many cases failures of packaging and durability interact with other factors causing damage to the goods. In many cases the level of packaging and durability affects the amount of damage, and resolving disputes ex post may involve judging the adequacy of the packaging and durability.

A third reason is that, due to either the shipment of novel products or the shipment of existing products in novel ways, the seller may be unaware ex ante that his goods lack durability or packaging relative to the intended transit. The seller may be willing to take the "risk" that the goods will survive intact.
To some extent the costs associated with the level of durability and packaging are interactive with other costs of the transit. That is, the carrier may be willing to reduce the cost of its service if there is less chance of being held liable for damage. One way to ensure that the risk of damage is lowered is to provide superior packaging and/or durability. In addition, the buyer may be willing to pay more for goods that stand a better chance of arriving unharmed. Finally, insurance costs may be reduced to reflect a decrease in risk due to enhanced packaging and durability.

A. The Optimal Model

The seller is present during the period when the goods are being prepared for transit. This provides him with an opportunity to package the goods and provide the last touches to ensure their durability. Thus, he ought to be responsible to package and otherwise prepare the goods for the upcoming transit.

The alternative to seller responsibility for packaging is to require the buyer to maintain a presence at the seller's location. It is conceivable that in some cases the buyer may wish to be present when the goods are being made ready for shipment. However, to require him to be present in all cases will increase his costs of the transaction.

The seller's specific knowledge regarding the durability of the goods provides him with additional advantage in
packaging. The buyer's cost in duplicating the necessary knowledge will add to the already expensive arrangements of being present at the point of shipment.

Further, making the buyer responsible for packaging provides a disincentive to the seller for installing the economical maximum amount of durability to the goods. In such an arrangement the seller may be less inclined to expend the effort necessary to ensure optimal survivability.

The only disadvantage to the seller in being responsible for packaging and durability is having to deal with damaged goods at the buyer's location. This problem may be overcome by requiring the buyer to accept goods damaged during transit and having the seller compensate the buyer for the diminution of the value of the goods.

The buyer has the best opportunity to inspect the goods at the conclusion of the transit. He is located at the end of the transit and presumably has the knowledge and facility to properly inspect the goods. To require the seller to inspect the goods at the conclusion of the transit increases his costs by having to maintain a presence at every buyer's location.

In addition, the buyer is in the best position to mitigate any loss including loss occasioned by a failure of packaging or durability. The reason for this is that the buyer is in the business of acquiring that particular type of good for further manufacture or resale. Thus, he has
knowledge of the product and knowledge of local markets. Knowledge of the product provides an ability to remedy damage and to facilitate resale. The buyer's knowledge of local markets means he is able to obtain the best local price for damaged products. It would be significantly more expensive for the seller to travel to the buyer's location in order to remedy defects and to effect the disposal of the goods.

Thus, the seller ought to be responsible for packaging and providing durability. The remedy for breach of the duty ought to be damages rather rejection.

As noted in the discussion on risk factors, both parties have an affect on the level of packaging and durability. To review, there are two reasons for this. The first is that the buyer having some knowledge of the product negotiates a price which reflects the particular product's durability and ability to withstand the anticipated transit. The second is that after the goods have been selected, the parties usually negotiate the method of transportation and the type of packaging to be used. It is highly likely that in many cases the buyer relies on the seller's advice respecting the level of packaging required.

Thus, the discussion of the seller's responsibility for durability and packaging is framed by the joint control over the subject. Within the limits discussed above, there are two standards for measuring the seller's performance. The first is that performance could be measured by the physical state of
the goods upon their arrival at the buyer's location. The second is that the performance could be measured by an arbitrary standard unrelated to the eventual outcome of the transit.

The first standard provides an advantage to the buyer at the expense of the seller. In effect, the seller would be guaranteeing the safe arrival of the goods. The buyer would know in advance what state the goods would be in upon their arrival at his location. The ex post calculation of damages would be simple owing to the ease of measuring the difference between the goods that arrived and the goods described in the contract.

The disadvantage to the seller is that it would be very difficult ex ante to determine the required level of performance. Thus, the seller's costs could not be calculated until the goods actually arrived at the buyer's location. The cost occasioned by this uncertainty would be passed on to the buyer in the form of higher prices.

An arbitrary standard has the advantage of allowing a more accurate calculation of the required effort at the point of transacting the exchange. Whatever the standard, the seller would be able to more accurately estimate costs.

As in the discussion regarding third party risks, there are a number of available standards. Each possesses advantages and disadvantages.
A customary standard is the best defined standard. Buyers and sellers acquainted with the practice in the industry would find an industry wide standard easy to deal with. Both parties to an agreement could take the risks of damage and the cost of performance into account ex ante.

The only major disadvantage to a customary standard is that it increases the information cost to newcomers in the industry. That is, in order to operate in an environment which uses customary practices, knowledge of the standards must be acquired. This entails a cost to the newcomer and may discourage his entrance into the industry.

The objective standard has the advantage of requiring the seller to become acquainted with what the industry considers reasonable. The costs of packaging and durability would have to be calculated with reference to the expected rigors of the transit. The level of care taken of the goods would be judged according to the relative costs of the protection and the benefit provided to the goods.

The objective standard has the further advantage of equality of treatment between buyers and sellers regardless of their experience with the particular industry. Moreover, under Anglo-Canadian law, practices of long standing eventually become customary standards.

The subjective standard has the characteristic of passing the information costs associated with packaging and durability
from the seller to the buyer. That is, prior to agreeing to a sale and arrangement of delivery contract, buyers would have to investigate the level of knowledge possessed by the seller in order to determine the risks of internally caused damage.

Moreover, the subjective standard would not allow the buyer to predetermine the value of the goods at the conclusion of the transit. In addition, the buyer's remedy against the seller would be severely limited due to the convenience afforded the seller of acting to the standard of his personal knowledge.

Due to these points and the discussion earlier in this paper, it is clear that the objective test provides the superior standard. The costs for new entrants occasioned by the use of customary standards mitigates against their entry. The problems of uncertainty and the difficulty of effecting a remedy mitigates against the use of the subjective standard.

B. The Sale of Goods Act Model

The leading case of Mash, and Murrell Ltd. v. Joseph I. Emanuel Ltd.\(^{180}\) defines the seller's responsibility for deterioration due to internal causes. Mr. Justice Diplock stated the rule as follows:

\[^{180}\, [1961] 1 W.W.R. 862, (Q.B. The decision was reversed on factual grounds in the Court of Appeal; [1962] 1 All E. R. 770)\]
...there is an implied warranty not merely that they shall be merchantable at the time they are put on the vessel, but that they shall be in such a state that they can endure the normal journey and be in a merchantable condition upon arrival.\textsuperscript{181}

Mr. Justice Diplock found as a fact that the transit was normal.\textsuperscript{182} That is, nothing of consequence occurred during the voyage which might have damaged the goods. This was enough for His Lordship to find that the goods must not have been of merchantable quality when placed on board.\textsuperscript{183}

Interestingly, the Court of Appeal reversed Mr. Justice Diplock's decision on the finding that the hold was not properly ventilated and the potatoes may have deteriorated from that cause.\textsuperscript{184} Implicit in the decision of Lord Justice Pearson in the Court of Appeal was the reluctance to extend the warranty of merchantability to risk during transit. The warranty will only operate if all other possible causes for the damage have been eliminated.\textsuperscript{185}

To fit into the implied warranty of merchantability the buyer must show, in addition to an absence of all other causes, that the seller was a seller of goods of that description, that it was a sale by description and that the

\begin{footnotesize}
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\item[Ibid, p. 773.]
\item[Ibid, p. 780.]
\item[Ibid.]
\item[Ibid.]
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buyer did not have an opportunity to inspect the goods prior to shipment.\textsuperscript{186}

The warranty of fit for purpose sees limited service as a control of risk to goods in transit. If the buyer can show reasonable reliance on the seller's expertise in the preparation of the goods for transit, then the seller may be liable for damage occasioned by his failure.\textsuperscript{187} The level of performance required is that the goods be reasonably fit for the purpose for which they were intended. Thus strict conformity is not required.

The cases support the use of this warranty in dealing with preparation for delivery and packaging. The proof required, aside from reasonable reliance is that the goods deteriorated as a result of a specific failure on the part of the seller.\textsuperscript{188} Hence, the buyer must establish that the voyage was normal and that the cause of the damage was some failure of preparation.

An illustrative case, \textit{George Wills & Sons, Ltd. v. Thomas Brown & Sons et al.}\textsuperscript{189} involved a sale and arrangement of delivery of herring from England to Australia. The buyers

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\textsuperscript{188} Ibid.

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advised the seller that the herring were purchased for resale and that they were relying on the seller's expertise for proper packaging. The herring were damaged during transit due to faulty packaging.

The Court held the seller responsible for all damage to the herring which occurred during the voyage. The rule cited by the Court was the implied warranty of fitness for purpose.\textsuperscript{190} To activate the duty under the warranty, the Court made the following findings of fact: that improper packaging caused the damage; that the seller was an expert in the field of packaging; and that the buyer was specifically relying on the seller's ability to package properly.\textsuperscript{191}

Whether the buyer is purchasing goods by description or relying on the seller's skill in packaging and preparing them for transit, the level of the seller's duty is the same. That is, in \textit{Mash and Murrell} Mr. Justice Diplock that the potatoes had to arrive in state which allowed for their intended resale.\textsuperscript{192} Likewise, in \textit{George Wills & Sons} the herring had to arrive in a state suitable for resale.\textsuperscript{193} The common feature was that the seller knew the reason why the buyer purchased the goods. Apparently, it is the seller's duty to

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\textsuperscript{190} Ibid.
\textsuperscript{191} Ibid.
\textsuperscript{192} \textit{Mash & Murrell}, Supra, at note 16. p. 866.
\textsuperscript{193} \textit{George Will & Sons Ltd.} supra, at note 25, p. 294.
\end{flushright}
guarantee that the goods will arrive in a state suitable to the known purpose of the buyer.

C. Comparison of the Sale of Goods Act and the Optimal Models

1. Generally

The optimal and Sale of Goods Act models have one notable similarity and a number of differences. The similarity is that the buyer's remedy for breach is based in damages instead of property. This utilizes the buyer's superior abilities as a mitigator of the damage. It forestalls any requirement that the seller maintain a presence at the buyer's location. Thus, it enhances the efficiency of the exchange.

All the differences are due to the Sale of Goods Act requirement that the seller ensure that the goods arrive at the buyer's location in a merchantable condition. This requirement has several consequences. The consequences effect the information flow between the parties.

First, the seller may have an incentive to distribute misinformation about the transit and its effects on the goods. Although the seller may not find it in his interest to undervalue the goods, he may be encouraged to confuse the buyer on what to expect at the end of transit. That is, the seller may wish to lower the buyer's expectations.

The consequence of this is that the information flow between the parties will be restricted. The maximum
productive use of the goods will not be achieved unless necessary information can flow unimpeded.

Second, since the test for performance is the fulfillment of expectations actually known by the seller, the seller has an interest in maintaining an ignorance about the buyer's actual expectations. For a number of products this would be very difficult. For example, in Mash and Murrell the Court applied an objective test. The shipped potatoes had only one purpose and that was for resale for human consumption:

I am satisfied that when the potatoes, the subject-matter of this action, were loaded at Limassol they were "not fit to travel" to Liverpool on the Ionian on the voyage which she was taking, which I have held was a normal voyage, in the sense that they were in such a condition that in the ordinary course of events they would, on arrival at Liverpool, be unfit for human consumption, which is the purpose for which Cyprus spring potatoes in bags are normally used.194

However, for many other products the seller could purposely maintain an ignorance about the end use of the product. The consequences of this is that information which may assist in ensuring that the goods arrive safely may not be received by the seller. That is, knowledge of the end use of a product which may be helpful in dealing with a number of the

factors under the seller's control including packaging and durability may not pass.

Third, the buyer is given a distinct incentive to make clear his intended purpose for the goods. Even in cases of goods which have an obscure purpose, the seller's awareness of any purpose appears to make him a guarantor of the fact that the goods will arrive fit for that purpose.

This means that information which has no other purpose than to increase the seller's liability is being transmitted between the parties. Obviously, this will increase the transaction costs of the exchange.

Fourth, the buyer is given a disincentive to become involved in the preparation of the goods for transit. That is, if the seller can show that his skill is not required to ensure the safe arrival of the goods, the risk of deterioration may pass to the buyer.

The disincentive to become involved in the preparation of the goods may mean that the knowledge and expertise on packaging and durability possessed by the buyer will not be passed on to the seller. Thus, the specific goods as well as all the goods shipped by the seller in the future are disadvantaged accordingly.

Finally, the seller is encouraged to require that the goods be inspected by the buyer or his agent prior to shipment. This has the advantage to the seller of passing the
risk of all obvious defects which might cause deterioration during the voyage to the buyer.\textsuperscript{195} The buyer has an equally powerful interest in not examining the goods prior to shipment even if such an examination serves other purposes. In either case, liability rules are interfering with the orderly flow of information between the parties.

Clearly, requiring the seller to guarantee that the goods arrive in a specific state causes distortions to the relationship between the parties.

2. Legal Clarity and Conformity to Common Expectation

In one sense the Sale of Goods Act model presents a clear rule for the division of the risk of unanticipated internally caused damage. Under the Sale of Goods Act the seller bears all the risk. Obviously, from the buyer's perspective this is a clear arrangement.

What is not clear ex ante is the level of effort required by the seller to cover this risk. That is, the implied warranties of merchantability and fitness for purpose require the seller to guarantee the condition of the goods upon their arrival at the buyer's location. However, the two warranties do not inform the seller of the extent of the effort required to fulfill his performance.

\textsuperscript{195} s. 35.
For example, in *Mash & Murrell* the case turned on whether events during the voyage or forces internal to the goods caused the damage. The trial court found one cause of the damage and the Court of Appeal found another, all on the same facts. If ex post determination of the "risks" is this difficult in most cases, then the seller has little chance of making an accurate ex ante prediction of the performance required of him.

The costs incurred by the seller, in either extra preparation of the goods for transit or contracting out of the warranties decrease the efficiency of the transaction. These costs are presumably passed on to the buyer in the form of higher prices.

The average businessman would be surprised by the Anglo-Canadian approach to unanticipated internally caused deterioration. He would probably not expect the seller in a sale and arrangement of delivery contract to guarantee safe arrival of the goods. Indeed, businessmen presumably expect that the parties perform their obligations to a specific standard such as a customary standard or to the best of their ability. The latter entails an objective test.

3. Reduction of Avoidable Losses

The Sale of Goods Act model does tend to reduce some avoidable losses. The model makes the party with superior control over the factors of packaging and durability
completely responsible for damage which is due to their inadequacy. However, the model actually increases losses due to higher transaction costs.

The Sale of Goods Act model ignores the fact that to some extent both parties control the factors of durability and packaging. The buyer may choose goods which may not have the propensity to survive a long transit. It appears from the Mash & Murrell case that the seller may have the duty of either warning the buyer of the risks of transmitting the goods or of taking the risk himself. Additionally, the seller may have a duty to warn the buyer during negotiations that the price negotiated for the packaging is inadequate to ensure the survivability of the goods from a packaging perspective.

In either case, the requirement of informing the buyer of the effect of his purchase during negotiations increases the information costs of the exchange. This increase to the information costs of the exchange comes without a corresponding decrease in the risk to the goods.

Another failure of the Sale of Goods Act model is that it does not take into account the buyer's capacity as the superior inspector of the goods at the end of the transit. That is, by making the seller completely responsible for losses due to inadequate durability and packaging, the buyer is provided a disincentive to intervene and remedy goods which arrive in a state of deterioration which continues after the transit ends. The buyer's duty to mitigate only requires him
to mitigate his loss and not the seller's loss. This might mean that the buyer could stand by and watch the goods rot on the dock. As long as his reliance and replacement costs are reasonable in the circumstances, the responsibility for the deterioration rests with the seller.
CHAPTER EIGHT

CONCLUSION

The purpose of this conclusion is to summarize the results of the analysis and answer the question of whether the Sale of Goods Act presents an efficient set of rules for the allocation of responsibility for damage to goods in transit. From this summary, an optimal set of rules will be developed. These optimal rules represent the recommended solution from an economic perspective.

Part one of this chapter summarizes the purpose of the thesis and briefly reviews how the thesis achieved its purpose. Part two discusses the analytical method used in the analysis. Part three summarizes the results of the comparison of the two sets of rules and offers one explanation for the inefficiencies in the Sale of Goods Act rules. Part four explores the form and content of the optimal set of rules. The chapter concludes by briefly indicating the overall value of efficient rules in this area of law.

A. Summary of the Purpose and Method

This paper presents a detailed analysis of the Sale of Goods Act rules governing risk to goods in transit. When goods are sold to a distant buyer, the transactional elements of the sale are dispersed over the period between completion of manufacture and the arrival of the goods at the buyer's location. The responsibility for damage to the goods is only
one set of transactional elements. In British Columbia responsibility for damage is governed by sections of the Sale of Goods Act and the case law which interprets the sections.

The risk regime set up by the Sale of Goods Act originated during the late nineteenth century. It represented solutions to late nineteenth century problems. The research detailed in this paper is based on the assumption that due to the enormous amount of change occurring during the last one hundred years, this regime no longer offers adequate solutions to problems resulting from damage to goods in transit.

Testing of this assumption required the answer to two related questions. The first concerned the degree of efficiency of the Sale of Goods Act. The second question concerned the form and content of the set of optimally efficient rules.

The answer to these two questions required the acceptance of two standards. They are, the standard of efficiency and the standard of the modern commercial environment.

Efficiency is an economic measure. Hence, the drive for a standard looked to the discipline of economics for an answer. Chapter Two examined the theoretical and methodological elements of the economic approach.

It was concluded that economic analysis provides a useful perspective through which to evaluate laws possessing a predominantly economic impact. Economic analysis measures the
facility of a law to promote behavior which maximizes the product of the behavior. It cannot measure or provide a standard for the distributive effects of the behavior nor of the non-economic value of the product to society.

Clearly, the economic standard is not appropriate for the evaluation of every type of law. However, it was concluded that rules determining responsibility for damage to goods in transit possesses only economic impact. Hence, the standard was judged appropriate.

Economic analysis provides the additional advantage in that it possesses useful analytical tools which make judging the efficiency of a law and making quantitative comparisons to other legal regimes possible. These tools include use of models and comparable states. In addition, economic theory provides a framework within which phenomena may be simplified through the use of factual assumption.

As good as these tools are, their use presents certain risks. First, there is the risk that the phenomena under analysis will be oversimplified by its insertion into analytical models. This paper attempted to avoid this risk by narrowing the field of view to considering responsibility for damage as between the buyer and the seller and ignoring the damage quantum variable. Second, there is the risk that the assumptions made in the process of simplifying the phenomenon will bias the conclusions of the analysis. This risk was
reduced by minimizing the number of assumptions made and ensuring, as far as possible, their neutral content.

Chapters Three and Four considered the standard of the modern commercial environment. As such, these two chapters set the scene for the analysis.

Chapter Three provided an in depth description of the ocean transit environment. This was considered a realistic environment in which to test the Sale of Goods Act rules and develop optimally efficient rules. The ocean transit environment is one of the most common transit environments. In addition, it provides a realistic backdrop in which to view rules which governed the allocation of responsibility for damage to goods during transit.

This latter point is based on two points. The first is that for historical reasons ocean shippers have very limited liability for damage to goods occurring during an ocean voyage. This means that the other parties to the sale assume almost all the responsibility for damage to the goods. Only in cases where the carrier failed to make the vessel seaworthy or is negligent in stowage of the cargo does he incur liability.

The second point is that the Sale of Goods Act emphasizes ocean transit. The only reference made by the Act to a specific environment refers to the ocean environment. This indicates that in the nineteenth century, the drafters of the
statute were preoccupied with ocean transit. Since most of the effort and thought went into rules covering the ocean environment, this area offers the most defined and thus most interesting regime of risk rules for analysis.

Chapter Four developed the structure of the models in which the rules were tested. The various risks were reduced to usable variables and allocated to the parties according to their effective control over them. An interesting conclusion of the analysis contained in Chapter Four is that a large number of risk factors cannot be clearly allocated. Indeed, five of the eleven risk factors considered are within the control of both parties.

Chapters Five through Seven dealt with building and comparing models of each category of rule as defined by the Sale of Goods Act. The comparison promoted a number of conclusions regarding the efficiency of the Sale of Goods Act rules. These conclusions answered both of our hypothetical questions concerning the efficiency of the Sale of Goods Act and the content of optimally efficient rules.

B. Summary of the Analytical Method

The purpose of the analysis was to identify the inefficiencies of the Sale of Goods Act rules and attempt to explain the reasons for them. The focus was the maximization of the aggregate value of the exchange. Efficiency was defined as the propensity of the rule to protect goods from
damage during transit and to reduce the need for communication between the parties regarding the details of respective party responsibility. It was assumed that reducing actual risk to goods and the requirement of communication reduced the net aggregate cost of the exchange to the parties.

Since the analysis only considered net aggregate value, the identity and actual value of the goods was assumed to be a constant. Additionally, the models did not deal with the general economic consequences of a loss nor with the distributive effects of its allocation.

There were two reasons for this. The first was based on the assumption that legal rules governing the commercial behavior of individuals ought not to distinguish between the individuals. The second was based on the Coase Theorem which holds that distributive effects are irrelevant when the parties are bargaining freely and have relatively low communication costs.\textsuperscript{196} The analysis assumed both points.

Each rule governing responsibility for damage to goods in transit was considered in isolation. This added an artificiality to the analysis because the rules are rarely considered in this fashion. In every situation involving the drafting of a contract or the settlement of a dispute, the rules would be used without dividing the rules into precise categories. For example, a buyer negotiating a contract may

\textsuperscript{196} See \textit{infra}, pp. 29-30.
require a term that defines the state of the goods upon arrival at the buyer's location. This one term encompasses both the anticipated and unanticipated damage categories. It defines merchantable quality and anticipated damage.

The second disadvantage of this choice of approach was that the justification and effect of the rules were overlapped to a large extent. This encouraged a redundancy in the analysis.

The justification for considering the rules in isolation is twofold. The first is to simplify the models. The need for simplification has greater importance than the risk of artificiality and thus abstraction of the conclusion. The goal of the analysis was to question specific rules and design optimally efficient ones. This required that each rule be given independent and close scrutiny.

The second justification is that the analysis indicated a very important fact about the Sale of Goods Act rules. The rules suffer from a categorization problem. This will be discussed later in this chapter.

Using models to analyze rules required simplification of both the environment and the rules being tested. To eliminate confusion, the models looked at a single sale involving an arrangement of delivery by the seller. Merchants and commercial lawyers call this a sale and arrangement of delivery contract and it is the most common method of selling
goods at a distance in the western world.\textsuperscript{197} Frequently, contracts have this type of transaction expressed in the form of the INCOTERM 'f.o.b.'\textsuperscript{198}

The Sale of Goods Act models relied on two sources of information. They were the specific sections of the statute which deal with damage to goods and several leading cases interpreting these sections. Both sources reflect the historical development of the rules. The Statute was enacted in 1893 and the risk to goods sections have not been amended since that time. The case law considered spans the lifetime of the statute.

The optimal models, on the other hand, used rules specifically designed to optimize the efficient allocation of responsibility for damage. Optimally efficient contract rules have two distinct objects. The first object is to promote an efficient operation of exchanges. The second object is to decrease the amount of the parties' time and effort required in making the exchange.

Dealing with the latter point first, every exchange involves necessary research and negotiation into terms and conditions of the exchange. Contract law assists the efficiency of exchanges by reducing this need for research and negotiation. This is effected by providing rules which are

\textsuperscript{197}. Sassoon, \textit{supra}, note 129, p. 18.

\textsuperscript{198}. \textit{Ibid.}
clear and conform to the expectations of the parties. The analysis contained in previous chapters defined this in terms of a "clarity and conformity to common expectation test".

An obvious difficulty in assessing clarity and conformity to common expectation is the question of exactly what is meant by clear and whose expectation forms the standard. These two difficulties are overcome through the use of the rational maximization assumption. If people are assumed to be rational and desirous of a maximization of resources, then rules which promote efficiency will always mirror what rational people think appropriate. Thus, efficient rules are always clear to efficient people and will meet the expectations.

The former point also depends on the rational maximization assumption. Rational and maximizing people want to maximize the value gained from exchanges. Assuming perfect knowledge and low communication costs, in every negotiation of an exchange the parties would settle on terms that provide the same amount of protection for the goods as the projected cost of the consequences of the damages. To give this effect in an efficient manner, the party best able to protect the goods should be the party responsible to do so. Additionally, if a risked event occurred, the party agreeing to be responsible would be the one best able to either absorb the loss or transfer the loss to an outside party. In risk to goods situations, the potential outside parties are the shipper or stevedores.
The logic of the rational maximization assumption was extended to cover the effect of the rules on third party behavior as well. The question asked was whether an allocation of responsibility would encourage sellers to be more selective regarding which ship they hired. Seller's hiring practices may have an effect on the behavior of shippers by rewarding ships with good records with additional business and therefore profit.

As with any research, there is a possibility that the theoretical foundation is incorrect. In this case, this would be due to the possibility of explanation by values other than economic ones. An example of such a value is the concept of justice.

However, it is not likely that justice plays a major part in rules governing risk to goods in transit. This is due to the fact that the concept of justice pertains to an intervention by courts or legislatures to promote an emotive result.\textsuperscript{199} It was concluded that emotive intervention would rarely be required to control purely commercial activity such as the area of law reviewed in this paper.

Another caution regarding the conclusions reached by this research concerns the use of factual assumptions. A number of facts were assumed to simplify the models sufficiently to allow for the development of equilibrium and comparison.

\textsuperscript{199}. \textit{infra. pp. 13 to 17}.
Because of the dependence on factual assumptions, the value of the conclusions of this paper are dependent upon their accuracy. To the extent that the assumptions are not empirically substantiated, the conclusions must be accepted as a priori.

Further, empirical testing of the conclusions was not possible due to the fact that there is limited case law dealing with the rights between merchants in sale and arrangement of delivery contracts. Apparently, most disputes are settled informally between merchants and their insurers.\(^{200}\) Moreover, the drafters of contracts dealing with overseas shipment of goods generally use the expressed INCOTERM f.o.b. in their contracts.\(^{201}\) Little consideration is apparently given to the more complex issues of responsibility of the person in control of the goods.

C. Summary of Inconsistencies Between the Sale of Goods Act and Optimal Models

1. The Categorization Problem

Organizing the Sale of Goods Act rules in models uncovered a theoretical difficulty with the rules. The Sale of Goods Act divides risk into the three categories of anticipated damage, unanticipated internally caused damage and


\(^{201}\) Sassoon, supra, note 129, p. 18.
externally caused damage. This analysis revealed that the rules for the first two categories are applied identically. This means that the Sale of Goods Act applies only two sets of rules covering damage to goods in transit. They are, rules covering internally caused damage and rules covering externally caused damage. The distinction between anticipated damage and unanticipated internally caused damage provides no value in analyzing problems about risk to goods in transit.

Merchantable quality is the standard the goods must reach at the end of the transit. If the seller fails to provide goods of this standard, the buyer is entitled to compensation proportional to the failure.

Anticipated deterioration is defined as the expected decrease in value of the goods which occurs during a normal transit. It represents a spread from perfect conformity to a level of damage which will go uncompensated. Any damage over the anticipated threshold must be compensated in proportion to the damage.

Both the merchantable quality and the anticipated deterioration standards are measured by an objective test. The abstraction of the objective test allows courts to adjust the performance term to accommodate any reasonable result in the eyes of the court.

The parties' objectively determined expectation defines both anticipated damage and the spread allowed by merchantable
quality. Both concepts may be argued as a defence to a damage claim made by an aggrieved buyer. The form of both arguments is the same. That is, the goods did not deteriorate any more than the buyer ought (objectively) to have expected. This is what was argued in the Bull case. Alternatively, In Marsh & Murrell the seller lost on the point because the court found that the goods had deteriorated beyond the buyer's reasonable expectations.

Another common feature in the Bull and Mash & Murrell decisions was that both courts considered the seller's responsibility was limited by causation. In Mash & Murrell the Court of Queens Bench awarded the buyer damages because it could not find an abnormality in the voyage. Abnormality meant that another cause existed which might explain the damage. In Bull, the court made an explicit reference to causation by basing its decision on the fact that rust was a natural consequence of shipping iron in winter. As in Mash & Murrell, nothing unnatural occurred during the voyage.

It is clear that both merchantable quality and anticipated damage provide an ex post adjudicator with the tools to account for damage anticipated to occur during the transit. Both are based on an objective measurement of the parties expectations. Both provide an ex post opportunity to correct inefficiencies in contracts for the sale and delivery of goods.
In summary, the Sale of Goods Act contains only two categories of rules covering damage to goods in transit. One concerns internal damage and holds that the seller is strictly responsible to provide goods which at the conclusion of the transit meet the objectively determined expectations of the parties. The second covers externally caused damage and holds that once risk has passed to the buyer, the seller is completely absolved of all responsibility.

2. Summary of the Comparison

The comparison between the Sale of Goods Act rules and the optimal rules revealed a number of differences between the two sets. These differences indicated the existence of inefficiencies in the Sale of Goods Act rules.

a) Externally Caused Damage

The Sale of Goods Act rules covering externally caused damage have two important characteristics. The first is that the holder of the risk is absolutely responsible for all externally caused damage. The second is that this absolute responsibility may pass from the seller to the buyer at any one of a number of points during the transaction. Moreover, the responsibility may revert back to the seller if he fails to perform certain duties in a minimally satisfactory way. Failures which may cause a reversion of the risk are:

i) inappropriate choice of vessel;
ii) failure to give notice of shipment; and, 

iii) delay in shipment which causes damage.

The reasons for the variability in timing of the passing of responsibility are due to the association of risk and property in the Sale of Goods Act. The event which triggers the cessation of responsibility for externally caused damage is not at all connected with the responsibility for its prevention. Indeed, it is very possible that responsibility could pass while the goods are still in the seller's warehouse.

Obviously, this adds a great deal of uncertainty to sales transactions. This uncertainty causes increased costs for insurance, negotiation, research and probably produces an increased risk of externally caused damage.

By contrast, the optimal model possesses only one rule for the allocation of responsibility for damage to goods in transit. It is that the seller must use reasonable care in all activities under his control. The set of activities under the seller's control includes providing goods with sufficient durability and packaging to withstand the voyage, and the proper arrangement of ship and stowage.

Under the optimal set, there is no issue of the passage of risk. Instead, if externally caused damage can be shown to have resulted in part from a failure of a seller's duty, then the seller is liable for that portion of the harm. Under the
Sale of Goods Act set of risk rules the buyer must establish that risk had not passed from the seller or else the seller is held blameless. It is either all or nothing.

A significant factor regarding efficiency is that under the Sale of Goods Act the actual passage of risk has nothing to do with care and control of the goods. Thus, it is in the seller's interest to activate the passage of risk long before he has given up control of the goods. This presents the obvious consequences that sellers may be encouraged to manipulate the events of a sale simply to trigger a property passing event.

Once risk passes, the seller is provided a relative disincentive to protect the goods. His part of the transaction is completed. Any additional loss prevention activity must be negotiated for and compensated by the buyer.

External damage rules under the Sale of Goods Act are clearly inefficient. Confusion due to the variability of time of risk passage requires the parties to negotiate this term in each and every transaction. Even when the term is defined, the precision of the event and the imprecise nature of expectation, interpretation and contract terminology means that there is always a possibility of ex post disputes. This is not a desirable situation for rules which are designed to facilitate exchanges.
b) Internally Caused Damage

Internal damage presents a less bold comparison. Under the Sale of Goods Act the seller's duty to protect the goods against internally caused damage is absolute within bounds defined by the parties' expectations and causation. Party expectation is defined by the concepts of merchantable quality and anticipated damage. Causation is defined by the category of externally caused damage discussed above.

By contrast, the optimal set of rules bases the duty on the same criteria as externally caused damage. That is, the seller is required to perform everything under his control according to the limits of reasonability.

Use of an objectively determinable duty has a number of advantages. The advantages are relative ease of predetermining the required performance and consistency with the duty required for the protection of the goods against externally caused damage. The *ex ante* advantages are operationalized by a reduction of transaction costs. They possess a greater degree of clarity and conformity to common expectation. That is, it is easier to visualize responsibility limited by both ability (causation) and reasonable foreseeability than it is to visualize responsibility defined by the quality of goods upon arrival less merchantable quality and third party intervention.
The overall difference between the two sets of rules is that the rules in the optimal model are based on principles similar to those used in tort law rather than contract law. The seller's responsibility is defined in terms of duties. These duties flow from both the seller's ability to protect the goods and damage resulting to the goods if the seller breaches the duty. If it appears \textit{ex ante} or can be shown \textit{ex post} that the seller could not have protected the goods using reasonable care then the seller would not possess a duty to do so. If it is reasonable that the goods arrive in a perfectly conforming state then that defines the seller's duty. Alternatively, if the seller cannot ensure that the goods arrive at all, then he has breached no duty if they do not in fact arrive.

Thus, under the optimal rules, an \textit{ex post} damage responsibility analysis would follow a typical tort analysis. The aggrieved buyer must prove duty, breach and damage to succeed. The existence of a duty would be based on the ability to protect. The responsibility to do so would be assumed because of the commercial relationship between the parties.

For his defence the seller must show that the damage to the goods occurred outside his control. To do this the seller would prove that he performed his duties to a reasonable standard.
The *ex ante* analysis would follow an equally simple process. The parties would determine their costs in an exchange by first addressing the parts of the sale under their control and secondly by attaching a cost of acting in a reasonable manner in fulfilling their parts.

A way of viewing the optimal rules is to visualize every sale as two separate transactions. One transaction is the sale of the good. The second transaction is the sale of services which travel with the goods to the buyer's location. These services are the seller's promises of action and guarantees. They are limited by both the seller's capacity to perform and the price the buyer is willing to pay for the service.

For instance, the sale of a tractor involves the sale of a good (passage of property and title) and the services of:

1. timely arrival at dock side;

2. selection of an appropriate means of transportation; and,

3. proper notice to the buyer of shipment and documentation to the shipper.

4. sufficient durability built into the tractor and packaging according to the seller's reasonable expectation of the rigors of transit.

If damage results due to a failure of either the goods or the services, the seller is liable. There is no issue of the passing of property or risk. Nor is there any concern over
the definition of merchantable quality or anticipated deterioration.

Both parties can easily calculate the *ex ante* costs of the whole package of goods and services involved in the transaction. The *ex post* dispute resolution process is streamlined by dealing with highly defined duties. The only factual issue to consider would be the seller's actual control over the cause of the damage.

**D. Inappropriateness of the 'Risk' Concept**

Risk is an ambiguous term. It has numerous meanings none of which deal with the existence of a duty. The use of risk ranges from its insurance to common usage. For example, the risk which applies to insurance is the present value of a future negative event multiplied by its probability of occurrence. Its common usage describes taking a chance or gambling.

Buyers and sellers may view their transactions as fraught with risk in the common sense. In addition, they may very well be interested in reducing the potential cost of the gamble to a present value. However, it serves no purpose to describe the relationship between the parties in terms of risk.

An analysis of the rights and corresponding duties in a sale and arrangement of delivery contract does not require the use of the risk concept. The seller has the right to receive
payment upon delivery of the goods and the performance of his various duties. The buyer pays for the right to receive delivery of the goods and the performance of the seller's duties.

As the seller performs his duties his overall responsibility to the buyer decreases. At some future point his responsibility will cease completely. But until that event occurs, the buyer and the seller are involved in a relationship defined by both parties rights and obligations defined as duties.

E. A Draft Wording of the Optimal Rules

The specific wording of optimal rules for responsibility of damage to goods during transit ought to be left to draftsmen expert in the rules of legislative drafting and statutory interpretation. However, since this thesis proposes new rules, an outline of the rules ought to be presented. The following wording could be considered to effect the goal of the optimal rules to make the party best able to perform responsible for performance.

Where the contract requires or authorizes the seller to ship the goods by independent carrier to the buyer's location, the seller must:

1. arrange all aspects of shipment of the goods in such a way to reasonably ensure their arrival at the buyer's location in the condition anticipated by the parties when the contract was entered into, including without limiting the generality of the foregoing;
a) select the carrier and type of stowage in relation to the fragility of the goods and vulnerability of their packaging;

b) provide proper notice of the shipment to the buyer; and,

c) transmit proper documentation which includes an accurate valuation of the goods to the carrier.

2. deliver goods to the carrier which are capable of withstanding the reasonably anticipated rigors of the intended transit taking into account the good's durability and packaging, the type and identity of the carrier, the time of year and the length of the voyage.

F. Conclusion Summary

Optimal rules promote relationship rather than confrontation. Parties who engage in a sale and arrangement of delivery agreement have as their object the efficient transfer of goods for profit. The promotion of the relationship mode of business assists in the reduction of costs by making it in both parties interest that conforming goods arrive at the buyer's location.

The intertwining of rights and duties promotes a vertically integrated business relationship. Neither party benefits from any act which reduces the value of the activity. It is in the interest of both parties to see that the relationship is productive and profitable. In that way society as well as the parties profits by the exercise.
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