

Working Papers Series
Cahiers de recherche



ECONOMIC COUNCIL OF CANADA
CONSEIL ECONOMIQUE DU CANADA

Regulation Reference
Mandat sur la réglementation



HC
111
.E35
n.3

c.1
tor mai

Working Papers are documents made available by the Economic Council of Canada, in limited number and in the language of preparation, to interested individuals for the benefit of their professional comments.

Requests for permission to reproduce or excerpt this material should be addressed to:

Council Secretary
Economic Council of Canada
P.O. Box 527
Ottawa, Ontario
K1P 5V6

The findings of this Working Paper are the personal responsibility of the author, and, as such, have not been endorsed by members of the Economic Council of Canada.

WORKING PAPER NO. 3

STUDIES OF TRUCKING REGULATION: VOL. II

- Norman C. Bonsor
- Michel Boucher
- J.J. McRae & D.M. Prescott
- R.J. Lord & J. Shaw



August 1980

CAN.
EC26-
NO.3
1980

Preface

This Working Paper brings together a number of studies on trucking regulation prepared for the Council's Regulation Reference. The individual studies vary in the nature and thoroughness of the analysis, and some of the studies fall short of the Council's customary standard for rigorous theoretical and/or empirical analysis. However, as a group we believe that these studies make a contribution to our understanding of the nature and effects of trucking regulation in Canada, and on that basis we feel that they deserve to be brought into the public domain.

Public policy discussions are inevitably coloured by the discussants' own beliefs and values. This is all the more likely in a highly controversial area such as trucking regulation, where quantitative information is incomplete and an important element of judgement is required to come to terms with many of the basic issues. This need not detract from the usefulness of the analysis, but it does require the reader to exercise particular caution in assessing the assumptions and the argumentation of those advocating a particular policy perspective. It also adds to the importance of our usual disclaimer that "the findingsare the personal responsibility of the author and, as such, have not been endorsed by members of the Economic Council of Canada".

- David W. Slater
Acting Chairman
Economic Council of Canada

TABLE OF CONTENTS

● THE IMPACT OF REGULATION ON FOR-HIRE HIGHWAY CARRIERS:
AN ANALYSIS OF THE COST BORNE BY CARRIERS IN THE PRODUCTION
OF REGULATORY DECISIONS

by Norman C. Bonsor

		<u>Page</u>
1.	Introduction	2
2.	The Institutional Framework for Regulatory Intervention in the For-Hire Trucking Industry	5
3.	A Brief Analysis of Regulatory Mechanisms Across Provinces	11
4.	The Production of Regulatory Decisions	27
5.	Data Sources	30
6.	The Aggregate Results	58
	References	64

● REGULATION OF THE QUEBEC TRUCKING INDUSTRY: INSTITUTIONS,
PRACTICES AND ANALYTICAL CONSIDERATIONS

by Michel Boucher

1.	Introduction	67
2.	The Nature of Regulation	68
3.	The Effectiveness of Regulation	82
4.	The Consequences of Regulation in Quebec	89
5.	Conclusion	102
	Footnotes	104

● AN ECONOMETRIC ANALYSIS OF THE EFFECTS OF REGULATION ON THE
CANADIAN COMMON CARRIER INDUSTRY

by James J. McRae
David M. Prescott

1.	Introduction	110
2.	Recent Econometric Analysis	113
3.	Analysis of the 1975 and 1976 Micro Data	128
4.	A Case Study of Saskatchewan	158
	Appendix 1	176
	Appendix 2	177
	Appendix 3	180
	Appendix 4	182
	References	184

A COMPARATIVE EXAMINATION OF THE IMPACT OF REGULATION ON THE
OPERATIONS AND COSTS OF INTRA PROVINCIAL TRUCKING FIRMS IN
ALBERTA AND ONTARIO

by Robert J. Lord
Jack Shaw

1.	Rationale for this Study	187
2.	The For-Hire Motor Carrier Industry	198
3.	The Alberta and Ontario Markets	202
4.	The Firms	215
5.	The Data	246
6.	Observations	267
7.	Rates	271
8.	Interpretation	285
9.	Conclusions and Recommendations	298
	Appendix A	310
	Appendix B	316

RÉSUMÉ

Depuis quelques années, la réglementation du transport routier est devenue une des questions relatives à la réglementation les plus controversées, tant au Canada qu'aux États-Unis. Pour nos voisins du sud, les longs débats ont abouti à l'adoption de lois visant à réformer de manière importante le processus de réglementation; le projet de loi récemment adopté par le Congrès libéralisera considérablement l'accès et la fixation de tarifs, et réduira de beaucoup la réglementation générale sur l'industrie du camionnage pour compte d'autrui et en location qu'exerce l'Interstate Commerce Commission depuis plus de 40 ans. Au Canada, plusieurs gouvernements provinciaux, dont l'Ontario, l'Alberta, le Québec, la Saskatchewan et la Colombie-Britannique, ont récemment entrepris des révisions de leurs approches à la réglementation de cette industrie. Au palier fédéral, la réglementation du camionnage au Canada fait présentement l'objet d'un examen dans le cadre des travaux du Comité interministériel pour l'étude de la concurrence et de la réglementation dans le domaine du transport. De plus, la Canadian Conference of Motor Transport Administrators, une association composée de membres des organismes provinciaux de réglementation et de représentants fédéraux, étudie les caractéristiques du processus de réglementation dans le but de réaliser un degré plus élevé d'uniformité des règlements provinciaux sur le camionnage.

Les études comprises dans ce Document sont destinées à contribuer à ce débat général sur les politiques en scrutant certains aspects de la nature et des effets de la réglementation du camionnage au Canada. Bien qu'elles n'abordent pas toutes les questions en cause, ces études reflètent la pensée, d'une part, de ceux qui s'inquiètent des coûts directs et indirects observés de la réglementation du camionnage et qui réclament en faveur un changement important dans le système actuel et, d'autre part, de ceux qui se préoccupent des conséquences, en particulier la possibilité d'une instabilité du marché, de tout relâchement de la réglementation publique. Les études soulignent la complexité des arrangements institutionnels dans l'industrie du camionnage et la diversité considérable des caractéristiques des entreprises

* Ce résumé traite brièvement de l'ensemble des études complétées sur la réglementation du camionnage au Canada. L'étude de Nix et Clayton "La réglementation de l'industrie du camionnage au Canada : Institutions et méthodes" a été publiée dans Études sur la réglementation du camionnage : Vol. I, Ottawa, Conseil économique du Canada et Institut de recherches politiques, Étude documentaire, 1980. Les études de Norman Bonsor; Michel Boucher, James McRae et David Prescott; et Robert et Jack Shaw ont paru dans Études sur la réglementation du camionnage : Vol. II, Ottawa, Conseil économique du Canada, étude documentaire, 1980.

de transport routier en location; ces deux faits compliquent les tentatives pour comprendre l'industrie et pour identifier les répercussions des contrôles réglementaires qu'impose la réglementation.

. F. Nix et A. M. Clayton, La réglementation du camionnage au Canada : Institutions et méthodes

Ce document fait un examen assez détaillé de l'aspect institutionnel de la réglementation des transporteurs routiers au Canada. Les organismes provinciaux de réglementation du camionnage possèdent un large éventail de pouvoirs grâce auxquels ils peuvent influencer les activités des transporteurs routiers en location, tant intraprovinciaux qu'interprovinciaux. Exception faite de l'Alberta qui ne réglemente pas l'accès au transport intraprovincial, toutes les provinces exigent des candidats à l'industrie du transport en location de subir un test de "commodité et de nécessité publiques". Les restrictions imposées par les autorités compétentes peuvent limiter la liberté du détenteur de permis de plusieurs façons : à l'égard des marchandises à transporter, des routes à suivre, des points à servir, de la fréquence du service, des véhicules et de l'équipement à utiliser, etc. Certains organismes tentent aussi de réglementer les tarifs du camionnage intraprovincial, mais les exigences de chaque province varient considérablement : l'Alberta n'en a pas, alors que les provinces de l'Ontario, de la Nouvelle-Écosse, du Nouveau Brunswick et de l'Île-du-Prince-Édouard demandent seulement que les tarifs exigés soient enregistrés auprès des organismes; le Manitoba fixe des taux conformément à une "structure tarifaire de prix unique" et la Saskatchewan établit des tarifs maximum pour certaines marchandises, tout en exemptant un grand nombre de celles-ci de toute forme de réglementation des tarifs; les trois autres provinces -- Terre-Neuve, la Colombie-Britannique et le Québec -- exigent que la plupart des tarifs du camionnage soient approuvés (à Terre-Neuve et au Québec, cette exigence s'applique aussi aux taux interprovinciaux), bien qu'il semble que cette réglementation des taux soit assez peu efficace dans bien des cas.

Cette étude de Nix et Clayton donne de plus amples détails sur un certain nombre d'aspects importants de ce système de réglementation, soulignant les différences existant entre les provinces et dans l'approche adoptée envers différents secteurs de l'industrie. Ils démontrent que presque tout énoncé décrivant les institutions de réglementation du camionnage comporte des exceptions ou doit être qualifié. Par exemple, bien que toutes les provinces aient créé des organismes de réglementation possédant un large éventail de responsabilités, certains ministères provinciaux sont souvent intimement mêlés à la fonction de réglementation. L'exigence voulant que les transporteurs routiers obtiennent un permis est sujet à un certain nombre d'exemptions, y compris le camionnage privé, le

transport intra-urbain, et le transport initial de produits agricoles, forestiers, miniers ou marins non transformés. Alors que cinq provinces sont engagées dans la réglementation des tarifs, en ce sens qu'elles les approuvent ou qu'elles les établissent, on peut se demander jusqu'à quel point ce contrôle est efficace, étant donné les ressources plutôt limitées qui sont généralement consacrées à cette activité. Tous les organismes consacrent une part importante de leurs ressources à l'émission de permis et à l'exercice de leur autorité quant aux termes et conditions en vertu desquels les entreprises doivent fonctionner, mais il existe de graves problèmes de mise en application et "certains soupçonnent fortement que les entreprises se prêtent à un grand nombre d'activités non autorisées par les organismes de réglementation".

Dans la plupart des cas, on considère les commissions de transport provinciales comme étant des organismes de réglementation "relativement indépendantes". Elles possèdent généralement un vaste éventail de pouvoirs et une assez grande latitude dans l'exercice de ceux-ci. Cependant, il est vrai que les gouvernements utilisent les instruments à leur disposition pour influencer certains aspects du comportement des organismes de réglementation du transport routier. Néanmoins, Nix et Clayton sont d'avis qu'il y a des lacunes au niveau des politiques. Il existe une ambiguïté considérable quant à la raison d'être de la réglementation et à ce que les commissions sont censées accomplir en termes généraux et par rapport à certaines questions de politiques particulières. Les auteurs font remarquer que, de façon générale, les responsables de la réglementation réagissent aux événements et que les modifications ont tendance à s'ajouter les unes aux autres, de sorte que la réglementation des transporteurs routiers a été emportée par son propre élan. Par conséquent, certaines questions fondamentales sur le but de la réglementation et l'orientation de la politique publique en matière de camionnage sont demeurées sans réponses.

• Norman Bonsor, Les coûts du processus de réglementation dans l'industrie du camionnage en location

Cette étude de porte sur les coûts annuels pour les entreprises de camionnage existantes de la participation au processus de réglementation. Elle porte de façon particulière sur les frais juridiques et administratifs engagés pour établir les demandes de permis nouveaux et s'opposer à celles de personnes voulant accéder à l'industrie. Bonsor a mené une enquête auprès d'un échantillon de transporteurs routiers pour compte d'autrui et en location réparti de façon à ce que les répondants représentent au moins 10 % du revenu produit par cette industrie dans chaque province. Les résultats de l'enquête démontrent que les coûts annuels engagés par ce genre d'entreprise pour établir les demandes de permis et s'y opposer sont de l'ordre des 40 millions de dollars (somme fondée sur des données de 1977-1978).

Bonsor a découvert que ces coûts directs de la réglementation varient considérablement d'une province à l'autre en raison des différentes façons de procéder adoptées par chaque organisme. En Colombie-Britannique, les coûts du processus de réglementation pour les transporteurs (exprimés en proportion du revenu d'exploitation) sont très peu élevés parce que les audiences publiques sont rares et que les transporteurs ont moins recours à la profession légale. Tel n'est pas le cas en Ontario où le processus de réglementation a pris un caractère hautement judiciaire et où la profession légale joue un rôle important. L'organisme de réglementation de l'Ontario n'accepte que les témoignages de vive voix et les audiences ont tendance à être longues, un grand nombre de témoins étant appelés par les requérants et les intervenants. Bonsor évalue à environ 30 millions de dollars les coûts annuels du processus de réglementation pour les transporteurs en Ontario. Au Manitoba, en Saskatchewan et dans les provinces maritimes, le processus de réglementation est semblable à celui de l'Ontario, mais les coûts sont généralement moins élevés. L'auteur attribue ce fait aux honoraires légaux en moyenne plus bas dans ces provinces, à la moins grande taille des industries du camionnage -- de sorte qu'il y a moins d'intervenants s'objectant aux demandes de permis individuelles -- et à l'uniformité plus grande des décisions des commissions de réglementation. Les transporteurs québécois ont révélé que ce ne sont pas les honoraires qui constituent la majeure partie des dépenses, mais plutôt les délais et les coûts administratifs qu'entraînent l'établissement de demandes de permis et l'opposition à celles-ci. On évalue à 8 millions de dollars les coûts annuels moyens de la participation au processus de réglementation dans cette province.

. Michel Boucher, La réglementation de l'industrie québécoise du camionnage -- Aperçu et considérations analytiques

Cette étude examine le rôle et les pratiques de la Commission des transports du Québec (CTQ), et tente d'évaluer l'importance des restrictions imposées par la réglementation dans cette province et leurs répercussions sur la performance de l'industrie du camionnage au Québec. Boucher démontre que l'interprétation que fait la CTQ de la notion d'"intérêt public ... a comme conséquence d'introduire de très fortes barrières à l'entrée". Il remarque, par exemple, que la Commission aura tendance à rejeter une demande de permis qui, s'il était accordé, risquerait d'accroître la concurrence et pourrait ainsi menacer la stabilité financière des entreprises déjà établies. Par contre, l'entérinement des tarifs semble n'être, dans la plupart des cas, qu'une simple formalité; le pourcentage de demandes accordées, en tout ou en partie, par la CTQ est généralement supérieur à 90 %. Ces aspects, de même que le rôle important que joue le Bureau des tarifs du Québec en tentant de coordonner les demandes de changement de tarifs par les membres de l'industrie du camionnage pour compte d'autrui et en location, laissent

penser que la réglementation aurait tendance à réduire considérablement la concurrence et à permettre la réalisation d'une rente monopolistique.

Boucher souligne, cependant, que certains facteurs ont effrité l'influence tant de la CTQ que du Bureau des tarifs du Québec. La disponibilité d'autres services de transport a diminué de façon marquée les effets des restrictions de la CTQ relatives à l'accès. Boucher mentionne en particulier les services des courtiers en transport et des compagnies de location des camions (ou de pseudo-location), et aux options possibles que constitue le transport ferroviaire ou privé. En outre, le "camionnage illégal" est devenu un phénomène important dans la province en raison de l'application assez peu sévère des règlements de la Commission et les amendes peu élevées infligées pour leur violation. En ce qui a trait aux activités du Bureau des tarifs du Québec, Boucher fait remarquer qu'il n'a pas donné lieu à la formation d'un cartel dans l'industrie, et qu'il ne pourrait le faire, étant donné son incapacité d'appliquer des taux et des quotas de production, et la forte motivation des membres individuels de miner un tel cartel. En effet, il arrive souvent que les transporteurs routiers de la province interviennent de façon indépendante, déposant des tarifs autres que ceux que propose le Bureau. Ainsi, malgré l'existence d'obstacles institutionnels, les forces de la concurrence semblent avoir une influence importante sur l'industrie du camionnage au Québec.

Un examen de divers aspects de la performance de l'industrie québécoise du camionnage a confirmé l'importance de ces forces. Bien que certains permis dans la province aient acquis une valeur marchande, on a évalué cette valeur comme étant assez peu élevée en pourcentage des recettes d'exploitation, et bien inférieure aux niveaux observés aux États-Unis. Ceci laisse supposer que la réglementation ne donne pas lieu à des profits excessifs très considérables dans l'ensemble de l'industrie. Une comparaison des taux de rendement avant impôts des entreprises du Québec et de l'Alberta appuient cette conclusion. De façon générale, l'analyse de la structure et de la performance du marché porte Boucher à conclure que la réglementation du camionnage au Québec est très peu efficace. La disponibilité de substituts endogènes et exogènes à l'industrie a considérablement réduit l'impact de la réglementation sur la performance de l'industrie et a grandement diminué ses conséquences négatives sur l'efficacité de la répartition. Ces preuves de l'inefficacité de la réglementation portent Boucher à remettre en question l'utilité de la Commission des transports du Québec : "Puisqu'elle n'apporte aucun bénéfice à la société, tout en nécessitant un budget de fonctionnement de l'ordre de 7,5 millions de dollars pour l'année 1979-1980, l'efficacité économique en exige la disparition. Le bien-être de la société se trouverait accru d'une somme au moins égale au montant de l'économie ainsi réalisée".

- James McRae et David Prescott, Une analyse économétrique des effets de la réglementation sur l'industrie canadienne du transport

Dans cette étude, les auteurs passent en revue les efforts antérieurs pour évaluer l'impact de la réglementation sur le prix des services de camionnage et tentent d'améliorer ces travaux en faisant de nouvelles régressions utilisant des données à un niveau de désagrégation élevé tirées de l'enquête de 1975 et 1976 sur le transport routier de marchandises pour compte d'autrui et en location. Les travaux antérieurs dans ce domaine souffrent de la mauvaise qualité des données disponibles, de l'incapacité de distinguer entre les différents régimes de réglementation des provinces et, dans un cas précis, de l'utilisation d'une méthode d'évaluation inacceptable. Dans leur étude pour le Conseil, McRae et Prescott ont recours aux tarifs du camionnage intraprovincial dans six provinces, soit l'Alberta, l'Ontario, le Québec, le Manitoba, la Saskatchewan et la Colombie-Britannique. Afin de déterminer quelles sont les répercussions de la réglementation sur les niveaux des tarifs, ils régressent le revenu par tonne-mille sur la distance parcourue, le poids du chargement, les coûts des facteurs et un ensemble de variables auxiliaires correspondant aux différentes formes de réglementation provinciale du camionnage. Pour ce faire, les provinces ont été classées selon quatre types de régimes de réglementation : contrôle de l'accès et fixation des tarifs (le Manitoba et la Saskatchewan); contrôle de l'accès et entérinement des tarifs (la Colombie-Britannique et le Québec); contrôle de l'accès et enregistrement des tarifs (l'Ontario); et aucune réglementation (l'Alberta). L'équation a été appliquée à des données regroupées sur les expéditions pour les années 1975 et 1976, et solutionnée séparément pour six catégories de marchandises.

Après avoir fait certaines corrections pour tenir compte de différences dans le type de chargements et dans les coûts des facteurs, les auteurs ont découvert qu'il existait toujours des écarts de tarifs très importants entre les provinces assujetties à divers régimes de réglementation. De façon plus précise, les résultats ont montré que les prix unitaires de l'expédition d'aliments, de demi-produits et de produits finis étaient considérablement plus élevés en Ontario, en Colombie-Britannique et au Québec qu'ils ne l'étaient dans la province non-réglémentée, c'est-à-dire en Alberta. Par contre, les prix unitaires au Manitoba et en Saskatchewan, provinces qui établissent les tarifs, étaient moins élevés qu'en Alberta. Les auteurs ont obtenu des résultats semblables lorsqu'ils ont comparé des régressions séparées pour chaque type de marchandises, à des données de chacune des six provinces. Ces analyses ont montré que des différences numériquement et statistiquement significatives des taux existaient entre les provinces, et "que le classement des provinces selon les niveaux des tarifs correspondait exactement à celui auquel on

s'attendait en regardant les différents régimes de réglementation". Cependant, en raison des facteurs exclus de l'analyse, les auteurs soulignent qu'il ne convient pas d'attribuer les différences observées des prix unitaires uniquement à la réglementation.

En poussant un peu plus loin leur étude originale, McRae et Prescott ont examiné de plus près la différence entre les taux de la Saskatchewan et ceux de l'Alberta, à partir du fait que, dans la première de ces provinces, un grand nombre de marchandises sont exemptes des contrôles intraprovinciaux sur l'accès et les prix. Une régression de forme fonctionnelle identique à celle de l'analyse précédente a été appliquée à des données pour un groupe de marchandises réglementées et non réglementées en Saskatchewan et pour un groupe de marchandises semblables en Alberta. Cette analyse a permis d'effectuer une vérification utile des résultats antérieurs puisque, dans cette comparaison, il existait peu de facteurs dont on ne tenait pas compte et qui pouvaient influencer la valeur de la variable auxiliaire qu'est la réglementation. Les résultats de cette analyse confirment la conclusion de l'analyse antérieure selon laquelle la réglementation en Saskatchewan a contribué à maintenir à un niveau sensiblement moins élevé les taux s'appliquant à un certain nombre de marchandises. En outre, des données financières sur la Saskatchewan se fondant sur les transporteurs de la classe III (qui se spécialisent dans le transport intraprovincial) laissent entendre que la réglementation des tarifs nuit sérieusement à la stabilité économique de l'industrie du camionnage dans la province.

- Robert Lord et Jack Shaw, Un examen comparatif des répercussions de la réglementation sur les opérations et les coûts des entreprises de camionnage intraprovincial en Alberta et en Ontario

Cette étude est axée sur un échantillon de transporteurs routiers intraprovinciaux du même type en Alberta et en Ontario; on a cherché à déterminer quelle influence, s'il y en a une, a eu la réglementation sur le fonctionnement et le rendement des entreprises ontariennes. Leur exposé met en relief un certain nombre de ressemblances et de différences entre les deux groupes de transporteurs. Les auteurs ont remarqué que, dans les deux provinces, les transporteurs se font activement concurrence pour attirer les clients et que les deux groupes mettent l'accent sur la concurrence au niveau des services. Cependant, la concurrence des prix semble plus grande en Alberta, notamment en raison des faibles obstacles à l'accès et de la tendance des nouveaux arrivants à abaisser leurs prix. Les transporteurs albertains se disent préoccupés de ce que ces nouveaux venus ne comprennent pas l'industrie et que, par conséquent, ils établissent des tarifs trop peu élevés pour être rentables. Les deux groupes de transporteurs considèrent les transporteurs privés comme étant leurs plus importants

concurrents. Ils s'alarment non seulement de la croissance du transport privé, mais aussi de ce que, selon eux, les transporteurs privés s'approprient les "trajets lucratifs", laissant les envois irréguliers et peu attrayants aux transporteurs pour compte d'autrui et en location.

Lord et Shaw font remarquer qu'il existe d'importantes différences géographiques et économiques entre l'Ontario et l'Alberta et que ces facteurs à eux seuls, sans tenir compte de la réglementation, entraîneraient des différences dans les opérations des deux groupes de transporteurs intraprovinciaux. Ils soulignent, par exemple, qu'en raison de la répartition de la population et de l'industrie, les retours lèges constituent un moins grave problème pour les transporteurs ontariens que pour les transporteurs albertains. Les auteurs considèrent cependant que ce problème a été aggravé par la présence de transporteurs albertains pour compte d'autrui et en location dont le nombre s'est accru par suite de l'absence de contrôles à l'accès. D'autres différences d'exploitation portent sur l'utilisation de l'équipement. Les tracteurs à deux remorques, communément utilisés entre Calgary et Edmonton, sont illégaux en Ontario. En outre, les transporteurs de l'Alberta font fonctionner leur équipement pendant de plus longues heures.

Lord et Shaw soulignent qu'il est difficile de comparer les prix et la qualité des services de camionnage entre l'Alberta et l'Ontario. Ils estiment que les taux dans les deux provinces devraient être comparés en se fondant sur le prix du transport de marchandises données sur des trajets comparables quant à leur longueur et à l'intensité de la circulation. Cependant, cette tâche est extrêmement difficile dans la pratique, et les efforts des auteurs pour comparer les tarifs en utilisant les données publiées par les principaux bureaux de la circulation dans les deux provinces illustrent bien la complexité de la question. En ce qui a trait au type ou à la qualité des services de camionnage, un certain nombre de différences ont été signalées. Les auteurs constatent que le nombre de remorques par tracteur est plus élevé en Ontario, ce qui pourrait indiquer que les transporteurs de cette province sont plus disposés que leurs homologues albertains à servir leurs clients en leur laissant les remorques. Les transporteurs ontariens ont tendance à offrir un service direct aux petits villages, alors que les transporteurs interurbains de l'Alberta livrent les marchandises à des terminus régionaux, laissant la distribution finale aux camions de livraison locaux. Les transporteurs ontariens ont laissé entendre qu'ils élimineraient ces trajets entrecoupés d'arrêts et transborderaient eux aussi leurs marchandises si la réglementation leur permettait de le faire.

Lord et Shaw font état de certaines préoccupations concernant la nature et les conséquences d'une concurrence non réglementée dans l'industrie du camionnage. Ils notent l'absence d'importants transporteurs indépendants en Alberta, situation

surtout attribuée à la forte concurrence existant sur le seul trajet important de la province (Calgary-Edmonton). Ils sont d'avis que le faible volume de marchandises transportées à l'intérieur de la province impose des coûts importants aux transporteurs de l'Alberta. Les ventes et les gains semblent plus instables en Alberta, ce qui a poussé les transporteurs à réduire leurs engagements et à garder leurs coûts aussi variables que possibles. Lord et Shaw croient qu'en l'absence de réglementation, le marché ontarien serait vulnérable à une concurrence destructrice. De façon générale, ils sont d'avis qu'il faudra trouver les réponses à certaines questions fondamentales relatives aux objectifs et aux effets des politiques de la réglementation publique avant que soit prise toute décision en matière de politique. "Peut-être la voie la plus souhaitable est-elle de remettre à plus tard toute décision, afin d'observer attentivement l'expérience américaine et d'en tirer profit".

SUMMARY*

The general subject of trucking regulation has become one of the most controversial regulatory issues in both Canada and the U.S. in recent years. In the United States, a prolonged debate has culminated in the passage of legislation to significantly reform the regulatory process; the Bill which was recently passed by Congress will liberalize entry into trucking, allow firms greater rate-setting freedom, and substantially reduce the general regulatory control the Interstate Commerce Commission has exercised for more than 40 years over the U.S. for-hire trucking industry. In Canada, a number of provincial governments, including Ontario, Alberta, Quebec, Saskatchewan, and British Columbia, have recently undertaken reviews of their approach towards the regulation of this industry. At the federal level, trucking regulation in Canada is being examined in connection with the work of the Interdepartmental Committee for the Study of Competition/Regulation in Transportation. And the Canadian Conference of Motor Transport Administrators, an association composed of members of the provincial regulatory boards and federal representatives, is looking at the specifics of the regulatory process with a view to the achievement of a greater degree of uniformity in provincial trucking regulations.

The studies in this Working Paper are intended to contribute to this general policy debate by probing certain aspects of the nature and effects of trucking regulation in Canada. While not all policy issues are addressed, the studies do reflect the thinking both of those who are troubled by the perceived direct and indirect costs of trucking regulation and would advocate a major change in the existing system, and of those who are concerned about the consequences, including in particular the potential market instability, which would result from any relaxation in government regulation. The studies also highlight the complexity of the institutional arrangements in trucking and the considerable diversity in the characteristics of for-hire motor carriers - both of which complicate attempts to understand the industry and to distinguish the impact of regulatory controls.

* This summary reviews the series of studies of trucking regulation in Canada. The study by Nix and Clayton, "Motor Carrier Regulation: Institutions and Practices" is contained in Studies of Trucking Regulation: Vol. I (Ottawa: Economic Council of Canada and The Institute for Research on Public Policy, Working Paper, 1980). The studies by Norman Bonsor; Michel Boucher; James McRae and David Prescott; and Robert Lord and Jack Shaw are contained in Studies of Trucking Regulation: Vol. II (Ottawa: Economic Council of Canada, Working Paper, 1980).

● F. Nix and A.M. Clayton, Motor Carrier Regulation:
Institutions and Practices

This paper looks in some detail at the institutional aspects of motor carrier regulation in Canada. Provincial trucking boards have been granted a broad range of powers with which to influence the operations of for-hire motor carriers engaged in both intra-provincial and extra-provincial transport. With the exception of Alberta, which does not effectively regulate entry into intra-provincial transport, all provinces require aspiring entrants into for-hire trucking to satisfy a test of "public convenience and necessity." Restrictions applied by the operating authority may constrain the freedom of the licence holder in a number of ways: with respect to commodities to be carried, routes to be followed, points to be served, frequency of service, vehicles and equipment to be used, etc. Some boards also attempt to regulate intra-provincial trucking rates, but there is considerable variation between provinces: the province of Alberta doesn't have any rate requirements, and the provinces of Ontario, Nova Scotia, New Brunswick and P.E.I. simply require trucking tariffs to be filed; Manitoba prescribes rates according to a "single price structure," and Saskatchewan prescribes maximum rates for some commodities while exempting a large number of items from any form of rate regulation; the other three provinces - Newfoundland, British Columbia and Quebec - require most trucking rates to be approved (in Newfoundland and Quebec this also applies to extra-provincial rates), although this would appear to amount to considerably less than effective rate regulation in many cases.

This study by Nix and Clayton elaborates on a number of important aspects of this regulatory system, highlighting the distinctions that exist between provinces and in the approach taken toward different segments of the industry. They indicate that virtually any statement describing regulatory institutions in trucking is subject to exception and qualification. While, for example, all provinces have created regulatory boards with wide-ranging responsibilities, provincial government departments, in many instances, are also intimately involved in regulatory functions. The requirement that motor carriers obtain a licence is subject to a number of exemptions - including, for example, private trucking, intra-urban transport, and the primary movement of unprocessed products of farm, forest, mine or sea. While five provinces are involved in rate regulation, in the sense that they either approve or prescribe rates, questions arise about the effectiveness of this control in view of the relatively limited resources generally devoted to this activity. All boards devote considerable resources to the licensing function and to the exercise of their authority over the terms and conditions under which firms may operate, but there are major enforcement problems and "there is a strong feeling expressed by some that a great many activities occur outside or beyond those intended by the regulatory boards when granting authority."

Provincial transport boards are viewed, for the most part, as "moderately independent" regulatory agencies. They tend to have a broad range of powers and considerable discretion in the exercise of these powers. However, governments do make use of the instruments available to them to influence broad aspects of the behaviour of motor transport regulatory boards. Nix and Clayton feel, nonetheless, that there is a policy vacuum. There is considerable ambiguity as to why regulation exists, and what the boards are supposed to be accomplishing both in general terms and with respect to specific policy issues. They note that regulators typically react to events, and that developments occur in an incremental manner. The result is that motor carrier regulation has developed a momentum of its own. In the process fundamental questions about the purpose of regulation and the direction of government policy in trucking have remained unanswered.

● Norman Bonsor, The Costs of the Regulatory Process in the Canadian For-Hire Trucking Industry

This study looks at the annual costs to existing trucking firms of participating in the regulatory process. The specific focus is on the legal and administrative costs incurred in applying for new licences and in opposing the applications of potential entrants. Bonsor surveyed a sample of for-hire carriers distributed such that the respondents represented at least 10 percent of the revenue generated by for-hire carriers in each province. The results of this survey suggest that annual costs to the trucking industry of entry seeking and entry forestalling activities are in the order of \$40 million (based on 1977-78 data).

Bonsor found that these direct regulatory costs varied considerably between provinces due to the different regulatory procedures adopted by individual boards. In British Columbia costs of the regulatory process to carriers (calculated as a proportion of operating revenue) are very low due to the infrequency of public hearings, and the minimal input of the legal profession. This is very different from the situation in Ontario where the regulatory process has become highly judicialized and where there is extensive involvement by the legal profession. The Ontario board will only accept verbal evidence and hearings tend to be lengthy, with a large number of witnesses typically being called by both applicants and intervenors. Bonsor estimates that the regulatory process in Ontario involves annual costs to carriers of around \$30 million. In Manitoba, Saskatchewan and the Maritime Provinces, regulatory procedure is similar to that in Ontario, but costs to the carriers tend to be lower. This is attributed to the lower average legal fees in these provinces, to the smaller size of the trucking industries, which results in there being fewer objectors for individual licence applications, and to the greater consistency in board decisions. Quebec carriers indicated that their major expense was not legal fees, but the time delays and administrative costs involved in making and

opposing licence applications. It is estimated that average annual costs of participating in the regulatory process in this province are about \$8 million.

● Michel Boucher, Regulation of the Quebec Trucking Industry:
Institutions, Practices and Analytical Considerations

This paper examines the role and practices of the Quebec Transport Commission (QTC), and attempts to assess the significance of regulatory restrictions in this province and their impact on the performance of the Quebec trucking industry. Boucher indicates that the interpretation given by the QTC to the test of "public convenience and necessity" makes the requirement for a licence a major obstacle to entry. He notes, for example the Commission will tend to reject a permit application which is likely to increase competition and could thereby endanger the financial stability of existing firms. The rate approval process in Quebec, on the other hand, appears to be largely a formality; the proportion of requests for rate changes granted in whole or in part by the QTC tends to generally be well over 90 percent. These aspects, along with the significant role of the Quebec Tariff Bureau in attempting to co-ordinate rate applications by members of the for-hire trucking industry, suggest that regulation is likely to substantially reduce competition and provide for the realization of monopoly rents.

However, Boucher points out that a number of factors have eroded the influence both of the QTC and the Quebec Tariff Bureau. The availability of substitute transport services has substantially reduced the effects of the QTC's entry restrictions. In this regard, Boucher refers specifically to the services of freight brokers and leasing (or pseudo-leasing) firms, and to the potential alternatives in the form of rail and private carriage. In addition, "illegal trucking" has become an important phenomenon in the province as a result of the rather lax enforcement of the Commission's regulations and the low fines for violations. As for the activities of the Quebec Tariff Bureau, Boucher points out that it does not and could not effectively "cartelize" the industry given its inability to enforce rates and production quotas, and the strong incentive of individual members to undermine any such cartel. Motor carriers in the province in fact often take "independent action" filing rates different to those proposed by the Bureau. Therefore, notwithstanding the existence of institutional impediments, competitive forces would appear to be a significant influence in the Quebec trucking industry.

An examination of various aspects of the performance of the Quebec trucking industry was found to confirm the importance of competitive factors. Although some permits in the province have acquired a market value, these were estimated to be quite low (as a percentage of operating revenue) - well below the levels found for the U.S. This suggests that regulation is not giving rise to very substantial excess profits for the industry as

a whole. A comparison of before-tax rates of return for firms in Quebec and firms in Alberta supports this finding. More generally, the analysis of market structure and performance leads Boucher to conclude that trucking regulation in Quebec is largely ineffective. The availability of intra-modal and inter-modal substitutes has considerably reduced the impact of regulation on industry performance and greatly diminished its negative consequences for allocative efficiency. This evidence of the ineffectiveness of regulation leads Boucher to question the usefulness of the Quebec Transport Commission: "Since it provides no benefit to society, but will consume an operating budget of about \$7.5 million in 1978-80, economic efficiency would dictate its dismantling. The welfare of society would then increase at least by the amount of the resource savings achieved."

- James McRae and David Prescott, An Econometric Analysis of the Effects of Regulation on the Canadian Common Carrier Industry

This paper reviews previous efforts to estimate the impact of regulation on the price of trucking services and attempt to improve upon this work by running new regression equations using micro data from the 1975 and 1976 for-hire trucking survey. Earlier work in this area suffers from the poor quality of the available data, from the failure of the authors to distinguish adequately between different provincial regulatory regimes, and in one case, from the use of an invalid estimation procedure. In their study for the Council, McRae and Prescott focus on intra-provincial trucking rates in six provinces (Alberta, Ontario, Quebec, Manitoba, Saskatchewan, and British Columbia). To determine the impact of regulation on rate levels they regress revenue per ton mile on shipment distance, shipment weight, factor costs, and a set of dummy variables corresponding to the different forms of provincial trucking regulation. For this exercise the provinces were grouped into one of four types of regulatory regime: entry control with rate prescription (Manitoba and Saskatchewan); entry control with rate approval (British Columbia and Ontario); entry control with rate filing (Ontario); and no regulation (Alberta). The equation was fitted to pooled shipment data for 1975 and 1976 and run separately for each of six commodity groups.

After adjusting for differences in the type of trucking shipments and in factor costs, it was found that there are still very substantial differences in trucking rates between provinces subject to different regulatory regimes. More specifically, the results indicated that the unit prices of shipping food, fabricated materials, and end products by truck are substantially higher in Ontario, British Columbia and Quebec than in the unregulated province of Alberta. On the other hand, unit prices in Manitoba and Saskatchewan, the provinces with rate prescription, were lower than in Alberta. Similar results were obtained when the authors fitted separate regressions for each commodity to data from each of the six provinces. These analyses indicate that numerically and statistically significant differences in rates exist between provinces, and "the ranking of provinces by

rate levels corresponds exactly to the ranking one would expect by looking at different regulatory regimes". However, because of the factors excluded from the analysis, the authors point out that it would be inappropriate to attribute the unit price differences identified to regulation exclusively.

In an extension of their original study, McRae and Prescott looked in greater detail at the rate differential between Saskatchewan and Alberta, utilizing the fact that in Saskatchewan there is a large number of commodities which are exempt from intra-provincial entry and price controls. A regression of the same basic functional form as in the previous analysis was fitted to data for a group of regulated and unregulated commodities in Saskatchewan and to a matched group of commodities in Alberta. This analysis provides a useful check on the earlier results since in this comparison there are few unaccounted factors which could influence the value of the regulatory dummy. The results of this analysis support the implication of the previous finding that regulation in Saskatchewan has substantially depressed the rates applying to a number of commodities. Financial data on Saskatchewan based Class III carriers (who concentrate on intra-provincial shipments) suggest, moreover, that rate regulation is seriously affecting the economic health of the provincial trucking industry.

- Robert Lord and Jack Shaw, A Comparative Examination of the Impact of Regulation on the Operations and Costs of Intra-Provincial Trucking Firms in Alberta and Ontario

This study focuses on a sample of matched intra-provincial motor carriers in Alberta and Ontario with a view to discovering what influence, if any, regulation has had on the operation and performance of the Ontario firms. The study highlights a number of similarities and differences between the two groups of carriers. The authors observe that their sample carriers in both provinces compete actively for customers, and that both groups place a major emphasis on service competition. However, price competition appears to be more severe in Alberta, due in large part to the low entry barriers and the tendency for price cutting by new entrants. The Alberta carriers were concerned that new entrants did not understand the business and that, as a result, set rates too low to be profitable. Both groups of carriers viewed their main competitive threat as coming from private carriage. The carriers were alarmed not only by the growth of private carriage but also by their perception that private carriers were taking the "profitable runs" leaving the relatively undesirable odd movements to for-hire carriers.

Lord and Shaw note that there are major differences in geography and in economic conditions between Ontario and Alberta, and these factors, quite aside from regulation would result in differences in the operations of the two sets of intra-provincial carriers. It is indicated, for example, that because of the distribution of population and industry, backhauls are less of a

problem for the Ontario than for the Alberta carriers. The authors, however, see this problem as being compounded by the relatively large number of for-hire carriers in Alberta resulting from the lack of entry controls. Other operating differences relate to equipment usage. Three unit trains which are common in the Calgary to Edmonton run, have been illegal in Ontario. Alberta carriers also work their equipment over longer hours.

Lord and Shaw emphasize the difficulty of comparing the prices and quality of trucking service in Ontario and Alberta. They suggest that rates in the two provinces should be compared on the basis of the price of moving given commodities over traffic lanes which are reasonably comparable in terms of distance and traffic balance. However, such an exercise is extremely difficult to carry out in practice, and efforts by the authors to compare rates using the data published by the main tariff bureaux in the two provinces illustrate the complexity of the rate issue. With respect to the type or quality trucking service in the two provinces, a number of differences are highlighted. The authors note that the trailer to tractor rate is higher in Ontario suggesting that carriers in this provinces may be more willing to service their customers by leaving trailers with them. The Ontario carriers tend to provide direct service to small communities while the Alberta inter-city carriers instead make their deliveries to regional terminals, leaving final distribution to local pick-up and delivery trucks. The Ontario carriers indicated they would eliminate these "pedal runs" and tranship their freight if it were not for regulation.

Lord and Shaw raise a number of concerns about the nature and consequences of unregulated competition in the trucking industry. They note that there is no large independent carrier in Alberta. This is attributed mainly to the extensive competition on the province's only major tariffic lane (Calgary-Edmonton). The small volume of intra-provincial freight is seen to impose significant costs on Alberta shippers. Sales and earnings are seen to be more volatile in Alberta. This has caused carriers in this province to reduce their investment commitment and to keep costs as variable as possible. Lord and Shaw feel that, in the absence of regulation, the Ontario market would be susceptible to destructive competition. More generally, they feel that there are some basic questions about the objectives and effects of government regulatory policy which require answers before any policy decisions are made. "Perhaps the very best action we can take is to defer any decision while we watch and learn from the American experience."

THE IMPACT OF REGULATION ON FOR-HIRE HIGHWAY CARRIERS:
AN ANALYSIS OF THE COST BORNE BY CARRIERS
IN THE PRODUCTION OF REGULATORY DECISIONS

Norman C. Bonsor
Department of Economics
Lakehead University

1. INTRODUCTION

Since the 1930's, the extent of government regulation of business activity in Canada has increased dramatically, with the proliferation of regulatory intrusion in recent years being particularly pronounced. In an increasing number of Canadian markets, resource allocation - and the resulting distribution of factor payments - is no longer determined by the free play of market forces, but by regulatory manipulation of market supply.

The for-hire trucking industry in Canada is, in most Provinces, subject to some form of government imposed economic regulation. In recent years, the question of whether or not economic regulation of the industry is desirable or necessary has received considerable attention from both academics and government. Since 1976, the Provinces of Alberta, British Columbia and Ontario have conducted major studies concerning the regulation of for-hire trucking carriers.

Economic regulation entails a suppression or limitation of market forces either by the exertion of control over the number of producers in an industry or their levels of output, and/or the regulation of selling prices. It must be noted that regulation of a non-economic nature intended to secure such objectives as safe working

conditions and product or environmental safety will also have an impact on market prices. In this paper, the objective is to analyze the impact on producers of for-hire trucking services of participating in the existing regulatory process.

A large amount of research - much of it inconclusive - has been directed at the question of whether economic regulation of the for-hire trucking industry has led to rates that are above the level that would have been set in the absence of regulation.¹ The aim in this paper is more limited. Although regulation is supplied by governments, the provision of regulatory services entails costs for both regulators and regulatees. The direct cost of providing the regulatory mechanism - the regulatory Boards and the associated legal framework - falls on the general tax paying public. In many instances, the cost borne by the taxpayer - qua - taxpayer is only a small portion of the total cost associated with producing regulatory decisions. In order to produce regulatory decisions, producers of for-hire trucking services must commit resources to activities connected with the operation of regulatory Boards. Specifically, the producers of for-hire trucking services will face costs in relation to entry seeking (and entry forestalling) activities and also with respect to rate regulation.

¹ Extensive bibliographies are given by Phillips (1975) and Trebilcock (1977).

The costs to the trucking industry of participating in the production of regulatory decisions will only be a portion of the total cost of regulation. From the perspective of economic theory, restrictions on supply will lead to two separate effects: a transfer of surpluses from consumers to producers and the creation of dead-weight losses resulting from inefficient production levels. In addition, there may be large additional losses caused by "X" inefficiency stemming from the partially protected nature of the industry under regulation.² That is, the existing cost experience of carriers tends to include the "X" inefficiency imbedded in the system.

It has been shown that the for-hire trucking industry - over a wide range of output - is characterized by approximately constant returns to scale and that, given the highly divisible nature of most production inputs, output can be adjusted relatively quickly in response to shifts in the industry demand curve.³ It is appropriate to use a neo-classical framework as a reference point for the analysis. In markets with atomistic producers and consumers, as would occur in a freely functioning market for for-hire trucking services, social

² To quote Douglas (1977, p. 181) " ...in mundane terms, sloppy management and waste".

³ See for example, Meyer et.al. (1969), Kahn (1972), Koenker (1977). The presence of constant returns to scale is of course not a necessary condition for the existence of an optimal solution.

benefits - measured by the sum of producers' and consumers' surpluses - will be maximized by marginal cost pricing. Anderson (1977) has shown that this maximization occurs due to the offsetting nature of externalities in the price system. Collusion among producers, as in the formation of a cartel or consumers, as in the formation of a consumers' union, represent attempts to redefine the distribution of economic rents.

The operation of regulatory agencies necessarily involves a redistribution of income - and an alteration in the allocation of resources - compared with the distribution that would have been yielded by unconstrained market forces. The demand for the limitation - or in some cases the complete elimination - of market forces arises from the desire of market participants to increase their share of economic rent, either as producer or consumer surplus. The impact of regulation on the distribution of income and allocative efficiency will, of course, be determined by market structures and the type of regulatory intervention.

2. THE INSTITUTIONAL FRAMEWORK FOR REGULATORY INTERVENTION IN THE FOR-HIRE TRUCKING INDUSTRY

The powers, procedures and policies of government agencies involved in the regulation of highway trucking in Canada are not homogeneous across provinces. An examination of the operations of the agencies responsible for the economic regulation of highway trucking

reveal that there are substantial and fundamental differences across both with respect to the substance and to the form of economic regulation.

In Canada, the regulation of intra-provincial highway transportation rests with provincial governments. The majority of provinces enacted regulation to control the supply of for-hire trucking during the 1930's in response to the oversupply of such services and general disarray of the industry.⁴

Although the pattern of regulation differs across provinces, the feature that is common to most highway transport regulatory agencies is that the grant of an operating authority is subject to the test of "Public Necessity and Convenience". (British Columbia and Prince Edward Island are notable exceptions: in British Columbia the Commission may take into account the "Public Interest", whereas in Prince Edward Island the enabling legislation for regulation makes no mention of "Public Necessity and Convenience"). The term public necessity and convenience gives regulatory bodies essentially unfettered discretion in substantive matters. In Union Gas v. Sydenham 1957 (SCR'85), the Supreme Court of Canada held that the test of public necessity and convenience was purely

⁴ See Bonsor, 1977.

subjective. To quote Rand, J.:

" ... It is not an objective existence to be ascertained; the determination is the formulation of an opinion in this use, the opinion of the Board and the Board only."

In a much quoted 1935 decision, Masten, J.A. wrote:

"the distinguishing feature of an administrative tribunal is that it possesses a complete, absolute and unfettered discretion, and is guided by its own ideas of policy and expediency. Hence, acting within its proper province and observing any procedural formalities described, it cannot err in substantive matters because there is no standard to judge or correct it by."

Public necessity and convenience is a subjective provision (and in consequence one that defies meaningful definition) which allows regulatory boards unfettered discretion.

In the highway trucking industry, economic regulation is implemented by two major types of activity: entry control and rate regulation. Entry control, if effective, will necessarily reduce the market supply of for-hire trucking services to below the level that would have been secured in a free market. Rate regulation, by itself, attempts to exert a degree of administrative control over pricing. In addition to entry control and rate regulation, most provinces also require carriers to file their rates with the

regulatory board. Rate filing, does not however, yield regulatory boards any significant control over rate levels.

Table 1 presents a classification of provincial regulation with regard to purely intra-provincial for-hire highway carriage. As can be seen, all provinces except Alberta practice some form of economic regulation.

TABLE 1: REGULATION OF INTRA-PROVINCIAL FOR-HIRE
HIGHWAY TRUCKING

	Entry Control	Rate Regulation	Rate Filing
Prince Edward Island	Yes	No	Yes
Newfoundland	Yes	Yes	Yes
Nova Scotia	Yes	No	Yes
New Brunswick	Yes	No	Yes
Quebec	Yes	Yes	Yes
Ontario	Yes	No	Yes
Manitoba	Yes	Yes	Yes
Saskatchewan	Yes	Yes	Yes
Alberta	No	No	No
British Columbia	Yes	Yes	Yes

Nine provinces regulate the entry of producers into the industry and five provinces exert some form of regulatory control over the level of rates.

It should not, and cannot, be assumed that the degree of entry control (or the level or rate regulation) is homogeneous across provinces or indeed homogeneous across district sectors of the industry within a given province. Across provinces, barriers to entry will differ due to the difference in policies adopted by the regulatory boards. Given that there is no precise definition of the terms "public necessity and convenience" and "public interest", the interpretation of these "tests" for the grant of operating authorities will vary across regulatory boards.⁵ Within a province, some sectors of the industry will be controlled more closely than others. In similar fashion, rate regulation will be conducted differently across provinces and, in some instances, differently across various sectors of the industry within provinces. In addition, all provinces, except Quebec, exempt some commodity movements or routes from part, or all, of economic regulation.

With respect to extra-provincial for-hire highway carriage, the Motor Vehicle Transport Act (Canada) 1954, effectively and formally delegates the authority to regulate inter-provincial traffic to the provinces. The legislation was enacted as a direct result of the 1954

⁵ The former Chairman of the Ontario Highway Transport Board stated that "... these words (public necessity and convenience) are subject to our interpretation as we see the circumstances of each situation". Ontario Select Committee of the Legislature on Highway Transportation of Goods.

decision of the Privy Council in the Winner case. The Privy Council held that under Section 92(10)(a) of the British North America Act that a province cannot prevent or restrict inter-provincial traffic. Since provinces had been regulating inter-provincial traffic, and since the Federal Government did not wish to enter this field, the Motor Vehicle Transport Act was enacted. It should be noted that Part III of the National Transportation Act (Canada) 1967, provides for Federal regulation of extra-provincial traffic. Thus far, Part III has not been proclaimed. The present situation is that a carrier wishing to transport goods across provincial boundaries must obtain operating authorities from all concerned provincial highway regulatory authorities. Table 2 presents a classification of provinces with respect to the regulation of extra-provincial traffic.⁶

⁶ Section 3.2 of the Motor Vehicle Transport Act states that a Provincial Transport Board "... may in its discretion issue a license to a person to operate an extra-provincial undertaking into or through a province upon the like terms and conditions and in the like manner as if the extra-provincial undertaking operated in the province were a local undertaking". It must be noted that many Provincial Transport Boards do treat intra-provincial undertakings differently from extra-provincial undertakings. For example, Manitoba and Saskatchewan regulate intra-provincial rates but do not regulate extra-provincial rates. Alberta does not automatically grant entry for extra-provincial movements as it does for intra-provincial movements.

TABLE 2: REGULATION OF EXTRA-PROVINCIAL FOR-HIRE
HIGHWAY TRUCKING

	Entry Control	Rate Regulation	Rate Filing
Prince Edward Island	Yes	No	Yes
Newfoundland	Yes	Yes	Yes
Nova Scotia	Yes	No	Yes
New Brunswick	Yes	No	Yes
Quebec	Yes	Yes	Yes
Ontario	Yes	No	No
Manitoba	Yes	No	No
Saskatchewan	Yes	No	No
Alberta	Yes	No	No
British Columbia	Yes	No	No

All provinces control entry, whereas only two provinces - Newfoundland and Quebec - exert control over extra-provincial rate levels.⁷

3. A BRIEF ANALYSIS OF REGULATORY MECHANISMS ACROSS PROVINCES

Prior to assessing the costs to producers of for-hire trucking services of participating in the regulatory process, it is necessary to briefly mention the manner in which the various provincial regulatory bodies operate.⁸

⁷ In both instances, some extra-provincial movements are exempt from rate regulation.

⁸ A detailed analysis of provincial regulation is given by House et al (1977).

British Columbia

Under the authority of the Motor Carrier Act, highway trucking in British Columbia is regulated by the Motor Carrier Commission. The Motor Carrier Branch of the Ministry of Transportation and Communications is responsible to the Commission for the administration of the Act.

The Commission, in deciding whether to grant a request for an operating authority, is not guided by any obligatory statutory requirements. The Act states that the Commission may take into account objections from other highway carriers, and from carriers in other modes, the public interest and the permanence and quality of the proposed service.

The procedure followed in British Columbia is, on receipt of an application for entry into the industry, for the Motor Carrier Branch to conduct an investigation.⁹ The investigation will normally include an interview with the applicant, his supporters and the declared objectors. Upon completion of the investigation, the Superintendent of the Motor Carrier Branch - acting under delegated powers - may render a decision or he may ask the Commission to decide the case, The Commission may issue a decision or it may call for a public hearing. In recent years, the

⁹ The Motor Carrier Act does not mandate the procedure the Commission is to follow. It merely states that "... after such investigation as the Commission deems proper, the Commission may grant, in whole or in part, or refuse the application".

Commission has held less than 20 public hearings per year.

The Act, or regulations made under the Act, exempt from the Commission's domain, vehicles owned by the Federal, Provincial and U.S. Governments, vehicles performing movements for the above Governments, and movements within certain specified geographic areas. The Commission classifies licenses into two types: Public Freight Vehicles (common for hire carriage) and limited Freight Vehicles (contract carriage). The Commission has the power to attach any condition or restriction to a license that it deems appropriate. Restrictions typically take the form of specifying routes and delivery points, commodities that may be carried, shipment size and named shippers.

The Commission has a wide ranging power to prescribe highway trucking rates. In the majority of cases the Commission relies on market forces to set rates and has exercised little direct control over rate levels. The degree of control has tended to be largest over rates in the household goods movers sector of the market. No control is extended over extra-provincial rates.

A notable feature of the regulatory process in British Columbia is that the role of legal counsel in proceedings is very small.

Alberta

The industry in Alberta is regulated by the Motor Transport Board under authority of the Motor Transport Act. In a de facto sense, intra-provincial for-hire trucking in Alberta is exempt from entry regulation. An applicant for a license must show that he has met the requisite insurance and registration requirements and is a resident of the Province.

The Board does exercise control over inter-provincial highway trucking. In assessing applications for inter-provincial operating authorities, the Board has no statutory criteria to which it must adhere. Decisions on most applications are decided at a public meeting. The public meeting is essentially an informal procedure where the application is discussed in a non-advisory manner. If the application is refused, the carrier can apply for a formal public hearing. In 1977, the Board dealt with approximately 390 extra-provincial applications, of which only 11 resulted in public hearings.

The Board does not exert any regulatory control over inter or intra-provincial rate levels.

Saskatchewan

The Saskatchewan Highway Traffic Board regulates trucking in the province under the authority of the Vehicles Act.

The overriding statutory objective of the Board is to "promote the public business". All commercial vehicles must obtain a license and a certificate of registration from the Board. The Board, however, issues a number of "blanket" exemptions, notably for intra-provincial private carriage, urban movements¹⁰, minor for-hire carriage by farm trucks and crude oil transport up to 35 miles from the well, that has the effect of removing a large number of vehicles from the Board's economic regulatory domain.

The Board issues licenses in four categories: A, AG, C and D. Classes A and AG are basically for-hire freight categories and C and D are basically for commercial (typically private) carriage. With respect to general merchandise, class A and AG vehicles must possess specific authorities for intra-provincial movements. However, vehicles do not need to possess specific authorization to haul what is termed Group I exempt commodities intra-provincially. (Group I includes items such as coal, grain, gravel, sand, wood and road construction material). For extra-provincial hauls, class A, C and D vehicles need specific authorization to haul Group I commodities. (Class AG is not allowed extra-provincial authority). Class A and D vehicles do not need specific authorities to haul Group II commodities intra-provincially. (Group II commodities include lumber, frozen fish, concrete blocks, scrap metal, and ore concentrates. The list of commodities is in

¹⁰ Within the corporate limits plus a 5 mile radius.

excess of 45). In addition, class AG vehicles may haul - without specific authority - Group II commodities up to 35 miles from their home base. Extra-provincial specific authorities are required by class A and D vehicles.

Upon request for a specific authority, the Board will order a public hearing. The exception to this general procedure is for unopposed applications for class A and AG specific authorities, the movement of owners' goods, and closed door corridor authority. The hearings before the Board will only accept verbal evidence. (In cases where the applicants and objectors agree, the Board will dispense with a public hearing and accept evidence and arguments in written form). It is to be noted that the Board does not provide written reasons for decisions.

The Board prescribes general merchandise freight rates for intra-provincial movements of milk, cheese and household goods. The Board allows carriers to set rates between a prescribed maximum and minimum rate. In a few instances, the Board has accepted filed rates that differ from the prescribed rates.

Manitoba

Under the Highway Traffic Act, the Motor Transport Board regulates highway trucking activity in the province. The Act requires that all commercial trucks be licensed by the Board. The Board,

however, exempts from economic regulation most private trucks, and the movements of grain, unprocessed forest products, sand and gravel, the first movement of fruit and vegetables and other farm related products.

The statutory criteria that the Board follows with regard to entry decisions is that, the grant of an operating authority is dependent on the finding that the existing transportation facilities are insufficient or that public convenience will be promoted. The Board rigorously follows these guidelines and requires applicants to prove their case,

Although not compelled by law, the Board holds public hearings. These hearings are formal in nature, with parties generally being represented by counsel. The Board does provide written reasons for decisions.

The Board has very general powers with regard to rates. As a matter of policy, the Board has prescribed a Single Price Structure, based on a distance-density-weight tariff, that allows carriers little flexibility in setting rates. The Board has allowed some carriers to file special tariffs, mainly for the movement of bulk commodities. The rate adjustment procedure involves public hearings that are adversary in nature. The Board does not exert control over extra-provincial rates.

Ontario

The Ontario Highway Transport Board, together with the Ministry of Transportation and Communications, regulate entry into the for-hire trucking industry under the authority of Public Commercial Vehicles Act

and the Ontario Highway Transport Board Act.

The Public Commercial Vehicles Act requires that no person shall operate for compensation a commercial vehicle for the transportation of goods unless he has obtained an operating license.¹¹ The Act dictates that prior to the Minister of Transportation and Communications issuing a license, a certificate of Public Necessity and Convenience must first be obtained from the Ontario Highway Transport Board.¹² Private carriage is thus not subject to any economic regulatory activity. Ontario also exempts from economic regulation for-hire trucking within (and up to three miles beyond) the boundaries of an urban municipality,¹³ the first movement of farm and forest products (milk and livestock excluded),¹⁴ and valid lease arrangements.¹⁵

11 For-hire transportation of goods by automobiles is excluded from the Board's jurisdiction.

12 If the Board issues a certificate, the Minister may issue a license.

13 Such carriers may be subject to municipal regulation however.

14 As of December 1, 1979, the movement of forest products will require a class "W" license.

15 These arise when the lessee has exclusive control over the leased vehicle and driver, provided the vehicle is not subject to more than one lease at a given time.

An applicant for an operating authority must satisfy the Board as to his fitness and financial ability. The overriding consideration is whether or not public necessity and convenience will be served by the grant of an operating authority. Although public necessity and convenience is a vague and nebulous term, the O.H.T.B. - unlike Boards in most other provinces - does not appear to have a consistent policy for applying the test.¹⁶

The Board classifies operating authorities for intra-provincial movements into 11 classes, varying from class "A" (common carrier) through classes "C" (continuous trip movement for a severely restricted number of consignees and consignors, typically full-truck load) and "D" (a transport service for a specific class of freight or for named shippers) to specialized licenses such as class "T" (transportation of bulk commodities in a tank vehicle). In addition, the Board places numerous restrictions on operating authorities with respect to commodities carried, origin and destination, gross shipment weight, fleet size and vehicle type. An added feature of the licensing system is that "privileges" - other operating authorities - may be attached to the basic operating authority. For example, an "A" authority may have attached "C" and "D" privileges.¹⁷

¹⁶ See Bonsor (1977, pp. 112-114).

¹⁷ One license found by the Select Committee on the Highway Transportation of Goods runs to 80 pages in length.

Hearings before the Board are very formal in nature and are subject to SS4-24 of the Statutory Powers Procedure Act, which in turn provides for the application of the Evidence Act. The Board will only accept verbal evidence (and this under oath), with witnesses being examined and cross-examined by the applicant (or his counsel) and the respondents (or their counsel). The vast majority of applicants and objectors are represented by counsel. In 1976, the Board heard 4149 cases under the Public Commercial Vehicles Act and 934 under the Motor Vehicle Transport Act. A high proportion - over 30% - were heard in chambers.¹⁸

The Board does not attempt to regulate rates, either intra or extra-provincially.

Quebec ¹⁹

The Quebec trucking industry is regulated under the authority of the Transport Act by the Transport Commission. The only element of the industry that is not subject to regulation is private trucking.

The Commission licenses for-hire trucking according to a number of classifications. The most important distinction is between general trucking and restricted trucking: restricted permits only allow

¹⁸ S9 of the Statutory Powers Procedure Act provides that hearings shall be public unless the matters to be considered are of a confidential or personal nature.

¹⁹ The description of the Quebec regulatory mechanism relies heavily on the work of M. Boucher (1979).

the carriage of particular commodities, such as household goods, or contract carriage. Both types are specified as to frequency (regular or irregular) and to whether they are local (within a named locality) or long distance.

The Commission is not given any statutory guidance on which to base entry decisions. However, the Commission does apply a public interest test. The rulings of the Commission have, apparently, established that applicants for a license must show that there is a need for their proposed service and that the existing services are inadequate.

If an application for an authority is not opposed by any existing carrier, the Commission will consider a staff report. Prior to refusing an application - and in the case of all opposed applications - the Commission must hold a public hearing. The hearings are formal in nature and the rules of evidence of the Civil Code are applied to proceedings before the Commission. It is to be noted that the Commission's President and Vice-President are chosen from among the Judges of the Provincial Court.

The Commission has wide powers to fix rates. At present four rate types are allowed by the Commission: agreed charge rates, contract rates, commodity rates and class rates. Agreed charge and contract rates are negotiated between carrier and shipper and are lower than the commodity rates "fixed" by the Commission.²⁰ Commodity

²⁰ Apparently, agreed charge and contract rates account for a very small portion of carrier revenue.

rates apply to specific commodities for movements of a given minimum weight between specified points whereas class rates apply to less-than-truckload irregular movements between specified points. The class rates are higher than comparable commodity rates. Essentially, the commodity and class rates are formulated by the Quebec Tarrif Bureau and are submitted to the Commission for "fixing". The Commission may alter the submitted rates but in recent years, it has done so only infrequently. It is to be noted that extra-provincial rates - with the exception of U.S. bound or originating movements - are subject to regulation.

New Brunswick

The for-hire trucking industry is regulated by the Motor Carrier Board under the authority of the Motor Carrier Act.

The Board exempts, either by virtue of the Motor Carrier Act or by regulation, a number of movements from economic regulation. The exempt movements include sand, gravel, earth, unprocessed forest products, the first movement of unprocessed sea, farm and mine products, (for sea and farm products the vehicle must be owned by a fisherman or farmer), movements in some urban areas, and for-hire movements in vehicles owned by farmers, fishermen and lumbermen that are "normally" used for moving unprocessed sea, farm, forest and mine products and private carriage.

An applicant for a license must show that the grant of an authority will promote public necessity and convenience. The Motor Carrier Act mandates that the Board consider in its deliberations the impact of the proposed service on existing transportation suppliers, the existing services supplied by for-hire carriers and the railroads, and the probability of the proposed services being permanent and continuous. The Board holds public hearings on license applications and the hearings are relatively formal in nature.

The Board classifies licenses into three major types: general freight, contract carriage and speciality (such as household goods). The Board has wide ranging powers to attach conditions to licenses, such as routes and the shippers served.

The Board has the power to set rates, but in practice the Board does not control rates.

Nova Scotia

The for-hire trucking industry in Nova Scotia is regulated by the Board of Commissioners of Public Utilities under the authority of the Motor Carrier Act.

The Board exempts from economic regulation all carriers operating with no more than two axle trucks, the movement of sand, gravel and materials used in highway construction and maintenance, limestone,

fertilizer, fresh herring, unprocessed round fish, fish offal and unprocessed forest products, logs and pulpwood.

In considering an application for a license, the Board looks at the sufficiency of services provided by objectors (including water, highway, air and rail carriers), the quality and permanence of the proposed service, the possibility of oversupply, and the effect of the proposed service on existing transportation services and the public interest. In the case of an opposed application, the Board will order a public hearing. Such hearings tend to be formal in nature.

The Board classifies licenses into general and restricted freight licenses (restricted licenses are specific as to the type of freight carried or, in the case of contract carriage, to the named shippers). The Board also has the power to specify routes and frequencies.

The Board does not control rates.

Prince Edward Island

The Public Utilities Commission, under the authority of the Motor Carrier Act, regulates for-hire trucking in Prince Edward Island.

The Commission exempts from economic regulation the first movement of unprocessed farm and sea products, - when moved in vehicles owned by farmers and fishermen, - movements of unprocessed forest products,

vehicles owned or used by or for a farmer, fisherman or lumberman and usually used for the transport of unprocessed forest products or the first movement of unprocessed farm and sea products and private carriage. Although there is no "official" license classification scheme, the Commission categorizes licenses into general freight, contract carriage and speciality carriage. In addition, the Board specifies routes, types of commodities that may be carried and also names shippers.

When reviewing an application for an operating authority, the Commission has a mandatory obligation to consider the transportation services supplied by a railroad or for-hire highway carrier, the permanence of the proposed service and the effect of the proposed service upon other transport services. The Act does not require a public interest test.

All license applications result in a public hearing. The typical hearing involves the presentation of the applicants case followed by the case presented by objectors. The hearing process tends to be less formal than that in most other jurisdictions.

The Board does not regulate rates.

Newfoundland

The Motor Carrier Act gives the Board of Commissioners of Public Utilities Control - with one exception - over the for-hire trucking sector. The exception is that the Canadian Transport Commission regulates

regulates the activity of CN Roadcruiser Service (a major carrier in the province).

The Board exempts from economic regulation the first movement of unprocessed mineral ores and sea and farm products, unprocessed forest products, private carriage, vehicles regulated municipally and movements in the Goose Bay region of Labrador.

The Board, in deciding whether to grant a license, operates a public necessity and convenience test. The Act allows the Board (but does not mandate) to consider, in deciding whether the public necessity and convenience will be served by the grant of an operating authority, the objections of all existing suppliers of for-hire transportation, whether the service would create an excess supply, and the general effect on other transport services and the public interest.

In the case of contested applications, the Board will order a public hearing. The hearing process is formal, with evidence being given under oath (only verbal evidence is accepted). Both applicants and objectors are normally represented by counsel.

The Board classifies licenses into general freight, speciality services (such as furniture, milk and controlled temperature movements) and contract services. In addition, the Board imposes restrictions on routes, commodities and service frequencies.

The Board has the power to approve, fix and revise rates and is actively involved in rate regulation, both with regard to intra and extra-provincial movements. In some instances, the Board fixes rates and in others it merely approves filed rates

4. THE PRODUCTION OF REGULATORY DECISIONS

In many instances, especially when rates are not subject to control or are set by regulatory Boards above the level that would have been determined by an unconstrained market mechanism, entry control may have the potential of yielding existing producers an economic rent. Provided that regulatory Boards allow existing producers to sell their operating authorities, then the value of property rights created by regulatory control will be determined by the discounted present value of producers' surplus. Whether or not these potential surpluses are realized will depend, in part, on the type of regulation that is practiced.²¹ If property rights are valuable, existing producers will logically commit resources to entry restricting activities up to the

²¹ It is possible that regulation, although leading to prices in excess of competitive prices, does not yield producers a surplus. An example of this can be seen in the regulated U.S. domestic Airline industry. See, for example, Douglas and Miller (1977).

point where the marginal cost of these activities is equal to the marginal benefit.²²

In most provinces, economic regulation of the for-hire trucking industry has been practiced for over forty years. Given this, it should be expected that a large body of precedents would be in existence. Legislative bodies typically just prescribe general rules of behaviour when forming laws as opposed to prescribing highly specific rules. We have already noted that regulatory boards have a very large degree of discretion in interpreting legislation. (In the case of acts containing the public necessity and convenience type clause, the board's discretion is unfettered). The policy of the board with respect to interpreting the legislation would be delineated by precedents. Precedents can be simply defined as "something done in the past that is appealed to as a reason for doing the same thing again".²³ The importance of precedents is that

²² In cases where surpluses are not present, or are not realized, producers will commit resources to entry forestalling activities if they fear that additional entrants will depress profit levels. It must also be noted that some producers may have little knowledge of marginal costs and marginal benefits.

²³ Landes and Posner (1978).

they lead - in most instances - to a reduction in uncertainty and in consequence to a reduction in the cost of decision making. For example, if a set of past rulings indicate that a firm desiring a license in a given case is virtually certain of having the application granted, existing producers will not rationally commit resources to opposing the application. Similarly if past rulings clearly indicate that the grant of a license is unlikely, a potential entrant will be discouraged from making an application.

The importance of precedents in any given jurisdiction will in part be determined by the consistency with which boards interpret the legislation. If boards follow a consistent policy, and in addition publish decisions and given reasons for these decisions, the cost of decision making will be lower than in a situation where the board does not follow a consistent policy. In the absence of a consistent policy - and the associated absence of precedents - a producer's investment in the production of a decision will have a depreciation rate of 100%. That is, the decision will apply to that case only and to no other (similar) cases. It will be shown that the lack of a consistent policy in specific provincial jurisdictions is responsible for decision making costs that are higher than necessary.

5.

DATA SOURCES

No useful data exists in published form on the cost borne by producers of for-hire trucking services of participating in the regulatory process. In order to obtain data on this topic, approximately 600 separate producers were asked, in a mailed questionnaire, to provide information on the costs of making applications for operating authorities in given provinces and the costs entailed in opposing applications by other carriers. The producers ranged in size from very large carriers operating in a number of provinces to small carriers operating in a single province. Carriers were asked to give information on the following:

- (i) The cost of making their most recent license application, the type of license and the division of the cost into legal and administrative components.
- (ii) The cost of making applications over a 12 month period, together with the number of applications.
- (iii) The cost of opposing applications over a 12 month period, together with the number of opposed applications.

- (iv) The percentage of total operating costs expended on regulatory activity.
- (v) The major on-going costs of the existing regulatory system.
- (vi) Annual operating revenues.

In order to supplement the information supplied in returned questionnaires, over one hundred carriers were interviewed by telephone. In addition, a number of major shippers, provincial trucking associations, lawyers representing carriers before Boards, and members of the various Boards were also asked to provide information.

Given the very limited time (and budget) allowed for this study, it was clearly impossible to obtain information from a very large number of carriers. The intent, therefore, was to obtain a sample of carriers that accounted for 10% of revenue generated by for-hire trucking producers in each province. The revenues earned by carriers responding to the mailed questionnaire were aggregated by province and where this fell short of the basic coverage objective, additional carriers were asked to provide information by telephone. Telephone interviews were also used to ensure that the sample included as many different types of carriers as possible.

It must be noted that the number of carriers in the sample is not proportionately representative of all revenue classes. Small carriers - those earning less than \$100,000 in annual revenue - are greatly under-represented in the sample. This is due to the fact that only a very few small carriers completed the questionnaire.

A question arises as to the accuracy of the cost estimates reported by the small carriers (and the carrier earning less than \$2 million in annual operating revenue).²⁴ It has been suggested that in general these carriers have little detailed knowledge of the administrative costs involved in applying for licenses and opposing applications of other carriers. The information supplied by carriers in this context must therefore be treated with some circumspection.

The major problem faced in this study is that of moving from the individual carrier level to the aggregate provincial level. Initially, an attempt was made to provide aggregate figures by province by type of operating authority. A number of complicating factors renders this approach inoperative. In some provinces many carriers hold multiple operating authorities. In consequence, a portion of the carriers providing information could not break down the costs involved in license applications (and oppositions) by license type. For example, one Ontario carrier in our sample held eight different types of operating authorities. In addition, an accurate count of

²⁴ This issue was raised by a reviewer of the first draft of the manuscript.

the number of carriers holding each type of authority is not available.²⁵

The approach adopted in this study is to aggregate costs in terms of operating revenues. The latest available information on carrier revenue from Statistics Canada pertains to the calendar year 1977. The data on regulatory costs pertains basically to the year 1978. Because of this, our dollar estimates of regulatory costs will be biased downward. The 1977 Motor Carrier Survey provides estimates of revenue earned by class I, II and III carriers by province.²⁶ Class I carriers are those earning revenues in excess of \$2 million, class II carriers those earning between \$500,000 and \$1,999,999 and class III carriers those earning between \$499,999 and \$100,000. Statistics Canada also publishes estimates of revenue for carriers earning between \$25,000 and \$100,000 in annual operating revenue.²⁷ The most recent data for these small motor carriers is for the calendar year 1976. Although the small motor carriers accounted for almost 78% of the total number of firms in the industry in 1976, they earned only 13% of industry operating revenue.

²⁵ In Ontario, a carrier in possession of a specific operating authority may have "privileges" attached to the license. For example, a holder of a class "A" authority may in addition have class "C" and "D" privileges.

²⁶ Statistics Canada 53-222.

²⁷ Statistics Canada 53-006.

One of the major problems in using the published data is that, at the provincial level, it is not possible to ascertain the amount of revenue earned in movements that are exempt from economic regulation. Given that in some provinces a large number of important movements are exempt from economic regulation, it is therefore necessary to estimate the amount of revenue earned in various provinces in exempt movements. With the aid of the data tapes used by Statistics Canada for the 1975 for-hire trucking survey, rough estimates of the proportion of total operating revenue derived from exempt movements have been calculated. The estimates are crude since they assume that the relationship between exempt and non-exempt movements was the same in 1977 as in 1975.

British Columbia

The Statistics Canada Motor Carrier Survey shows that in 1977 there were 474 carriers based in British Columbia earning in excess of \$100,000 in annual operating revenues. In total, class I, II and III carriers based in British Columbia had annual operating revenues of \$430.6 million. Over half of this revenue was due to the 21 carriers classified as class I (earning in excess of \$2 million). Class I and II carriers - all carriers earning in excess of \$500,000 a year in annual operating revenue - comprised a total of 114 carriers responsible for 75% of total revenue.

There are 25 carriers included in our sample who are responsible for a minimum of 14% of revenue generated by class I, II and III carriers based in the province.

The information provided by carriers based in British Columbia revealed that the cost to producer of applying for an operating authority ranged between \$20 and \$25,000 per application. The most frequently reported level was between \$100 and \$150 per application. The average cost per application was \$130, and the standard deviation was very small. There does not appear to be any great difference in the costs of applying for different license types - although there was a slight tendency for contract authority applications to be more costly than the average application. In addition, carrier size was not a determinant of application costs.

The cost to carriers of opposing applications for operating authorities by other carriers was reported to be relatively small. The carriers in our sample opposed an average of 4 applications a year at an average cost of \$200 per opposition.

The majority of carriers earning in excess of \$2 million a year in operating revenues reported that the cost to them of participating in the regulatory process, as a percentage of operating revenue was close to zero. The highest cost reported by a class I carrier was 1/2 of 1% of annual operating revenue. Very similar results were obtained for firms classified as class II and III carriers.

The average cost of entry seeking and forestalling activities of carriers in the sample was equal to $1/8$ of 1% of annual operating revenue. Given revenue of \$430.6 million, the cost to British Columbia based carriers would be of the order of \$538,000.

Account must be taken of the costs of participating in the regulatory process that fall on carriers earning less than \$100,000 a year in operating revenues. In British Columbia, Statistics Canada estimates that, for the year 1976, there were 1713 carriers earning between \$100,000 and \$25,000 in annual operating revenue for a total operating revenue of \$92.8 million. The information obtained from the small motor carriers indicates that regulatory costs were not significantly different to those reported by class I, II and III carriers. The estimated cost of regulation for the small carriers is equal to \$116,000. The total cost of entry seeking and forestalling activities is therefore equal to \$654,000. The low bound on the estimate is equal to \$497,000 and the upper bound to \$810,000.

Saskatchewan

In 1977, class I, II and III carriers based in Saskatchewan reported a total operating revenue of \$58,366,549. The 19 class I and class II carriers accounted for 48% of this, with the remainder accounted for by 102 class III carriers.

In Saskatchewan a large number of movements are exempt from regulatory control. Because of the specific way in which the Province frames exemptions, it is not possible to determine with any great degree of accuracy how much of the total operating revenue reported by Statistics Canada is produced by vehicles exempt from regulation. It is probable that between 20% to 30% of the reported annual operating revenue is due to non-regulated operations. The revenue figure used in this paper will be 75% of the Statistics Canada reported figure.

We were able to obtain information from 19 carriers who were based in Saskatchewan. In terms of the distribution of these carriers, 4 were Class I and II, 10 were class III and the remainder were earning under \$100,000 a year in operating revenue. These carriers account for a minimum of 15% of the annual operating revenue reported by Statistics Canada.

The data reveals that with regard to entry seeking activity, the cost per application varied considerably from carrier to carrier, depending in part on the type of commodity and the route. The reported cost ranged between \$2,000 and \$8,000 per application, with an average cost of \$3,800 per application.

The carriers in our sample were very active in opposing the license applications of other carriers. For example, one relatively large carrier (by Saskatchewan standards) said that he opposed 20-25

applications in 1978 at a cost of \$200 to \$280 per case. Other carriers reported a cost of between \$150 to \$500 per opposition. The average cost per opposition was \$220.

Almost all carriers agreed that the legal costs involved in making or opposing applications were the major cost to them of participating in the regulatory process. For the average carrier, legal costs accounted for approximately 65% of total regulatory costs.

With respect to the cost of entry seeking and forestalling activities (together with the cost associated with rate applications) as a percentage of annual operating revenues, the range indicated by firms in our sample was between a high of 4.1% and a low of 1/4 of 1%. Firms earning in excess of \$1 million in annual operating revenues tended to spend a lower percentage of revenue on regulatory activity than did firms of smaller size. For carriers earning in excess of \$1 million, the majority of firms indicated that the percentage was between 1/2 of 1% and 1%. For those below \$1 million in annual operating revenues, the typical range was between 1% and 2%. The average percentages obtained were 8/10 of 1% for class I carriers, 1.2% for class II carriers, 1.5% for class III carriers and 1% for those earning under \$100,000. For class I, II and III, the estimate of revenue spent on regulatory activity is \$494,000, with a lower bound of \$365,500 and an upper bound of \$622,000.

With regard to the position of carriers earning between \$100,000 and \$25,000 in annual operating revenue, Statistics Canada estimates that these small motor carriers earned \$22.9 million in operating revenue in 1976. Industry sources have suggested that 30% to 40% of the above revenue would be earned in movements not subject to economic regulation. It is therefore assumed that 65% of the annual operating revenue is earned in regulated activities. The estimated cost of regulatory activity for these carriers is \$149,000, with a lower bound of \$ 97,000 and a upper bound of \$201,000. It must, however, be clearly understood that the variance across the small motor carriers with respect to regulatory costs is large and that the sample of such carriers is small.

Manitoba

For-hire class I, II and III carriers based in Manitoba earned \$199 million in total operating revenue in 1977. Over 76% of this revenue was due to the operations of the 15 class I carriers, with the remainder being earned by over 100 class II and class III carriers. The industry in Manitoba is thus more heavily concentrated than is the industry in most other provinces.

The carriers in our sample accounted for a minimum of 20% of revenue produced by class I, II and III carriers based in the province. In total, information was obtained from 8 class I and II

carriers, 8 class III carriers and 4 carriers with revenue below \$100,000.

The cost for a class I carrier of making an application for an operating authority ranged between \$2,000 and \$10,000 for an intra-provincial authority and between \$1,000 and \$15,000 for an extra-provincial authority. The data reveals a large variance in the cost of making an application across different carriers and also a large variance across applications by a given carrier. The average cost per application was \$5,500. For class II carriers, the average cost per application was just under \$5,000. All carriers reported that legal costs accounted for approximately 50% of the costs involved in making applications.

The carriers in our sample were active in opposing the license applications of other carriers. One large carrier reported, for example, that he normally opposed about 35 applications a year at an average cost of \$280 per case. The cost of opposing applications ranged between \$50 and \$2,000 per case, with the average cost being \$490 per case.

An analysis of the data reveals that class I and II carriers, (who together account for almost 90% of revenue generated by carriers based in the province) spent between 1/2 of 1% and 1/4 of 1% of annual operating revenue on entry seeking and forestalling activities.²⁸

²⁸ One major carrier estimated that he spent between \$7,500 and \$10,000 a year on making rate applications. We were not able to obtain information on this from any other carrier.

The position with regard to class III carriers and those earning less than \$100,000 a year in operating revenues is somewhat unclear. The survey revealed that in general, such carriers spent a lower percentage of operating revenue on regulatory activities than did class I and II carriers. However, approximately half of the carriers earning less than \$500,000 a year reported that the costs of regulatory activities were close to zero. Part of the reason for this was the low level of entry seeking activity by such carriers.

Manitoba exempts from economic regulation a small portion of for-hire highway trucking. The data published by Statistics Canada is of little help in any attempt to determine the proportion of total operating revenue earned in exempt movements. We estimate that at a minimum, approximately 10% of revenue is earned in exempt movements.

The average regulatory cost borne by class I and II carriers in Manitoba is estimated to be equal to .35 of 1% of operating revenue. The estimate of regulatory costs for class I and II carriers is \$539,000 with a lower bound of \$431,000 and upper bound of \$647,000.

For class III carriers, and small motor carriers earning between \$100,000 and \$25,000 in annual operating revenue, it is estimated that regulatory costs are equal to 1/5th of 1% of total operating revenue. The derived estimate for regulatory costs is \$71,000, with a lower bound of \$57,000 and an upper bound of \$85,000.

Ontario

In 1977, Statistics Canada data reveals that class I, II and III for-hire highway carriers based in Ontario earned \$1.385 billion in operation revenues. Ninety class I carriers earned approximately 73% of the total, with 181 class II carriers accounting for an additional 15%. The remainder was earned by 544 class III carriers.

Carriers in our survey accounted for a minimum of 11% of revenue earned by carriers based in the province. The survey includes 10 class I carriers, 19 class II carriers, 14 class III carriers and 7 carriers earning below \$100,000 in annual operating revenue.

In 1977, the Ontario Highway Transport Board received 4,343 applications for public commercial vehicle operating authorities, including 848 applications for extra-provincial authorities. The Board held 4,655 hearings, of which almost 2,000 were heard in chambers. It should be noted that few of the applications for authorities are "new", most are requests for extensions of existing authorities and/or the relaxation of Board imposed restrictions.

An analysis of the data supplied by carriers in our survey reveals that the cost of making an application for an operating authority ranges from a low of \$75 (for a class "E" authority to transport milk) to a high of \$1.5 - and rising since the application

is still in progress - for a class "D" authority²⁹ (allowing the transport of goods to or from the person named in the license or a service operated for the movement of a given type of freight). Although both of these applications are atypical, the variance in the cost of applying for an operating authority is large both across and within specific license classes.

Sufficient information was available to perform some detailed statistical analysis on the cost of applying for class "D" authorities. (In 1977, the Board received 852 applications for "D" authority). In our sample of class "D" applications, the lowest cost in making an application was \$100 and the highest was \$1.5 (and rising). Both of these cases are unusual: the former because the operator has started to do his own legal work and the latter because of the issues surrounding the application. Without the above two applications, the mean cost per application was \$3,995, with a standard deviation of \$6,512. The mean number of "D" applications by carrier was 1.64 per annum. There is, however, a wide variation in the number of applications made from carrier to carrier. In general, the number of applications tended to be directly related to firm size.

From information supplied by carriers, it is apparent that applications for class "A" (general merchandise), class "H" (household goods), class "K" (heavy equipment) and class "X" (extra-provincial)

²⁹ This case is discussed below.

authorities tend to be more costly than for other types of authorities. With respect to class "A" applications, carriers in the sample indicated that their cost per application ranged between \$10,000 to \$30,000, with the average cost being approximately \$20,000. Very similar figures were obtained for class "K" applications. With regard to extra-provincial applications, the cost varied for carriers in our sample between \$15,000 and \$60,000 per application.³⁰ Class "H" applications averaged \$5,500 per case.

In Ontario, there are two widely used mechanisms for opposing license applications. The first is to oppose the application on an individual basis. Those who directly employed counsel to act on their behalf reported an average cost, per objection, of \$443. The standard deviation was relatively small. The number of oppositions per carrier ranged between 0 and 150 per year. The second method of opposing applications is to be represented by the Ontario Trucking Association (O.T.A.). The O.T.A. will represent member carriers in opposing applications (but will not represent members in making applications) for a fee of \$50. The survey of carriers reveals that firms with operating revenue under \$500,000 per annum used the O.T.A. counsel more frequently than did firms of larger size.

³⁰ In general, the longer the number of Provincial Boards involved, the larger the cost.

In the past year, a number of carriers serving certain narrowly defined regions of Ontario have formed groups to apply for territory extensions to existing licenses. The O.T.A. has vigorously opposed this move on the grounds that if the applications are successful it would be tantamount to effectively de-regulating the for-hire trucking industry in major Canadian transport markets. Under the title of 'More Rampant "Bandwagon" Hysteria', the O.T.A. comments, "while every effort is to be made to obtain voluntary withdrawal of "mass" applications, that, if granted, would be tantamount to an extension of regional municipalities the Association would not necessarily be an intervenor in such instances. It was felt that the serious implications, plus possible cancerous growth into this case, other areas of the Province such as Kitchener/Niagara Falls, made intervention essential". (Ontario Trucking Association, 1979).

Prior to estimating the aggregate cost to carriers of participating in the regulatory process, it is necessary to look at the United Parcel Service Canada Ltd. (U.P.S.) application for a "D" license. In its application, U.P.S. was opposed by 147 respondents, ranging from large carriers such as CP and CN to small post-office sub-contractors. U.P.S. called 352 witnesses to testify on its behalf and has estimated that its costs for the 110 day hearing are approximately \$1.5 million. The respondents called 363 witnesses and industry observers have estimated that opposers have spent between one-half and three-quarters of a million

dollars presenting their cases. The then Chairman of the O.H.T.B., E.J. Shoniker, had counsel for one of the opposers write the Board's decision to reject the application. In consequence, the Ontario Cabinet asked the Board to rehear the case. At the present time, the matter of whether or not the Board can rehear the case is before the courts.

The information supplied by Ontario based carriers indicate that they spent between 1/5th of 1% and 15% of operating revenue on regulatory activity.³¹ The variance across carriers is large. However, two general patterns emerge. First, the proportion of total operating revenue committed to entry gaining and forestalling activities is inversely related to the size of operating revenue. Carriers earning less than \$500,000 in annual operating revenue spent, on average 5.5% of operating revenue on regulatory activity. Carriers earning between \$1 million and \$500,000, spent on average 3.8%, and for large carriers, the appropriate figure is 1.6%. (The reported figures for class I carriers were between 1/5th of 1% and 3%).

In Ontario, urban freight transportation and the first movement of farm - except milk and livestock - and forest products are the most important elements of the industry exempt from regulation. It is estimated that approximately 8% of the revenue earned by class I, II and III carriers is from exempt movements.

³¹ One carrier reported that he spent "too much", another "minimal" and a third that he spent 30% of operating revenue on regulatory activity. The latter carrier has, it is believed, over estimated the real costs.

We were not able to obtain any useful information on the costs involved in making and opposing applications for class "R" dump truck authorities. Part of the reason for this is due to the highly fragmented nature of this sector of the industry. Very few operators were able to specify the costs to them of entry seeking and forestalling activities. Because of this, the dump truck sector has been excluded from the analysis.

With respect to class I carriers, it is estimated that regulatory costs, based on 1977 operating revenues, would be equal to \$14.2 million. The high bound placed on the estimate is equal to \$19 million and the low bound \$9 million. (It should be noted that costs of the U.P.S. case have not been included).

For class II carriers, our survey reveals that carriers earning closer to \$2 million in annual operating revenue spend a lower proportion of revenue on regulatory activities than do carriers earning close to \$500,000. Information on how many carriers earned between \$1 million and \$2 million and how many earned between \$1 million and \$500,000 is not available. Given the above, the best estimate for the percentage of operating revenue spent on regulatory services is 2%. This yields an estimated cost of \$3.78 million. The lower and upper bounds placed on the estimate are \$2.98 million and \$4.53 million.

The class III carriers in the sample spent on average an amount equal to 5% of operating revenue on regulatory activity. It is however highly probable that a relatively higher percentage of activity for class III carriers will be exempt from economic regulation than is the case for class I and II carriers. For example, class III carriers in Ontario in 1977 earned 6.4% of their total revenue in the movement of exempt forest products. The additional exclusion of the dump truck sector, plus the estimated revenue earned in the other exempt movements, brings the estimated percentage of revenue excluded to 28%. The derived estimate for the amount spent by class III carriers on regulatory activity is \$5.117 million with a lower bound and upper bound of \$3.58 million and \$6.65 million respectively.

The average percentage of revenue expended by carriers earning between \$100,000 and \$25,000 in annual operating revenue was 6.5%. It can be reasonably assumed that approximately 40% of this revenue will be due to exempt movements. The estimate of revenue spent on regulatory activities is thus \$4.764 million with lower and upper bounds of \$3.8 million and \$5.695 million.

With respect to the movement of household goods, all "II" licensed carriers who supplied information estimated that entry seeking and forestalling activities accounted for approximately

2% of total operating revenue. This figure, given total operating revenue, yields an estimate of \$1.623 million for regulatory costs. The lower and upper bounds are \$1.29 million and \$1.94 million.

The cost to carriers of entry seeking and forestalling activities is estimated at \$29.48 million, with a lower bound of \$28.8 million and an upper bound of \$53.68 million.

Quebec

Class I, II and III carriers based in Quebec earned, in 1977, \$720.99 million in operating revenue. The 55 class I carriers earned 54% of the total, with 160 class II carriers accounting for 23% and the 476 class III carriers the remainder.

The carriers in our sample included 8 class I carriers, 15 class II carriers, 9 class III carriers and 5 carriers earning less than \$100,000 a year in annual operating revenue. The sample of carriers account for approximately 11% of operating revenue earned by Quebec based carriers.

The average cost of making an application for an operating authority was approximately \$2,000. Legal costs were generally of the order of \$700 to \$800 per application. For a large application - one that covers a big route or a large number of commodities - legal costs will rarely exceed \$7,000. Carriers applying for intra-provincial authorities agreed that the largest cost to them of the application procedure was for administrative as opposed to legal

expenses. It must, however, be noted that many companies were not able to estimate with precision the administrative costs involved in making an application. Although nearly all said that they were large, few could translate this into dollar amounts. The few who did came up with figures ranging between \$575 to \$1500 per application.

The carriers in our sample were generally active in opposing the applications of other carriers. For carriers earning in excess of \$2 million in annual operating revenue, the number of oppositions ranged between 5 and 40, with an average of 9 per carrier. The number reported by class II and III carriers were between 2 and 20, with an average of 5 per carrier. The cost of opposing an application ranged between \$1,250 and \$160, with an average of \$260 per opposition. The most costly oppositions were those related to the movement of household goods.

It is very difficult to derive estimates of the cost of entry foreseeking and forestalling activities as a percentage of annual operating revenues, primarily because administrative costs are the largest component of such costs. Carriers who were able to provide estimates of regulatory costs as a percentage of total operating revenues thought that they ranged between 1% and 2%. Senior executives of 3 major Quebec-based carriers were asked if, in the light of their experience, this appeared reasonable. All indicated that they thought it large, but were not able to accurately judge how much they spent on entry seeking

and forestalling activities since they judged the major costs to be related to time delays and administrative costs rather than to legal costs.³²

Given the above, our best estimate is that the cost of entry seeking and forestalling activities is equal to 1% of annual operating revenues. This yields an estimate for regulatory costs of \$8.15 million, with a lower bound of \$6.1 million and an upper bound of \$12.2 million. The lower and upper bounds were calculated on the assumption of a minimum cost of 3/4 of 1% and a maximum cost 1 and 1/2% of operating revenues being expended on regulatory activity.

Maritime Provinces

Prior to estimating the costs of regulation on a provincial basis, a number of considerations with respect to the for-hire trucking industry in the Maritime Provinces need to be noted. First, the absolute size of the for-hire trucking industry in the Maritimes is small. In 1977, total operating revenue earned by class I, II and III carriers

³² Six carriers - all of large size and all serving more than three provinces - opined that the Commission was "tough" in granting license applications, especially compared with the Maritime Provinces and, to a lesser extent, Ontario. One of the biggest problems cited by carriers was the lengthy time taken to process applications.

based in the Maritimes (excluding revenue earned by the movers of household goods) was only \$170.6 million - less than the revenue generated in any single province except Saskatchewan. In total, there are only 50 class I and II carriers based in the Maritimes.

It is estimated that the 40 carriers in our sample account for a minimum of 17% of the revenue earned by Maritime carriers. The sample includes 8 class I carriers (out of a total of 12) and in consequence the sample is very biased due to the over representation of large carriers and the under representation of small carriers.

Many of the class I carriers in the sample operate in more than a single Maritime Province. In some instances it is believed that such carriers have arbitrarily apportioned some of the total costs incurred in entry seeking and forestalling activities to specific provinces.

Nova Scotia

Nova Scotia based class I, II and III carriers earned \$67.8 million in operating revenue in 1977. Approximately 40% of this was earned by 5 class I carriers and 27% by 20 class II carriers.

In our sample of carriers, the cost of applying for an operating authority ranged between \$225 and \$3,500 per case, with legal fees accounting for approximately 70% of the cost. One very

large carrier estimated that a typical application cost his company \$500 to \$2,000, the exact amount depending upon the type of license and the degree of opposition. The average cost per application for carriers in the sample was \$1,165. The majority of carriers thought that they averaged less than 1 application per year.

The cost of opposing a license application ranged between \$200 and \$700, with an average cost of \$310 per application. Costs for extra-provincial authority oppositions were judged to be slightly higher.

Carriers reported that the cost of applying for and opposing license applications ranged between 1/6th of 1% and 2 and 1/2% of annual operating revenue. The majority of carriers believed that the cost was between 1/2 of 1% and 1%. There was little evidence to suggest that carriers of small size spent proportionately more or less on producing regulatory decisions than did large carriers.

Carriers spent on average 3/4 of 1% of operating revenue on entry seeking and forestalling activity. The reported operating revenue for class I, II and III carriers, together with revenue earned by household goods movers, was \$67.8 million in 1977. It is estimated that approximately 15% of the above revenue is earned in exempt movements. The estimate for regulatory costs is thus \$432,000. The low and high bounds placed on the estimate are \$339,000 and \$670,000.

For small carriers, the reported operating revenue for 1976 was \$11.27 million. The estimated cost of regulation to such carriers is \$71,000, with bounds of \$56,000 and \$112,000.

New Brunswick

In 1977, class I, II and III New Brunswick based for-hire carriers earned \$84.73 million in operating revenue. The 19 class I and II carriers accounted for 80% of the total operating revenue.

For carriers in our sample, the cost of applying for an operating authority ranged between \$10,000 and \$150. Although there was a large variation in costs across carriers, the typical cost per application was between \$2,000 and \$600, with the average cost being \$1,100. Approximately 75% of the cost was for legal counsel.

The carriers in our sample spent between \$1,100 and \$100 per case in opposing the authority applications of other carriers. The average cost per objection was \$310. The number of oppositions made by carriers varied between 1 and 15 per year, with carriers making an average of 3 oppositions per year.

All carriers reported that the cost of applying for operating authorities and opposing the applications of other carriers was less than 1% of annual operating revenue. For class I carriers, the cost was generally less than 1/4 of 1%. There was no strong evidence to support the hypothesis that small carriers spent a larger portion of

revenue on regulatory activities than did large carriers.

It was very difficult to obtain an estimate of revenue earned by carriers in movements that were exempt from economic regulation. Part of the reason for this is that some of the exemptions relate to movements in vehicles that are owned by persons in designated professions, such as farmers and fishermen. Because there is no apparent way of estimating how important this type of exemption is in terms of revenue generated, the estimate of revenue generated in exempt movements must be treated with considerable suspicion. For the purposes of this study, it is assumed that 15% of reported revenue is earned in non-regulated movements.

The carriers in our sample spent an average of 1/5th of 1% of annual operating revenue on entry seeking and forestalling activities. The estimate of regulatory costs for all New Brunswick based carriers is thus \$163,000. The lower and upper bounds placed on this estimate are \$122,000 and \$240,000 respectively.

Newfoundland

Statistics Canada reports that in 1977 there were only 65 carriers in Newfoundland and Prince Edward Island earning in excess of \$100,000 in annual operating revenue. These carriers earned \$25 million in operating revenue in 1977. Three Newfoundland class I carriers accounted for 37% of the total revenue. Unfortunately, because of a confidentiality requirement, Statistics Canada does not distinguish between Newfoundland and Prince Edward Island based class II carriers.

At a minimum, Newfoundland based class I, II and III carriers earned \$18.6 million in operating revenue in 1977, with Prince Edward Island based carriers earning a maximum of \$6.44 million.

With respect to the costs entailed in applying for operating authorities in Newfoundland, the reported figures vary greatly - from a low of \$500 per application to a high of \$7,000 - from carrier to carrier. Approximately 60% to 70% of the costs were attributable to legal fees. Carriers of larger than average size were spending far more on each application than were smaller carriers. It is believed that the large difference in costs were due mainly to the fact that the larger firms in the sample were attempting to expand at a faster rate than were the smaller firms, and were attracting considerable opposition from other carriers.

The number of oppositions to applications for operating authorities varied greatly from carrier to carrier. One large carrier, for example, reported that he opposed 20 to 30 applications per year, whereas another relatively large carrier did not oppose any applications. The cost of each intervention fell between \$150 to \$300.

Carriers indicated that they spent between 6% to 1/10th of 1% of annual operating revenue on entry seeking and forestalling activities. The variance in the sample was very large, making accurate

estimation of costs very difficult. The best estimate would be in the range of 1.5% to 1/2 of 1%, with an average cost of 1%.

It is estimated that approximately 20% of revenue is earned in the movement of exempt commodities. Thus our best estimate of the costs of regulation falling on carriers is \$188,000, with lower and upper bounds of \$94,000 and \$282,000.

Prince Edward Island

Because of the very small number of class II and III carriers based in Prince Edward Island (a maximum of 18), it was not possible to obtain sufficient usable information of the cost to carriers of entry seeking and forestalling activities. Carriers serving this province from other provinces offered the opinion that there was, to quote one company President, "less hassle" in Prince Edward Island than in Newfoundland.

6.

THE AGGREGATE RESULTS

The cost to the for-hire trucking industry of entry seeking and forestalling activities are estimated to be in the range of \$28.8 million to \$53.68 million. The "best" estimate is that these costs are of the order of \$40.39 million.

We have no illusions that

It is, however, believed that it is reasonably suggestive of the magnitude of "the cost". As was previously discussed, the estimates of costs reported by individual carriers were based on their 1978 experience. The data for operating revenues are for 1977 and 1976. In consequence, our estimates of aggregate costs are probably biased downward.

Irrespective of the above caveats, it can be seen that the costs incurred by carriers in the regulation of entry are large. From the perspective of allocational efficiency, such costs must be viewed as deadweight losses. The costs estimated in this paper are, of course, only a portion of the total deadweight losses that flow from the economic regulation of the trucking industry. For example, we have not taken account of the very real, and potentially large, deadweight losses entailed by the regulatory system in terms of "X-inefficiency" or "empty miles".³³

33

"Empty miles" was stated by a number of Saskatchewan carriers as being the major cost to them of the regulatory system.

The study reveals that the level of cost to producers of participating in the regulatory process is directly related to the type of regulatory procedures adopted by the various boards. It has been shown that the cost of entry seeking and forestalling activities to highway carriers is, as a proportion of operating revenue, lowest in British Columbia and highest in Ontario. If, for example, the Ontario procedures were adopted in British Columbia, it is estimated that the cost of regulation falling directly on carriers based in British Columbia would be approximately \$9 to \$10 million, instead of the estimated \$654,000. Conversely, the adoption of the British Columbia procedure in Ontario would reduce costs falling directly on carriers from the estimated \$29.4 million to around \$2 to \$3 million a year.³⁴

Three major reasons can be cited for the low costs to British Columbia carriers of entry seeking and forestalling activities. First, the regulatory process involves a minimal input by the legal profession. In only a limited number of cases do carriers applying

³⁴ The cost of providing the regulatory mechanisms will clearly change. For example, the cost borne by the general taxpayer of the Ontario system.

for authorities or opposing applications for authorities hire legal counsel. Second, since the regulatory Board in British Columbia rarely holds public hearings, carriers are not faced with meeting the cost of supplying witnesses. Third, the Motor Carrier Commission has been relatively consistent in rendering decisions and thus the Commission's policy is known to carriers. It was argued above that consistency will reduce uncertainty and in consequence reduce the cost of decision making.

In Ontario, the cost to carriers of participating in the regulatory process is large due to the large involvement of the legal profession in the process, the length of public hearings and the apparent lack of any objective or consistent standard for entry. With respect to the involvement of the legal profession, Palmer (1974) has observed, based on information supplied by the then Chairman of the Board, that 75% of all applicants were represented by counsel. Based on the data supplied by carriers in our sample, it is believed that the percentage of applicants represented by counsel would be at a minimum 80%. Carriers were almost unanimous in citing legal fees as the major cost of applying for, or opposing an application for operating authorities. In this context, it should be noted that lawyers who specialize in Board hearings charge between \$900 and \$1,200 a day.³⁵ Since the Board will only accept verbal evidence, both applicants and opposers typically supply a large number of "witnesses" to present "evidence" in support of their positions.

³⁵ These figures were supplied by carriers and by lawyers.

In recent years, there has been an escalation in the number of witnesses supplied by parties to hearings and this has led to longer (and more expensive) hearings.

The Ontario Select Committee on Highway Transportation of Goods (1977) heard testimony attributing the high cost of proceedings to the following:

- i) uncertainty and unpredictability of Board policy
- ii) over reliance of counsel in minor matters
- iii) reliance on quantity rather than quality of evidence presented by parties to the Board
- iv) lack of prehearing disclosure of evidence

One of the outcomes of the Ontario process has been the large number of bizarre restrictions that are placed on operating authorities. As examples of the type of restrictions placed on licenses, the following are taken from Ontario operating authorities:

1. "No individual drum, pail, bin or bag of the produce to weigh less than 25 lbs."
2. "... Highway 2 between and including (place A) and the eastern extremity of the said highway (no local business permitted between place A and B, restricted to pickup or delivery of goods from or to therein)." (In this case, the license is 80 pages long).

Eckert (1970) and Hinton (1972) have hypothesized that regulatory commissions attempt to minimize the number of complaints from firms in regulated industries. In many cases where there are sharp conflicts, regulatory agencies tend to make compromise decisions. Douglas and Miller (1974) refer to this as "squawk" minimizing. It is hypothesized that the reason for the existence of the many bizarre restrictions on operating authorities in Ontario is a direct result of the "squawk" minimizing objection. Such restrictions also result in carriers applying to the Board to have the restrictions relaxed. This in turn leads to new hearings and to additional costs to applicants and opposers.

In Provinces where the mechanics of the regulatory procedure are similar to those in Ontario, notably Saskatchewan, Manitoba and the Maritime Provinces, the costs to carriers of participating in the regulatory process is not as large, in terms of the percentage of operating revenue expended on regulatory activity, as it is in Ontario. The reasons for this are believed to be three-fold. First, the length of hearings are shorter than in Ontario primarily because applications attract fewer objectors. This is largely due to the smaller size of the trucking sector in these Provinces. Second, the fees charged by lawyers are believed to be much lower than those being charged by Ontario specialists. For example, the highest fee per day charged by counsel to parties before Board hearings was \$700. Third, carriers

appear - especially in Manitoba and Saskatchewan - to believe that the Boards have handled applications in a fairly consistent fashion.

One of the major rationales for the existence of quasi-judicial regulatory agencies is that, compared with the courts, costs to participants are assumed to be lower. The judicialization of the regulatory process is very costly to participants and negates one of the major assumed advantages of administrative tribunals. In addition, regulatory agencies of the type involved in economic regulation of the highway trucking sector are not asked to decide on matters that are even remotely related to law. As constituted in almost all Canadian Provinces, the objective of regulating highway carriers is to promote "the public interest". It was noted earlier that the courts have decided very clearly that this is a subjective matter to be interpreted by the regulatory agency, i.e. it is not an objective fact that is to be decided. Given that the objective of the regulatory agency - however vague - is to look at questions of an economic nature and given that the substance of the process and decision is outside the realm of law, the judicialization of the regulatory process is to a large extent inappropriate and very costly.³⁶

³⁶ For an interesting discussion of judicialization of the regulatory process, see Bernstein (1955).

REFERENCES

- Anderson, F.J. (1974) "Pecuniary Externalities and Referent Groups in the Operation of the Price System", Southern Economic Journal, 41, 442-446.
- Bernstein, M. (1955) Regulating Business by Independent Commission, (Princeton N.J., Princeton University Press).
- Bonsor, N.C. (1978) "Regulation in the Highway Trucking Industry", Government Regulation, (Toronto, Ontario Economic Council).
- Boucher, M. (1979) "Regulation of the Quebec Trucking Industry: Institutions, Practices and Analytical Considerations" Report prepared for the Economic Council of Canada.
- Douglas, G.W. (1977) "Impact of Increased Efficiencies on Air Fares and Travel", in "Lower Airline Costs Per Passenger Are Possible in the United States and Could Result in Lower Fares: A Report to Congress", U.S. Comptroller General Washington D.C.: G.P.O..
- Douglas, G.W. & Miller, J.C. (1974) Economic Regulation of Domestic Air Transport, (Washington D.C., Brookings Institution).
- Eckert, R.D. (1973) "On the Incentives of Regulators: The Case of Taxi Cabs", Public Choice XIV, 83-99.
- Hinton, G.W. (1972) "The Basic Behaviour of Regulatory Commissions", American Economic Review, LXII, 47-54.
- House, R. & Associates, Clayton, S. Parks and Associates (1977) Economic Regulation of the For-Hire Trucking Industry, Report prepared for the Anti-Inflation Board.
- Kahn, A. (1971) The Economics of Regulation, (New York, J. Wiley).
- Koenker, R. (1977) "Optimal Scale and the Size Distribution of American Trucking Firms", Journal of Transportation and Economic Policy II, 54-67.
- Meyer, J.R., Peck, M., and Zwick, C. (1969) The Economics of Competition in the Transport Industries, (Cambridge Mass., Harvard University Press).
- Ontario Trucking Association (1979) News Round-Up, 23, 20, (Toronto).
- Palmer, J. (1974) "Taxation by Regulation? The Experience of the Ontario Trucking Regulation", Logistics and Transportation Review, 10, 207-212.

Phillips, A. (1975) Promoting Competition in Regulated Markets,
(Washington D.C., The Brookings Institution).

Trebilcock, M.J. et. al. (1978) "Markets For Regulation" in Government
Regulation, (Toronto, Ontario Economic Council).

REGULATION OF THE QUEBEC TRUCKING INDUSTRY:
INSTITUTIONS, PRACTICES AND
ANALYTICAL CONSIDERATIONS

Michel Boucher
Ecole nationale
d'administration publique
Université du Québec

Acknowledgements

This report has been prepared for the Regulation Reference of the Economic Council of Canada. The author would like to thank his colleague Jean-Luc Migué and Gérard Bélanger of Université Laval, William Stanbury and Ron Hirshhorn of the Economic Council of Canada for valuable comments and for suggesting several improvements on an earlier draft. We remain responsible for any errors or ambiguities.

1. INTRODUCTION

The Province of Quebec has a long tradition of regulating rates and issuing permits in the transport field. As early as 1909, in fact, a government board was given the power to set rates for the carriage of goods by tramways.¹ In 1926, the Quebec Legislature amended the 1920 Act creating the Public Services Commission of Quebec to give the Commission jurisdiction over public highway transport services. Although the new act required a permit for the operation of a public goods delivery service, it was not implemented until about 1935. Not until 1949, however, did a specific agency dealing exclusively with highway transport services emerge: the Transportation Board. The Board acquired the power to amend rates and revise its by-laws. In 1972, the new Transport Act created a new agency to oversee and control transportation: the Quebec Transport Commission.

The aim of this paper is to describe and analyze the basic aspects of economic regulation in Quebec trucking industry, identify its consequences and thus be able to evaluate the allocative efficiency of these public policy measures.² The first section of this paper determines the role played by the Quebec Transport Commission in issuing permits. This is accompanied by a description of the procedure for setting rates and tariffs used by this regulatory agency and by the Quebec Tariff Bureau. The development of these two themes permits us to establish the scope of trucking regulation in Quebec. The second part evaluates the actual importance of these regulatory measures and thus the extent of the leakages that erode the formal constraints introduced by the Commission. The third section attempts to identify the consequences of regulation on the industry's economic performance. The market structure is examined primarily through an evaluation of the barriers to entry introduced by the Commission and the consequences of this board's practices on the industrial structure. The elements of conduct analyzed are the rate and tariff levels allowed by the regulatory agency and the level of the rate of return on capital received by Quebec common carriers. Finally, the industry's performance is evaluated by judging the scope of

regulation and its possible ill effects on resource allocation.

2. THE NATURE OF REGULATION

Before going into details of the Quebec Commission's regulation of trucking activities, it seems relevant to briefly review the main impacts of regulation in the common carrier industry. These consequences on resource allocation derive mainly from analysis and empirical studies of the U.S. experience.

The interpretation of the "public interest" concept by the Interstate Commerce Commission has led to the establishment of very strong barriers to entry.³ The resulting artificial scarcity places a significant market value on permits.⁴ Another observed consequence of U S regulation is higher rate levels. Some comparisons⁵ with firms hauling exempt agricultural products and some control experiments⁶ resulting from a series of court decisions show that the level of rates is much higher for regulated carriers than for unregulated carriers.

The effect of regulation on the rate of return on capital appears to be indeterminate. From a theoretical point of view, a major reduction in competition could be expected to increase the rate of return on capital. However, empirical studies⁷ show the absence of higher rates of return because regulation also raises the cost of providing a given amount of service. The inefficient practices in common carrier trucking arise in general, from commodity and route restrictions. These are further augmented by the costs of nonprice competition, which includes, for the example the use of better equipment and the provision of more frequent service than in a free market (because price competition is virtually impossible), the costs of cross-subsidization and the direct costs borne by trucking firms operating in a regulated environment. Another significant effect of regulatory practices lies in increasing the degree of concentration.⁸ As the natural growth of a dynamic firm is prevented due to the difficulty of acquiring new permits, the take-over

or merger becomes the sole means of expansion. As the trucking industry is not subject to substantial economies of scale, the combined result of restricted entries and the many mergers approved by the Interstate Commerce Commission is growing concentration as compared to the evolution of carriers of exempt agricultural products.

The overall consequence of these effects of regulation is to generate an inefficient allocation of resources and a serious waste of resources. In other words, these social costs are important and substantial.⁹

Now that the main consequences of regulation on the traditional analytical framework have been clearly described, we proceed with the first objective of this section, namely to describe and interpret the administrative standards used by the Commission members when issuing permits. To achieve this, the actual decisions of the regulators are examined. We then present the existing rate and tariff structure, explain the role of the Quebec Transport Commission in setting up this structure and, finally, describe in detail the role of the Quebec Tariff Bureau in all of these procedures.

2.1 The Issuance of Permits

Although the Commission has the authority to deal with a wide range of transportation modes, this paper is limited intentionally to the trucking industry.

Permit Nomenclature

One of the main activities of the Commission in public trucking consists of granting permits. A schematic presentation of their classification and an explanation of the main components would be in order. Table 1 shows a permit's determining factors: class; type of services; frequency of service and the various types of specialty permits.

Both general and restricted permits carry the same type of spe-

TABLE 1

CLASSIFICATION OF PERMITS

1. CLASS

- a) General Trucking
- b) Restricted Trucking
- c) Transport Broker

2. TYPE

- a) Local (within the limits of the locality mentioned and a radius of 5 miles)
- b) Long distance (radius, territory, route, restricted route)

3. FREQUENCY

- a) Regular (hours, days, weeks or intervals)
- b) Irregular (on demand)

4. SPECIALTY PERMITS

- a) Milk and cream
- b) Explosives and dangerous materials
- c) By floats
- d) By tank trucks
- e) By temperature-controlled trucks
- f) By armoured vehicles
- g) For moving
- h) For transport of motor vehicles
- i) Contract

5. HAULAWAY

Source: "General Order No. 4995 on Trucking", ss.38 and 41, in Lois, reglements et ordonnances des transports, Volume 2, Quebec Official Publisher, 1977.

cifications on the type and frequency of service. The general permit authorizes carriage of commodities excluding explosives, other dangerous materials and industrial, commercial or agricultural wastes. To illustrate, the firm Champlain-Sept-Iles Express holds a permit to haul goods from Montreal to Quebec City that contains two particular clauses: the first reads "general transport - long distance - restricted route - via Highway 138 - on a regular frequency"; the second carries the same stipulations but instead specifies "Highway 116". The restricted permit authorizes the holder to carry particular commodities (elements a and b of the specialty permits section), or to use special equipment (element c through h of the same section), or to haul commodities for the account of one or more shippers (element i of section 4). For example, Guilbault Transport Inc. holds a transport permit from Quebec City to Montreal that reads: "restricted transport - long distance - restricted route - under contract for Legrade Inc." This permit allows the firm to carry animal fat to Montreal in tank trucks on demand; it does not grant the right for a loaded return to Quebec City.

Finally, the haulaway transport permit gives the owner of a tractor the right to haul a trailer owned by the holder of a transport broker permit issued by the Commission. A single carrier may be authorized to operate two or more different classes. In 1977-78, the Commission listed 3,687 firms holding 12,487 permits.

The Concept of Public Interest

As in the case of quasi-judicial agencies, the Transport Commission's procedures for issuing permits centre on the requirements of the "public interest". Although this concept is not specifically mentioned in the founding act, continuous jurisprudence has established an obligation to give fundamental consideration to the public interest when making a decision. The Quebec Transport Commission is the sole judge of this concept; thus, the basis for interpreting this concept is subjective and depends on the particular circumstances of each situation. This is not to say that the Commission operates in a purely

arbitrary fashion, but rather that the Commission members have a certain degree of latitude and flexibility in interpretation. Justice Pratte summarized this position fairly well in Giroux vs.

Maheux:¹⁰

Thus, authorization can only be requested, and the Board will grant or refuse the request based on what it deems appropriate in terms of the public interest; it will deal with the request not on the basis of a pre-established objective and independent standard, because none is provided by the Act, but instead according to a standard established by the Board corresponding to the Board's idea of what the public interest requires. Of course, the Board's decision may well depend to a certain extent on the submissions made by the parties, but after all is said and done it is the public interest that will determine the Board's action...

An operational definition of this term can in fact only be drawn from analysis of the Commission's decisions. Only through the Commission's actions can we discover the interpretation given this term by the Commission and its members, since no official definition exists.

Interpretation in Practice of Public Interest in the Context of an Application for a Permit

When an applicant requests a general or restricted trucking permit, either to offer new services or to add services to his present permit, the Commission seeks to ascertain whether this new operation meets a public or demand need. If, in a public hearing, it decides that the service requested is necessary and can be provided or is already provided by present carriers and/or that the introduction of an additional carrier could endanger existing firms, the Commission will reject the request.

Three cases from the Commission's files support this view. In Freeport Transport vs. Husband Transport Limited et al.,¹¹ the Commission did not approve the applicant's request to add new services

to his permit since some opposing companies already offered the service and since others could provide the required service through interchange. In Marc Caron vs. Fournier Transport Ltée et al.,¹² the Commission denied the applicant's request to carry small parcels since no one could establish a real need for another carrier in addition to those already authorized. In the third case, Forget Transport Inc. vs. St-Jérôme Express Ltée et al.,¹³ the Commission rejected a change in a clause in the applicant's permit since the volume of traffic, although it had grown in recent years, had not increased enough to justify the issuing of a new permit.

These cases indicate that the Commission forms an idea of the number of existing carriers necessary to ensure a certain level of service and a certain balance. This number of carriers varies according to the Commission's evaluation of the intensity of present or potential needs. This allows us to formulate a first underlying principle of the Commission's perception of the public interest: any request for a permit that would increase competition from present levels will generally be rejected.

The granting of new permits for new territories or new activities will reveal a second implicit principle of the Commission's concept of public interest. For James Bay, the Commission issued, under its own authority, general and restricted trucking permits to existing firms carrying goods in the Northwest Quebec region.¹⁴ For Mirabel Airport, the Commission granted permits to existing firms that already held a local transport permit within the region and to air freight firms that previously provided regular service from Dorval Airport.¹⁵ In the event of any sudden increase in the demand for for-hire transport resulting from either the opening of a new territory or the creation of new activities, the Commission meets this demand by resorting to existing firms.

The third implicit rule that governs the concept of public interest is the Commission's refusal to accept price competition, since this

tactic could endanger the financial stability of the firms. This rule generally takes two forms. First, the Commission operates on the belief that an applicant's ability to lower rates and tariffs does not constitute clear proof of inefficiency and inadequacy in the services provided by existing motor carriers.¹⁶

The second form of this opposition to price competition is found in the procedure for issuing or extending a permit to a contract carrier. If this operation is profitable for the applicant firm and is liable to affect the services provided by holders of general trucking permits, the Commission shows extreme reluctance and may even refuse to issue the request permit. The case of Thetford Transport Limitée vs. Bécancour Express Transport Inc. et al.,¹⁷ gives a good illustration of this philosophy. The Commission refused on the basis that the rates requested, which were lower than the rates of the public motor carriers, would reduce the applicant firm's profitability and thus create an unjustified tariff imbalance for present public carriers as well as their users. In brief, its implicit emphasis on preventing bankruptcy among Quebec carriers leads the Commission to reduce or minimize price competition; this explains its relative intransigence toward a potential competitor who uses this argument, and its close surveillance of the awarding of a contract clause.

A fourth factor considered by the Commission in defining the content of public interest is related to the so-called inadequate present physical services test. The Commission generally rejects requests for extended services or new permits made by a potential or existing carrier unless the applicant presents convincing evidence that the facilities of existing carriers are physically inadequate. This can take several forms. In Cartier Transport Inc. vs. Gravel et Desbiens Inc.,¹⁸ the applicant party obtained a restricted trucking permit - long distance - restricted route, although the opposing party already provided satisfactory service, strictly because the latter did not plan to meet the considerable and growing needs of the region. In another case,

Gérard Nolin Ltée vs. Provost Cartage Inc.,¹⁹ the Commission granted a permit requested by the applicant, even though the opposing party already provided the service because it had been shown that the available physical equipment was deficient and inadequate in relation to the shipper's needs.

However, it should be noted that the articles of proof accepted by the Commission for satisfactory services provided by existing carriers have been fairly summary. They have ranged from mere allegations by protesting carriers that a sufficient number of trucking firms already provided the service, to findings that underutilized facilities existed. This test is implicitly contained in the first criterion dealing with the Commission's opinion on the optimum number of competitors. However it indicates that the Commission places emphasis not only on a firm's output, but also on certain inputs in the production process.

It can be inferred that this discrimination against potential competitors does not mean that the total inflow of new resources in the public trucking industry is hampered. The share of the new market acquired by the existing carriers, as well as their new investments is determined by competition. The existing firms guarantee expansion of the sector.

To sum up, the existing motor carriers constitute the field of reference used by Commission members in developing their concept of public interest. The four principles developed here only reflect this preoccupation, namely to protect the interests of the existing firms. The full burden of proof rests solely on the potential competitor, who must prove that he can provide the service while the existing firms cannot adequately and efficiently. In other words, a new permit or clause is granted only where a new shipper need has developed and where this new authorized service will not divers customers away from the existing carriers. Consequently, new permits or permit

clauses granted will contain many restrictions on the commodities carried, the route to be used and the shippers to be served, since this is the only means for any carrier to overcome the full range of obstacles. All these formalities create an image of anti-competitive prejudice, in that competition is seen to run counter to the public interest as defined or perceived by the Commission.

2.2 Determination of Rates

The present rate and tariff structure is made up of agreed charges, contract clauses, class rates and commodity rates. An agreed charge constitutes a firm rate resulting from a particular and specific agreement between a carrier and a particular shipper that cannot be extended to the rest of the industry. An essential part of this arrangement is shipper's guarantee of providing the motor carrier with some agreed percentage of his traffic, affected by the agreed-on rate. The agreed charges are less than commodity rates. It seems that this pricing arrangement is now a very negligible element of the present structure.

Contract clauses occur in signed contracts between a carrier and a shipper, but covered by a contract carrier permit. The main difference with the former pricing process is that the volume of shipment is not specified in advance. The advantage of this formula is to meet the irregular needs of a shipper whose products must be shipped to various locations in the province. A summary compiled by the Department of Transport in 1976 indicated the existence of nearly 5,200 contract carrier permits. Of these, 744 were for hauling general commodities on long distance for the account of one shipper. So 42% of the permit authorizations granted by the Commission were of contract carrier permit type in 1976. In a study conducted for the Quebec Transport Commission, it was found that in practically all contracts analyzed, the negotiated rates were lower than the commodity rates registered with the Quebec Tariff Bureau and fixed by the Commission. Thus, for identical conditions in terms of distance and tonnage carried, it was found that the negotiated rates

covered by a contract carrier permit were lower than the commodity rates by as much as 60 per cent.

The third element of the structure is the class rate, which applies between specified origin and a specific destination to irregular movements of goods shipped in less than truck load. The class rates are higher than the commodity rates. Finally, there are commodity rates that apply solely to a precise commodity of a minimum established weight, generally in loads of 5,000 pounds and over, for regular movements between two stipulated points. The commodity rate results from negotiations between a shipper and a carrier, but when accepted by the transport commission, it becomes an industry rate that all public carriers must apply in identical situations.

A survey conducted by the Quebec Tariff Bureau of a certain number of bills of lading for 23 Quebec trucking firms with revenues between \$500,000 and \$3,000,000 provided some information on the relative importance of these four elements in the composition of their revenues.²⁰ In Table II, we find that the weight of goods carried under the class rates represented 21.8 per cent of the total weight while the revenue generated by the same goods constituted 57.8 per cent of total revenue. The weight of goods carried under the commodity rate constituted 72.4 per cent of all tonnage while they produced only 38 per cent of total revenue. Goods carried under an agreed charge or a contract clause represented 5.78 per cent of the total goods carried.

Rates and Tariffs: The Role of the Quebec Transport Commission

This regulatory board is responsible for analyzing and establishing rates from tariffs submitted to it by carriers or their representatives.²¹ No carrier may afterwards charge tariffs other than those in force. It must be pointed out, however, that the Commission's role in establishing the rate and tariff structure tends to be a formality only, since it approves almost all requests submitted for both rate increases and decreases. Table III shows the percentage distribution

TABLE II

PERCENTAGE DISTRIBUTION OF REVENUES
AND GOODS CARRIED BY RATES AND TARIFFS:
A SAMPLE OF 23 QUEBEC CARRIERS, 1977.

<u>RATES & TARIFFS</u>	<u>REVENUES</u>	<u>WEIGHT</u>
Class Rate	57.8 %	21.8 %
Commodity Rate	38.0 %	72.4 %
Contract Claude & Agreed Charges	3.6 %	5.8 %
Miscellaneous	0.6 %	---
TOTAL	100.0 %	100.0 %

Source: Quebec Tariff Bureau, Montreal, 1978

TABLE III

PERCENTAGE DISTRIBUTION OF DECISIONS HANDED
DOWN BY THE TRANSPORT COMMISSION
FOR FIXING OF RATES

(general and specialized trucking)

	1975/76	1976/77	1977/78
Requests granted in whole or in part	96.4	89.7	97.9
Requests rejected	2.4	5.3	0.7
Requests withdrawn	1.2	5.0	1.4

Source: Report of the Activities of the Quebec Transport Commission

of the decisions handed down by the Commission over the 1975-78 period. Of particular note is the high percentage of requests granted in whole or in part. Except for 1976-77, when the rate of acceptance dropped to 90 per cent for general and specialized trucking combined, the percentage of requests granted in whole or in part has remained at about 95 per cent. Finally, the enforcement of rates and tariffs is done by the Department of Transport and not by the Commission.

The Quebec Tariff Bureau Inc.

At this stage in the description of rate setting, we must clarify and evaluate the particular role of a private enterprise, the Quebec Tariff Bureau Inc. This firm represents approximately 230 permit holders who conduct the major part of general public transport in Quebec. Membership is not compulsory, however, so that a public carrier holding a Commission permit may conduct business without being a member.

The formal objectives of this private corporation are numerous. First, the Bureau offers a general or collective service to its members, namely the determination of rates and tariffs to be submitted to the Commission for approval. Since the Commission almost automatically approves requests submitted to it, this particular task constitutes a very important function. In addition, it lobbies the government and the regulatory agency and represents the interests of carriers before groups of shippers and manufacturers. The Bureau also provides consulting services to its members as well as technical services such as data processing for account billing, a management system for vehicle fleets, a centre for research on operating costs and occupational training services.

By usually approving requests from the Tariff Bureau for rate and tariff changes, the Transport Commission actually gives this private agency a de facto role of cartelizing the trucking industry. Since the Bureau gathers the support of the large majority of carriers

behind universally applicable decisions, it actually causes the industry to behave like a monopoly. This monopolistic power is nonetheless limited by the very nature of the cartel. A cartel is a formal agreement reached by a certain number of producers who wish to avoid the hardships of competition. The goal is to restrict output through quotas, for example, and to obtain monopoly profits. Thus, if cartelization of public trucking in Quebec occurs through the action of the Quebec Tariff Bureau, all firms in the cartel will receive a monopoly profit from the consecutive rise in the price of their products. This profit would constitute a collective good of the cartel. But because of the large number of firms involved, a reluctant firm could sell a greater quantity at this non-competitive price and receive the full benefit of the higher price without paying any of the costs through reduction of its output. This explains why no successful cartel of Quebec highway carriers has ever been formed. While all public carriers have an interest in high prices for transport services (a collective good) and a reduction in the level of output in terms of ton-miles to maintain artificial prices, each would gain by increasing their output to sell it at monopoly prices (private interest). Each has an interest in breaking the operating rules of the cartel and not participating the agreement.

To summarize, since membership in the Quebec Tariff Bureau is not compulsory and no one can deny a public carrier the benefits of the collective action of this private organization, its contribution to the activity of the whole will be small, while the interests of its members will lead them to undermine the very foundations of the cartel. This explains the Quebec Tariff Bureau's relative lack of success in forming a cartel, and the emergence of several means to reduce its effectiveness: independent action and other forms of highway carriage of goods such as so-called "illegal" trucking, truck leasing firms or "pseudo" leasing arrangements, the services of transport brokers and private carriage.

Through "independent action", a public carrier may require the Quebec Tariff Bureau to submit a rate proposal to the Commission even against its will. In other words, there is room within the cartel for dissenting action. Independent action, which in reality constitutes price competition, should in principle reduce the severity of the obstacles that the Quebec Tariff Bureau may raise against competition. According to some sources, recourse to independent action has not occurred more than 15 times since the Commission was created. There is always the risk, however, that a public carrier who is discontented with the tariff level in effect may resort to independent action. Like Damocles' sword, this possibility, while difficult to quantify, still remains present in the minds of the Bureau's members.

Since the other possibilities will be discussed extensively in the following section dealing with the extent of regulation in Quebec they will be mentioned only briefly here. A public carrier may, for example, offer services extending beyond the classes in his permit. This "illegal activity" is particularly common because the system of control and penalties presents little discouragement. Another means a public carrier may employ to increase his volume of output is to form a truck leasing firm. Finally, there is intra-modal competition from freight forwarders and inter-modal competition from private carriers such as Steinberg's.

2.3 General Considerations

This overview of regulation in Quebec has revealed that the current practices of the Commission in issuing permits incorporate prejudices against any potential new competitor. By requiring proof of public convenience and necessity and a demonstration of inadequate physical facilities among existing carriers, the Commission actually places the burden of proof on any potential entrant.

Two organizations are responsible for setting rates and tariffs. The Commission analyzes and fixes rates, which become official rates;

no trucking firm may then charge different rates. However, this procedure is only a formality since in reality the Commission almost always approves the requests submitted by the Quebec Tariff Bureau. This latter, a private institution, attempts to represent the interests of carriers before the public board. However, a wide range of reasons and circumstances considerably hinders all its attempts to form a cartel.

3. THE EFFECTIVENESS OF REGULATION

Our description of the formal regulation of trucking would lead the reader to believe that entry into the industry is fairly restricted and that the natural function of the Quebec Tariff Bureau is to cartelize the industry. On the other hand, there are good reasons to believe that the protection offered by the entry control is not as tight as the description in the previous section would seem to imply. The climate of tolerance or lax enforcement of the rates and tariffs also appreciably lessens function of cartelization attributed to the private Quebec Tariff Bureau. As these general considerations suggest this section will evaluate the actual effectiveness of regulation and consequently the extent of leakages that limit the formal constraints.

3.1 The Substitutes

There exist various agents and mechanisms both inside and outside the industry that act as a sort of release valve since they diminish the effectiveness of the Commissions protectionist measures. Before analyzing them separately to attempt to determine their relative magnitude, it would be relevant to comment on the market for transportation of goods.

There is not, strictly speaking, a Quebec market for transportation of goods, but a collection of sub-markets. As these various sub-markets can be determined by geographical criteria such as the Montreal-Quebec corridor, for example, or by the type of commodities shipped such as copper castings, and so on, the substitutes will vary

according to the determining factors that have generated this given sub-market. Our analysis will seek, to a certain extent, to specify the context of relevant substitutability of a given transport mode with a common carrier.

Intra-modal Substitutes

Among the substitutes endogeneous to the trucking industry, one can think of leasing or "pseudo-leasing" companies, freight brokers and the so-called "illegal" trucking services.

So-called "illegal" trucking. "Illegal" trucking generally is that conducted either by a carrier not holding any permit or one who goes beyond the clauses of his permit. A trucking firm will offer this type of illegal service if the probability of arrest is low and if the punishment per offense is small in relation to the profits derived from the illegal activity.²²

Two indicators we found suggest that the probability of arrest is relatively low. In the first place, the enforcement of the Transport Commission's by-laws and regulations is one of many responsibilities of the Department of Transport's inspection service. Until 1977, surveillance was relaxed at night when the Department's inspection stations closed. Second, the permits granted are so complex that only the possession of their complete description such as granted by the Commission could allow the surveillance officers to decide on the legality of an operation; unfortunately, they do not possess this type of information. Finally, the fine is generally about \$50, a minimal and even ridiculous sum for certain carriers. In fact, a survey conducted between January 1976 and May 1978 revealed that "illegal" truckers were fined for 1,104 infractions and that 62.5 per cent of these fines were \$50 or less.

In addition to this context that influences a firm's behaviour, two other facts must be remembered: each complaint is considered as an isolated occurrence since the Department never makes note of repeat

infractions; moreover, the Commission has yet to withdraw or suspend the permit of a carrier convicted of "illegal" trucking.

In conclusion, the description and analysis of the mechanisms set up to counteract so-called "illegal" trucking only confirm the profitability of this activity in relation to the costs. Although some may consider this substitute to be negligible due mainly to the difficulties of quantifying its impact, this activity seems to compete with the common carriers of general commodities operating in the peripheral zones of Quebec's urban centres. This activity constitutes a significant release valve for the Commission's obstacles to entry.

Freight Brokers. The freight broker, in the strict sense of the term, is not regulated by the Commission. His activity consists of picking-up small shipments (LTL) from several shippers and having them moved in a full load either by truck or rail. A score of forwarders operate mainly in the Montreal-Toronto and Montreal-Quebec City corridors, because small shippers feel the class rates are too high and because brokers offer a different price-quality ratio than public carriers. These intermediaries, by offering the same services as a general carrier, namely to pick-up and to deliver small shipments of commodities, constitute an important substitute in this particular sub-market of small shipments (LTL). They therefore provide additional competition with the dozen common carriers of general commodities operating in the Montreal-Quebec City corridor. Though this substitute is concentrated in certain corridors and specializes in handling less-than-truck-load shipments (LTL), it remains a potential threat that general trucking firms cannot ignore with impunity.

Leasing. Leasing (or pseudo-leasing) firms lease the services of a truck and driver rather than the transport service as a common carrier does. The most common practice at present is to lease the same truck to a certain number of shippers. The truck will be used to

carry several full loads or for round trip journeys. Since these firms are not subject to economic regulation by the Commission, their services cost less than those of public carriers. This intra-modal substitute gains some advantages in terms of quality of services offered. Having no territorial constraints as common carriers do, the leasing firm can ship everywhere without interchange or transshipment of merchandise, which reduces considerably transit time and the risks of damage to goods. It is not unusual, however, to find a public carrier who also owns a leasing firm.

Quite recently, the Government of Quebec passed a regulation that it claimed would reduce the scope of this activity. However, motor carrier owners believe that it probably will not curtail this substitute activity for public carriers; at best, it will only define this form of transport more clearly and thus legalize many operations of certain existing firms.

This mode currently provides a very good substitute for hauling truck loads (TL) on long distance runs.²³ It appears to be common in the Montreal-Toronto corridor and relatively widespread in Quebec province, since the Quebec Transport Commission listed 1,044 firms holding leasing permits in 1977.

Inter-modal Substitutes

Other substitute modes that are exogenous to the public trucking industry also reduce the effectiveness of the obstacles to entry. Our analysis of the role of private carriers and railways will be brief.

Private Carriage. Shippers may react to conditions imposed by regulation by substituting other means of transport. Oi and Hunter²⁴ have shown that private trucking in the United States acted as a direct competitor with public carriers rather than with railways. McLachlan²⁵ shows that Canadian shippers located in the regulated provinces make greater use of their own fleets of trucks than their colleagues in provinces where the market forces are working freely.

The shipper will only make this substitution after he has assessed the inconveniences of the new price quality-of-service relationship created by regulation, the consequences of a diversion of resources from the primary production effort of the firm and the high costs of private trucking. Private carriers must cope with a lower utilization rate for trucks, and since a private carrier is not authorized to solicit traffic on a commercial basis and the normal flow of his goods is only in one direction, trucks often return empty to their point of origin.

Since data on the subject do not exist for Quebec, two studies, one from the U.S. and the other from Ontario, will be used to support this view. Oi and Hunter reveal that the average weights of loads in tons per vehicle-mile for a private carrier, regardless of vehicle size, are lower than average payload weights for all public carriers.²⁶ The second study confirms the fact that the median gross weight of private trucks is lower than that of for-hire trucks on the basis of research conducted for the Select Committee of the Ontario Legislature.²⁷ In brief, a certain share of private truck transportation is conducted in spite of its high costs. Private trucking nonetheless enjoys a comparative advantage in small shipment/short haul freight movements by keeping terminal expenses low.²⁸

The actual sharing between the for-hire motor carrier and private motor carriage is partly a result of the existence of regulation.²⁹ However, it is impossible to specify the precise conditions of the emergence of private carriage as a substitute for public carriage other than by the variables employed by Oi and Hunter: the quality of transportation ("service") and the costs of using public carriers. As in the United States, it seems that some major industry groups such as the petroleum, printing, food, furniture and lumber industries make significant use of private trucking. Moreover, it would appear that, for a given industry, it is the small firm that reports the most intensive use of proprietary trucking

because its transportation requirements entail a high number of short-haul freight movements.

Railways. The comparative advantages of rail are based on the capacity for heavier loads over long distances but with much slower delivery times than by truck. The legal framework of railway rate structures means that the rail carrier is now subject to incentives as well as market fluctuations. Since the railway is becoming increasingly restricted to hauling raw materials over long distances, the range of substitution possibilities is narrowing. Moreover, this substitution would require a shipper to make adjustments, to inventory levels, for example.

This substitute is particularly relevant for the peripheral regions of the province. For example, the railway competes with motor carriers in the Saguenay-Lac St-Jean region for the transportation modes also compete in northwestern Quebec for the transportation of copper and forest products. The same phenomenon may repeat itself to a lesser degree, in the Gaspé peninsula. Finally, the railway constitutes a good substitute for the for-hire motor carrier in the carriage of automobiles.

Considerations on the Substitution Phenomenon

Although the Transport Commission has allowed a cartel to exist, its power has been limited. The various substitutes, both intra-modal and inter-modal, constitute external indicators of this gradual erosion. The former reveals immediate opportunities for bypassing the Commission's formal barriers while remaining in the context of the trucking industry itself. The latter indicates that shippers could marginally adapt to conditions possibly resulting from regulation by resorting to modes outside the industry. Moreover, they operate in different sub-markets according to their comparative advantages and the circumstances. There is always a possibility that some specific market segments allow fewer substitutes. As mentioned previously, it occurs when a shipper does not

wish to participate in illegal or leasing operations owing to their permissive nature nor to allocate scarce resources to private carriage operations, the rate of return being too low. Further the less than truck load shipper and those situated beyond the main urban areas may have no alternative if the substitutes to the cartel exist primarily for truck load traffic and traffic in high density lanes.

However, this would not appreciably affect the conclusion of this research, namely that the trucking industry, broadly defined, is relatively open since these various substitutes introduce a certain flexibility that shippers use to their advantage. This real erosion of the market held by public carriers forces them to adapt and move towards criteria of efficiency that differ little from those that would prevail in a competitive system.

3.2 Lax Enforcement of Rates and Tariffs

The erosion of the effectiveness of Quebec's trucking regulation is discovered not only when considering access to the industry, but also when examining the rates and tariffs applied in the industry. Enforcement of the official rates is definitely lax, and the by-laws are indeed violated, although no one dares measure to what extent.³⁰

Two observations can help to describe the environment of this industry. Because of the complexity of the rate and tariff structure, inspectors with the Department of Transport only investigate following a complaint. Detection of unauthorized rates and tariffs becomes extremely difficult since it is based almost exclusively on accusations, primarily by licensed operators. Just three infractions for "unofficial" or "unaccepted" rates were recorded, out of a possible 1,107 infractions registered between January 1976 and May 1978.

In addition, the description of the Quebec Tariff Bureau's role

shows that this private firm does not have the coercive means to force trucking firms to respect the non-competitive rate and tariff levels. Consequently, it comes as no surprise that the Transport Commission, during an internal investigation of rates and tariffs charged at Mirabel Airport, concluded that the rates and tariffs it has established were generally not respected.

3.3 General Considerations

The previous section on the nature of the Quebec's trucking regulation implied a certain amount of difficulty in obtaining a permit and establishing rates and tariffs when the indicators analyzed were considered separately. This section, which deals with the actual effectiveness of the regulation, reveals, on the other hand, the presence of definite limits to the strength of these constraints. The account of the general environment in which this industry operates revealed the broad spectrum of "leaks" in the system. These "leaks" seem to indicate that the trucking industry, broadly defined, is relatively free of impediments; although inefficiencies may exist in some segmented markets owing to the absence of genuine substitutes. The fairly common practice of tolerance in the enforcement of rates amplifies the competitive nature of this industry. Due to all these leaks, it is quite reasonable to claim that Quebec's regulation is not as stiff as the description of its official extent would indicate.

4. THE CONSEQUENCES OF REGULATION IN QUEBEC

By referring to the paradigm of industrial organization -- "market structure - conduct-performance" -- we will attempt to determine how the Commission's various actions in issuing permits and setting rates and tariffs could have consequences on the performance of the trucking industry in Quebec. In other words, we will now determine with the help of empirical analysis whether the set of constraints imposed by the Commission is as ineffective as the description of the "leaks" implies. Our

analysis of the elements of the market structure component will concentrate on two specific points: evaluation of barriers to entry introduced by the Commission and the implications on the number and size of firms. Two elements reflecting the industry's conduct will be examined: the rates and tariffs authorized by the regulatory board and the rate of return on capital earned by carriers. The industry's performance will be measured against the general criteria of economic efficiency.

4.1 The Market Structure

We are now in a position to ask whether the Commission's administrative standards make access to the industry more difficult for newcomers and expansion more difficult for existing firms. The answer for new firms can be derived from external indicators of barriers to entry such as the actual market value of a permit. The possible consequences on the number and size of firms can only be derived if we know the cost structure of a typical firm.

Barriers to Entry

A first indicator tends to suggest that the tests of public convenience and necessity and inadequate services constitute real obstacles to entry into the trucking industry: some permits or permit clauses appear to have acquired a certain market value. This constitutes an indication of fully discounted future excess profits that the Commission's barriers to entry may procure. Examination of a new corporate financial statements reveals that the market value of some permit clauses varies between \$3,000 and \$15,000 while some permits that change hands through a merger or transfer may attain a value of \$25,000 to \$125,000.

This same phenomenon exists in Ontario,³¹ with the minor difference that permits change hands at lower prices. This would seem to indicate that the data compiled for Quebec reflect not only the market value of the permits but also certain intangibles such as the goodwill. Since it is impossible to separate the market value of a permit from a firm's goodwill, the figures provided overestimate the

real value of a permit. Because the goodwill and permits cannot be separated, another point tends to diminish the importance of these data: the low value of the permit and goodwill compared to the amount of annual revenues. The transactions analyzed by Moore³² reveal that the gross rents generated by the operating rights granted by the Interstate Commerce Commission represent 10.7 per cent of gross operating revenue. Since this type of information is not available in Quebec, we must proceed indirectly. Various calculations based on regression results of before-tax profits on total operating revenues for a sample of Quebec firms show that the value of the permit and the goodwill involved constitute only 5.2 per cent of total revenues. In the extreme and improbable assumption that overall before-tax profits come from the rights only and that there would be no return due on investment, the gross rent received by the Quebec trucking firms would be just 5.2 per cent of operating revenues. This percentage, in absolute value, is substantially lower than the U.S. estimates obtained by Moore. Moreover, our result includes elements other than the right itself.³³

The second indication results from the observation that acquisition of new permits is almost totally reserved to existing firms. Cross-checking of the data on requests for permits contained in the 1975-76 and 1976-77 annual reports indicated that close to 85 per cent of all new permits were issued to existing firms.

To sum up, although the Commission may have conferred a market value to some permits, the consequences on the allocation of resources should be minor. As a matter of fact, the value obtained for the permit and the goodwill represents a low percentage of operating revenues, contrary to the transactions observed in the United States. So the estimate used far overestimates the true value of a permit.

The Industrial Structure

Regulation of entry to the trucking industry can influence its structure, in this case the number of firms and their relative size. Several studies, conducted mainly in the U.S., have analyzed the cost structure of the trucking industry to learn more about the typical firm. They have generally reached the same conclusion, although they used various methodologies: an absence of major economies of scale, or fairly constant average costs. Under these conditions, small trucking firms can therefore operate just as efficiently as large firms. A brief review of the major studies is necessary to understand the process leading to this conclusion.

Some researchers recently tackled directly the actual cost structure of a trucking firm. By using cost structure specifications that take into consideration factors such as heterogenous output, quality of output and the existence of joint production, these authors discovered the existence of a plateau at which a trucking firm operates at an approximately constant average cost.³⁴ Their findings indicate that standardization of shipment characteristics causes the difference in costs between small and large firms to disappear. Thus, omission of qualitative variables, such as the percentage of tons shipped in LTL lots and the actual composition of the output, would explain why certain statistical studies concluded that some economies of scale did exist.³⁵

Economists whose research goes back to the mid-1950's used methods that relied instead on the relationship between output indicators and financial data. Their conclusions approached the observation that beyond a certain minimum level of operation, a firm's size does not noticeably affect unit costs. It should be pointed out that Meyer³⁶ obtained a negative but small coefficient of correlation between cost per ton-mile and the annual income of inter-city carriers, while Roberts³⁷ pointed out the total absence of correlation between the operating ratio, measured simply as the ratio of operating revenues to operating expenditures, and operating revenues. According to

Sloss,³⁸ the profits of the major Canadian public carriers are not excessively high in relation to the rest of the industry.

If a typical trucking firm has approximately constant average costs, then the number of firms as well as their relative size is indeterminate. On the one hand, a fairly constant average cost does not necessarily mean that the firms are of equal size. On the other hand, since no reference sector exempt from regulation, such as U.S. carriers of agricultural products, exists in Quebec, and no historical data on the industry exist, it becomes extremely difficult to develop and verify precise hypotheses on the consequences of regulation on the level of concentration.

Since the Commission rarely refuses to transfer permits held by operating carriers, the quickest and surest way of becoming a public carrier appears to be acquisition of an existing firm. For dynamic and aggressive firms seeking new markets, acquisition of a carrier already holding a coveted permit provides a means of minimizing costs or lost earnings caused by legal procedures and the waiting period for obtaining a permit, if indeed one is finally granted. In a regulated environment of entry control, mergers, acquisition and takeovers constitute the main instruments of expansion. For this very reason, U.S. economists³⁹ presume and demonstrate empirically that regulation has increased the level of concentration in the industry.

The Commission does not allow the purchase of firms holding common permits. So existing firms may only be purchased for the purpose of completing and filling in missing portion of permits already held. In other words, mergers make it easier to achieve full economies of density and network utilization. The hypothesis of this research is that the present regulatory practices of the Commission aim at limiting the concentration within some given networks. However, they do not remove the clear incentive for firms to merge in order to have more commodities to carry and more routes to travel.

To provide an indication of the level of concentration in the industry, we compiled some percentage distributions of carriers and their operating revenues among the three major classes of firms, the full results of which are shown in Table IV. Looking at 1976, we see that the 46 firms with over \$2 million in operating revenues account for 41 per cent of the revenue in the industry although they represent only 1.2 per cent of all firms in the industry. In all, 17.4 per cent of the Quebec firms earned 79.2 per cent of the revenue.

TABLE IV
DEGREE OF CONCENTRATION OF THE QUEBEC
TRUCKING INDUSTRY 1975 AND 1976

	<u>Number of Regulated Carriers by Operat- ing Revenues Class</u>		<u>PERCENTAGE Of Carriers</u>		<u>DISTRUBITION Of Operating Revenues</u>	
	1975	1976	1975	1976	1975	1976
\$2 million & over	39	46	1.08	1.27	37.31	41.00
\$500,000 to \$2 million	152	154	4.19	4.21	24.72	23.81
\$100,000 to \$500,000	459	437	12.66	11.93	17.15	14.36
TOTAL:	650	637	17.93	17.41	79.18	79.17

Source: Calculations based on Motor Carriers-Freight and Household Goods Movers and on For-Hire Trucking Survey, Statistics Canada.

It may be possible to draw a better configuration of the industrial structure in referring to the various sub-markets. If the specialized common carriers are considered, it can be seen that a carrier holding a specialty permit by tank trucks earns nearly 80 per cent of the operating revenues in this group; the largest trucking firm in automobile hauling accounts for roughly 60 per cent of revenues of this class of carriers. If geographical criteria, such as

the number of regulated truckers who share the traffic between two major points are considered, it appears that about a dozen motor carriers of general commodities operate daily between Quebec and Montreal. On the other hand, a light-density route as Montreal and Sept-Iles is served by only four motor carriers of general commodities.

The trucking industry nonetheless remains one of the least concentrated industries in Quebec or Canada, compared to certain manufacturing industries where the number of producers is limited. For example, the four largest Canadian firms in the brewing and distilling industries control 94.6 and 84.2 per cent of Canadian shipments respectively.⁴⁰

Since Quebec, unlike the United States, has no reference sector for analyzing the changing behaviour of firms exempt from regulation, it becomes difficult, if not impossible, to measure the consequences of the Commission's actions on the present structure. However, our hypothesis remains valid: since the typical firm operates at approximately constant unit cost, the incentive for dynamic firms to obtain new operating rights through merger and acquisition may contribute to increased concentration in the industry. But if the mergers in Quebec are aimed at better integration of the various local segmented markets into an efficient network, the concentration effect will actually be reduced.

General Considerations

The consequences, if any, of Quebec's regulation on the market structure are negligible, minor and of little importance. First of all, the main result obtained on the effectiveness of the barriers to entry are highly different from the estimates observed in the United States because the market value of a permit, right and goodwill included, constitutes a low percentage of the operating revenues earned by a motor carrier. The influence of regulation on the size and number of firms proves difficult to evaluate. U.S. economists

have shown empirically that regulation tends to increase concentration when merger and acquisition of existing firms are the sole means of expansion. Due to the regulatory practices covering acquisition of existing firms, we stress that the concentration effect will be lessened if mergers can allow firms to achieve full economies of density and network utilization since transport is a local service.

In brief, then, the market structure of Quebec's public trucking industry should approach that of a competitive market. The elements analyzed clearly indicate characteristics that do not appear to differ noticeably from the reference structure, a competitive industry.

4.2 The Industry's Behaviour

The second stage in our analysis of regulation is a diagnosis of the actual behaviour of Quebec's trucking industry. It is accomplished by comparing rate and tariff levels and the rate of return on capital for Quebec firms with the same variables for firms located in competitive provinces.

Rate and Tariff Levels

Since the extent of regulation differs by province, the hypothesis that regulation could explain the price differences observed between public carriers in the regulated provinces and those in the competitive provinces can be tested. Several empirical research papers have been written on this subject and a brief review of the results would be appropriate.

The first comparative studies cover the 1958-1963 period.⁴¹ The main conclusion that emerges from their empirical analysis is that public carriers operating in the regulated provinces charge average rates 10 per cent higher than those charges by public carriers in the competitive provinces. The Province of Quebec, however, is included among the provinces allowing the market forces to operate freely. These empirical studies therefore indicate that the former Transporta-

tion Board exerted little influence on rate and tariff setting in Quebec. Sloss attributes this result to the large number of agreed charges in force at the time and to the Board's unusual liberality in permitting entry of new firms.

A second series of studies dealing with the influence of regulation on rate and tariff levels covers the period from 1970 to 1975. First, Sloss⁴² updated his study for the 1970-72 sub-period. Although his model is fairly different from its predecessor in terms of specifications and level of aggregation, the author could not prove the existence of a statistically significant price difference caused by regulation. Maister's works,⁴³ which cover the 1973-75 sub-period, cannot statistically indicate the existence of higher rates and tariffs in the provinces assigned as regulated. He obtains these results despite the fact that the specification of his equation includes, in addition to the traditional independent variables such as distance and weight, dummy variables that explicitly consider the various forms of regulation reflected in the existence of barriers to entry, rates and tariffs presented by the regulatory agencies and the approval of increases in these same rates and tariffs.

Our own results for the same sub-period clearly indicate that the new conditions now prevailing in Quebec are no different than those that existed under the former Transportation Board.⁴⁴ The various statistical tests applied were, first of all, a classical hypothesis test on the existence of a difference in the average residuals obtained for the regulated provinces and the competitive provinces, second, an χ^2 test on the distribution of the signs of the residuals for the regulated provinces compared with the distribution of the signs of the residuals in the classified competitive provinces and finally the introduction of dummy variables that explicitly take into account the status of the provinces. These results all agreed; we can therefore confirm that regulation does not constitute a statistically significant variable affecting the determination of rates and tariffs as practised in the various de jure regulated provinces, including Quebec.

Finally, a recent study,⁴⁵ using a pooling of the 1975 and 1976 individual shipment data for each of six commodity groups, compares the revenues per ton-mile received by the common carriers of six Canadian provinces. Though the authors find that the unit prices of trucking services do differ substantially between the provinces for commodity groups, they are not prepared to attribute the differences exclusively to regulation. However, the message of this research is clear cut: the analysis of sub-markets, defined according to distance or/and commodity criteria may provide a more accurate picture of the influence of regulated and competitive systems.

Rate of Return

The theoretical prediction that generally emerges from analysis of regulation is that a reduction in competition induces an increase in the level of profits and the rate of return. However, empirical studies indicate that regulation appears to exert an unspecified influence on the sector's profitability because of certain ambiguous factors. First, the monopolistic power given to carriers may produce extraordinary profits by allowing the tariffs to exceed the actual costs. On the other hand, it must also be realized that the regulatory agency would force carriers to bear additional and artificial costs. Further discussion of the possible forms these assumed additional costs could take would be in order.

The first element of these possible supplementary costs involves the content of the permit that does not strictly correspond with a firm's choice. Although it is not as restrictive as the Interstate Commerce Commission in granting permits,⁴⁶ the Quebec Transport Commission nonetheless imposes certain restrictions. These generally deal with the authorization for and content of back hauls, routes to be travelled and list and weight of commodities to be handled. Although difficult to quantify, these additional costs resulting from the Commission's permit specifications in place of the market forces appear to constitute a negligible quantity. Second, regulation would eventually generate cross-subsidization elements. This term designates the arrangement whereby authorization to provide a profitable

service is made fairly explicitly conditional on extension of the service to customers unable to meet the costs.⁴⁷ This means that while it generally costs more to carry goods to certain places, even higher prices would not always produce higher profits. But a certain knowledge of the procedure for the determination of rates and tariffs in Quebec and of statistical results⁴⁸ reveals that this phenomenon is far from common and is in fact marginal. A third set of elements, of bureaucratic origin, would be the costs inherent in implementing and operating the regulatory system; these would be borne by the regulated firm. Of particular note are the costs associated with public hearings, company staff whose time is devoted to the Commission's rather than the firm's business as well as those inherent in the industry's reduced flexibility.

In brief, the situation of Quebec firms is as follows: the procedure for setting rates and tariffs in Quebec proving to be no different statistically than in the competitive provinces, it would not be possible to differentiate the profitability of the Quebec firms from that of trucking firms operating in the competitive provinces. In other words, the Quebec trucking firms should adopt the same behaviour as carriers operating in a competitive environment since the Quebec regulatory system has been shown to impose relatively few constraints.

Verification of this hypothesis was carried out for the 1974-1976 period,⁴⁹ through a hypothesis test of the difference between the mean levels of the corresponding before-tax rates of return for firms operating in a competitive context and those in Quebec. The left side of Table V summarizes the results. Only Quebec Class I carriers have a lower rate of return than that observed among unregulated firms; this difference is statistically different at a 5 per cent confidence level. The two other classes showed no statistical difference in the average rate of return. Quebec's regulation thus would have no effect on the rate of return on capital, except perhaps for certain Class I firms.

The hypothesis of achieving more stable rates of return for the Quebec motor carriers cannot be retained in view of the statistical results obtained for each of the three carrier classes analyzed. The degree of fluctuation in the rate of return of Quebec trucking firms does not differ from that observed in the provinces classified as free market. It is noteworthy that these statistical tests differ from those applied by McLachlan⁵⁰ over the 1958-1968 period. In his study, this author shows that truckers' profits have differed under competition compared to regulation since, although the regulatory agency conferred privileges upon a chosen few, it also gave rise to additional costs. Consequently, it proved impossible to differentiate the mean levels of profits and the variability of profits of the competitive provinces from those prevailing in regulated provinces.

TABLE V

COMPARISON OF BEFORE-TAX RATES OF RETURN ON CAPITAL
FOR FIRMS OPERATING IN COMPETITIVE PROVINCES*
AND IN QUEBEC: 1974-76

<u>Size Class of Carrier</u>	<u>Rate of return Level (π)</u>	<u>Variability of Rate of Return (V)</u>
Class I	$\pi_Q < \pi_c$	$V_Q = V_c$
Class II	$\pi_Q = \pi_c$	$V_Q = V_c$
Class III	$\pi_Q = \pi_c$	$V_Q = V_c$

* The competitive provinces are Nova Scotia, New Brunswick, Ontario and Alberta.

Source: M. Boucher, Une analyse économique de la réglementation québécoise de l'industrie du camionnage, op. cit. p. 69

General Considerations

The indicators of the Quebec trucking industry's behaviour do not diverge systematically from those observed in provinces operating under competitive forces. Based on rate and tariff levels or the level of rate of return, the statistical analysis is unable to

distinguish clearly between the industry's behaviour in Quebec and in the other competitive provinces. Thus, the rates and tariffs applied in Quebec would tend to be determined by the market forces; the rate of return obtained by Quebec carriers would also be the result of the same competitive forces operating in the other provinces classified as competitive.

4.3 The Industry's Performance

What conclusions can be drawn on the trucking industry's economic performance? The variables used to analyze the market structure and the industry's behaviour allows us to conclude that no effective regulation process exists. Operating in a market structure where access to the trucking industry in general is relatively open although some social costs may persist and where the typical firm operates at fairly constant average costs, the behaviour of Quebec firms in terms of rates and tariffs as well as rate of return on capital is no different systematically and statistically than that of other Canadian trucking firms operating under competition. In other words, the Quebec regulation process imposes few restrictions and the consequences on resource allocation are negligible and of little importance though the initial description of its nature let us something different. For instance, if Moore's methodology⁵¹ is used and that the social costs of regulation are computed, the estimates obtained give a total of income transfert of \$51.6 million for 1976. This figure represents 6.5 per cent of the total operating revenues for the industry. This estimate of the social costs of regulation gives only an indicator of the size of the inefficiency and it represents, in all probability, the upper bound of the social costs. Consequently, Quebec trucking firms tend to adhere to standards of economic efficiency that are not far removed systematically from those prevailing in a competitive environment.

This economic performance of Quebec firms differs radically from that registered by motor carriers regulated by the Interstate Commerce Commission. Since this regulatory board appears to have

cartellized the industry, it obtains large monopolistic revenues for the factors of production involved. As a matter of fact, Moore⁵² believes that the income transfers to labor and capital involved in trucking lie between \$2.5 billion and \$3.3 billion on total operating revenues of \$16.8 billion. The obstacles to entry are very strict and trucking firms are strongly encouraged to join a tariff bureau. In addition, this public board has coercive tools that prevent recalcitrant firms from breaking the cartel. The penalties imposed are very harsh, and some fines for not respecting the rates and tariffs can reach several thousand dollars, for example. Infractions for "illegal trucking" may lead to temporary suspension of a permit. This combination of reasons, although reviewed only briefly, explains the persistence of the inefficiencies related to regulation of the U.S. trucking industry. Since none of these conditions are found in Quebec, detection of economic inefficiency proves extremely difficult.

If the trucking industry tends to behave as competitive industry, we are justified in questioning the usefulness of the Quebec Transport Commission. Since it provides no benefit to society, but will consume an operating budget of about \$7.5 million in 1979-1980, economic efficiency would dictate its dismantling. The welfare of the society would then increase at least by the amount of resource savings achieved.

5. CONCLUSION

The use of a traditional reference framework for industrial organization permits us to conclude that the economic performance of the Quebec industry does not differ clearly from that which would prevail in a competitive industry having a large number of firms operating at fairly constant average costs. In other words, Quebec's regulation is not effective and has no harmful consequences on resource allocation such as those found under regulation in the U.S. Analysis of the market structure demonstrates that the cartel power permitted by the Commission is

weak and quite loose since intra-modal substitutes may easily take over a certain percentage of the market. The consequences of the Commission's practices on the industrial structure are extremely difficult to determine. Since the average firm operates at fairly constant average costs, the number and size of firms is indeterminate. In the absence of a reference sector such as the exempted carriers of agricultural products in the U.S., we make the following conjecture: a merger does lessen the impact of concentration in the industry if it allows firms to achieve economies of density and network utilization.

The analysis of the Quebec industry's behaviour shows that the two variables analyzed, tariffs and the rate of return on capital, do not differ statistically from those in the free market provinces. The overall performance of this industry shows that its members adhere to standards of efficiency very similar to those commonly in a competitive industry with similar characteristics, although the analysis has detected, here and there, some inefficiencies.

FOOTNOTES

- (1) 9, Edward VII, chapter 16, 1909. This act created The Public Utility Services Commission of Quebec.
- (2) Some parts of this research are based on a research report entitled: Une analyse économique de la réglementation québécoise de l'industrie du camionnage, Canadian Transport Commission, Ottawa, December 1977.
- (3) J.C. Nelson, "The Effects of Entry Control in Surface Transport", Transportation Economics, National Bureau of Economics Research, Columbia University Press, 1965, pp. 381-422.
- (4) T.G. Moore, "The Beneficiaries of Trucking Regulation", The Journal of Law and Economics, Vol. 21, no 2, October 1978, pp. 327-344.
- (5) R.N. Farmer, "The Case for Unregulated Truck Transportation", Journal of Farm Economics, Vol. 46, May 1964, pp. 398-409 and W. Miklius and D.B. DeLoach, "A Further Case for Unregulated Truck Transportation", Journal of Farm Economics, Vol. 47, December 1965, pp. 933-947.
- (6) For a good survey of the price behaviour of some products declared by the court to be exempt commodities and reregulated by Congress, see T.G. Moore, "The Beneficiaries of Trucking Regulation", The Journal of Law and Economics, op. cit., pp. 327-328 and T.G. Moore, "Deregulating Surface Freight Transportation", in Promoting Competition in Regulated Markets, A. Phillips, Editor, The Brookings Institution, Washington, 1975, pp. 59-60.
- (7) R.N. Farmer, "The Case for Unregulated Truck Transportation", The Journal of Farm Economics, op. cit., pp. 402-404 and also T.G. Moore, "Deregulating Surface Freight Transportation", in Promotion Competition in Regulated Markets, op. cit., pp. 57-58.
- (8) J.C. Nelson, "The Effects of Entry Control in Surface Transport", Transportation Economics, op. cit., pp. 393-405.
- (9) These social costs, for example, according to some conservative figures, could reach 20 per cent of the revenues earned by the trucking industry regulated by the Interstate Commerce Commission. See T.G. Moore, "The Beneficiaries of Trucking Regulation", The Journal of Law and Economics, op. cit., p. 342, for more details.
- (10) Giroux vs. Maheux, 1947, Queen's Bench Court, p. 169, unofficial translation.
- (11) Freeport Transport Inc. vs. Husband Transport Limited et al., case M-13580, December 20, 1976.
- (12) Marc Caron vs. Fournier Transport Ltée et al., case M-14011, December 22, 1976.
- (13) Forget Transport Inc. vs. St-Jérôme Express Ltée et al., case M-5410, July 26, 1977.

- (14) Brazeau Transport Inc., vs. L. Woods and Son Transport Ltd. et al., cases M-1212, M-4146, Q-1028, Q-1029, October 22, 1974.
- (15) Speedway Transport Limited, the Department of Transport vs. Forget Transport Inc. et al., case Q-2802, January 29, 1976.
- (16) In Thetford Transport Limitée vs. Bécancour Express Transport Inc. et al., case Q-11742, November 4, 1977, the opposing parties argued that these low rates did not make it possible to achieve a minimum profit. In Freeport Transport Inc. vs. Husband Transport Ltd. et al., case M-13580, December 20, 1976, the opposing parties accepted a brief comparison of the effective rates, which thus had the official approval of the Commission, with those of the plaintiff which did not conform since they had not yet been authorized by the Commission.
- (17) Thetford Transport Ltée vs. Bécancour Express Transport Inc. et al., case Q-11742, November 4, 1977. The plaintiff requested contract transport permit in order to carry containers for an exporter. The latter, however, had always dealt with general public carriers, the parties opposing the request. He claimed to be satisfied with the services provided except for the rates and tariffs charged.
- (18) Cartier Transport Inc. vs. Gravel and Desbiens Inc., case Q-1610, June 3, 1975.
- (19) Gérard Nolin Ltée vs. Provost Cartage Inc., decision QCS-232, November 20, 1973.
- (20) Although this piece of information may not reflect the accurate contribution of each element, it indicates nevertheless the relative imbalance of each element's contribution in terms of weight and revenue.
- (21) The small and medium-size trucking firms that do not belong to a Tariff Bureau deal directly with the Commission. The members of the Quebec Tariff Bureau Inc. or of the Conférence des camionneurs québécois are represented by these firms before the Commission. There are other tariff bureaux in Canada and the U.S. that deal with the Commission on behalf of their members.
- (22) G.S. Becker, "Crime and Punishment: An Economic Approach", reprinted in The Economic Approach to Human Behaviour, The University of Chicago Press, Chicago, 1976, pp. 39-85.
- (23) In 1976, the Quebec Trucking Association estimated the revenues of these leasing entreprises at \$50 million. If this intra-modal substitute tends to become more generalized because shippers bother less to participate in operations which may be questionable legally, the public trucking industry will have to adjust in order to survive as such.
- (24) W.Y. Oi and A.P. Hunter, Economics of Private Truck Transportation, W.C. Brown Company Publishers, Dubuque, 1965, pp. 98-162.

(25) D.L. McLachlan, "Canadian Trucking Regulations", The Logistics and Transportation Review, Vol. 8, no 1, January 1972, pp. 73-75.

(26) The following table, taken from their research, compares the average weights of loads in tons per vehicle-mile for three classes of motor carriers:

Carrier	Type of Vehicle	
	<u>Single-unit</u>	<u>Combination</u>
Average weights of loads (in tons)		
Regulated by the ICC	1.94	7.8
Agricultural products		
or operating within a state	2.17	8.99
Private	1.09	6.76
Average	1.20	7.55

Source: W.M. Oi and A.P. Hunter, Economics of Private Truck Transportation, op. cit., p. 109.

(27) "A Public Policy Direction for the Highway Transportation of Goods", Final Report of Select Committee of the Legislature on Highway Transportation of Goods, Queen's Park, Toronto, 1977, pp. III-66 to III-81.

(28) For a simulation of this hypothesis, see D. Stressy, "Cost Structure of Private and For-Hire Motor Carriage", Transportation Journal, Spring 1976, Vol. 15, no. 3, pp. 40-48; for an empirical verification, see W.Y. Oi and A.P. Hunter, Economics of Private Truck Transportation, op. cit., pp. 191-226.

(29) The President of Overland Express Limited stated that "much of today's private carriage exists because regulated (common) carriers do not meet service requirements" and "regulatory authorities - or the regulatory system - may be to blame." According to the General Traffic Manager of Dominion Stores Limited "shippers and traffic managers have been forced into private trucking because they were unable to get the service and individual attention they required at a satisfactory price." Motor Carrier, March 1970, p. 11 and reported in D.L. McLachlan, "Canadian Trucking Regulations" The Logistics and Transportation Review, op. cit. p. 81. Mr. Pierre Asselin, president of the Quebec Trucking Association upheld the same point in a meeting with the Canadian Industrial Traffic League, an association of major Canadian shippers. A report of his statement appears in Transport routier du Québec, January 1976, pp. 4-5.

(30) Three quotations taken from statements presented at the annual meeting of the Quebec Trucking Association held in Quebec City in April 1979 can serve as examples. One speaker proposed the introduction of maximum and minimum rates in the actual structure "to eliminate if possible all these "illegal" cuts of rates which are the present scourge of the trucking industry". In a different context, two speakers, discussing the consequences of price deregulation on the truck load shipments (TL) said, "in my humble opinion, the truck load rates could not be reduced because these

rates do not greatly exceed a lot the break-even point" and "this solution would surely be the easiest because we already apply it in many cases by not charging the official or published rates".

- (31) The same phenomenon occurs in Ontario since the market value of certain Ontario permits may vary between \$4,000. and \$20,000. depending on the profitability of the route. J. Palmer, "Taxation by Regulation? The Experience of Ontario Trucking Regulation", The Logistics and Transportation Review, Vol. 10, September 1974, pp. 207-212.
- (32) T.G. Moore, "The Beneficiaries of Trucking Regulation", The Journal of Law and Economics, Vol. 21, no. 2, October 1978, pp. 327-344.
- (33) Our research has found just one case in the Commission's files containing the relevant information. The purchase of a permit and the goodwill involved worked out to be \$478,000. whereas the before-tax profits were \$63,000. So the ratio of the before-tax profits on the price paid for the rights and goodwill comes to 13.32 percent. This percentage differs greatly from that of Moore, who obtains a regression coefficient of 56.8 percent for the same ratio. This seems to indicate that the measures used in this research largely overestimates the market value of permit granted by the Quebec Commission. Another element that corroborates this tendency to overestimate is found in the Quebec accounting practice of depreciating the value of the permit and the goodwill over a 40-year period. In the United States, carriers can amortize this investment in rights over a five-year period only.
- (34) R. Spady and A.F. Friedlaender, "Hedonic Cost Functions for the Regulated Trucking Industry" The Bell Journal of Economics, Vol. IV, no. 1, Spring 1978, pp. 159-179, as well as R. Koenker, "Optimal Scale and the Size Distribution of American Trucking Firms" The Journal of Transport Economics and Policy, Vol. XI, no. 1, January 1977, pp. 54-67.
- (35) We are thinking in particular of the work by S.L. Warner, "Cost Models, Measuring Errors and Economic of Scale in Trucking", in M.L. Burnstein et al., The Cost of Trucking: Econometric Analysis, Wm. C. Brown Co., Dubuque, Iowa, 1965, pp. 1-46, and M.L. Ladenson and A.J. Stoga, "Returns to Scale in U.S. Trucking Industry", Southern Economic Journal, Vol. 40, no. 3, January 1974, pp. 390-396.
- (36) J.R. Meyer et al., The Economics of Competition in the Transportation Industries, Harvard University Press, 1959, p. 95.
- (37) M.J. Roberts, "Some Aspects of Motor Carrier Costs: Firm Size, Efficiency and Financial Health", Land Economics, August 1956, p. 234.
- (38) J. Sloss, "Regulation of Motor Freight Transportation: A Quantitative Evaluation of Policy", The Bell Journal of Economics, Vol. I, Autumn 1970, pp. 352-353.
- (39) J.C. Nelson, "The Effects of Entry Control in Surface Transportation", Transportation Economics, National Bureau of Economic Research, Columbia University Press, 1965, pp. 381-422.

- (40) Department of Consumer and Corporate Affairs, Concentration in the Manufacturing Industries of Canada, Ottawa, Information Canada, 1971, Table A-4.
- (41) D.L. McLachlan, "Canadian Trucking Regulations", The Logistics and Transportation Review, January 8, 1972, p. 58-81; J. Sloss, "Regulation of Motor Freight Transportation: A Quantitative Evaluation of Policy", The Bell Journal of Economics, 1, Autumn, 1970, pp. 327-366; J. Palmer, "A Further Analysis of Provincial Trucking Regulation", The Bell Journal of Economics, 4, Autumn, 1973, pp. 655-664. The models and statistical methods used by Sloss, Palmer and McLachlan differ. Although these authors measure the consequences of regulation on the same dependent variable represented by revenue per ton-mile, the differences appear primarily in the choice of independent variables. Some authors then explicitly take into account the impact of regulation through the use of dummy variables while others analyze the consequences of regulation by studying the behaviour of the residual errors of the regulated and unregulated provinces. Finally, Palmer's model is better specified than the two others since it explicitly considers the fact that the relationship between revenue per ton-mile and distance may not be linear.
- (42) J. Sloss, "The Regulation of Motor Freight Transportation in Canada: A Reappraisal of Policy", Mimeo, Department of Civil Engineering, M.I.T., July 1975, p. 27.
- (43) D.H. Maister, "Regulation and the Level of Trucking Rates in Canada: Additional Evidence", Transportation Journal, Winter 1978, pp. 49-62, as well as "Regulation and the Level of Trucking Rates in Canada", Motor Carrier Economic Regulation, Washington, D.C., National Academy of Sciences, 1978, pp. 199-231.
- (44) M. Boucher, Une analyse économique de la réglementation québécoise de l'industrie du camionnage, op. cit. pp. 58-65.
- (45) J.J. McRae and D.M. Prescott, "The Effects of Economic Regulation on the Canadian Common Carrier Industry", unpublished manuscript, Centre to Study Inflation and Productivity, Economic Council of Canada, April 1979.
- (46) The extent of the Quebec market could not accomodate the full set of restrictions imposed by the Interstate Commerce Commission. On this subject consult J.C. Nelson, "The Effects of Entry Control in Surface Transport", Transportation Economics, National Bureau of Economic Research, Columbia University Press, 1965, particularly pp. 389-394.
- (47) This is the explanation given by Posner for the general phenomenon of regulation. R.A. Posner, "Taxation by Regulation", The Bell Journal of Economics, 2, Spring 1971, pp. 22-50. On the other hand, Palmer, in an application of this theory to the public trucking industry in Ontario, believes that this hypotheses is very improbable. He finds that uniform rate structures are not respected, either because the quality of service varies or because the rates and tariffs submitted are not applied and the obstacles to entry to profitable routes are not operable because of trans-

AN ECONOMETRIC ANALYSIS OF THE EFFECTS OF REGULATION
ON THE CANADIAN COMMON CARRIER INDUSTRY*

James J. McRae
David M. Prescott
Department of Economics
University of Guelph

Acknowledgements

We have been fortunate in this study to have had the comments of many people at various critical times. Setephen Mozes, Wayne Reinhart and William Benoit of the Motor Carrier Division of Statistics Canada helped us obtain and interpret the required origin/destination data tapes, and Rob Taylor at CSIP has provided valuable background material. The largest debt, however, is owed to our programmer, Dan Perrin. Without his amazing abilitites on the computer, this work would never have been finished in the time allotted.

* Sections 2 & 3 of this paper are taken from a study prepared for the Centre for the Study of Inflation and Productivity

1. INTRODUCTION

The November, 1978 announcement by Premier William Davis of Ontario that his government will not at this time proceed with a limited selective deregulation bill (Bill 78) for the intraprovincial motor carrier industry caused the Globe and Mail to editorialize that, "when the captains of industry oppose deregulation, we have reason enough to examine the benefits of it" [Globe and Mail, Nov. 23, 1978]. This most recent interest in examining the benefits and costs of trucking regulations in Ontario stems from events in 1976 when the government passed the Public Commercial Vehicles Amendment Act, 1976. The purpose of this legislation is to hinder the further development of lease market operators who were circumventing provincial entry controls by a series of imaginative schemes. Friction between licensed and these unlicensed lease carriers led to the establishment of the Ontario Legislative Select Committee whose two-volume report was tabled in the Legislature in 1977. The interest in the effects of economic regulation on the structure and performance of the trucking industry has by no means been limited to Ontario. In 1976, the Alberta Select Legislative Committee on Intraprovincial Trucking Legislation tabled its report on exactly these same issues, and the Department of Economic Development in British Columbia has recently carried out an exhaustive investigation in that province. In the United States, following the lead of the Civil Aeronautics Board (CAB), the Interstate Commerce Commission (ICC) chairman A. Daniel O'Neal recently announced his intention to eliminate the Commission's control over truckload carriers, and allow much more price competition in the remaining sectors of the industry [Fortune, Dec. 18, 1978]. In turn, this more liberal position on regulation

in the motor carrier industry probably has been influenced by the deregulation experiments already carried out in the United Kingdom, Belgium, Sweden and Australia.

The need for an efficiently operating motor carrier industry is important in both a direct and an indirect sense. Directly, shippers have the right to expect a mix of cost based rates and service characteristics which sail a middle course between low short-run prices and higher longer-run prices and profits which are needed for expansion and technological improvement in the industry. With this socially correct set of transportation prices and service levels, a healthy motor carrier industry will be able to pay competitive wage rates, and provide continuous employment for existing and new entrants into the labour force. By this criteria, the operation of the motor carrier industry is worthy of investigation directly, as evidenced by the fact that in 1976 it employed 82,378 workers, paid out 1.06 billion dollars in wages and salaries and had total earnings of 2.86 billion dollars. However, in addition to the importance of the motor carrier industry on its own, there is its indirect importance as a necessary input into nearly all other sectors of the economy. If transportation costs and service levels are not cost based and responsive to changing market situations, there will occur a whole series of distortions in other industries as firms make sub-optimal location decisions, move too soon into private trucking operations, or make socially incorrect factor input decisions.¹ In a macroeconomic sense, it clearly would be inappropriate to assign exclusive blame for current high levels of inflation

and low levels of productivity growth to non-optimal trucking rates, but given the importance of transportation as an input into nearly all other production activities, any distortions take on a larger significance.

The next two Sections, which are taken from a study originally prepared for the Centre for the Study of Inflation and Productivity, look at the econometric evidence on the effects of regulation on trucking rates. After extensively discussing the previous econometric work in Section I, the following Section focuses on a comparison of the intraprovincial rate structure in the belief that if economic regulation causes a cartelized industrial structure and/or operating inefficiencies (more empty backhaul, lower levels of technological innovation) this, and the more direct costs of regulatory hearings, will show up in rates. In the third Section we present an analysis of the level of rates in Saskatchewan. The presence of a fairly large group of unregulated commodities in that province provides a unique opportunity for examining the effect of regulation on the level of rates.

2. RECENT ECONOMETRIC ANALYSIS

Several attempts have been made to estimate the effect that economic regulation of the Canadian trucking industry has had on the price of trucking services. Regulatory regimes differ markedly between provinces, varying from no economic regulation to various combinations of (a) entry regulation and (b) price regulation. This variety of structure provides the opportunity of comparing the impact that these different regimes have had on the price of trucking services. In this section we will discuss the recent studies that have looked into this issue.

The first group of studies used what can be described as aggregate data, while a report prepared by Maister (1977) for the Anti-Inflation Board analyzed micro shipment data. The step from aggregate to micro analysis is, in our opinion, an important one. A key problem that emerges from all of these studies is the difficulty of separating the effects on prices of (a) regulation and (b) other province-distinguishing variables such as the cost of fuel, labour and other inputs. In fact, the nature of the currently available data precludes an adequate treatment of this difficulty. We argue that failure to recognize this point resulted in Maister presenting quite meaningless results in his A.I.B. report. Specifically, Maister found that at the micro level none of the province-distinguishing variables (including the regulation variables) were statistically significant in explaining the price of trucking services. In fact, as we report in

Section 3 of this report, the micro data show clearly that there are large and statistically significant differences between the price of trucking services in different provinces, although there are serious difficulties in attributing these differences to the effects of regulation or other province-distinguishing variables.

2.1 Aggregate-Data Studies

Sloss (1970), McLachlan (1972) and Palmer (1973) all used essentially the same data base, which covered the period 1957-63, and similar approaches to estimating the price effect of regulation. Sloss, for example, regressed revenue per ton-mile (unit price of trucking services) on (i) average length of haul, (ii) average net weight per loaded vehicle, (iii) average fuel tax per gallon, (iv) average annual licence cost per truck or tractor, (v) average annual wage per employee. Sloss ignored the first year's data and used eight observations - one for each province excluding Newfoundland and Prince Edward Island - giving a total of forty-eight observations. He then tested for the difference between the mean residuals for the regulated and unregulated provinces. The difference between mean residuals is then attributed to regulation. Of course, the difference in means is actually a measure of the effect on prices of all province-distinguishing variables that have not been included in the model. This criticism applies to all empirical work done on the basis of his tests. Sloss concluded that the effect of regulation had been to raise intraprovincial rates by 0.68 cents per ton-mile.

McLachlan (1972) modified Sloss' analysis by replacing employee's wages with the average provincial wage rate. The reasoning here is that if regulation has an effect on prices, some of the additional revenue might be channelled into wages rather than profits. One would tend to underestimate the effect of regulation on prices if the regulation effect is measured by comparing prices in regulated and

unregulated provinces once they have been adjusted for employee wages and other costs. McLachlan also introduced a dummy variable to distinguish between regulated and unregulated provinces rather than use residual analysis. Again, this dummy variable will pick up the effects on prices of all omitted province-distinguishing variables that should be in the regression in addition to the effects of provincial regulation. McLachlan found that the coefficient on the dummy variable was statistically significantly different from zero, and he concluded that regulation had raised intraprovincial rates by 2.6 cents per ton-mile.

Palmer's (1973) major contribution was to replace the average length of haul by its inverse which he argued is more appropriate on theoretical grounds. He also introduced a time trend and a provincial miles per gallon variable which he hoped would account for additional provincial cost differences. Palmer examined various specifications of his basic model, and concluded that regulation had raised intraprovincial trucking rates by between one and two cents per ton-mile.

Maister (1978) has criticized these three papers in detail. He points to three key issues:

1. First, he discusses the definition of regulation. All three studies grouped each province into either a regulated or unregulated group. This obscures the distinction between entry and rate regulation, and led Sloss to classify Ontario as being unregulated while McLachlan decided to omit Ontario from the analysis. However, one could reasonably argue, as Maister does, that entry regulation alone is likely to lead to higher rates than the combination of entry and rate regulation, since the former can lead to the creation of essentially unregulated monopolies.

2. The second is concerned with model misspecification. The most serious problem here is the use of aggregate data which obscures the different product mixes within the provinces. As an example, take the category Live Animals which can be split into Cattle, Poultry, Swine and Other Live Animals. The 1975 and 1976 For Hire Trucking surveys, together, recorded only one shipment of cattle in Quebec while over 94% of the sample consists of records of poultry shipments. However, 88% of the Alberta sample consists of cattle shipments. We have estimated that in Ontario and Alberta, for a given weight and distance, it costs about 35% more to ship poultry than to ship cattle. Consequently, when the data are aggregated to the level of Live Animals, a comparison of revenue per ton-mile between provinces could be very misleading.

3. Finally, Maister questions the quality of data. The key variables (revenue per ton-mile, average length of haul and average net weight per loaded vehicle) were taken from the D.B.S. publication Motor Traffic Transport. It was recognised that these data were of questionable quality. This ultimately led to the discontinuation of the publication.

2.2 Maister's Analysis of the 1973 Data

In 1976, Statistics Canada published the For-Hire Trucking Survey - 1975 which was the result of several years work to improve the data on truck transportation. Maister (1978a) used the information in this document to revisit the issues that Sloss, McLachlan and Palmer had addressed. Maister hoped the improved data, the inclusion of more explanatory variables and a more careful treatment of regulation would

yield more meaningful results. The latter two improvements are clearly aimed at achieving a more precise separation of the effects on revenue per ton-mile of (a) regulations and (b) other factors, such as factor costs. It is worthwhile to consider this problem in some detail since it essentially reduces to the question of the information content of the available data with respect to central issue - can the effects of regulation and other factors be separated? First, let's look at the nature of the data.

The basic unit is a single record of information on a particular shipment. The information relates to such characteristics as revenue, origin, destination, origin-destination mileage, weight of shipment, commodity name and three digit standard commodity classification (SCC) code. The information is taken from a sample of shipments which are selected randomly according to a two-tier design. First, a sample of carriers is selected, and then, for each carrier, a sample of shipments is chosen. Statistics Canada publishes the information in aggregate form. Thus Maister used information on (i) revenue per ton-mile, (ii) average length of haul, and (iii) average shipment size in tons. Such information is available in the publication for all ten provinces, and up to a detail of six broad commodity groups: live animals; food feed, beverages and tobacco; crude materials, inedible; fabricated materials, inedible; end products, inedible; general or unclassified freight.

Maister's expanded list of explanatory variables comprised the following: X_1 = inverse of average length of haul; X_2 = average shipment size in tons; X_3 = index of provincial wages; X_4 = licence fee per vehicle; X_5 = maximum weight limitation on provincial highways; X_6 = fuel tax per gallon of diesel; X_7 = provincial sales tax; X_8 = a unit

variable if rates are prescribed by any regulatory agency, zero otherwise; X_9 = a unit variable if rate increases are subject to approval, zero otherwise; X_{10} = a unit variable if filing is required by any regulatory agency, zero otherwise.

Note that Maister's list of explanatory variables has reached ten, but there are only six provinces. Consequently, there are only six observations for each of the variables if attention is limited to intraprovincial movements. To increase the effective number of observations, Maister is forced to consider interprovincial shipments if his full list of explanatory variables is to be retained. This, however, raises new problems. Is it reasonable to assume that the effect of regulation on prices is exactly the same for interprovincial shipments as it is for intraprovincial shipments? The specification problems do not end here. What is the appropriate wage rate, fuel tax, etc. for interprovincial movements? Maister does deal with these issues, but one can't help thinking that too much is being asked of the data. Indeed, none of the province-distinguishing variables have statistically significant coefficients in any of the single commodity group regressions, and many have implausible signs. We conclude that the introduction of interprovincial movements into the analysis is a questionable way of expanding the information content of the data with respect to the issue of isolating the effect of regulation on trucking rates.

An alternative approach, examined by Maister, is to pool all six commodity groups and fit a single regression. When attention is confined to intraprovincial movements, there are 36 observations (six provinces and six commodity groups). Augmenting the ten original variables, and a constant term by five commodity dummy variables seems to imply 36-16-20

degrees of freedom. Apparently, Maister believes that these data can yield estimates of the effects on prices of four regulatory regimes and five other province-distinguishing variables. This is not so. Each province-distinguishing variable has the property that its numerical value varies only across provinces, but for all observations within a province its numerical value is constant. With only six provinces, at most six province-distinguishing variables including a constant term can be introduced into the regression. The introduction of more than six such variables will result in exact multicollinearities, and thus, a breakdown of the least squares estimation procedure. Note that Maister used a step-wise regression method and that some coefficients were estimated to be zero. This is a direct result of the exact multicollinearities that exist in his data.

The following example is intended to clarify the point that is being made in the previous paragraph. Suppose there are just two provinces, one of which is regulated and the other unregulated. Information is available on six commodities which are trucked within each of the two provinces, so that twelve observations are available on average revenue per ton-mile; average weight of shipments; average distance shipments are transported, where all averages are computed over each province's sample of individual shipment records. The researcher wants to estimate the affect that regulation has on revenue per ton-mile. However, he knows that fuel costs are quite different in the two provinces. To separate the effects of regulation and fuel cost differences, the researcher plans to regress average revenue per ton-mile on (i) X_1 , a constant term, (ii) X_2 , average weight, (iii) X_3 , average distance, (iv) X_4 , a dummy variable which represents the presence of regulation,

(v) X_5 , provincial fuel costs. Since the presence or absence of commodity dummy variables is not relevant to the current issue they are ignored. The researcher plans to interpret the coefficient of the dummy variable as representing the additional revenue per ton-mile that would be earned in the regulated province for transporting a shipment of given weight and given distance if fuel costs were the same in the two provinces.

Unfortunately, the data described do not contain sufficient information to yield an answer to the researcher's question. The use of ordinary least squares will fail to produce coefficient estimates. If the researcher turns to a step-wise regression procedure one of the three variables X_1 , X_4 or X_6 will not be introduced into the regression, i.e., it will be given a zero coefficient. This is precisely what Maister found. To see why this is so, let's examine the data matrix. It will have 12 rows and five columns.

Obs. No.	X_1	X_2	X_3	X_4	X_5
1	1	w_{11}	d_{11}	1	f_1
2	1	w_{12}	d_{12}	1	f_1
.
.
.
6	1	w_{16}	d_{16}	1	f_1
7	1	w_{21}	d_{21}	0	f_2
8	1	w_{22}	d_{22}	0	f_2
.
.
.
12	1	w_{26}	d_{26}	0	f_2

The first six observations are from the regulated province where the cost of fuel is f_1 . Observations 7 through 12 are from the unregulated province where the cost of fuel is f_2 . The exact linear relationship between X_1 , X_4 and X_5 is now obvious. In particular,

$$f_2 \cdot X_1 + (f_1 - f_2) \cdot X_4 = X_5 .$$

If the intercept were omitted, then the researcher could fit his regression model and his interpretation of the coefficient of the dummy variable would be correct. However, he would not be able to introduce further province-distinguishing variables into his regression. Thus, if he had data on wage rates, licence costs, maximum weight, etc., these could not be introduced separately into the regression. The argument generalizes. With cross-section data collected from six provinces, it is not possible to include more than six variables (including the constant term) of the type that do not vary within a given province. Consequently, it is asking the impossible to demand that the data separate the effects of four types of regulatory regimes and five other province-distinguishing variables.

Finally, we should note an interesting result that Maister found. He estimated a model very similar to the ones investigated by Sloss (1970), McLachlan (1972) and Palmer (1973). That is, the data were aggregated to the provincial level. A commodity mix variable was introduced along with a single dummy variable to distinguish regulated from unregulated provinces. Since there is only one observation per province, inter-provincial movements had to be introduced. This specification yielded a statistically significant negative coefficient on the regulation variable.

Maister is certainly correct in suggesting that this result is due to the process of aggregation, since such an effect was not found in his more disaggregated analysis. This serves to underscore the danger of basing statistical analysis on aggregate traffic flows.

2.3 A Time-Series Cross Section Analysis

One way to enrich the data is to pool cross-section and time-series observations. This was done in Maister (1978b) where separate equations are fitted to each of the six commodity groups to avoid as far as possible the problem of commodity mix. At the time of this study, only three years of data were available (1973-1975) giving a total of $3 \times 6 = 18$ observations on intraprovincial traffic flows. Since this is not sufficient to estimate all the separate factors that one would like to isolate, Maister again incorporated interprovincial traffic flows into the analysis. As we pointed out above, this greatly increases the number of observations (to 108), but at the cost of having to make additional assumptions.

However, the results of the exercise are interesting in that for three commodity groups, the set of regulatory coefficients are statistically significant. Entry control and rate filing (intra-Ontario) seems to raise rates for food, fabricated materials and end products by 1.44, 1.31 and 6.05 cents per ton-mile respectively above rates in an unregulated market (intra-Alberta). The rates on fabricated materials and end products are also significantly lower in the rate prescribing environments (Manitoba and Saskatchewan) than in Ontario. A surprising result is that rate approval, when added to entry control, appears to raise rates rather than lower them. Maister offers the suggestion that

"the mechanics of rate control might provide the forum for collective rate making that would not exist when no rate control existed" (Maister, 1978b, p. 55).

The author warns that these results are to be treated with caution since the usual qualifying comments apply. For example, the model is a poor representation of the true cost structure which is reflected in the fact that "very surprising coefficients (both of sign and statistical significance) continue to plague efforts of this kind" (op. cit., p. 60). However, for all their shortcomings, these results must be considered the best available estimates of the impact of regulation on trucking rates.

2.4 Maister's A.I.B. Report

In contrast to earlier work, Maister's A.I.B. report made use of the individual shipment records that Statistics Canada collected for the 1975 For-Hire Trucking Survey. Maister's report addressed two distinct issues. The first is the effect of regulation on the level of rates. The second is an analysis of rate structures, and in particular, whether regulation leads to cross-subsidization of high-cost operations by low cost operations. This is analysed through an examination of the relationship between rates and population density, shipment size and value of service. We will confine our comments here to the first issue.

This part of the statistical analysis involved the estimation of a single equation which was fitted to 37,238 observations. The data were confined to intraprovincial shipments within six provinces west of and including Quebec. The dependent variable, rate per ton-mile, was explained in terms of: the inverse of distance; the weight of the

shipment; maximum allowable weight on provincial roads; licence fees; provincial fuel and sales taxes and labour costs. In addition, dummy variables were included to account for different commodities (26), different regulatory regimes (3 or 5 depending on the model), population sizes of origin and destination (3) as well as eleven others to describe such things as the use of a heated or refrigerated van.

Maister's main conclusion is that all the variables that relate to provincial differences (namely the regulation dummies, wage and fuel costs, etc. which number either 8 or 10 depending on the specification) have "highly insignificant coefficients". This is due to the fact "... that the high degree of variations in rate per ton-mile within each province is so high that any attempt to detect differences in provincial average rates will fail, since these differences will be insignificant compared to intraprovincial variations in rates" (p. 36, his emphasis).

This is quite simply incorrect. As we show later, average provincial rates are significantly different, but the data do not allow a clear separation between regulation and provincial cost differences. What is surprising is that Maister was able to obtain any coefficient estimates for his two specifications. As we have pointed out above, when cross-section data from six provinces is fitted to a model it is not possible to include more than six variables which vary only between provinces without introducing exact multicollinearities. Apparently it is the case that either Maister's province-distinguishing variables in fact vary within a province (contrary to his assertions), or the manipulation of the huge data set involved the accumulation of sufficiently large rounding errors to allow a mathematically singular matrix to be inverted. In Appendix 2, we present a more formal treatment of the

above argument and also show that Maister's five dummy variables which represent de facto regulation themselves form a singular system. In other words, the inclusion of these dummy variables alone will cause the least squares procedure to break down completely.

2.5 A Summary

The first group of studies that looked into the question of the impact of economic regulation on trucking rates did find statistically significant effects. These studies, Sloss (1970), McLachlan (1972) and Palmer (1973) have been thoroughly examined in Maister (1978a) where it is concluded that the results should be considered tentative at best. The most serious problems concern the quality of the early data and its aggregate nature which obscures important differences in the mix of commodities transported in each province. In addition, Maister criticized the oversimplified categorization of provinces as being either regulated or unregulated and he felt important explanatory variables which could explain differences in provincial trucking rates had been omitted.

In 1976, improved data became available and Maister, in a series of papers, attempted to correct some of the defects of the earlier work. It should be pointed out that Maister himself indicates the weaknesses of his own work which stems from the difficulty of adequately modelling the complex market for trucking services and the unavailability of data to estimate a satisfactory model.

Maister (1978a) and Maister (1977) both used cross-section data from a single year; the former employs aggregate data while the latter analyses disaggregated data; i.e., observations refer to individual shipments. Maister's own caveats notwithstanding, there seems to be a

fundamental oversight in both of these papers concerning the nature of the information contained in the sample of intraprovincial traffic flows. By refining the concepts of regulation so that four kinds of regime are distinguished and by introducing several variables which may explain part of the difference in intraprovincial trucking rates, Maister has asked too much of his data - it simply cannot separate the effects of so many factors. This is reflected in zero coefficient estimates which are reported in Maister (1978a) and in his conclusion in Maister (1977) that, with micro data, no provincial differences in trucking rates can be detected because "... these differences (are) insignificant compared to the intraprovincial variations in rates" (Maister, 1977, p. 36). This conclusion is based on what we believe to be two spurious regressions. Indeed, we find that the micro data show provincial differences in the price of trucking services which are often large and statistically significant. We admit, however, that separating the effects of regulation and other factors on these differences is hazardous with the currently available data.

Maister (1978b) makes use of pooled cross-section and time-series data which are aggregated to the level of six commodity groups. To minimize the problem of different commodity mixes within provinces, six separate regressions were run. However, because Maister wishes to isolate the effects of so many explanatory variables (14) and since there are only 3 years by 6 provinces which equals 18 observations on intraprovincial movements, he is forced to consider interprovincial movements also. The potential number of observations is now increased to $3 \times 36 = 108$, but not without cost. Additional assumptions have to be made about the equivalence of the effect of regulation on intraprovincial and

interprovincial traffic as well as the appropriate method for computing cost data for interprovincial movements.

The results are nevertheless interesting in that statistically significant regulatory effects are found in the three commodity group regressions which show the best statistical fit. Moreover, apart from the case of entry control and rate approval which seems to result in higher unit prices than entry control alone, the estimated effects of regulation do not contradict prior expectations. This set of six regressions probably represents the best specification yet estimated despite the problems mentioned above. We would conclude, therefore, that there is some evidence to suggest that regulation raises the unit price of trucking services.

3. ANALYSIS OF THE 1975 AND 1976 MICRO DATA

The data that we have available to us are the individual shipment records from which the statistics in the 1975 and 1976 For-Hire Trucking Survey publications were computed. We would like to stress that the information released to us by Statistics Canada does not reveal the identity of any carriers.

The objective of our analysis is to examine the intraprovincial rate levels and structures in each of the six provinces west of and including Quebec. In particular, we are interested in establishing whether or not there are statistically and numerically significant differences in trucking rates between the provinces. If there are no significant differences, as Maister's micro analysis apparently showed, then there seems little point in trying to explain the role of regulation and the other factors which are usually considered to be relevant.

In fact, we do find such differences, but as we have indicated earlier, to identify the source of such differences would require an amalgamation of cross-section data and a reasonably long time-series. One can think of the time-series dimension as estimating the effects of wages, fuel costs, etc. and the cross-section dimension as yielding information on the effects of regulatory structure. (The number of time-invariant province-distinguishing variables, such as regulation dummies, maximum weight and some provincial sales tax rates could not, however, exceed the number of provinces.)

The samples of shipments taken from the provinces often differ markedly in their mix of commodities. This means that aggregation of the data into broader commodity groupings can generate possibly misleading values for such variables as revenue per ton-mile. For this reason we

analyze the data in the most disaggregated form available to us; i.e., at the three digit standard commodity classification code level. An advantage of this approach is that it may allow us to point to specific instances where the rate applicable to a given commodity in a given province seems out of line and therefore worthy of further analysis.

Regarding the structure of rates, our attention focuses on (a) the weight and distance elasticities of unit price, and (b) the variance of rates across commodities within each province. Evidence on the former would indicate possible cross-subsidizations between (a) short and long haul traffic, and (b) truck load and less than truck load shipments. With regard to the latter, one would expect to find that rates in Manitoba and Saskatchewan are less variable than in the free market of Alberta since the prescribed rates of the first two provinces apply to broad commodity categories. In Ontario, however, where there is entry control but no rate control one might expect to find monopoly power being reflected in value of service pricing. In these circumstances, trucking rates will vary across commodities not merely with costs of production but also with the value of the goods being transported. Consequently, one would expect to find more variable rates in Ontario than in Alberta.

3.1 An Analysis of Rate Levels

Since the work of Palmer (1973), the inverse of distance rather than distance itself has been introduced into equations which explain revenue per ton-mile. But apart from this variable, the specifications appearing in the literature are linear. One would expect, however, that revenue per ton-mile, or unit price as we prefer to think of it, would also exhibit a nonlinear relationship with weight simply because of the

huge range over which shipment weights vary. For example, we would not expect the difference in the unit prices of one thousand and two thousand pound shipments to be the same as the difference between thirty nine thousand pound and forty thousand pound shipments. We therefore decided to experiment with a double-logarithmic specification and found it to be far superior to the linear model.

To get a straightforward answer to an apparently simple question - do trucking rates differ between provinces?, one has to make simplifications, some of which are relaxed in the following section. The basic equation that we have estimated and report in this section has the following form:

$$(1) \quad y = AD^a W^b L^c e^Z,$$

$$\text{where } Z = \sum_{i=1}^3 r_i R_i + t \cdot T + \sum_{i=1}^3 s_i (T \cdot R_i) + \sum_{i=1}^{NC-1} d_i C_i + \sum_{i=1}^8 e_i N_i + u$$

The dependent variable, y , is revenue per ton-mile.

A is a parameter

D is the distance the shipment is transported

W is the weight of the shipment

L is labour cost (the provincial wage rate)

R_1 is unity for Manitoba and Saskatchewan, zero otherwise

R_2 is unity for Quebec and British Columbia, zero otherwise

R_3 is unity for Ontario, zero otherwise

T is unity for 1976 and zero for 1975

C_i is unity for the i^{th} commodity and zero otherwise

NC is the number of commodities represented in the data set

N_i is the i^{th} member of a set of dummy variables which represent various characteristics of the shipment. These variables will be discussed separately in Appendix 3.

u is a random error term with usual classical properties.

This equation has been fitted to individual shipment data (1975 and 1976 are pooled). Separate regressions were run for each of six commodity groups. For each commodity group the weight and distance elasticities are constrained to be equal across all provinces and across all commodities included in the commodity group. The commodity dummy variables allow for the fact that within a given province and commodity group revenue per ton-mile (unit price) will differ across commodities. Similarly, given the commodity, unit price will differ between provinces. Rather than include six provincial dummy variables (and no intercept) we decided to combine the provinces into four groups according to the regulatory regime: absence of regulation (Alberta); entry control with rate prescription (Manitoba and Saskatchewan); entry control with rate approval (British Columbia and Quebec); and finally, entry control with rate filing (Ontario). By grouping the provinces we hoped to be able to account for the different levels of wages and fuel prices across the provinces. (See Appendix 1).

The time variable, T , and the interaction terms $R1*T$, etc. allow for changes in unit prices over the period 1975/76 within each of the regulatory regimes over and above that which can be explained by changes in the included input prices.

While this specification imposes certain restrictions on the data that one might want to relax, it does have the advantage that it yields a single estimate of the ratio of the unit price of trucking services between

TABLE 3.1
GENERAL FREIGHT*

<u>Variable</u>	<u>Run 1</u>	<u>Run 2</u>	<u>Run 3</u>
Weight	-.437 (.003)	-.436 (.003)	-.439 (.003)
Distance	-.597 (.006)	-.616 (.006)	-.610 (.006)
Alta.	5.21 (.445)	2.45 (.441)	11.9 (.637)
R1 (M&S)	4.63 (.432)	2.01 (.478)	11.6 (.624)
R2 (B&Q)	4.83 (.441)	2.25 (.438)	12.1 (.638)
R3 (Ont)	4.96 (.440)	2.31 (.436)	12.2 (.634)
Wages	-.765 (.097)	.562 (.081)	-1.30 (.120)
Fuel	1.10 (.047)		
Alta * T			.881 (.041)
R1 * T			.731 (.066)
R2 * T			.385 (.020)
R3 * T			.172 (.022)
\bar{R}^2	0.764	0.752	0.767
No. Obs.	10,614	10,614	10,614

* Dependent variable: Revenue per ton-mile. Standard errors in brackets.

any pair of regulatory regimes. That is, given the commodity group, these ratios are independent of the commodity chosen, the weight of the shipment and the distance transported (as long as these are held constant across regulatory regimes). Our estimates of these ratios are given in Table 3.3, but first let's examine the individual regressions.

Table 3.1 reports the results of three regressions fitted to the General Freight shipments. This commodity group comprises just one three digit S.C.C. commodity, namely General Freight (S.C.C. code 995). In these regressions the intercept was dropped and replaced by a dummy variable representing Alberta. The first two specifications suppress the time variables so that changes in unit prices between 1975 and 1976 are explained only by the included factor prices. In the first regression the wage variable has a negative sign while the fuel price elasticity is implausibly large - the estimate implies that a 1% increase in fuel prices leads to a 1.1% increase in unit price. The omission of fuel prices results in a more plausible estimate of the wage elasticity but does not materially affect the weight and distance elasticities nor the ranking of the provinces by the level of their unit prices. From high to low, the ranking is: Alberta; Ontario; B.C. and Quebec; Manitoba and Saskatchewan. This ranking is consistent with the results obtained from fitting separate regressions to the six provinces (see Table 3.4A).

The inclusion of the time trend and the interaction variables results in an implausible sign on the wages variable. The multicollinearity between fuel prices, wages, the regulatory dummy variables and the time variables is reflected in the instability of the sign and size of the wage elasticity rather than the standard errors. The latter are relatively small because of the large number of observations involved (10,614).

Moreover, if the third regression were used to compare unit prices after adjusting for wage differences between the provinces, the conclusions would be misleading because of the large negative coefficient on wages. For this reason the comparisons reported in Table 3.3 for General Freight are based on the second specification.

Table 3.2 shows the results of fitting equation (1) to the other five commodity groups. The live animals group comprises four commodities while the other four commodity groups each comprise twenty, individual three digit (S.C.C.) commodities. The coefficients on the commodity dummy variables are not reported.

Our main interest in this section is to estimate the relative prices of trucking services across the four regulatory regimes, after wage differences have been accounted for. The results are presented in Table 3.3. Since the ratios represent averages over all the commodities within a given commodity group the estimates are meaningful only insofar as each commodity is adequately represented in each province. It should be pointed out, for example, that there are only two cattle shipments within Quebec during 1975 and 1976. Elsewhere cattle shipments are a large proportion of the sample. Similarly, within the Crude Materials commodity group there is very little overlap in the data in that most observations on individual commodities tend to be confined to one or two provinces. In order to judge the comparability of the provinces we have computed a measure of the provincial overlap in the data. For a given commodity group, let n_{ij} be the number of observations on commodity i in province j . The index

$$\frac{\sum_i [\min_j (n_{ij})]}{\min_i [\sum_j n_{ij}]}$$

TABLE 3.2*

<u>Variable</u>	<u>Live Animals</u>	<u>Food</u>	<u>Crude Materials</u>	<u>Fabricated Materials</u>	<u>End Products</u>
Constant	4.32 (1.02)	2.30 (.085)	6.56 (.106)	4.70 (.068)	6.01 (.068)
Weight	-.287 (.006)	-.376 (.002)	-.543 (.005)	-.483 (.002)	-.400 (.002)
Distance	-.592 (.010)	-.684 (.005)	-.675 (.006)	-.523 (.003)	-.573 (.003)
R1 (M&S)	.368 (.054) **	-.193 (.022)	-.105 (.020)	-.289 (.017)	-.159 (.019)
R2 (B&Q)	.261 (.031)	.128 (.019)	-.078 (.020)	-.031 (.012)	.257 (.014)
R3 (Ont)	.388 (.027)	.325 (.019)	-.157 (.023)	.089 (.013)	.372 (.015)
Wages	-.225 (.191)	.358 (.012)	-.059 (.012)	.048 (.010)	-.017 (.010)
T	.122 (.033)	.203 (.029)	.244 (.017)	.063 (.013)	.349 (.015)
R1*T	-.049 (.093)	-.009 (.036)	.153 (.031)	.176 (.022)	-.103 (.024)
R2*T	.333 (.036)	.191 (.032)	-.154 (.024)	.143 (.017)	-.314 (.018)
R3*T	-.063 (.036)	-.175 (.033)	-.087 (.031)	-.010 (.017)	-.350 (.020)
\bar{R}^2	0.621	0.762	0.700	0.810	0.749
No. Obs.	5,325	19,755	13,083	41,884	40,602

* Dependent variable: Revenue per ton-mile. Standard errors in brackets.

** Manitoba only since live animals are exempt in Saskatchewan.

is bounded between unity and zero. Unity implies a high degree of overlap i.e. all provinces have observations on all commodities within the commodity group. For Food, Fabricated Materials, and End Products the value of the index is 0.74, 0.82 and 0.63 respectively. On the other hand, the value of the index for Crude Materials is just 0.03 which indicates that commodities within this group tend to be province-specific.

TABLE 3.3
PROVINCIAL PRICES AS A PROPORTION OF ALBERTA'S PRICE
1975/76 AVERAGE

	Live Animals	Food	Crude Materials	Fab. Materials	End Products	General Freight
Ontario	1.43	1.27	.82	1.09	1.24	0.87
B.C. & Quebec	1.56	1.26	.86	1.05	1.11	0.82
Man. & Sask.	1.41*	.82	.98	.82	.81	0.64

* Manitoba only

While the measure we have cited is not the only one that could be constructed, it does alert us to possibilities of making unfounded comparisons. A second factor one should consider is the sign and size of the wage coefficient. A large negative coefficient is a spurious result and does not provide a sound basis for accounting for provincial wage differences. These considerations lead us to suggest that the most meaningful results have been obtained for the Food, Fabricated Materials, End Products and General Freight commodity groups.

If we confine ourselves to these four groups, the following conclusions emerge. First, General Freight is alone in that this category of goods is apparently more costly to ship in Alberta than in any other province. Since this is the exceptional case, one is tempted to search for an explanation. We do not have one, except to suggest that General Freight is possibly a more heterogeneous group of commodities than other three digit commodity classes so that we may have detected this rather than the differences in unit prices for identical shipments.

The results for the other three commodity groups are more systematic. Unit prices in Manitoba and Saskatchewan are just over 80% of prices in Alberta. Since wage differences have been accounted for and fuel prices are lowest in Alberta, it is tempting to suggest that the strict control of rates in Manitoba and Saskatchewan has depressed them below the level they would be in a competitive market. A larger time-series than is currently available would allow one to test for the effects of (a) regulatory lag in the rate-setting provinces, and (b) demand factors in Alberta which presumably raise rates to attract capital into the growing industry.

The results of Table 3.3 also indicate that unit prices are higher in Ontario, British Columbia, and Quebec than in Alberta, with Ontario having the highest prices of all. Despite the fact that this order corresponds to what one would expect on the basis of the regulatory regimes we are not prepared to attribute the unit price differences to regulation exclusively, since demand conditions and other relevant factors have not been accounted for. We can be sure, however, that, contrary to the assertion made in Maister (1977), the unit prices of trucking services

do differ substantially between the provinces. This conclusion will be confirmed in the following section.

3.2 The Structure of Rates

In this section, the results of fitting separate regressions to the six province. are reported. The functional form is

$$(11) \quad y = AD^a W^b e^Z, \quad Z = \sum_{i=1}^{NC-1} d_i C_i + t \cdot T$$

where the symbols represent the same variables as before. Equation (11) was fitted to each of the six commodity groups for each of the six provinces, i.e. a total of thirty six regressions. Again, except for General Freight and Live Animals, approximately twenty commodities at the three digit S.C.C. level were included. For all commodities but one, there is a corresponding commodity dummy variable; the exceptional commodity is the base case which is accounted for by the intercept. Of course, there are observations on the base commodity from each province.

First, we examine whether or not the separate regressions are consistent with the results of the previous section. Table 3.4A shows the predicted unit price for Cattle and General Freight according to the fitted equations. The commodity, Cattle, is the base case in the Live Animals regression. Quebec is excluded from the table because of the paucity of data. Cattle shipments are generally truckloads so that the most relevant comparisons are at 40,000 lbs. A particularly interesting result is the similarity of unit prices in Saskatchewan and Alberta since the transportation of livestock in Saskatchewan is exempt from regulation. This suggests a hypothesis that we plan to test at a later

TABLE 3.4.A
REVENUE PER TON-MILE BY WEIGHT (DIST = 100.) 1975-76

	CATTLE					
<u>Weight</u>	<u>Que.</u>	<u>Ont.</u>	<u>Man.</u>	<u>Sask.</u>	<u>Alta.</u>	<u>B.C.</u>
500 lbs.	N.A.	\$ 0.411	\$ 0.305	\$ 0.252	\$ 0.351	\$ 0.300
1,000 lbs.	N.A.	0.335	0.263	0.210	0.273	0.260
5,000 lbs.	N.A.	0.209	0.185	0.137	0.152	0.186
20,000 lbs.	N.A.	0.139	0.137	0.095	0.091	0.140
40,000 lbs.	N.A.	0.113	0.118	0.079	0.071	0.121

REVENUE PER TON-MILE BY WEIGHT (DIST = 150), 1975

Weight	GENERAL FREIGHT					B.C.
	Que.	Ont.	Man.	Sask.	Alta.	
200 lbs.	\$.92	\$ 1.02	\$.62	\$.49	\$.61	\$.58
1,000 lbs.	.46	.45	.29	.22	.40	.32
5,000 lbs.	.23	.20	.14	.10	.26	.18
25,000 lbs.	.12	.09	.06	.04	.17	.10

date, namely that trucking rates in Saskatchewan and Alberta are identical for commodities which are exempt from regulation in Saskatchewan but rates for regulated commodities are lower in Saskatchewan than in Alberta.

With regard to General Freight, the information in Table 3.4A confirms that Alberta rates are highest for shipments weighing in excess of a few thousand pounds. For shipments of all sizes, rates in Manitoba and Saskatchewan are well below the rates in Quebec, British Columbia and Ontario. These results are broadly consistent with the conclusions drawn in the previous section.

Tables 3.4B through 3.4E and Charts 3.1A through 3.3B contain a considerable amount of information on the structure of trucking rates in the six provinces. Let us examine each commodity group in turn.

Food

Twenty two commodities within this category were included in the regression. The top panel of Table 3.4B shows the predicted revenue per ton-mile by province for shipments of different weights which are transported 100 miles. The predicted revenue per ton-mile is averaged over 1975 and 1976 and over all twenty two commodities in the Food category. There seem to be three distinct groups of provinces. For all weights, the highest rate provinces are Quebec, Ontario and B.C., followed by Alberta and in turn by Manitoba and Saskatchewan.

We have also computed average revenue per ton-mile for a subset of eleven commodities within the Food group. These eleven commodities comprise most of the 19,755 observations in this Food group. The figures are presented in the top panel of Table 3.4C. The conclusions drawn above remain in force, except that for shipments in excess of about 5,000 pounds

TABLE 3.4.B

REVENUE PER TON-MILE BY WEIGHT (DIST=100.) 75-76

WEIGHT *****	FOOD (22 Commodities)				
	QUE *****	ONT *****	MAN *****	SASK *****	ALTA ***** B.C. *****
500.LBS.	\$ 0.589	\$ 0.622	\$ 0.415	\$ 0.353	\$ 0.448 \$ 0.553
1000.LBS.	0.452	0.480	0.302	0.278	0.351 0.438
5000.LBS.	0.244	0.263	0.144	0.160	0.198 0.254
20000.LBS.	0.144	0.156	0.076	0.099	0.121 0.159
40000.LBS.	0.110	0.121	0.056	0.078	0.095 0.126

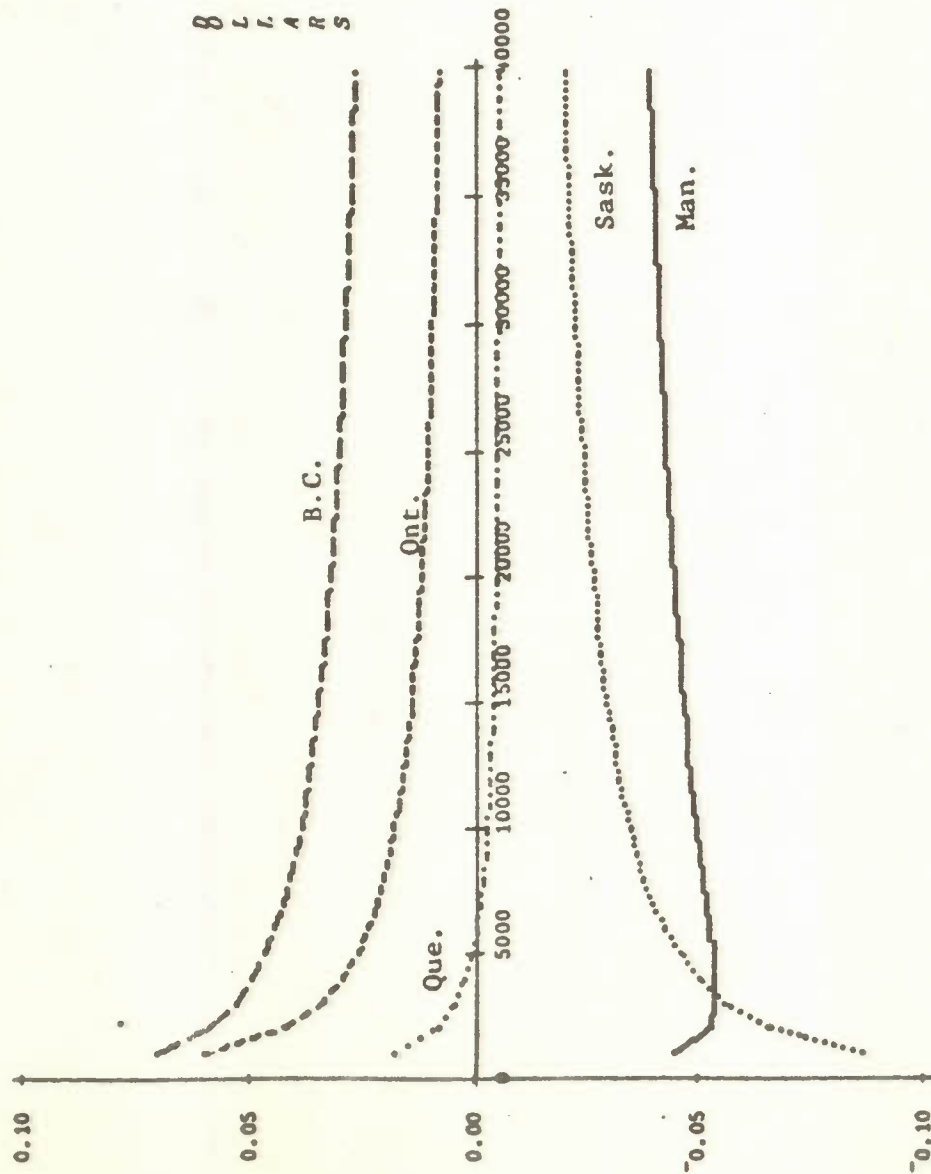
REVENUE PER TON-MILE BY WEIGHT (DIST=100.) 75-76

WEIGHT *****	CRUDE MAT. (18 Commodities)				
	QUE *****	ONT *****	MAN *****	SASK *****	ALTA ***** B.C. *****
500.LBS.	\$ 0.540	\$ 0.717	\$ 0.673	\$ 0.644	\$ 0.688 \$ 1.144
1000.LBS.	0.393	0.489	0.459	0.447	0.481 0.709
5000.LBS.	0.188	0.201	0.189	0.191	0.210 0.233
20000.LBS.	0.099	0.094	0.088	0.092	0.103 0.089
40000.LBS.	0.072	0.064	0.060	0.064	0.072 0.055

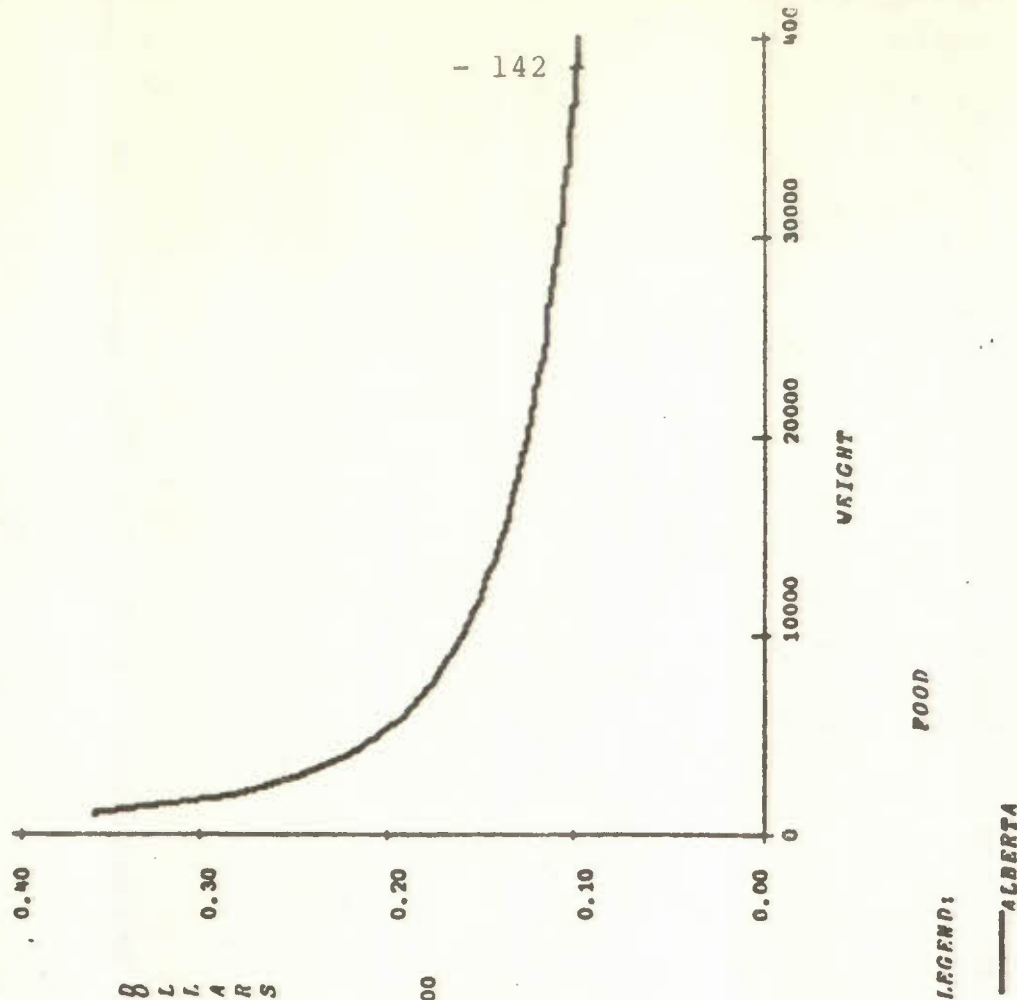
CHART 3-1.A

FOOD (11 Commodities)

DEVIATIONS FROM ALBERTA'S UNIT PRICE



UNIT PRICE BY WEIGHT (ALBERTA)



END:

QUEBEC

ONTARIO

MANITOBA

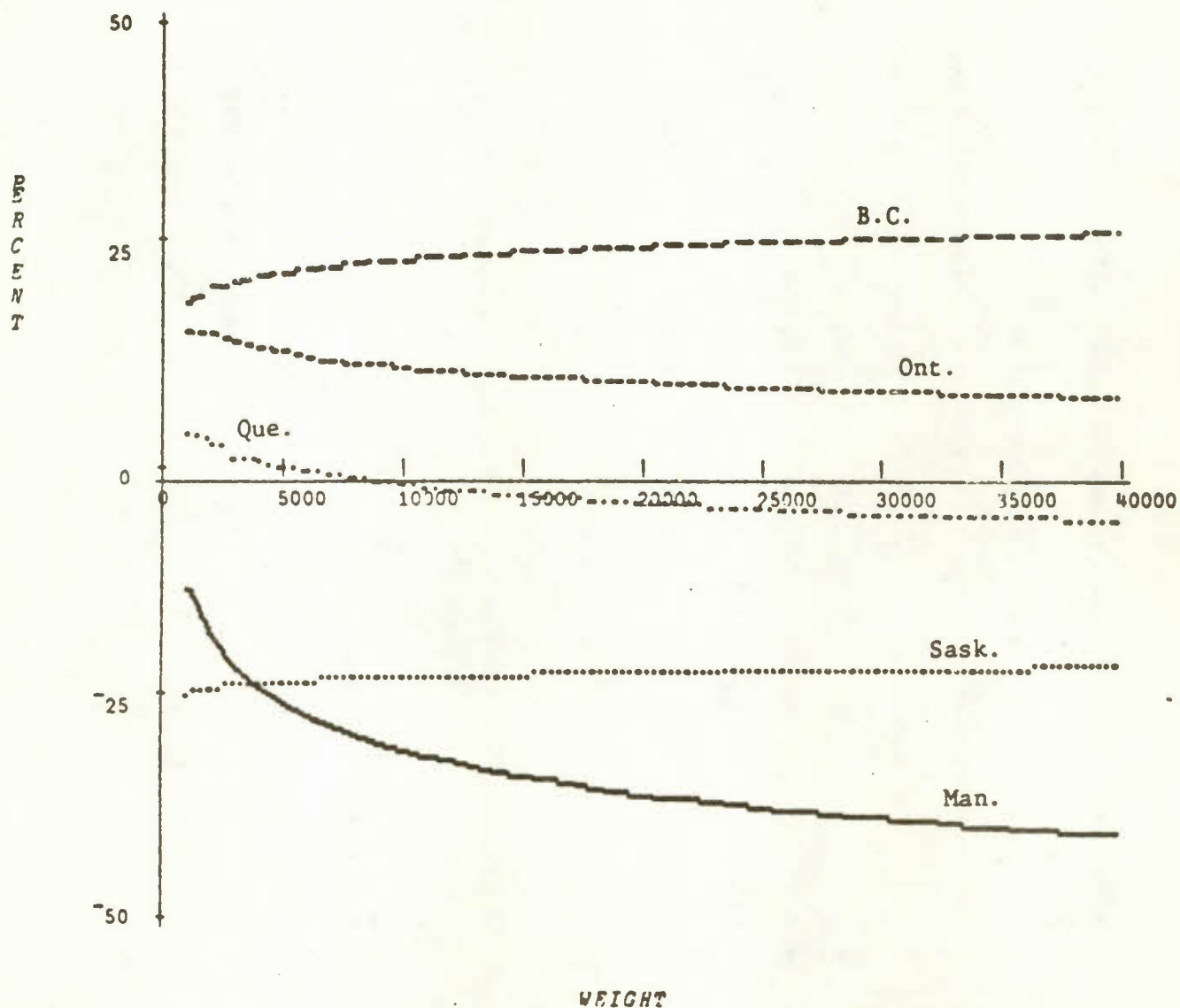
SASKATCHEWAN

BRITISH COLUMBIA

CHART 3.1.B

FOOD (11 Commodities)

UNIT PRICES RELATIVE TO ALBERTA



LEGEND:

FOOD

..... QUEBEC

----- ONTARIO

———— MANITOBA

----- SASKATCHEWAN

----- BRITISH COLUMBIA

TABLE 3.4.C

REVENUE PER TON-MILE BY WEIGHT (DIST= 100.) 75-76

WEIGHT	FOOD (11 Commodities)				
	QUE	ONT	MAN	SASK	ALTA
500.LBS.	\$ 0.475	\$ 0.549	\$ 0.436	\$ 0.349	\$ 0.463
1000.LBS.	0.365	0.423	0.317	0.275	0.362
5000.LBS.	0.197	0.232	0.152	0.158	0.205
20000.LBS.	0.116	0.138	0.080	0.098	0.125
40000.LBS.	0.089	0.106	0.058	0.078	0.098

REVENUE PER TON-MILE BY WEIGHT (DIST= 100.) 75-76

WEIGHT	CRUDE MAT. (Single Commodity)				
	QUE	ONT	MAN	SASK	ALTA
500.LBS.	\$ 0.493	\$ 0.620	\$ 0.678	\$ 0.582	\$ 0.732
1000.LBS.	0.358	0.423	0.462	0.404	0.512
5000.LBS.	0.171	0.174	0.190	0.173	0.223
20000.LBS.	0.091	0.081	0.088	0.083	0.109
40000.LBS.	0.066	0.055	0.060	0.058	0.077

TABLE 3.4.D

REVENUE PER TON-MILE BY WEIGHT (DIST= 100.) 75-76

WEIGHT	FAB. MAT. (18 Commodities)				
	QUE	ONT	MAN	SASK	ALTA B.C.
500.LBS.	\$ 0.601	\$ 0.876	\$ 0.488	\$ 0.418	\$ 0.576 \$ 0.555
1000.LBS.	0.440	0.602	0.357	0.314	0.422 0.420
5000.LBS.	0.213	0.253	0.172	0.161	0.205 0.219
20000.LBS.	0.115	0.119	0.091	0.091	0.110 0.125
40000.LBS.	0.084	0.082	0.067	0.068	0.081 0.084

REVENUE PER TON-MILE BY WEIGHT (DIST= 100.) 75-76

WEIGHT	END PRODUCTS (20 Commodities)				
	QUE	ONT	MAN	SASK	ALTA B.C.
500.LBS.	\$ 0.850	\$ 1.114	\$ 0.666	\$ 0.583	\$ 0.688 \$ 0.850
1000.LBS.	0.655	0.824	0.497	0.437	0.516 0.655
5000.LBS.	0.358	0.410	0.253	0.224	0.263 0.357
20000.LBS.	0.212	0.225	0.141	0.126	0.148 0.212
40000.LBS.	0.164	0.166	0.105	0.095	0.111 0.163

TABLE 3.4.E

REVENUE_PER_TON-MILE_BY_WEIGHT_(DIST=100.)_75-76

WEIGHT	FAB. MAT. (11 Commodities)					B.C.
	QUE	ONT	MAN	SASK	ALTA	
*****	*****	*****	*****	*****	*****	*****
500.LBS.	\$ 0.677	\$ 0.887	\$ 0.503	\$ 0.409	\$ 0.564	\$ 0.603
1000.LBS.	0.496	0.610	0.367	0.307	0.413	0.455
5000.LBS.	0.241	0.256	0.177	0.158	0.201	0.238
20000.LBS.	0.129	0.121	0.094	0.089	0.108	0.136
40000.LBS.	0.095	0.083	0.069	0.067	0.079	0.103

REVENUE_PER_TON-MILE_BY_WEIGHT_(DIST=100.)_75-76

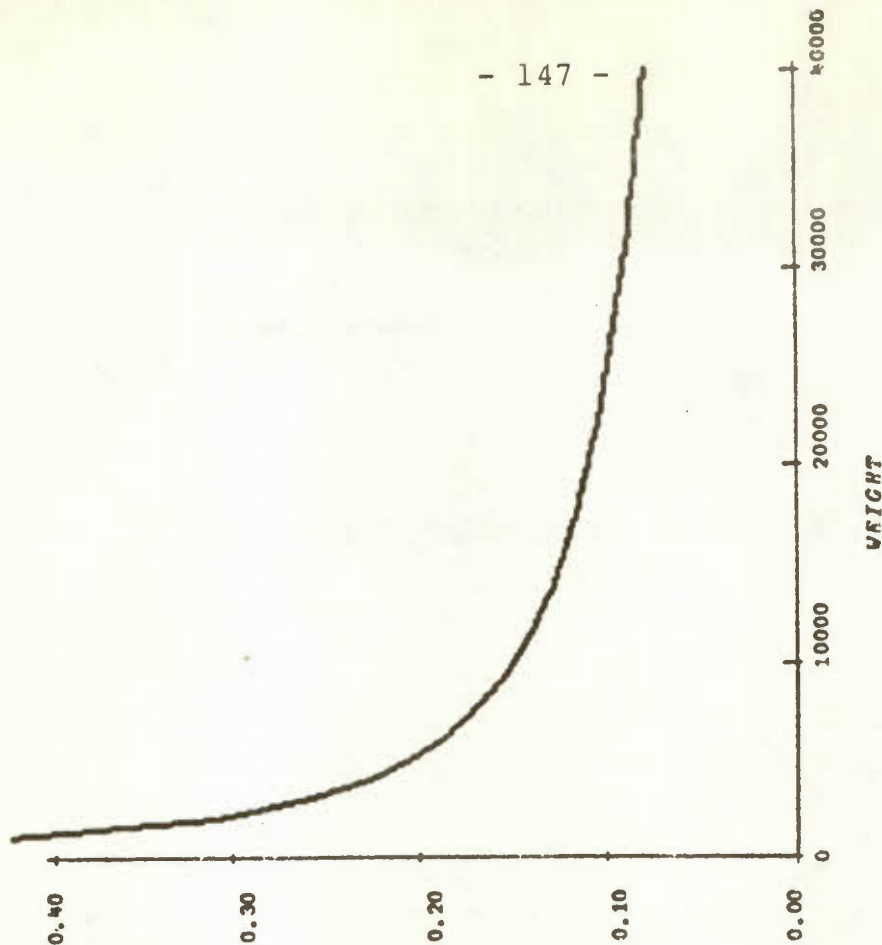
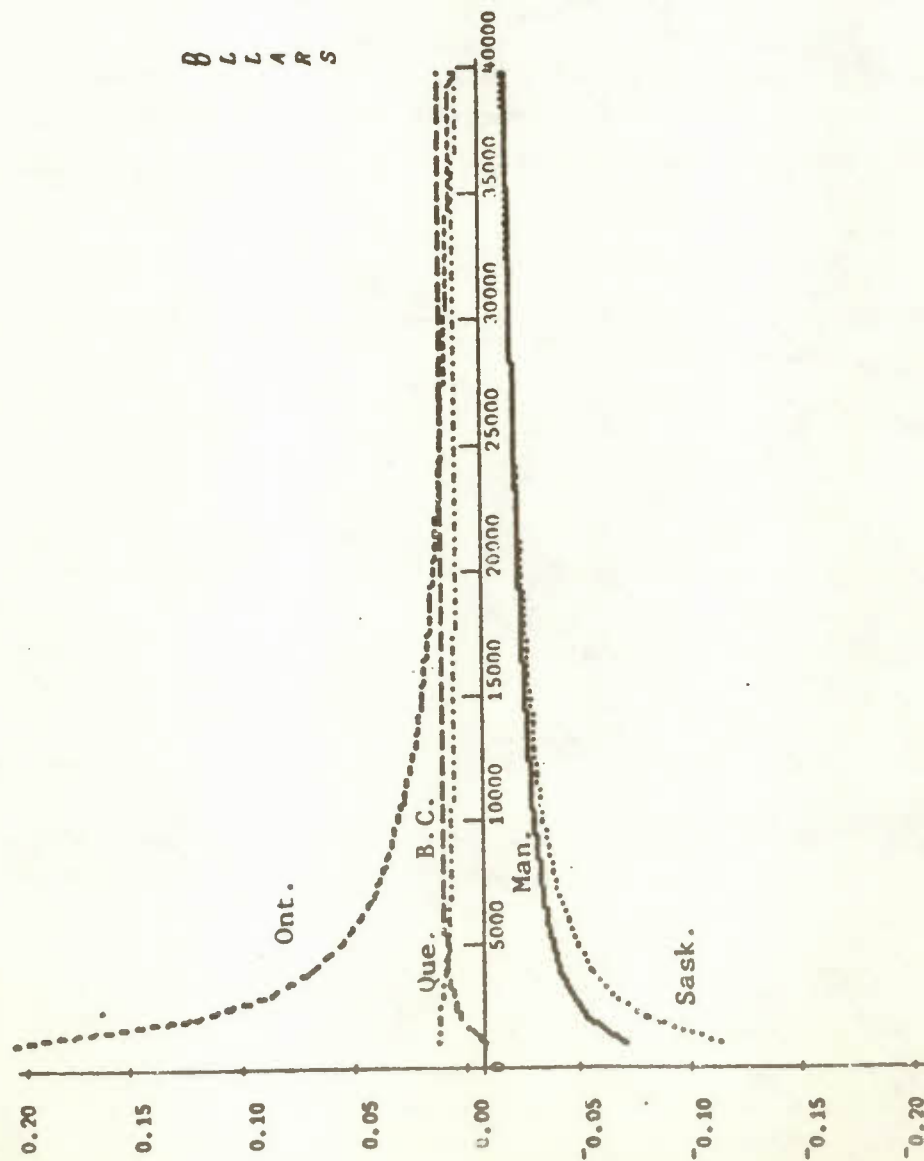
WEIGHT	END PRODUCTS (11 Commodities)					B.C.
	QUE	ONT	MAN	SASK	ALTA	
*****	*****	*****	*****	*****	*****	*****
500.LBS.	\$ 0.841	\$ 0.933	\$ 0.637	\$ 0.553	\$ 0.648	\$ 0.778
1000.LBS.	0.648	0.691	0.476	0.415	0.485	0.599
5000.LBS.	0.354	0.343	0.242	0.213	0.248	0.327
20000.LBS.	0.210	0.188	0.135	0.120	0.139	0.194
40000.LBS.	0.162	0.139	0.101	0.090	0.104	0.149

CHART 3.2.A

FAB. MAT. (11 Commodities)

UNIT PRICE BY WEIGHT (ALBERTA)

DEVIATIONS FROM ALBERTA'S UNIT PRICE



- 147 -

LEGEND:

FABRICATED MATERIALS

WEIGHT

FABRICATED MATERIALS

WEIGHT

ND:

QUEBEC

ONTARIO

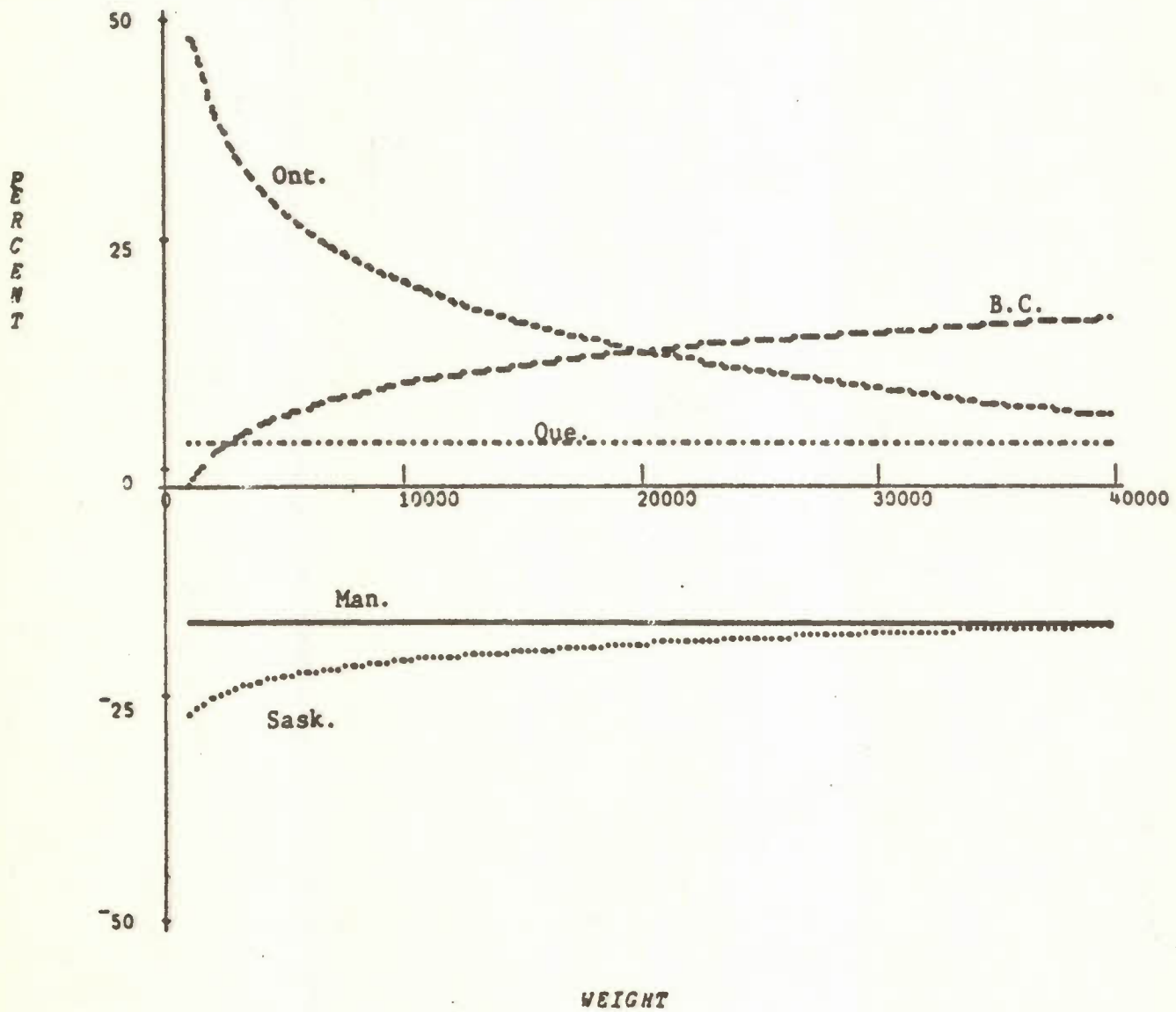
MANITOWA

SASKATCHEWAN

CHART 32.B

FAB. MAT. (11 Commodities)

UNIT PRICES RELATIVE TO ALBERTA



FABRICATED MATERIALS

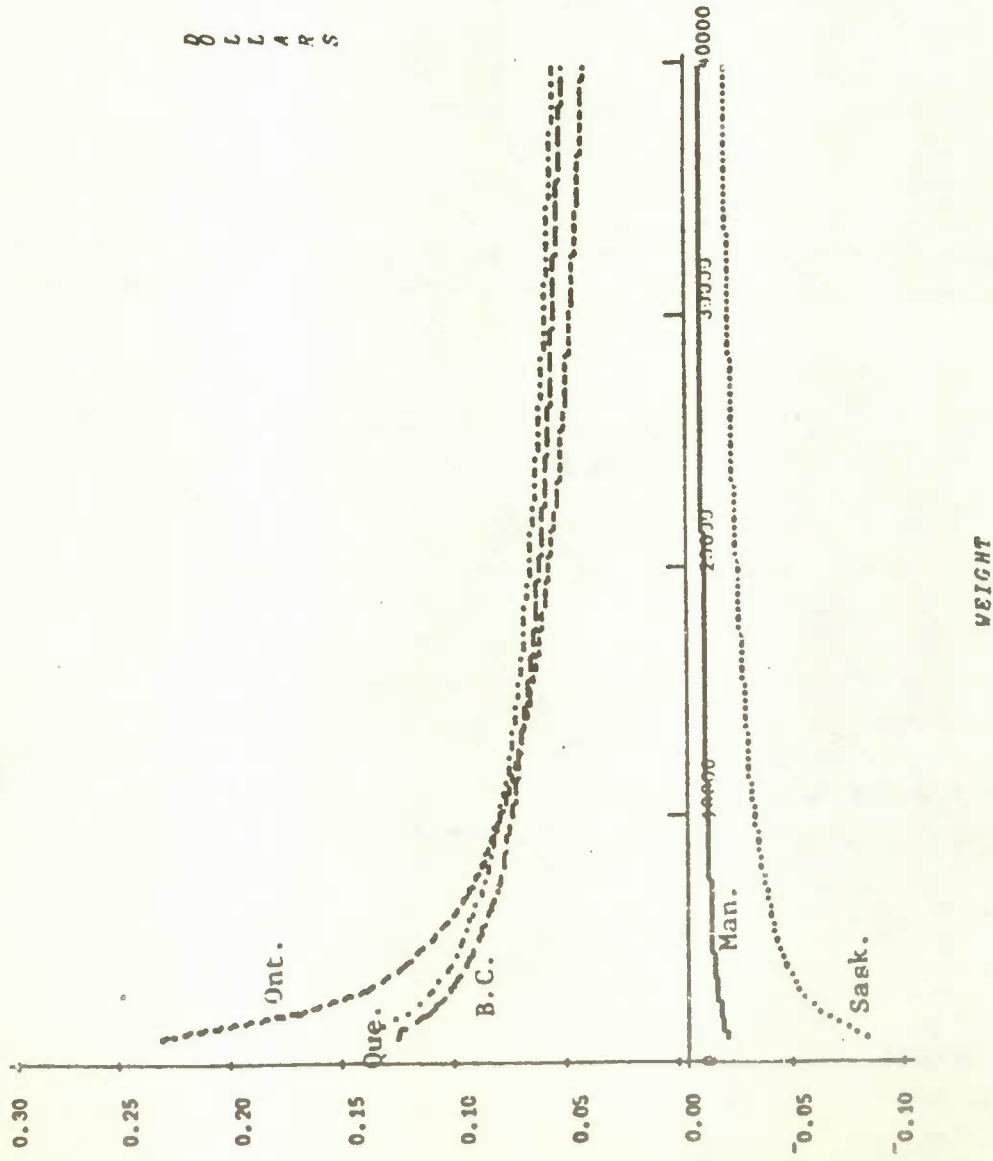
LEGEND:

- QUEBEC
- ONTARIO
- MANITOBA
- SASKATCHEWAN
- BRITISH COLUMBIA

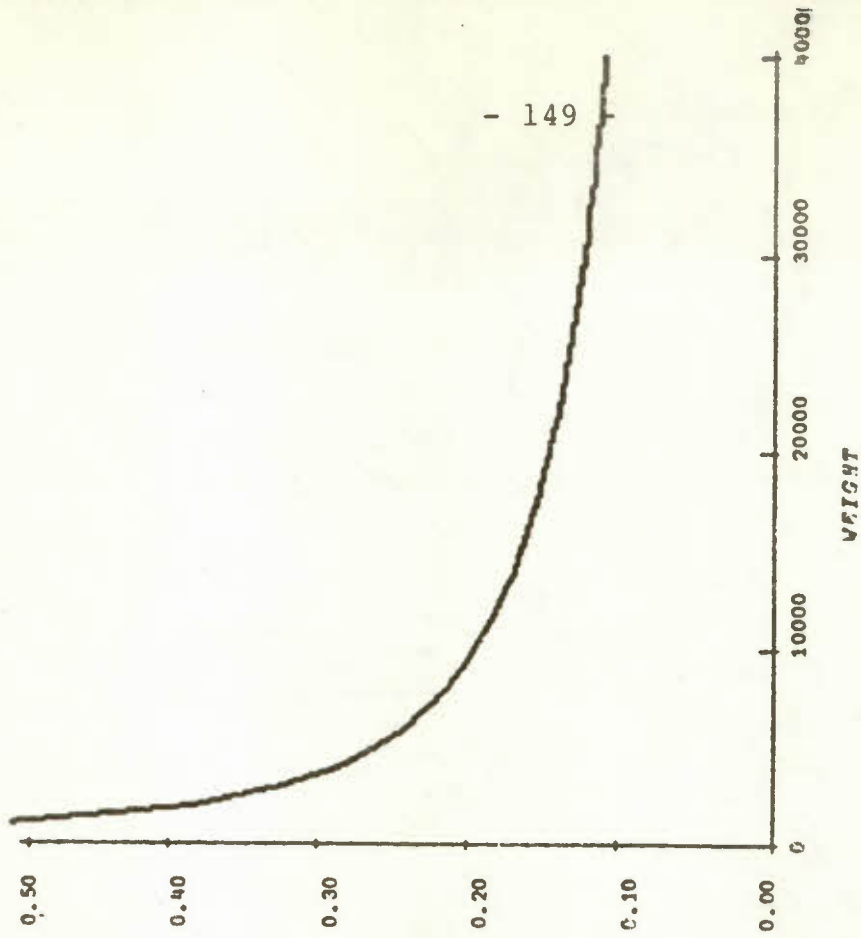
CHART 33.A

END PROD. (11 Commodities)

DEVIATIONS FROM ALBERTA'S UNIT PRICE



UNIT PRICE BY WEIGHT (ALBERTA)

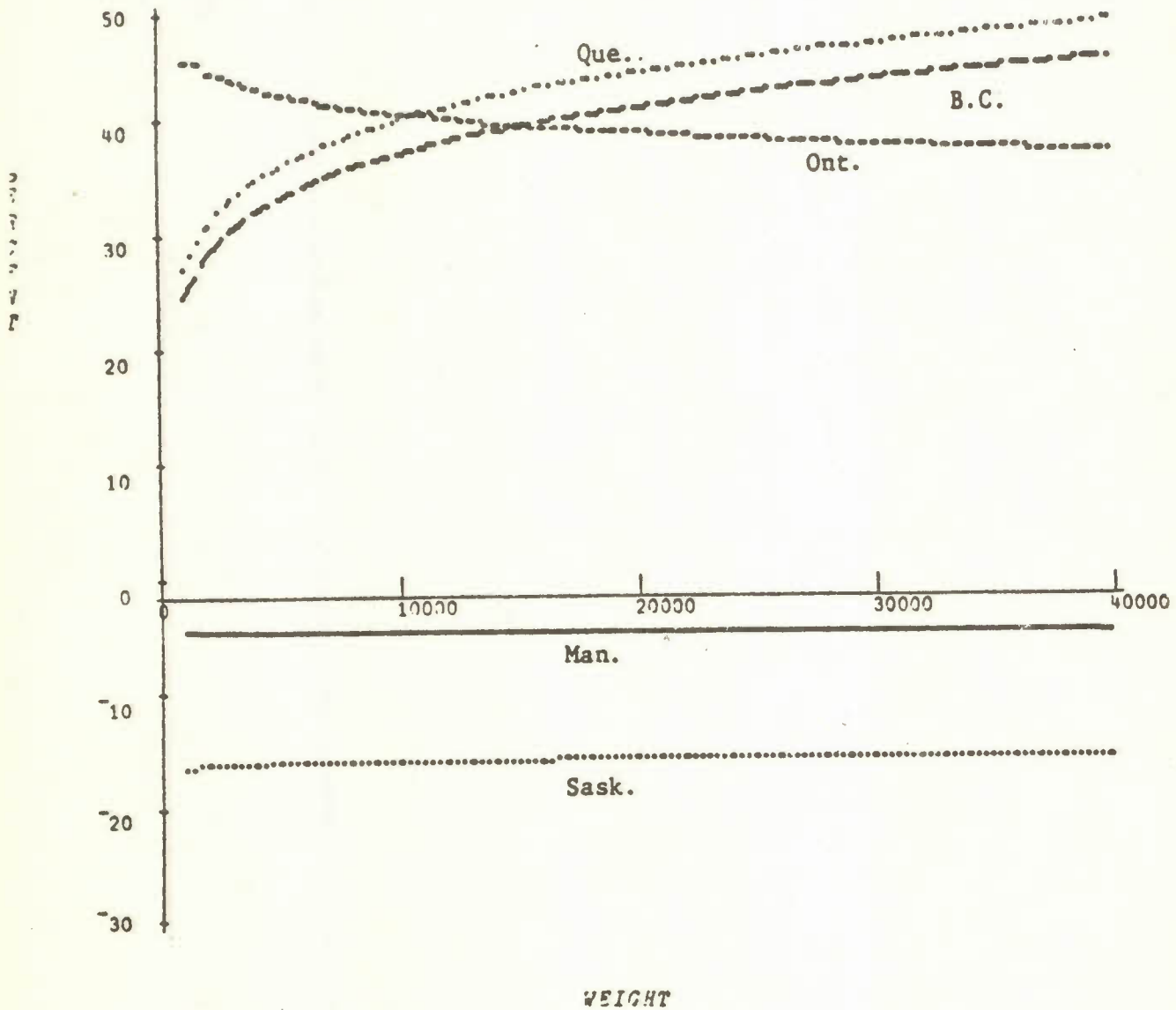


- 149

CHART 3.3.B

END PROD. (11 Commodities)

UNIT PRICES RELATIVE TO ALBERTA



END PRODUCTS

LEGEND:

- QUEBEC
- ONTARIO
- MANITOBA
- SASKATCHEWAN
- BRITISH COLUMBIA

rates are lower in Quebec than in Alberta. Chart 3.1A gives a visual representation of the relationship between average revenue per ton-mile (over the 11 commodities) and weight. The righthand panel shows this relationship for Alberta. The lefthand panel shows unit prices in the other provinces as deviations from Alberta's unit price at each weight. Distance is specified to be 100 miles in all charts and tables. Chart 3.1B gives the same information in a different form. We can see immediately, for example, that, for all weights, unit prices in Saskatchewan are 20% to 25% lower than in Alberta.

Crude Materials

We pointed out in the previous section that commodities in this group are province-specific so that meaningful comparisons are difficult to make. Observations on the base commodity, Other Crude Non-metallic Minerals (S.C.C. code 279), are available for all provinces so we have presented revenue per ton-mile figures for this commodity in the lower panel of Table 3.4C. However, the figures should be treated with caution for two reasons: (a) this is likely to be heterogeneous commodity class and (b) the regression was fitted to 18 commodities in the Crude Materials group so that unit price predictions for this single commodity may be unreliable. For this reason we have not included charts for this group.

Fabricated Materials

Eighteen commodities were included in this regression. The top panels of Table 3.4D and Table 3.4E reinforce the view that rates in British Columbia, Quebec and Ontario are higher than in Alberta, which in

WEIGHT ELASTICITY *

PROVINCE	LIVE ANIMALS	FOOD	CRUDE MAT.	FAB. MAT.	END PRODUCTS

QUE	-0.14256 (0.02081)	-0.38250 (0.00500)	-0.45924 (0.01482)	-0.44936 (0.00394)	-0.37596 (0.00374)
ONT	-0.29473 (0.01219)	-0.37433 (0.00385)	-0.55163 (0.00990)	-0.54002 (0.00255)	-0.43406 (0.00291)
MAN	-0.21698 (0.02593)	-0.45868 (0.00676)	-0.55294 (0.02124)	-0.45426 (0.00848)	-0.42090 (0.00907)
SASK	-0.26439 (0.02602)	-0.34367 (0.01109)	-0.52713 (0.02233)	-0.41351 (0.00661)	-0.41495 (0.00953)
ALTA	-0.36494 (0.01141)	-0.35408 (0.00693)	-0.51536 (0.01007)	-0.44878 (0.00387)	-0.41731 (0.00598)
B.C.	-0.20725 (0.01456)	-0.33727 (0.00474)	-0.69121 (0.01234)	-0.40420 (0.00577)	-0.37648 (0.00557)

TABLE 3.5.A

DISTANCE ELASTICITY

PROVINCE	LIVE ANIMALS	FOOD	CRUDE MAT.	FAB. MAT.	END PRODUCTS

QUE	-0.87084 (0.02271)	-0.75723 (0.01021)	-0.67430 (0.01814)	-0.56983 (0.00785)	-0.57072 (0.00610)
ONT	-0.67836 (0.02069)	-0.66731 (0.00770)	-0.45681 (0.01558)	-0.56966 (0.00472)	-0.62767 (0.00533)
MAN	-0.82487 (0.04951)	-0.64843 (0.01080)	-0.71488 (0.01680)	-0.54142 (0.01580)	-0.65918 (0.01474)
SASK	-0.55972 (0.03234)	-0.67059 (0.02591)	-0.50062 (0.02378)	-0.43219 (0.01466)	-0.64990 (0.02033)
ALTA	-0.45552 (0.01624)	-0.50577 (0.02201)	-0.59892 (0.01077)	-0.47035 (0.00844)	-0.36409 (0.01263)
B.C.	-0.59007 (0.02183)	-0.69507 (0.01059)	-0.89939 (0.00947)	-0.53473 (0.00897)	-0.57206 (0.00793)

turn has higher rates than Manitoba and Saskatchewan. In addition, Chart 3.2B shows that the ratio of unit prices in Ontario to those in Alberta is much greater for less-than-load (LTL) shipments than for truckload (TL) shipments. Assuming the relationships between cost and weight are similar in the two provinces and that there is no price discrimination in Alberta, this suggests that TL traffic in Ontario is being subsidized by LTL traffic. This finding is consistent with Maister (1977) and a report prepared by the Ontario Ministry of Transportation and Communications. It has been suggested that this may be the result of rail competition for TL traffic.

In British Columbia the contrary situation seems to prevail, i.e. using Alberta as a basis for comparison, TL rates in B.C. are relatively higher than LTL rates. This is consistent with the view that more profitable TL traffic is subsidizing less profitable LTL traffic. It must be admitted, however, that at the present time this is more speculation than conclusion.

End Products

The observations made in the two previous paragraphs can be repeated here, with the further comment that the ratios of rates in Quebec, B.C. and Ontario to those in Alberta are much higher for End Products than for Fabricated Materials. One might be tempted to cite this as evidence that regulation in Quebec, B.C. and Ontario leads to value-of-service pricing. In fact, if the chart were based on a length of haul of say 200 miles rather than 100 miles, the picture would change somewhat, since the distance elasticities in Quebec, B.C. and Ontario are much larger in absolute size than in Alberta (see Table 3.5A).

Weight and Distance Elasticities

Table 3.5A reports the weight and distance elasticities by province and commodity group along with their respective standard errors. Two points seem to emerge, namely that British Columbia consistently shows relatively small (in absolute value) weight elasticities while the same can be said of Alberta's distance elasticities. Table 3.5B reports the sum of the weight and distance elasticities. Alberta clearly has smaller elasticities than the other provinces, which implies that in Alberta the unit price of trucking services declines less rapidly than elsewhere as weight and distance increase. Ontario and Manitoba are at the other extreme. This could be interpreted to mean that there is price discrimination in these two provinces to the disadvantage of users of short-haul, LTL services.

TABLE 3.5B

SUM OF WEIGHT AND DISTANCE ELASTICITIES BY COMMODITY GROUP AND PROVINCE

	Live Animals	Food	Crude Materials	Fabricated Materials	End Products	General Freight
Quebec	1.014	1.140	1.133	1.019	0.951	1.060
Ontario	0.973	1.041	1.009	1.110	1.062	1.201
Manitoba	1.042	1.107	1.268	0.995	1.080	1.077
Sask.	0.824	1.015	1.028	0.846	1.065	1.099
Alberta	0.821	0.860	1.114	0.919	0.781	0.671
B.C.	0.797	1.032	1.590	0.939	0.948	0.981

Variability of Rates by Province

The nature of the prescribed rate structures in Saskatchewan and Manitoba suggest that the variability of rates over commodities should be less in these two provinces than elsewhere. We also argued above that

value-of-service pricing is likely to lead to greater variability in rates compared to situations where rates are cost determined. Table 3.6 shows the variance of commodity dummy coefficients for each of the provinces. Meaningful results can be obtained only if observations on all commodities within a commodity group are available in all provinces. Accordingly, figures have been computed for: Food, Fabricated Materials and End Products.

The calculations do indicate that revenue per ton-mile has less variability in Manitoba and Saskatchewan than in the other provinces. However, no other systematic results seem to emerge.

TABLE 3.6
VARIANCE OF COMMODITY DUMMY COEFFICIENTS

	Que.	Ont.	Man.	Sask.	Alta.	B.C.
Food	1.58	1.11	1.26	1.09	0.79	1.23
Fab. Materials	1.13	1.61	0.91	0.54	0.96	1.25
End Products	<u>1.24</u>	<u>1.38</u>	<u>0.94</u>	<u>1.28</u>	<u>3.50</u>	<u>1.13</u>
Mean	1.32	1.37	1.04	0.97	1.75	1.20

3.3 A Summary

The statistical analysis reported in this section has made use of the individual shipment information which is collected by Statistics Canada and forms the basis of the For-Hire Trucking Survey. This is the

second study which has made use of these data, the first being Maister (1977). These two studies can be distinguished from other investigations into the level and structure of trucking rates in that the latter have used data which have been aggregated into broad commodity groups and are therefore open to the criticism that biases of unknown sign and size have been introduced. As we discussed in detail in Section 2, Maister was unable to detect provincial differences in rate levels using micro data and claimed that these differences are insignificant compared to the variability of rate levels within provinces. We have explained at some length why Maister was unable to detect such differences and we have provided evidence which shows that numerically and statistically significant differences do in fact exist.

With respect to the level of rates the provinces fall into three groups. Ontario, Quebec and British Columbia have higher rates than Alberta which in turn has higher rates than Manitoba and Saskatchewan (where rates are prescribed). This conclusion holds even when account is taken of the level of wages in each province. We have not, however, been able to attribute rate differences to the effects of regulation exclusively. For example, a longer time-series is required to detect the effects of regional differences in rates of economic growth. In addition, we have not been able to address the issue of regulatory lag in the rate-setting process.

Except for one commodity group, we found that rates in Saskatchewan are well below comparable rates in Alberta. The exception is Live Animals (cattle in fact). For this group, rates were very similar in the two provinces. Since Live Animals are exempt from regulation in

Saskatchewan this result suggests an interesting hypothesis, namely that there are no differences in rates for exempt commodities, but regulated rates in Saskatchewan are lower than comparable rates in Alberta. We plan to examine this hypothesis in the next section.

With respect to rate structures, we have examined the relationship between the price of trucking services and (a) the weight of shipments and (b) the origin-destination distance. We find that in British Columbia weight elasticities are relatively low, while weight elasticities are large in Ontario for the Fabricated Materials and End Product group. The latter observation is consistent with views expressed elsewhere that in Ontario the market for TL traffic is more competitive than for LTL traffic. In British Columbia, on the other hand, our evidence suggests that if there is price discrimination it has the effect of raising TL rates relative to LTL rates. Certainly these issues are worthy of further investigation. Taking the weight and distance elasticities together, it is clear that Alberta emerges as the low-elasticity province. This implies that in Alberta the unit price of trucking services declines less rapidly as weight and distance increase than elsewhere.

Finally, we looked into the variability of prices across commodities within each province and found, as expected, that prices vary less in provinces that prescribe rates (Manitoba and Saskatchewan), but no other distinctions emerged.

4 A CASE STUDY OF SASKATCHEWAN

4.1 Introduction

In the papers by Sloss (1970), McLachlan (1973), (1977, 1978a, 1978b) and our own work in Section 3, the hope has been to explain differences in provincial trucking rates in terms of factor costs and other relevant province distinguishing factors such as maximum allowable weight on public roads. Remaining differences in rates, after netting out the effects of these variables, are attributed to the influence of the separate regulatory regimes. For all of those papers, the available data have not allowed researchers to adequately separate the effects of regulation and cost differences despite vigorous attempts. Essentially two approaches to correct for this problem are available. The first is to wait until more years of the origin/destination survey are available so that a reasonably long amalgamation of cross section and time series data is available. One can think of the time series dimension as estimating the effects of factor costs, and the cross section dimension as yielding information on the effects of the regulatory structure. A second approach is to link the origin/destination information to the financial data by firm. Since neither of these sources of data is currently available to us, we present a third option which uses only the origin/destination data tapes for 1975 and 1976.

The approach utilized here builds on the fact that in Saskatchewan there is a fairly large number of commodities which for hire trucking firms are permitted to haul intraprovincially without

being subject to either rate or entry regulation. Thus, within Saskatchewan commodities may be classified as falling into either a regulated or unregulated group for purely intraprovincial traffic. A listing of unregulated commodities is given by R.K. House and Associates (1977), and is presented in Table 4.1. For our purposes, only those unregulated products which could be described in terms of the 3 digit Standard Commodity Code (SCC) are included in the analysis. These commodities and their associated 3 digit SCC numbers are presented in Table 4.2.

The discussion of the Econometric specification in Sec. 4.2 and Appendix A explains the nature of the test, but to aid understanding, an intuitive explanation is provided here. As was discussed fully in Sec. 3, the revenue per ton mile earned by firms operating in Saskatchewan or any other province depends upon provincial cost and demand factors, the industrial structure and regulation, if this is applicable. To neutralize the effects which different provincial levels of these types of variables have on the rate structure in entry and rate regulating Saskatchewan when compared to Alberta, we proceed as follows. First, from the set of regulated commodities moving intraprovincially in Saskatchewan, three groups of 19 commodities are randomly chosen so that each group may be compared to the 19 unregulated commodities listed in Table 4.2. These sets of commodities are presented in Table 4.3. This produces a total of three sets of thirty-eight commodities moving intraprovincially within Saskatchewan. One half of any set of 38 is the 19 unregulated goods, and the other 19 are the randomly selected regulated ones. These 38 commodities are matched to the identical group of 38 which move entirely within Alberta.¹

¹Not all commodities are represented in the data, see Tables 4.2 and 4.3.

TABLE 4.1

Commodities Exempt From Regulation in Saskatchewan

1. Gravel, Sand, Stone
2. Livestock
3. Lumber, Wood, Telephone Poles, Wooden fence posts
4. Eggs, Egg crates
5. Chemicals used for pest and weed control
6. Fresh and frozen fish
7. Coke
8. Scrap metal, ore concentrate
9. Ice, Water
10. Grain
11. Cement, Concrete blocks

Source: R.K. House and Assoc. (1977)

TABLE 4.2

Commodities Exempt From Regulation in Saskatchewan

<u>S.C.C. Description*</u>	<u>S.C.C. Code</u>
1. Sand, gravel and crude stone (1)	276
2. Cattle (2)	001
3. Other crude wood materials (3)	239
4. Eggs (4)	053
5. Other insecticides and rodenticides (5)	419**
6. Fish steaks, blocks, slabs and sticks (6)	035**
7. Coke of petroleum and of coal (7)	435
8. Iron ores concentrates and scrap (8)	251
9. Water and ice (9)	278
10. Swine (2)	003
11. Other live animals (2)	009
12. Poultry (2)	006
13. Cereal grains unmilled (10)	061
14. Lumber and sawn timber (3)	331
15. Cement and concrete basic products (11)	475**
16. Zinc in ores, concentrates and scrap (8)	257**
17. Copper in ores, concentrates, matte and scrap (8)	253
18. Other crude non-metallic minerals (8)	279
19. Other metal bearing ores (8)	259

* Number in parentheses refer to the items listed in Table A.1.

** Not included in regression analysis due to absence of observations.

TABLE 4.3

Regulated Commodities Included in Regressions 1, 2 and 3

<u>Regression 1</u>		<u>Regression 2</u>		<u>Regression 3</u>	
<u>Commodity</u>	<u>Code</u>	<u>Commodity</u>	<u>Code</u>	<u>Commodity</u>	<u>Code</u>
Meat	011	Canned vegetables	095	Non-alcoholic bev.	171
Sugar, molasses	101	Ferm. alcoholic bev.	172	Distilled alcohol	173
Sugar preparations	104	Wood pulp	341	Oil seeds	212
Tobacco products	183	Paperboard	356	Natural gums	217
Pulpwood	236	Inorganic acids	401	Paper for printing	351
Bldg. paper and board	357	Adhesives	421	Tissue paper	353
Paints and paint prod.	428	Plate etc. steel	445	Gasoline	431
Fuel oil	432	Bolts, nuts, etc.	465	Insulated Wire	464
Lub. oils	433	Valves	468	Glass basic prod.	473
Steel bars and rods	444	Tile flooring	494	Engines	502
Alum. and alum. alloy	451	Electrical generators	503**	Tractors	551
Pipes and tubes	448	Heating stove	653	Tires	621
Wire and wire rope	449	Batteries	693	Audio equipment	636
Autos and chassis	581	Household furniture	741	Air condition. equip.	655
Trucks and chassis	583	Hand tools	753	Plumbing fixtures	671
Boots, shoes	791	Cosmetics	801	Light fixtures	681
Cleaning preparations	807	Soap	806	Business machines	771
Floor coverings	841	Office paper supplies	901	Sporting equipment	832
Shipping containers	951	Paper products	964	Books	893

** Not included in regression analysis due to absence of observations.

If it may be assumed that the cost and demand factors affect all 38 commodities moving entirely within Saskatchewan equally, it may be stated that the only difference on rate per ton mile between the randomly selected regulated and unregulated groups in Saskatchewan is the influence on rates of the regulatory board. This is not at a strong assumption for all it says is that wage costs, fuel costs, road conditions, maximum allowable gross vehicle weights etc. apply equally to all goods transported within Saskatchewan. A similar assumption is made for the 38 goods moving within Alberta, but of course, there is no distinction between regulated and regulated categories.

Given these arguments, it seems reasonable to attempt to estimate the average provincial differentials between the price of trucking services for the two groups of commodities, namely the group of commodities which are regulated in Saskatchewan and the group which are unregulated in Saskatchewan. If regulation has an effect on prices in Saskatchewan then we would expect this to be reflected in the two average provincial price differentials. For example, consider the unregulated commodities, if the net effect of the supply and demand factors is to maintain the price of trucking services in Saskatchewan above those in Alberta then our estimate of the average differential will pick this up. The results of Section 3, suggest that in the two years for which we had data, 1975 and 1976, regulation in Saskatchewan led to lower rates than would otherwise have prevailed. If this is correct, then for regulated commodities, Saskatchewan rates will be closer to or even below Alberta rates than are the rates of unregulated commodities.

When equation (4.1) is fitted to this data set, the dummy variables will provide an estimate of the average provincial differentials between the price of trucking services which are regulated in Saskatchewan and the group which are unregulated in Saskatchewan, and comparisons to the equivalent commodities when shipped entirely within Alberta. By repeating the experiment three times with the three randomly selected groups of regulated commodities we believe we have covered a sufficient number of commodities to render a consistent set of results very strong evidence on the effect of regulation on trucking rates in Saskatchewan over the period 1975/76.

4.2 THE MODEL SPECIFICATION

In order to estimate the price effect of regulation, the following functional form was fitted to the data.

$$(4.1) \quad y = W^a H^b e^Z,$$

$$\text{where} \quad Z = \sum_{i=1}^4 d_i D_i + \sum_{i=2}^{NC} c_i C_i + t_1 \cdot (T \cdot D_1) + t_2 \cdot (T \cdot D_2) + t_3 \cdot (T \cdot D_3) + u$$

y = Revenue per ton mile	D_1 = 1 if Alberta, 0 otherwise.
W = Weight of shipment in pounds.	D_2 = 1 if Saskatchewan, 0 otherwise.
H = Length of haul.	D_3 = 1 if Regulated in Saskatchewan, 0 otherwise
u = A disturbance term with classical properties	D_4 = 1 if a surcharge is included in revenue per ton-mile, 0 otherwise
NC = Number of commodities in the sample.	C_i = 1 if i^{th} commodity, 0 otherwise.
	T = 1 if 1976, 0 if 1975.

The functional form specifies that revenue per ton-mile depends on the weight of the shipment, the length of the haul, the commodity

being shipped, the province, and in the case of Saskatchewan, whether or not the commodity is subject to economic regulation. In addition, there are dummy variables included to allow for the presence of surcharges and to allow for increases in rates between 1975 and 1976. The functional form also implies that when all other factors are held constant a one per cent increase in shipment weight results in a percentage change in revenue per ton mile equal to the parameter a (which will be negative). This means that as shipment weight increases, revenue per ton-mile falls, but at a decreasing rate. A similar interpretation can be given to the length of haul parameter, b . The shape of the relationship between revenue per ton-mile and weight and distance is specified to be the same for all commodities, and for both provinces. However, the vertical height of the weight and distance curves is allowed to vary from one commodity to another. Moreover, for each commodity the vertical height of the weight and distance curves depends on the province, and whether or not the commodity is regulated. The restrictions that have been imposed are that, for all unregulated commodities, the ratio of revenue per ton-mile between Alberta and Saskatchewan is fixed. This is also true for the commodities which are regulated in Saskatchewan. An algebraic treatment of these restrictions and a derivation of the equation we estimated is given in Appendix 4.

4.3 RESULTS

Table 44 reports the results of fitting equation (4.1) to each of the three sets of data. Note that this Table does not report the 37 estimated commodity coefficients. There are at most 37 commodity dummies because the base commodity has no dummy variable.

TABLE 4.4

	<u>Run 1*</u>	<u>Run 2*</u>	<u>Run 3*</u>
Weight (W)	-.426 (.004)	-.420 (.004)	-.397 (.004)
Distance (H)	-.556 (.007)	-.593 (.008)	-.549 (.006)
Saskatchewan (D_1)	4.24 (.051)	4.34 (.054)	3.93 (.052)
Alberta (D_2)	4.28 (0.49)	4.37 (.053)	3.95 (.051)
Reg. Dummy (D_3)	-.301 (.031)	-.173 (.040)	-.050 (.029)
T*Saskatchewan ($T*D_1$)	.310 (.027)	.311 (.027)	.310 (.024)
T*Alberta ($T*D_2$)	.200 (.011)	.235 (.012)	.210 (.011)
T*Reg. Dummy ($T*D_3$)	.057 (.035)	-.203 (.051)	-.144 (.034)
No. Obs.	14,939	11,439	12,699
\bar{R}^2	0.751	0.810	0.791

*Dependent variable is revenue per ton-mile. Standard errors in parentheses.

Commodity dummy variables were included in the regression, but the estimated coefficients are not reported here.

A number of indicators suggest that the regression results are sound. First, the overall fit as measured by the \bar{R}^2 statistics is good in all three cases. Second, the weight and distance parameters are stable across regressions which indicates that forcing the same parameters on all commodities in a given regression is probably reasonable. Third, the coefficient on T*Sask is essentially unchanged from one regression to another. This is as it should be since this coefficient represents the percentage increase in unit prices between 1975 and 1976 in Saskatchewan for the unregulated commodities. This group is unchanged from one regression to another. In order to interpret this coefficient, one needs to exponentiate the coefficient value and subtract unity to give the percentage increase in revenue per ton-mile i.e. $[\exp(0.31) - 1] \times 100\% = 36\%$.

Now, let us turn to the effect of regulation on revenue per ton-mile. The first regression shows that in 1975 regulation in Saskatchewan kept the price of trucking services $-[\exp(-.301) - 1] \times 100\% = 26\%$ below the level they would have been in the absence of regulation. However, the rates for this first group of regulated commodities rose on average 44% between 1975 and 1976, while the Saskatchewan rates for unregulated commodities rose on average by 36% - as we mentioned above. The regression results for the second group of regulated commodities again shows a large and statistically significant regulation effect which, in 1975 and 1976 depressed rates below what they would otherwise have been. The third regression tells a similar story except that for this group regulated rates were only marginally below what they would otherwise have been in 1975, but substantially below in 1976.

All three regressions show statistically significant effects of regulation. It appears that the extent to which regulation depresses rates below what they would otherwise have been varies from year to year, suggesting that there may be a regulatory lag involved. In order to present a clearer picture of the effect of regulation, we have computed the relationship between unit prices in the three markets averaged over the years 1975 and 1976. This information is presented in Table 4.5.

Recall that in each regression the set of unregulated commodities is the same so the three regressions should produce similar estimates of the ratio of unit prices in Alberta and Saskatchewan for those commodities which are unregulated in Saskatchewan. This is indeed the case. Our estimates suggest that for this group of commodities, rates in Saskatchewan are between one and three percent higher than in Alberta. With respect to the regulated commodities the situation is quite different it is clear that, an average over 1975 and 1976, rates in Saskatchewan were substantially below those in Alberta for the same commodities.

Charts 4.1 through 4.3 in addition to illustrating the decreasing negative relationship of the estimated parameters a and b, make the same point as Table 4.5. Chart 4.1 for example, shows the relationship between revenue per ton-mile and (a) shipment weight in pounds and (b) the length of the haul in miles. Three relationships are shown for a particular commodity, in this case fuel oil. The solid line represents the Alberta relationship. The dashed line, which is the lowest, represents

Unit Prices as Percentage of Comparable Alberta Unit Prices
1975/1976 Average

	<u>Run 1</u>	<u>Run 2</u>	<u>Run 3</u>
Alberta	100.0%	100.0%	100.0%
Saskatchewan - Unregulated	101.5%	101.2%	103.0%
Saskatchewan - Regulated	77.3%	76.8%	91.2%

CHART 4.1

Revenue per Ton-Mile by Weight and Distance 1975/1976

Fuel Oil

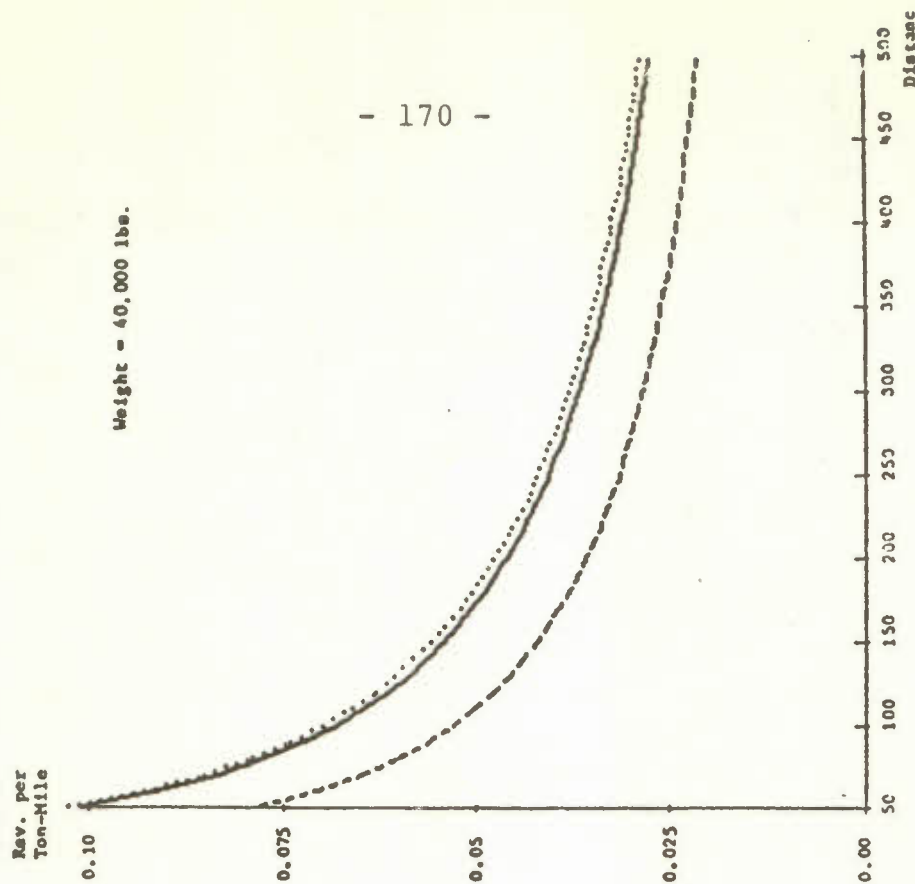
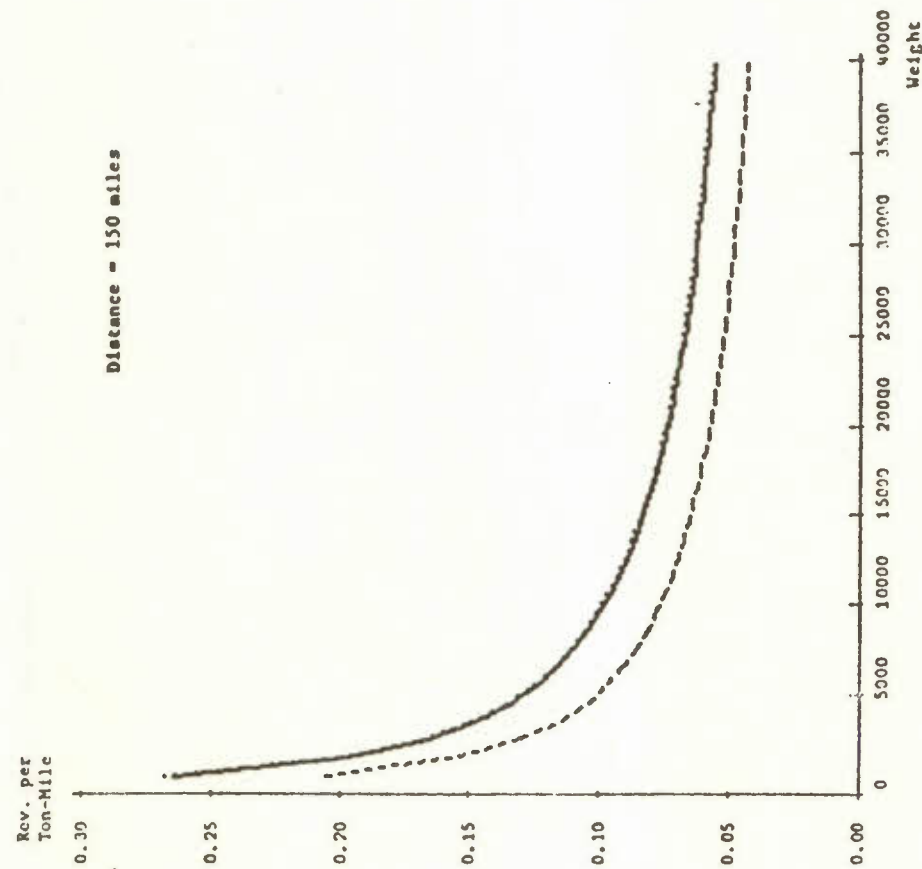


CHART 4.2

Revenue per Ton-Mile by Weight and Distance 1975/1976 Paper End Products

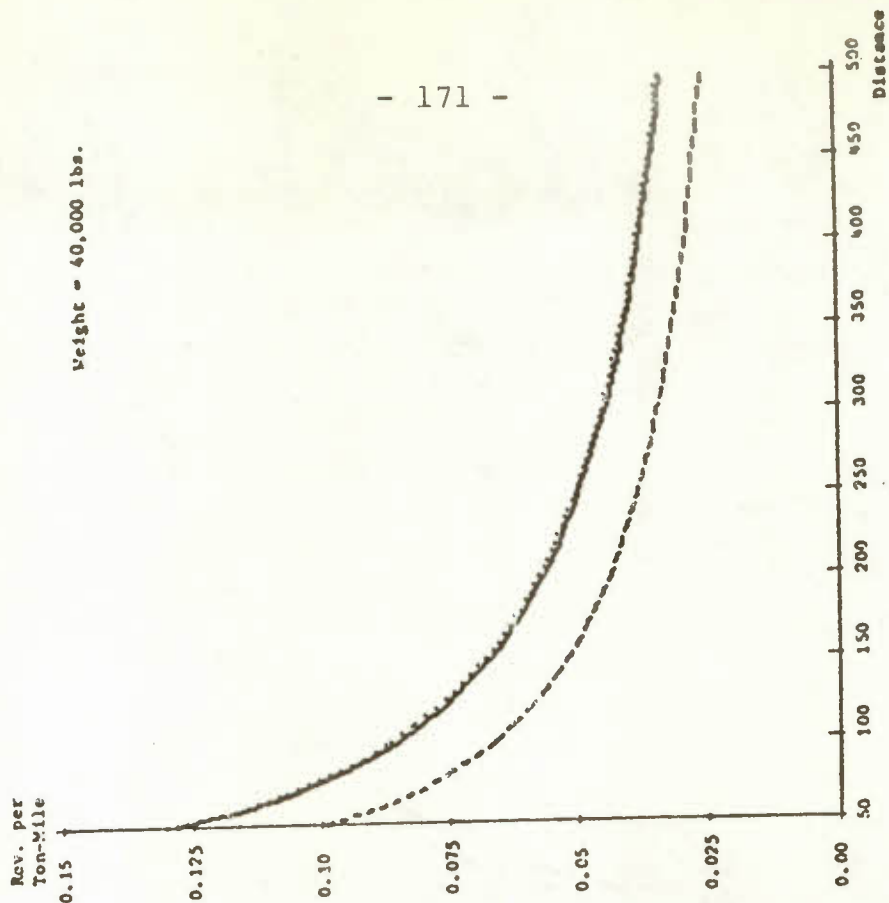
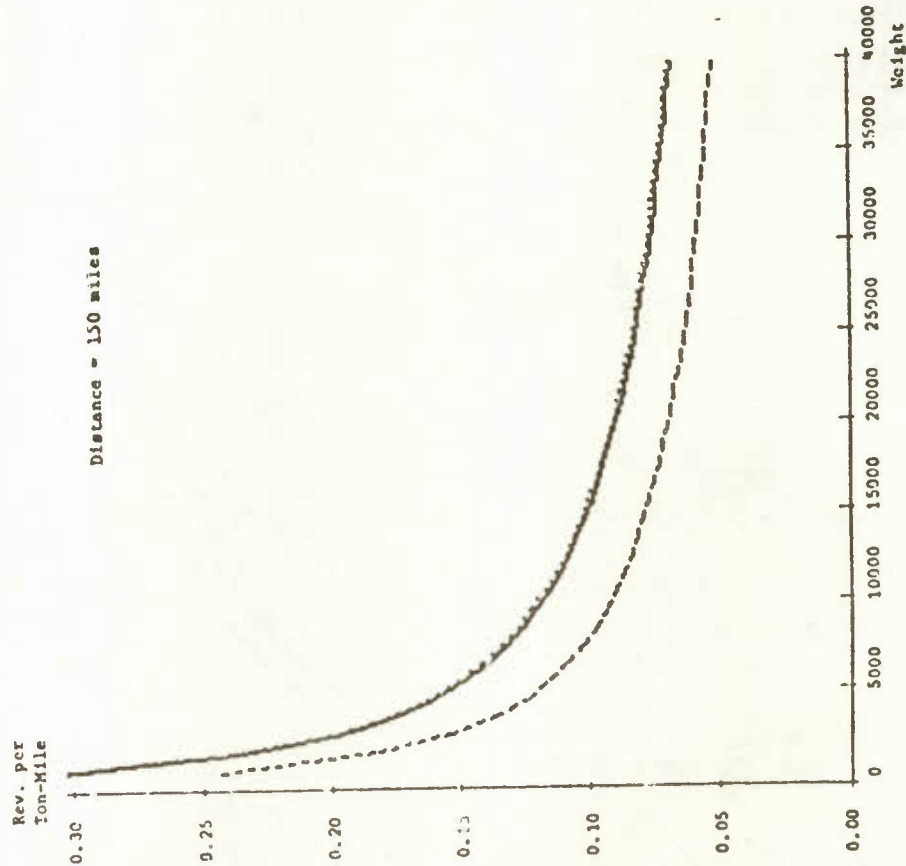
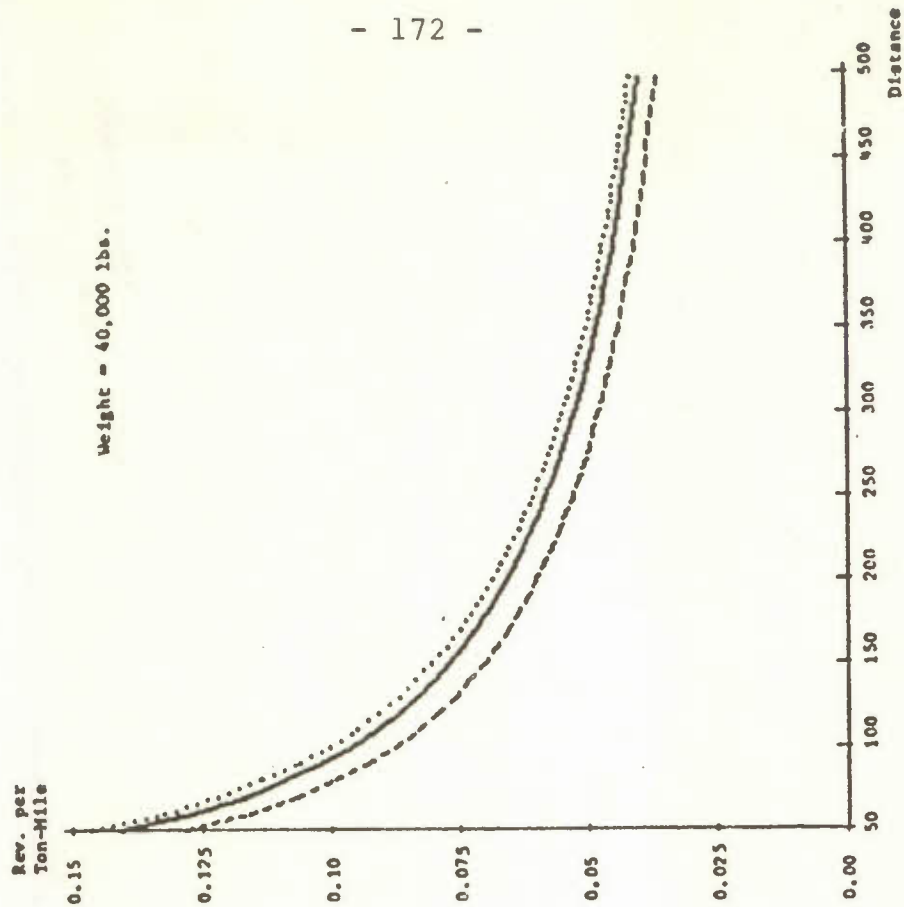
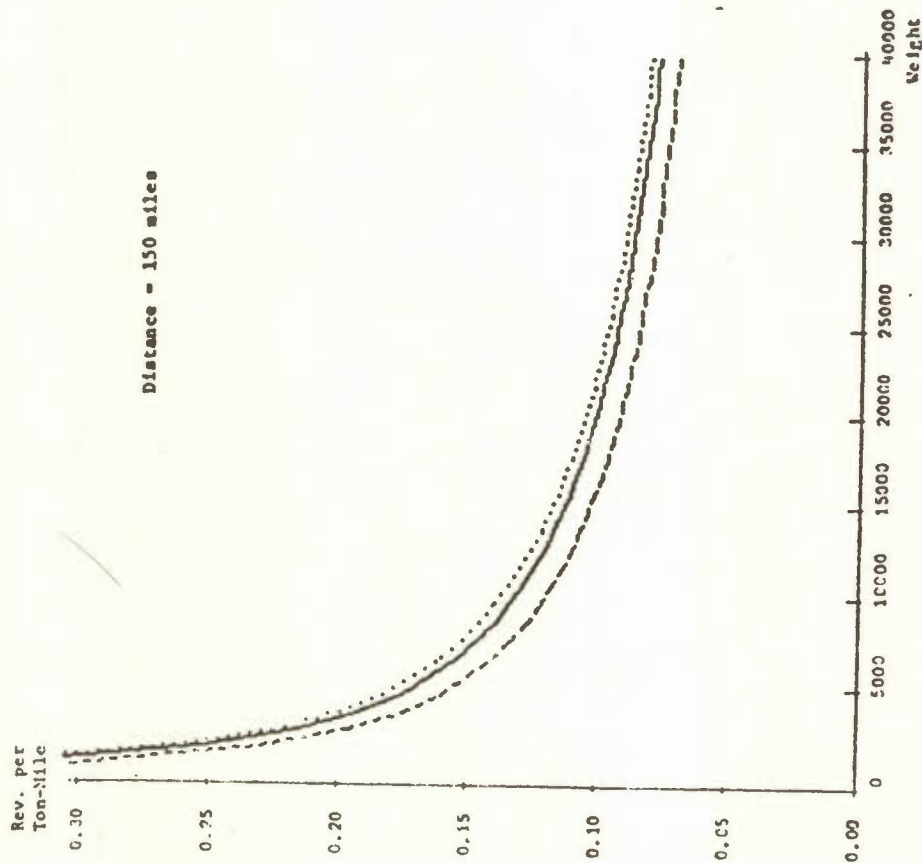


CHART 4.3

Revenue per Ton-Mile by Weight and Distance 1975/1976 Paper for Printing



the actual Saskatchewan relationship. The dotted line, which is slightly above the Alberta curve, is an estimate of where the Saskatchewan curve would have been had fuel oil not been regulated. Charts 4.2 and 4.3 show similar curves for paper end products (regression two), and paper for printing (regression three). Inspection of Table 4.2 does not suggest any characteristics peculiar to the regulated and unregulated groups, other than that they are either regulated or unregulated, which could possibly account for the substantially different relationships between Saskatchewan and Alberta trucking rates.

4.4 CONCLUSIONS

The approach followed here utilizes the fact that in Saskatchewan there is a sizeable group of commodities which are not subject to economic regulation. By comparing the relationships between rates in Saskatchewan to those in Alberta for the regulated commodities and the unregulated commodities we are able to estimate the effect of regulation without the use of cost information. We find large and statistically significant regulation effects which on average over 1975 and 1976 depressed rates in Saskatchewan by between 9% and 23% of what they would otherwise have been.

At the present time, with only two years of data, it is impossible to say whether or not this is a short run phenomena - reflecting perhaps a regulatory lag in having rate increases not match factor cost increases - or a longer term problem with rate regulation as it is currently practiced in Saskatchewan. Exact answers must await more time series data, but some tentative information may be gained from Table 4.6.

TABLE 4.6

Percentage Change, 1975/76, in Financial
Variables for Class III Carriers by Province

	<u>QUE.</u>	<u>ONT.</u>	<u>MAN.</u>	<u>SASK.</u>	<u>ALB.</u>	<u>B.C.</u>
Total Current Assets ¹	-17.8	-6.2	-8.7	-45.0	+24	-13.5
Revenue Equipment ²	- 2.2	-3.6	+1.3	-34.0	+21.5	- 8.3
Total Current Liabilities ³	-11.6	-6.0	-16.9	-27.8	+25.5	- 6.3
Long Term Debt	- 8.0	-1.3	-11.6	-29.4	+ 9.1	- 1.4
Retained Earnings ⁴	-13.3	+12.2	+23.7	-26.1	+ 2.0	-26.1
Capital Stock ⁴	-10.8	+ 3.4	+34.7	-84.4	+35.5	-32.0

Notes:

1. Total Current Assets include Cash, Accounts Receivable, Prepaid Expenses, Materials and Supplies, Inventory and Other Current Assets
2. Revenue Equipment is evaluated at original cost
3. Total Current Liabilities include Bank Loans, Accounts Payable, and Other Liabilities.
4. Retained Earnings plus Capital Stock equals Total Assets at book value net of depreciation minus Total Liabilities.

Source: Compiled from Statistics Canada - "Motor Carriers, Freight and Household Goods", Cat. 53-222.

This Table is compiled from Statistics Canada (53-222), Motor Carriers, Freight and Household Goods Movers for the years 1975 and 1976. The financial information is for Class III carriers (revenue between \$100,000 and \$5,000,000 annually) who are located in the provinces as specified. Work currently being undertaken by the Canadian Transport Commission shows that in 1975 for Canada as a whole, 73.3% of the Class III carriers were purely intraprovincial carriers with only 17.4% and 9.3% engaged in extraprovincial and international business respectively. Thus, financial information for Class III carriers alone is compared to our findings on rates for intraprovincial traffic in Saskatchewan.

Simple inspection of Table 4.6 reveals an accentuated down-trend in the economic health of Saskatchewan based Class III carriers when compared to the other provinces, especially Alberta. For example, total assets and revenue equipment at original cost decreased dramatically for carriers based in Saskatchewan. Reflecting the fact that Saskatchewan trucking firms are probably winding down their operations at a rapid rate, is the observation that total current liabilities and long term debt fell further in Saskatchewan than in any other province. Finally, note the large decline in retained earnings and capital stock for Saskatchewan. For all measures, Alberta based Class III carriers appear to be enjoying favourable economic indicators.

These results confirm an observation in the earlier section that rate and entry regulation in Saskatchewan have been combined in such a fashion that the net effect is lower rates than would otherwise have prevailed. It would be desirable to perform an identical test on an entry regulating province like Ontario, but unfortunately, the list of unregulated commodities is far too small.

APPENDIX 1

GASOLINE AND DIESEL PRICES (INCLUDING ALL TAXES) BY PROVINCE

FOR 1975 AND 1976, EXPRESSED IN DOLLARS

	Que.	Ont.	Man.	Sask.	Alb.	B.C.
Gas						
1975	.788	.777	.762	.710	.681	.736
1976	.851	.840	.822	.800	.741	.809
Diesel						
1975	.737	.717	.669	.625	.577	.668
1976	.800	.780	.729	.735	.637	.715
Index						
1975	.774	.754	.740	.704	.669	.725
1976	.837	.817	.800	.791	.729	.793

Source: Gas and diesel prices come from a major Canadian oil company. The weights used to produce the index are the actual consumption levels of diesel and gas by province from Statistics Canada, "Motor Carriers - Freight and Household Goods Movers", Cat. 53-222.

INDEX OF WAGE AND FUEL COSTS

	Que.	Ont.	Man.	Sask.	Alb.	B.C.
1975	318.8	323.9	297.0	295.2	314.4	350.2
1976	353.47	359.5	330.5	338.2	356.5	391.8

Source: A major Canadian oil company and Statistics Canada, "Motor Carriers - Freight and Household Goods Movers", Cat. 53-222. The weights used to construct this index are the actual proportionate expenditures on labour and fuel by province and year.

Appendix 2

The question we examine here is: how many province-distinguishing variables can be retained in a model fitted to cross-section data that has been collected from a number of provinces? A province-distinguishing variable is one whose value varies only across provinces, but for all observations from a given province these variables are constants. Examples are: diesel fuel and provincial sales taxes; provincial wage rates and dummy variables that represent the regulatory regimes. The assertion is that the maximum number of this type of variable that can be included in the model is $p-1$, if an intercept is included, or p otherwise, where p is the number of provinces. To be specific, we will consider an example in which there are six provinces and show that the inclusion of seven province-distinguishing variables leads to a data matrix which has a rank deficiency of one.

Suppose that there are n observations on each of the k explanatory variables. The data matrix, X , therefore has dimensions $n \times k$. Existence of the least squares estimator requires the rank of X to be k . For convenience, assume that the seven province-distinguishing variables occupy the first seven columns of X . Further, the observations are arranged so that the first n_1 rows of X are from province 1, the next n_2 rows are from province 2 and so on, where $n_1 + n_2 + \dots + n_6 = n$.

We will now consider the matrix formed by the first seven columns of X and show that its rank is at most six which will imply that the rank of X is at most $k-1$.

By the nature of the province-distinguishing variables it is clear that the first n_1 rows of our $n \times 7$ matrix are identical since they refer to the first province. Similarly, the next n_2 rows are identical, and so

on. Consequently, there are only six distinct rows in the $n \times 7$ matrix so that its rank is at most six.

This completes the first argument. Now we will look at the five dummy variables which describe de facto regulation. According to Maister (1977), p. 20:

DE FACTO REGULATION	x_{50}	= 1 if shipment is within a province with strict entry controls, 0 if not (i.e. = 1 for intra-Quebec, intra-Ontario)
	x_{51}	= 1 if shipment is within a province with less strict entry controls, 0 if not (i.e. = 1 for intra-B.C., intra-Manitoba, intra-Saskatchewan)
	x_{52}	= 1 if shipment is within a province with strict rate controls, 0 if not (i.e. = 1 for intra-Manitoba, intra-Saskatchewan, intra-Quebec)
	x_{53}	= 1 if shipment is within a province with less strict rate controls, 0 if not (i.e. = 1 for intra-B.C.)
	x_{54}	= 1 if shipment is within a province with only rate filing required, 0 if not (i.e. = 1 for intra-Ontario)

If we set this up in matrix form we have

	X50	X51	X52	X53	X54
Q.	1	0	1	0	0
O.	1	0	0	0	1
M.	0	1	1	0	0
S.	0	1	1	0	0
A.	0	0	0	0	0
B.C.	0	1	0	1	0

Visual inspection shows: $X51 = X52 + X53 + X54 - X50$. Consequently,

the de facto dummy variables are involved in a perfect multicollinearity which should have caused the least squares method to break down.

Appendix 3

Equation (1), which is described in Section 3.1, includes eight dummy variables which have yet to be discussed. These variables describe various characteristics of the shipment such as whether or not a charge for a roundtrip or a transportation-related surcharge was included. Table A.1 shows the eight regression coefficients for each commodity group.

TABLE A.1
REGRESSION COEFFICIENTS** - EQUATION (1)

Dummy Variable	Live Animals	Food	Crude Materials	Fabricated Materials	End Products	General Freight
Interlined	.313	.122*	.309*	.050	.048*	.024
Heated Van	-.892	.151*	.079	-.065	.025	-.019
Refrigerated Van	.130	.106*	N.A.	-.020	-.272	-1.36*
Piggy-back	2.13	.062	N.A.	.057	-.497	-.418
Fishy-back	.235	.167	.503	.490*	.443*	.118
Container	N.A.	.184	.008	-.033	-.210	.136
Surcharge	-.080	.120*	.172*	.288*	.118*	.173*
Roundtrip	-.037	.522*	.037	.088	.466	.102

** Coefficients denoted by an asterisk have t-statistics greater than 4.0 in absolute value.

If attention is confined to the statistically significant coefficients, only one of these fourteen has a surprising sign (the refrigerated van coefficient in the General Freight equation). To illustrate the

interpretation of these coefficients consider the cost of trucking Food in a refrigerated van. The exponential of the point estimate, 0.106, is 1.11, which implies that there is an 11% surcharge for the use of a refrigerated truck. Similarly, the surcharge for a roundtrip is $[\exp(0.522) - 1.0] = 69\%$ for commodities in the Food group.

APPENDIX 4

In this appendix the estimation form of the model of Section 4 is derived

The total number of observations is $NS = \sum_{i=1}^2 \sum_{j=1}^{NC} NS_{ij}$ where NS_{ij}

is the number of observations on commodity j in province i . Note NC is the total number of commodities and there are two provinces ($i = 1$ for Alberta, $i = 2$ for Saskatchewan). If the equations which relate revenue per ton-mile to weight and distance are allowed to have different multiplicative constants for each commodity in each province then the full set of equations has the form

$$y = W^a H^b e^Z,$$

where

$$Z = \sum_{i=1}^2 \sum_{j=1}^{NC} c_{ij} X_{ij} + u$$

where X_{ij} is a dummy variable which has unit value for commodity j in province i and zero otherwise. Note that each of the vectors y, W, H, X_{ij} are $NS \times 1$. Also for convenience we have omitted the surcharge and time interaction variables that appear in equation (i) of the text.

The restrictions that we impose in order to estimate the effect of regulation in Saskatchewan can be described in the following way.

$$c_{1j} - c_{2j} = d_u, \quad j = 1, \dots, NC_u,$$

$$c_{1j} - c_{2j} = d_r, \quad j = NC_r, \dots, NC,$$

where NC_u is the number of commodities which are unregulated and $NC_r = NC_u + 1$ is the first of the regulated commodities which are indexed NC_r to NC . The

first set of restrictions forces the ratio of unit prices in Alberta to those in Saskatchewan to be identical for all unregulated commodities. In fact $[\exp(d_u)-1] \times 100\%$ is the percentage by which Alberta rates exceed Saskatchewan rates for unregulated commodities. A similar interpretation can be placed on the second set of restrictions. The effect of regulation is measured by $d_u - d_r$.

To derive the estimable form, substitute for c_{2j} to give

$$\begin{aligned} Z &= \sum_{j=1}^{NC} c_{1j} X_{1j} + \sum_{j=1}^{NC} (c_{1j} - d_u) X_{2j} + \sum_{j=NC_r}^{NC} (c_{1j} - d_r) X_{2j} \\ &= \sum_{j=1}^{NC} c_{1j} (X_{1j} + X_{2j}) - d_u \sum_{j=1}^{NC} X_{2j} - d_r \sum_{j=NC_r}^{NC} X_{2j} \end{aligned}$$

Now define $c_{11} = e$ and $c_{1j} = e + e_j$, $j = 2 \dots NC$, So

$$\begin{aligned} Z &= e \sum_{j=1}^{NC} (X_{1j} + X_{2j}) + \sum_{j=2}^{NC} e_j (X_{1j} + X_{2j}) - d_u \sum_{j=1}^{NC} X_{2j} + (d_u - d_u - d_r) \sum_{j=NC_r}^{NC} X_{2j} \\ &= e \sum_{j=1}^{NC} X_{1j} + \sum_{j=2}^{NC} e_j C_j + (e - d_u) \sum_{j=1}^{NC} X_{2j} + (d_u - d_r) \sum_{j=NC_r}^{NC} X_{2j} \end{aligned}$$

Hence,

$$Z = \sum_{j=2}^{NC} e_j C_j + e D_1 + (e - d_u) D_2 + (d_u - d_r) D_3$$

where $C_j = X_{1j} + X_{2j}$ is a commodity dummy

$D_1 = \sum_{j=1}^{NC} X_{1j}$ is an Alberta dummy

$D_2 = \sum_{j=1}^{NC} X_{2j}$ is a Saskatchewan dummy

$D_3 = \sum_{j=NC_r}^{NC} X_{2j}$ is a Saskatchewan dummy for regulated commodities.

REFERENCES

- Alberta (1976) Reviewing Intra Provincial Trucking Regulations.
Report of the Select Committee of the Legislative Assembly
(Edmonton)
- Annable, J. E. (1973) "The ICC, the IBT, and the Cartelization of the
American Trucking Industry". Quarterly Review of Economics and
Business, 13, 33-47.
- Burck, C. G. (1978) "Truckers Roll Toward Deregulation". Fortune,
18 Dec., 74-85.
- Currie, A. W. (1967) Canadian Transportation Economics (Toronto:
University of Toronto Press)
- Globe and Mail (1978) "Roadblock to Competition" 23 Nov., (Toronto)
- House, R. K. and Associates (1977) Economic Regulation of the For-Hire
Trucking Industry, unpublished report for the Anti-Inflation
Board.
- Maister, D. H. (1977) Regulation and the Structure of Trucking Rates
in Canada, unpublished report for the Anti-Inflation Board.
- Maister, D. H. (1978a) "Regulation and the Level of Trucking Rates in
Canada", in Motor Carrier Economic Regulation, Proceedings of a
Workshop Conducted by the Committee on Transportation, Assembly
of Engineering, National Research Council, in cooperation with
The Transportation Center of Northwestern University (Washington,
D.C.: National Academy of Sciences)
- Maister, D. H. (1978b) "Deregulation and the Level of Trucking Rates
in Canada: Additional Evidence". Transportation Journal, 49-62.
- McLachlan, D. L. (1972) "Canadian Trucking Regulations". Logistics
and Transportation Review, 8, 59-81.
- Moore, T. G. (1977) "The Beneficiaries of Trucking Regulation", report
77-17, Hoover Institute, Stanford University.
- Ontario, Ministry of Transportation and Communications (1975) Truck
Transportation in the Province of Ontario (Downsview)
- Ontario (1977) A Public Policy Direction for the Highway Transportation
of Goods. Final Report of the Select Committee of the Legislature.
- Palmer, J. (1973) "A Further Analysis of Provincial Trucking Regulation".
Bell Journal of Economics and Management Science 4, 655-64.
- Sloss, J. (1970) "Regulation of Motor Freight Transportation: A
Quantitative Analysis of Policy" Bell Journal of Economics
and Management Science 1, 327-66.

Spady, R. H. and Friedlaender, A. F. (1978) "Hedonic Cost Functions for the Regulated Trucking Industry". Bell Journal of Economics, 9, 159-79.

Statistics Canada (1975, 53-222) Motor Carriers, Freight and Household Goods Movers (Ottawa)

Statistics Canada (1976, 53-222) Motor Carriers, Freight and Household Goods Movers (Ottawa)

Statistics Canada (1976, 72-002) Employment Earnings and Hours (Ottawa)

A COMPARATIVE EXAMINATION OF THE IMPACT OF REGULATION
ON THE OPERATIONS AND COSTS OF INTRA PROVINCIAL
TRUCKING FIRMS IN ALBERTA AND ONTARIO

Robert J. Lord, Associate Professor
School of Business Administration
University of Western Ontario

Jack Shaw, Lecturer
Wilfrid Laurier University

Acknowledgements

This study has been completed only through the extensive cooperation of many people: the Economic Council of Canada, the motor carriers reported upon and members of the Alberta and Ontario Trucking Associations and Provincial Motor Transport Boards and Ministries. We are deeply indebted to all who have taken the time to answer our questions, or helped in many other ways. We obviously would like to acknowledge every participant personally, but unfortunately, doing so would violate our promises to the firms that their identities will remain confidential. We are most grateful to Mr. Steve Flott of the Ontario Trucking Association and Mr. Robert Drinnan of the Alberta Trucking Association who went out of their way to help us. We also want to acknowledge the assistance we received from Mr. R. Blackborrow of the Canada Transport Tariff Bureau and Mr. M. Mikkelsen of the Western Tariff Bureau. While we gratefully acknowledge the tremendous amount of help we have received, we accept full responsibility for the data presented and for the conclusions of this study.

Rationale

A Comparative Examination of the Impact of Regulation on the Operations and Costs of Intra-Provincial Trucking Firms

Chapter 1 RATIONALE FOR THIS STUDY

INTRODUCTION

Ever since the national railroad strike in the early 1950's, when the long-haul trucking industry was born in Canada, trucking has played an increasingly important role in the Canadian economy. Trucking has changed the location of Canadian industry, and modified how industry operates. Trucking provides an efficient, reliable, flexible service not available from other forms of transportation. With the rail strike shippers found that goods could reach Winnipeg in half the time by truck. Ever since the influence of trucking has escalated--the truck as a warehouse on wheels has become very real.

In the last 20 years, the development of better roads and bigger and better highway vehicles has led to the evolution of a system which allows the auto industry to operate virtually without in-plant part inventories. Evolution has also led to specialization and improved efficiency. Gone are the days of expensive man handling of banded grain and fertilizer. With the development of the tank truck, bulk handling has become an effective, inexpensive means of distributing many cargos.

Trucks play an important role in the lives of Canadians. Almost everything we eat and wear will have moved in a truck sometime during its travels from grower, or manufacturer to our local grocer, or retailer. And many Canadians are dependent upon trucking for their livelihood, both as members of the trucking industry and as members of firms dependent upon trucks to provide raw materials and to distribute finished goods.

Because the trucking industry is so important to Canada, it recently has become the heart of a significant controversy concerning the extent of government involvement in this industry. One side in the controversy supports a major reduction in government interference in decisions concerning where carriers operate their vehicles, what commodities carriers haul, what communities and customers carriers serve and at what costs. The other side of the controversy supports government regulation of these decisions and is opposed to any significant move toward deregulation.

Rationale

Government is involved in regulation of the trucking industry to different degrees across the provinces of Canada. However, with the exception of Alberta, it can be stated that the trucking industry in Canada is extensively regulated. The history of regulation in Ontario is indicative of the route to such controls.

Regulation of the Trucking Industry in Ontario

Regulation of the automotive transport industry in Ontario began in 1928, initially as a response by the railways to the competition they faced from the fledgling trucking industry. Further pressure for regulation brought on by the depression led to the 1934 Public Commercial Vehicles Act giving control over entry to the trucking industry to the Ontario Municipal Board.

Even prior to the depression there had been a decrease in truck shipping rates in Ontario. An inadequate understanding of business principles caused prices to fall, even further, as firms competed for the little freight available. This situation was escalated with the fall in industrial output. As the depression continued entry barriers into the trucking industry declined for two reasons. The cost of used equipment fell as the price of scrap metal fell, and the cost of labour fell due to widespread unemployment. The number of trucking firms increased, and a period of destructive rate cutting ensued. It was against this background that the Automotive Transportation Association and the railroads lobbied for and succeeded in getting regulation of the trucking industry.

ARGUMENTS FOR REGULATION

The major arguments advanced for regulation of the trucking industry are:

- 1) to prevent reoccurrence of the destructive competition observed during the depression
- 2) to ensure adequate service to all shippers and communities
- 3) to prevent discrimination in rates between large and small shippers

Rationale

A major argument for regulation is that without controls a period of destructive competition will again result. It is felt that new entrants into the industry will only be able to attract business by rate cutting. Without regulation the number of independent owner operators can be expected to increase. As a result, either because these owner operators do not understand their costs, or because they are willing to subsidize the shipper by not withdrawing a reasonable wage, the owner operators will undercut established carrier rates. Such rate cutting will lead to diminished services as carriers eliminate costly terminals and LTL movements.

It is a concern, that wave after wave of unsophisticated entrants will enter the market, that extends the perhaps unrealistically simple destructive competition argument. Deregulation means more than meeting the threat of a rate cutting competitor. The threat is having to face continuing waves of such competitors.

An owner/operator, buys a truck, and to enter the market, he cuts price below a level necessary to provide a reasonable return or to provide for adequate maintenance or replacement. For the established carrier, unable to compete at these uneconomic rates, the freight is gone until the owner/operator fails. Then the freight may return, and the rates may even firm until the next unsophisticated operator attacks. The established carrier should be able to fend off the first wave of competition, because he is established and has other freight to haul. He may survive even two or three waves, but continued assaults will eventually cause his collapse, and the collapse of service expected by shippers and communities.

A second argument for regulation is cross subsidization, where more attractive loads and large communities help to pay for less attractive loads to smaller communities through higher rates. Those in favour of regulation argue that overall rates are not higher under regulation, but that the rates have a lower variance than they would have under deregulation.

Tied in with the cross subsidization argument is the concern for service to small towns. Under regulation, small towns must be served regardless of freight volume. There is no such pressure under deregulation. With deregulation, it is safe to assume that new entrants will be attracted to the high volume lanes, those that are presently subsidizing the "less attractive" lanes. Thus the benefit, if there is any, from increased competition will go to the large shippers and communities.

Rationale

There are several other arguments used for regulation, although many seem to be lacking in hard substance. Under deregulation, it is argued that huge companies will form, relying on predatory pricing to keep out competition. UPS is often mentioned as an example of this threat. It is also argued that labour is better paid, and equipment is kept in better order because of regulation.

ARGUMENTS AGAINST REGULATION

The protagonists of deregulation argue primarily that regulation is inefficient, and that it provides the licensed carriers with an undeserved monopoly which results in excessive shipping and transportation costs.

Deregulators argue that regulation leads to a misallocation of resources. Management time and money, are expended in securing operating rights and then protecting these rights. And, the cost of enforcement is substantial. The recent Ontario Select Committee Report on highway transportation indicated that at the present time some \$2 million annually is being spent on enforcement of Ontario highway transport regulations. This use of firm and government resources, it is argued, provides little benefit to society.

Deregulators have also argued that regulation leads to inefficient operations and causes needless empty backhauls. Carriers with rights to a market may not have equivalent rights out of that market. This imbalance raises the costs to the community served.

In general, those in favour of deregulation argue that the free enterprise system should be given an opportunity to work in the motor carrier industry. They argue that free enterprise is the only way to ensure that resources are allocated correctly, that labour and capital earn the proper return and that technological innovation takes place. In a free market the high degree of mobility of resources in this industry should allow for any imbalances to be righted through the market mechanism. Low entry costs will allow for new entrants where there is excess demand and high capital turnover will cut supply where an excess occurs.

Generally, the proponents of deregulation consider the arguments for regulation as either unsound or outdated. The deregulators simply do not believe that the industry would fall prey to the destructive competition that occurred during the

Rationale

depression. It is argued that it is not reasonable that new entrants would be so foolish as to commit economic suicide by operating at uneconomic rates, nor that successive competitors would not learn from the failures of those unfortunate enough to be part of the early waves against the existing carriers.

Further, it is argued that additional competition would improve the operations of existing carriers. The industry is accused of failures to innovate and of capitulation to excessive labour demands. Thus additional competition would encourage carriers to operate more efficiently.

Regarding the provision of services and rate discrimination, deregulators appear resigned to accepting higher costs for some goods and markets and lower rates and levels of service for others. Deregulation would lead to competition for high volume traffic and presumably would lead to reduced rates for that traffic. As a result, however, the carrier who previously could afford to provide service to smaller communities and shippers at rates similar to those paid by the large shipper would no longer be able to do so. Each shipper and community would be expected to pay transportation rates related to the costs of the service provided or see their service levels decline.

Critics of regulation also claim regulation inhibits motor carriers productivity. They argue restrictions in operating authorities leads to excessive interlining and to the inhibition of the development of efficient intermodal operations. Other adverse effects are supposed to include unduly complex rate structures and high barriers to entry due to the difficulty of obtaining operating authorities.

THE REASON FOR THIS STUDY

Because the trucking industry is so important to Canada, the controversy between the opponents and proponents of deregulation is far more than an academic question. We live in a time when the involvement of government in business is being challenged outside government and even by government itself. The 1978 meeting of the Canadian Provincial Premiers and Federal Prime Minister resulted in a request to the Economic Council of Canada to undertake studies of government regulation which appear to be having substantial impact on the Canadian economy.

Rationale

The First Ministers expressed a concern that:

'The burden of government regulation on the private sector should be reduced, and the burden of overlapping federal and provincial jurisdictions should be eliminated.'

This concern poses many questions about the impact of government regulation upon Canadian industry. It poses questions concerning:

- the extent of regulation
- the form of regulation
- the effectiveness of regulation
- the desirability of regulation
- the procedures for reducing the level of regulation or improving its effectiveness.

In order to address these questions, the Economic Council has undertaken a series of investigations of regulation throughout the Canadian economy. One of these investigations is a study of the economic regulation of the for-hire trucking industry. This investigation focuses on the rationale and effects of provincial control over entry, tariffs and conditions of service. It consists of a series of studies which:

Outline the structure of the regulatory process across Canada's provinces.

Examine the legal and administrative costs of participating in the regulatory process.

Examine the effect of regulation on the operations of the industry in Quebec.

Compare the trucking rate structures between the provinces.

and this study, which contrasts the operations of unregulated intra-provincial carriers in Alberta with similar regulated carriers in Ontario.

The purpose of the Economic Council's examination of the for-hire trucking industry is to provide government with a well developed analysis of the regulation/deregulation issue as a basis for establishing future policies. The proponents of deregulation would have government extract better performance

Rationale

from the industry by reducing controls over who can operate in it and the services and rates to be provided. The opponents of deregulation argue that any such changes would seriously harm the industry, if not destroy it, and that if improvement is to come, more regulation, or at least more effective regulation and enforcement may be necessary.

Obviously, before government can move in either of these directions a clear understanding of the impact of any proposed changes must be understood and evaluated. The practical problem is that very little real information exists in Canada about either the impact or effectiveness of regulation of the for-hire motor carrier industry.

Arguments advanced by both proponents of regulation and deregulation often represent only the position held by the groups speaking. Everyone involved in the discussion appears to have their own bias or vested interest to protect, and there is very little data to substantiate strongly held beliefs. The Council's studies are intended to develop information by means of which the position for and against regulation can be addressed.

THIS STUDY

This study addresses the question: Is there any rationale for having economic regulation of trucking? by contrasting the operations of unregulated carriers in Alberta with regulated carriers in Ontario.

The basic questions asked by this study are found in the arguments of the proponents of deregulation. They contend that deregulation should reduce transportation costs through increased competition and improved carrier efficiency. The purpose of this study is to examine this contention by exploring the operations of a limited sample of unregulated carriers in Alberta and to contrast these operations with the operations of regulated carriers in Ontario. Its intent is to establish if unregulated firms operate differently and/or have different operating costs. Further, it attempts to establish if any differences identified can be attributed to specific regulations or lack thereof.

In this investigation a comparative case study methodology is utilized. A detailed examination of a limited number of firms, in detail, is appropriate due to the exploratory nature of this investigation. Answering the question -- whether regulated carriers operate differently than their unregulated counterparts -- requires a comprehensive understanding of operations,

Rationale

policies, procedures and attitudes which can only be gained through a case study approach.

Secondly, this study is concerned with operating costs. While some operating statistics can be obtained from Statistics Canada (3), these statistics are highly aggregated, and tend to be out of date. This study was concerned with collecting data which is as current as possible because of recent significant changes in energy and equipment costs. But obtaining operating cost information can be difficult without the explicit cooperation of the firms studied. Obtaining this cooperation was possible through the case study methodology.

Finally, this study was concerned with generating comparable information among the firms studied. Because there are no standardized accounting practices for the trucking industry, the comparability of accounting data between firms can be suspect. Understanding the idiosyncrasies of an individual firm's definition of costs so that comparisons between firms are meaningful requires a case study approach.

OUR AUDIENCE

This report has been prepared with several audiences in mind. For the Economic Council, this study is to provide detailed empirical evidence which may assist the Council to more readily interpret and understand the more complex analyses and models developed by its other investigations. Our hope is that our detailed information, about the few firms we have studied, will help place in perspective the overall patterns apparent in the other studies. In addition, because we have had access to detailed operating and cost data and have had extensive discussions with carriers, we hope to provide insights into the reasons for, and managements' attitudes towards, any differences which may exist.

We have also written this study for the for-hire carriers. During our preliminary investigations, we were astonished by the lack of data existing about the operations and economics of the Canadian trucking industry. More importantly, during our discussions with members of the industry, we have been aware of deeply held fears about the future of the industry due to the uncertainties surrounding future government action. Our hope is that this study will help alleviate some of these fears. It outlines some of the conditions which exist in an unregulated market. It reports how firms have adapted to these conditions and indicates that it is possible to be successful without

Rationale

regulation. If deregulation becomes government policy, this study may suggest how the operations of regulated carriers may have to change.

Finally, this report poses a challenge to other academics and students. The trucking industry is essential to the Canadian economy. However, throughout our study, we have been made aware of its fragmentation and lack of sophistication. More importantly, it is an industry which appears to have attracted little academic interest and for which little theoretical or practical help is available. Given the serious challenges the industry faces from rapidly rising costs, changes in government attitudes, shipper behaviours and private fleets, the for-hire industry is in need of study and assistance.

PLAN OF THE REPORT

The remainder of this report is structured as follows. In the next chapter we develop a description of the motor carrier industry and identify areas of carrier operations as a guide to our field data reported in subsequent chapters.

Chapter three discusses why this study is focused on the Alberta and Ontario intra-provincial for-hire markets, and provides an overview of the regulatory and economic conditions in these two markets.

Chapter four discusses how the firms in the study were selected and provides extensive descriptions of each of the firms. In this chapter, we describe how the firms are organized, the markets they serve and their physical operations.

Chapter five continues the reporting of the data gathered. It summarizes the data about the firms and then focuses on their financial performance.

In addition to financial and descriptive data, the study also collected opinions and perceptions during our extensive interviews with officers of the firms studied and with other participants in the industry. Highlights of these opinions are summarized in Chapter six.

In Chapter seven, we directly address the question of the impact of regulation upon rates and levels of service. Chapter 7 contrasts Alberta and Ontario tariff rates for a select sample of quantities, lanes, and mileages.

Rationale

Chapter eight reports our analysis of the data gathered and our interpretation of that analysis. In this chapter, we isolate the significant differences identified between the Alberta and Ontario markets and the operations of the Ontario and Alberta carriers. In addition, we attempt to evaluate these differences and to relate why they occur to differences in market conditions and/or to the differing regulatory environments.

Finally, in chapter nine, the conclusions to be derived from this study are reported, and our recommendations, both to the Economic Council and to the for-hire industry, are discussed.

An Important Caveat

This study has only been possible through the extensive cooperation of the firms studied. The firms reported in this study were not compelled to cooperate with us. They have cooperated only due to their deep concern for the future of their industry.

As researchers we are deeply indebted to these individuals. We have been extremely concerned throughout this study and throughout the drafting of this report, not to violate the confidences in which much of the data reported herein was provided. It has been our very real concern that wide dissemination of some of the data gathered could be harmful to the carriers studied. For this reason we have not identified, by name, the data reported. We appreciate that this form of reporting may be frustrating to individual readers interested in the operations of specific carriers, in specific markets, or the problems of specific lanes, but we have throughout this report opted for protection of the firms included in it. Hopefully, the reader will appreciate this reason for our lack of fully detailed reporting and will find our analysis of the overall patterns presented in Chapter eight a satisfactory substitute for greater detail.

Rationale

References:

1) Government Regulation Issues and Alternatives, The Ontario Economic Council, 1978

2) See for example, 'The Pros and Cons of Deregulating the Truckers', Fortune, June 18, 1979

3) Statistics Canada: Motor Carriers - Freight and Household Movers (53-222) published by the Transportation and Communications Division

Industry

Chapter 2 THE FOR-HIRE MOTOR CARRIER INDUSTRY

Assessing arguments that greater competition will lead to greater carrier efficiency and thus lower transportation costs requires an understanding of the operations of the motor carrier industry. Fortunately for the purposes of this study, previous research, particularly by Daryl Wyckoff in his unique studies(1,2,3) provides useful insights into the trucking industry. The following description of the industry is summarized from the Wyckoff studies.

OPERATIONS

The operations of the general-commodity carrier handling less-than-truckload (LTL) freight may be described as follows:

- 1) Collect freight from shippers in response to specific telephone requests or standing orders in local pick up and delivery (P & D) trucks.
- 2) Unload freight at origin terminal and assemble into trailer-load lots for inter-city movement. It is this sorting operation which characterizes LTL movements. Freight from multiple shippers must be aggregated by destination.
- 3) Inter-community movement (the linehaul)
- 4) Unloading freight at destination terminal, with consolidation by consignee for loading in local delivery equipment.
- 5) Delivery to consignees.

Normally, truckload (TL) freight does not pass through the terminal but is collected at the shipper's dock and moved in the same trailer to the consignee.

While these descriptions are typical of the traditional pure LTL or TL carrier, hybrid combinations are also possible. At origin, multiple pick ups on an LTL basis may be assembled into a single shipment to one consignee, so that once loaded, the trailer can be delivered direct to the consignee. The inverse of this form of operation occurs if one shipper has goods for multiple destinations in a geographic area. In these circumstances, the trailer may be loaded for the linehaul at the

Industry

shippers' docks, but the load will have to be broken (reassembled for delivery) at the destination terminal. A third variation, the "pedal run", starts with one or more shippers' goods on a trailer which is then pulled to several communities where the freight is delivered to a series of customers.

There are three distinct, but interrelated, stages in motor carriage operation: pick up and delivery, terminal operations and linehaul or over the road movement. Backing up these key stages are a variety of secondary functions: rating and billing, dispatching, claims processing, maintenance, sales and marketing and general management.

Terminals are located throughout the operating system in relatively close proximity to centers of shippers and consignees. Representing a high percentage of the total capital investment of any LTL carrier, efficient use of terminal facilities is considered a crucial factor in motor-carrier success.

Local pick up and delivery and terminal operations are critical because they are the area of operations where the greatest productivity losses or gains can occur. Local operating problems occur because pick up and delivery trucks must operate during the height of daily traffic congestion in urban areas, or because many terminals operate at maximum loading at night when it is often difficult to attract the best workers.

Improvements in engines and vehicle design and construction, investments in labour-saving equipment and work methods, and the practice of operating equipment for shorter lives before trading-in, have all contributed to increases in maintenance productivity.

Inter-city productivity gains are a complex combination of more powerful equipment (thus faster on grades), better highways (reducing congestion on grades), gradual relaxation of size and weight limitations and speed limits. In addition, some carrier operating practices have contributed to the overall improvement of inter-city (or over-the-road) productivity. During the past three decades, there has been a general progression from "roll-and-rest" operations, where one driver drives until he has consumed his allowed driving hours, then rests until he may legally drive again, to "sleeper" operations, where a team of drivers trade off driving and sleeping to eliminate idle time for resting, to "relay" or "slip-seat" operations, where drivers exchange units at designated divisions points on tight schedules.

Industry

Motor carriers have traditionally stressed personal selling. This has come about because of the rather intangible nature of service. For many years, salesmen have relied heavily on interpersonal relations with shippers. However, in recent years, these interpersonal relations have tended to be increasingly built on professional proficiency and assistance rendered to the shipper's traffic manager by the salesman.

COST and FINANCIAL STRUCTURES

Motor carriers operate on relatively thin profit margins. Wyckoff's U.S. data illustrates that operating ratios (the percent that operating costs before financing costs are of revenue) exceeds 95 percent. Relatively slight variations in expenses or levels of revenues can lead to substantial losses.

It has been observed that the profitability of motor carriers is variable with company size. The transportation (truck drivers, fuel, and rents), maintenance, depreciation, traffic (and sales) and license expenses are generally the same proportion of revenue at all levels. General and administrative expenses, because of a large component of fixed costs, decrease as a proportion of revenue for larger companies. However, the proportion of revenue expended on terminal operations, sorting and consolidating of less-than-truckload freight tends to increase with increased revenues.

Motor carriers have traditionally relied on internally generated funds and debt financing through commercial banks and equipment manufacturers. For many years, equipment manufacturers, who were willing to finance trucks and trailers because of their desire to sell them and ability to resell them in cases of financial failure, provided the bulk of equipment financing for the industry.

As the industry has matured banking arrangements have provided motor carriers with great flexibility for equipment expansion, but have done nothing for financing of terminal properties and buildings, working capital, or purchase of operating authorities. Rapidly growing carriers have typically been limited on these aspects by their ability to generate funds.

Industry

References:

1) D.Daryl Wyckoff, Organizational Formality and Performance in the Motor-Carrier Industry, Lexington Books, 1974

2) Wyckoff & Maister, The Owner Operator: Independent Trucker, D. C. Heath and Company, 1975

3) Wyckoff & Maister, The Motor Carrier Industry, D. C. Heath and Company, 1977

Markets

Chapter 3 THE ALBERTA AND ONTARIO MARKETS

Motor carriers in Alberta and Ontario operate in different regulatory environments. Alberta and Ontario carriers also serve different markets. For this reason, this chapter provides a contrast between the Ontario and Alberta economies, motor carrier markets and regulations of the motor carrier industry.

REGULATIONS

Under the BNA Act the provinces have exclusive jurisdiction over intra provincial trucking. While the Federal government has jurisdiction over extra provincial trucking it has delegated the mechanics of this control to the provinces. Because of the Federal Motor Vehicle Transport Act, all of the provinces have regulatory agencies involved in the licensing of extra provincial transportation.

The province of Ontario regulates intra provincial trucking. In contrast, Alberta exercises only a nominal control over intra provincial carriers, a control which does not limit entry.

Alberta

The Public Service Vehicle Act of Alberta empowers the Alberta Motor Transport Board to regulate the trucking industry in the province. Although the AMTB could regulate intra provincial carriers, it has been government policy to allow the intra industry to operate with minimal regulatory requirements. As a result the procedure involved in obtaining an intra provincial operating authority and commencing a for-hire trucking operation in Alberta is relatively simple.

The Alberta Motor Transport Board stipulates:

- residency requirement
- the purchase of a Public Service Vehicle licence plate
- proof of insurance
- posting of a fidelity bond

Markets

Meeting the four basic requirements permits any properly licensed resident of Alberta to commence an intra provincial for-hire trucking operation with no restriction on routes, rates, commodities transported or equipment. (1)

Ontario

In Ontario no person shall operate a for-hire commercial vehicle on a highway unless an operating license has been issued by the Minister of Transportation for that vehicle. But the Minister of Transportation shall not issue an operating license unless the Ontario Highway Transport Board, after a public hearing, approves the issue of the license. Licences may only be issued on the ground that public necessity and convenience warrant their issue.

Having received an operating authority, any Ontario carrier with over four licensed vehicles is required to file his rates with the Ontario Highway Transport Board, and by law he cannot charge any rates other than those filed.

Finally, having received his license a carrier may not discontinue operations or transfer ownership of his license to another operator without ministerial permission. In addition to continued service, other conditions necessary to maintaining a carriers' license include adequate insurance, and financial solvency. (2)

In summary, Ontario regulates entry into the for-hire trucking industry through an extensive hearing process. Potential carriers must apply for operating rights and existing carriers have an opportunity to defend their services. Of 1525 applications considered at hearings in 1975 only 1010 were granted (3). For this reason entrance into the for-hire motor carrier in Ontario is considerably more difficult than is entry in Alberta.

THE MARKETS

Transportation is essential to modern trade, and the converse is also true. The motor carrier industry, to operate efficiently, requires products to carry. And, it needs these products flowing in both directions. Balanced movements imply population centres with diversified manufacturing facilities and industries connected by a highly developed road network. While both Alberta and Ontario provide these elements of a motor

Markets

carrier market, the two provinces are quite different.

Three principle differences exist between Alberta and Ontario age, population, and economic base. Ontario has been referred to as Canada's middle aged province (4,5). The province's location and natural resources have provided a massive industrial base that provides half of the nation's manufactured goods, and supports 8,500,000 Canadians. Alberta, on the other hand, is still a boisterous young province. Its real growth has occurred only since discovery of oil in 1947, and its economy is still highly natural resource and agriculture oriented.

Population

Perhaps the most readily apparent difference between the two provinces is the difference in population. Alberta's rapidly growing population (1,985,000 in 1978) resides in five cities, of which only two, Calgary and Edmonton, had populations of over 100,000 in 1977 (Table 1). In contrast Ontario's 8,500,000 people live in more than 30 cities including 17 with populations in excess of 100,000 (Table 2).

Table 1
Population and Percentage Change
of Population

	Ontario		Alberta	
	Population	% Change	Population	% Change
1951	4597542		939501	
1956	5404933	17.6	1123116	19.5
1961	6236092	15.4	1331944	18.6
1966	6960870	11.6	1463203	9.9
1971	7703106	10.7	1627874	11.2
1976	8264465	7.3	1837869	12.9
1977	8354000	1.1	1895600	3.1
1978	8443800	1.0	1985200	4.7

Source: Canada Yearbook 1978-1979 (table 4.9)

Labor Costs

In recent years Alberta's population has been growing more rapidly than Ontario's (Table 1) as the rapid development of massive projects like the Athabasca tar sands, rising increases in petroleum prices and the Alberta government's efforts to

Markets

Table 2
Number of Municipalities

	Ontario		Number of Communities Alberta	
	1976	1977	1976	1977
Population				
<10000	689	677	313	311
10000-49999	66	76	12	14
50000-99999	13	14		
>100000	14	17	2	2

Source: Canada Yearbook 1978-1979 (table 3.6)

diversify the Alberta economy have provided strong economic growth. Alberta's unemployment rate remains considerably below that of Ontario (Table 3).

Table 3
Employment and Unemployment Rates

	Ontario		Alberta	
	Employment (000's)	Unemployment Rate	Employment (000's)	Unemployment Rate
1971	3114	5.4	643	5.7
1972	3248	5.0	668	5.6
1973	3400	4.3	702	5.3
1974	3550	4.4	747	3.5
1975	3613	6.3	778	4.1
1976	3689	6.2	822	3.9
1977	3714	7.0	868	4.5
1978	3847	7.2	915	4.7
1979	3850	7.6	915	4.9

Source: Canada Yearbook 1978-1979 (table 8.3)

As a result of low unemployment and an expanding economy Alberta's labor rates are higher than Ontario's. Hourly rates have been continuously higher and only in 1979 have Ontario's salary rates caught up with Alberta (Table 4.)

Markets

Table 4
Average Weekly Salaries and Hourly Earnings

	Ontario		Alberta	
	Weekly Salaries	Hourly Earnings	Weekly Salaries	Hourly Earnings
1974	181.43	4.54	178.72	4.66
1975	204.85	5.18	207.38	5.53
1976	228.72	5.87	236.89	6.25
1977	249.46		261.96	
1978	251.76		268.03	
1979	274.84		269.79	

Source: Canada Yearbook 1978-1979 (tables 8.16, 8.19)

Infrastructure

The much higher population density in Ontario (9.27 people per square kilometer versus 2.85 in Alberta in 1976) has led to a more highly developed highway and street network. More than 40% of Ontario's highways are paved versus only 15% for Alberta (Table 5).

Table 5
Roads & Streets

	Ontario				Alberta			
	Kilometers 1973	Kilometers 1974	% 1973	% 1974	Kilometers 1973	Kilometers 1974	% 1973	% 1974
Paved	61400	65188	40	42	19801	23918	12	14
Gravel	87125	84345	56	54	108975	108502	65	62
Earth	6261	6167	4	4	38283	41326	23	24
Total	134786	155700	100	100	167059	173746	100	100
Land Area	891000 SQ KM				644000 SQ KM			

Source: Canada Yearbook 1978-1979 (Table 4.10)

Economy

Since the first census in 1871, Ontario has had Canada's largest population. For this reason, Ontario is the biggest producer in almost every field. Though it is the most highly industrialized and most highly urbanized province it has the

Markets

largest number of occupied farms and farm income significantly exceeds Alberta's (6), (Table 6).

Table 6
Cash Receipts & Net Income
From Farm Operations

	(\$000's)			
	Ontario		Alberta	
	Receipts	Income	Receipts	Income
1972	1622681		917353	
1973	1992585	717647	1201211	671735
1974	2486908	878548	1686475	790799
1975	2649785	999222	1876103	893013
1976	2769932	813528	1847673	722652
1977	2855037		1968235	

Source: Canada Yearbook 1978-1979 (tables 11.1, 11.3)

The manufacturing output of Ontario (Table 7) is many times greater than its value from farming. Ontario's manufacturing output equals that of the rest of the country combined.

Table 7
Value of Shipments of Goods of Own
Manufacture
(\$000,000's)

	Ontario	Alberta
1974	41404	3821
1975	44422	4726
1976	50291	5273
1977	55893	6118

Source: Canada Yearbook 1978-1979 (table 17.1)

Ontario's industrial development has been influenced by its position on the Great Lakes waterway and by the diversity of available raw materials (Tables 8 & 9).

Ontario's manufacturing industries are distributed across the province. The "Golden Horseshoe", Toronto, Hamilton, Niagara Falls portion of the province, is the most highly industrialized, however most communities have industry of some kind. Canadian automobile production, almost all of which is concentrated in Ontario is dispersed from east of Toronto to Windsor.

Markets

Table 8
Lumber Production & Shipments

Value of Shipments (\$000's)

	Ontario	Alberta
1974	152841	57197
1975	117256	48706

Source: Canada Yearbook 1978-1979 (table 10.6)

Table 9
Value of Metallics, Non-metallics, Fuels
and Structural Materials
(\$000'S)

	Ontario		Alberta	
	1975	1976	1975	1976
Metallics	1948966	2153488	40	
Non-metals	56186	75742	100802	72955
Fuels	11554	11788	5569399	6829529
Structural Material	333300	353024	76330	93068
Total	2350006	2594042	5746571	6995572

Source: Canada Yearbook 1978-1979 (table 12.7)

Other leading industries include textiles, food processing, industrial and farm machinery, electrical goods, rubber and synthetics, aircraft components and furniture. Ontario has a diversified industrial base. For this reason it has a wide variety in the size of its industries (Table 10).

Table 10
Manufacturing Establishments - 1975
Classified by Number of Employees

	Ontario	Alberta
Number of Employees		
>20	4726	888
20-99	3670	649
100-499	1464	233
<500	243	12
Total	12245	1821

Source: Canada Yearbook 1978-1979 (table 17.5)

Markets

Alberta is second only to Saskatchewan in area of farmland, but livestock, plus dairy and poultry products produces 60 per cent of farm income and crops (including wheat) only 40 %. In total farm income, Alberta or Saskatchewan rank second or third to Ontario, depending on the volume of wheat exports in the particular year.

The 1947 discovery of oil at Leduc, near Edmonton, changed Alberta from an agricultural to an industrial economy. Manufacturing in Alberta, however, is closely related to the agricultural and petroleum industries. The total value of factory shipments is deceptively high in terms of contribution to the economy because meat packing and petrochemicals, two industries that rate low in terms of value added and labor content, are the province's leading manufacturing industries.

Alberta's industrial activity is highly concentrated. Edmonton is the industrial hub of the province. Four out of five new industries and jobs in Alberta are being created in the northern half of the province dominated by Edmonton. Another reason for Edmonton's dominance is the fact that Edmonton is on the Canadian National Railway mainline. Much of Alberta's manufactured goods from the east come to Edmonton by rail for subsequent distribution across the province. It is this rail link that explains why the Calgary-Edmonton traffic lane is unbalanced with more freight flowing from Edmonton to Calgary.

Traditionally Edmonton has been Alberta's largest manufacturing base. Calgary, where head offices are concentrated, has been more service oriented. Calgary has had some success in increasing its manufacturing base, but growth is still concentrated in distribution and food processing.

Red Deer, in the centre of the province is an ideal distribution centre, but little manufacturing is located there and the freight on the Red Deer line is strictly one way (inbound). Medicine Hat, in the southeast corner of the province is being edged out by Red Deer as a distribution centre, but demand still remains strong in Medicine Hat for warehousing, light industry and food processing. Lethbridge, Alberta's third largest city, has an agricultural base that supports a strong food processing industry (7).

Markets

THE MOTOR CARRIER INDUSTRY

The significant differences in population, size and economic base have had a significant impact on the motor carrier industry. The industry in Alberta is much smaller than its Ontario counterpart (table 11).

Table 11
Canadian For-hire Trucking Firms
With Annual Revenues in Excess of \$100,000
Excluding Household Movers

	(Values In \$000'S)			
	Ontario		Alberta	
	1975	1976	1975	1976
Establishments	739	703	369	369
Operating				
Revenues	1051532	1158240	322615	354980
Expenses	994814	1112455	307417	336686
Income	56718	45784	15198	18294
Employees	34197	34081	7981	8167
Equipment:				
Trucks	7144	6440	1915	1538
Tractors	12881	12959	2852	3115
Semi-trailers	25342	26372	6406	6839
Full-trailers	2178	2600	378	473
Other	1506	1266	278	429
Total Equipment	49051	49637	11829	12394

Source: Canada Yearbook 1978-1979 (table 15.19)

Alberta has half the number of firms earning more than \$100,000 per year and the Alberta carriers are considerably smaller (Table 12). Based on table 11, Alberta carriers averaged \$960,000 in revenue in 1976 while the average for the Ontario carriers was in excess of \$1.6 million.

The second significant difference between east and west is the routes over which they operate. Alberta's motor carrier industry is concentrated in a north south corridor connecting Edmonton and Calgary. Extensions distribute goods north of Edmonton and south of Calgary, but little balanced traffic exists outside the corridor.

Markets

Table 12
For-hire Carriers with Revenue over \$100,000 - 1976
Classified by Size

Size Revenues	Ontario		Alberta	
	#	%	#	%
Over \$2,000,000	79	11	25	7
500,000-2,000,000	171	24	84	23
Under 500,000	453	65	260	70
	703	100	369	100

Source: Statistics Canada -- Motor Carriers Freight and Household Movers 1976 (Catalogue 53-222)

Ontario also has its main highway, 401 creating a corridor from Windsor to Montreal, but Ontario's extensive industrial base allows for more comprehensive traffic patterns. Ontario's carriers tend to serve broad areas of the province rather than simple to and from movements. Unlike their Alberta counterparts Ontario carriers are involved in "pedal runs" serving several communities around the major centres they serve.

No discussion of the Alberta situation would be complete without a discussion of the impact Canadian Freightways has on the industry in Alberta. Canadian Freightways is the dominant carrier in Alberta both, because it is well operated and because it provides the province's primary link with the U.S. During the Anti-inflation Program Canadian Freightways became insnarled in the government controls and was forced to hold its rates at approximately 1977 levels. The constraint on Freightways's rates was effectively a constraint on the rates of all carriers who run in the same lanes as Freightways. For this reason several Alberta carriers suffered financial losses under the anti inflation regulations.

In Ontario the industry does not appear to be as vulnerable to domination. There are large carriers, like Laidlaws, but the market is so diversified that there does not seem to be a dominant carrier as there is in Alberta.

A final comment concerns the stability of the industry. In Alberta the AMTB has begun to track motor carrier entry and exit rates. This data is summarized in Table 13.

Similar entry and exit data is not kept for the industry in Ontario so it is difficult to directly compare the Alberta statistics to Ontario.

Markets

Table 13
Alberta Motor Carrier Turnover
For the Six Month Period October 1, 1978 to March 31, 1979

Intra-Provincial For Hire:

Applications for:		%Granted
new authority	1752	100
reinstatements	160	100
Total applications	1912	
Cancellations for:		
dormancy	331	
transfer of equipment	136	
Total cancellations	467	
Proportion of turnover	24%	

Source: Alberta Motor Transport Board

The limited data that is available concerning Ontario's Class A (general commodity) carriers is summarized in Tables 14 and 15.

Table 14
Ontario Class A Motor Carriers
as at March 31

1975	357
1976	355
1977	349
1978	334
1979	339

Source: Ontario Ministry of Transportation and Communications

While any conclusions about turnover in the two provinces is tenuous, the high activity in Alberta is impressive. During the six month period reported nearly 2000 carriers entered the Alberta market. Because the Alberta intra market is unregulated all of these new carriers are (if they desire) general commodity carriers.

Markets

Table 15
Ontario Highway Transport Board Activity
Class A Motor Carriers 1978

Applications:		% of Existing Carriers
for transfer of shares	4	1
for transfer of licence	21	6
Extensions of authority	37	11
Total changes	62	18

Source: Ontario Highway Transport Board

In the same period over 400, or nearly 25 percent of the number of entrants withdrew from the market. Obviously a number of these failures were recent starts, the loss of which might not be serious except that it is this turn over that represents where pressure on rates comes from for the ongoing carriers.

Unfortunately, for the Alberta shipper it is not just the new comers that fail, even large carriers run into trouble. During the course of this study two associated carriers serving traffic lanes east of Calgary to the Saskatchewan border failed. These two failures left two lanes (and approximately twenty communities) without motor carrier service and it was not clear when service would be restored.

The conclusions for Ontario are much different. Ontario Class A carriers are very stable. There has been some contraction of the number of carriers during the past five years, but basically the industry has grown as existing carriers apply to the Board for expanded authorities or acquire smaller carriers. There is not the rush of entrants into the Ontario general commodity market that there is in Alberta.

Markets

References:

- 1) Based on the Alberta Report of the Select Committee of the Legislative Assembly, Reviewing Intra Provincial Trucking Regulations, March 1977.
- 2) Based on extracts from the Public Commercial Vehicles Act NSO 1970, chapter 375.
- 3) Appendix J, A Public Policy for the Highway Transportation of Goods, Ontario Legislative Assembly, 1977
- 4) "Settling into Middle Age", The Financial Post, November 18, 1978
- 5) "Ontario's new role in Confederation", The Financial Post, November 18, 1978
- 6) Canadian Pocket Encyclopedia, Quick Canadian Facts Ltd., Toronto, 1978
- 7) From "The question is now whether Alberta can keep up the pace", The Financial Post Special Report, October 21, 1978

Chapter 4 THE FIRMS

We began our search for firms to be included in this study by attempting to understand the overall structure of the industry. Trucking firms can be classified a number of ways. One way is by the nature of the commodities they carry. In Ontario this classification takes the form of letter classes which establish whether a firm can specialize in LTL (less than truck load) movements or in TL (truck load) shipments. Other classes allow carriers to move everything from general freight to to livestock and gravel. In Alberta no such class structure exists, so in selecting firms we conformed to the Ontario class structure as much as possible.

Size also has a significant impact on the operating efficiency and profitability of trucking firms (1). For this reason, we attempted to include both large and small firms in the study. Finally, specialty haulers, such as firms specializing in floats, tankers and reefers may have different operating characteristics and problems (2). We had hoped also to include specialty haulers in the study.

Firms were selected through examination of Motor Carrier directories published by the provincial trucking associations (3,4) and discussions with the Executive Directors of the Ontario and Alberta Trucking Associations. With the kind assistance of these gentlemen we were able to select a group of carriers for study in the two provinces. In addition, these Association Officers introduced us to the firms and encouraged the carriers to participate in this study.

During the process of matching the firms it became apparent that the Ontario class structure would be difficult to match beyond the class A level (general commodity carriers). Finding a specialty hauler in Alberta similar in size or business to Ontario class C or D haulers was not possible. It is for this reason that the firms in this study are predominantly general commodity carriers.

In this chapter each firm studied is described in detail. For the reader who is not interested in all of the detail, a summary of the firms is included at the end of the chapter.

Firms

ONTARIO CARRIERS

Carrier A

Operations

The present operations of the company are significantly changed from five years ago in terms of the territory served. At one time the company generated 80 percent of its business between Pickering, Ajax and Metro Toronto. With the expansion of the Metro Toronto Cartage Area to include Ajax and Pickering, the firm was overwhelmed by the influx of new operators into their market. revenues. For this reason, the company applied for and received an A authority from Oshawa to Toronto. At this time the Oshawa to Toronto portion of the business generates some 70 percent of the company's operating revenue. The company still serves the Ajax Pickering area, where the remainder of operating revenues are generated.

The company is allowed to travel on Highway 401 in transit with no pick up and delivery enroute. Alternately, it can run between points on Highways 12 and 2 with pick up and delivery at points enroute. The company also has C authority, which allows for truckload movements out of, or to, Ajax, Oshawa and Whitby to all points within Ontario. The truckload portion of the business has been on the increase over the last five years. Now truckloads account for 70 percent of revenues. Management expects the trend to truckload movements to continue as shippers continue to consolidate shipments to take advantage of the lower rates offered for truckload movements.

The company is a short haul carrier and attempts to avoid any movements that require a driver to remain overnight on the road. Management would define a long haul for the company as one to London, Ontario from the home base of Whitby, a distance of 243 kilometers (150 miles).

The company is a general freight carrier, primarily moving packaged goods. It has no capacity to haul either perishable food stuffs or bulk items. The company has also avoided other specialized services, such as steel hauling, maintaining that the extra investment in equipment cannot be justified by the existing level of rates.

History

The company is a relative newcomer in Ontario, having been started in 1948, by two principals, who drove the company trucks during the daytime and did the bookkeeping at night.

Other than the authority changes described in the preceeding section, the company has not made any significant changes in its operating area. There have been no acquisitions to expand the operating authority of the company. Growth has come from only two sources, growth of shipments by existing customers and expansion of market share. It is not possible to ascertain from existing company records which factor has had the greatest impact.

Customers

Presently the company has approximately 400 active accounts, with ten customers accounting for some 80 percent of the company's revenue. Management maintains that its customer base has been fairly stable over time, although there are indications that some accounts have been lost recently.

The major customers are billed weekly, while the rest of the accounts are billed once a month. Management would like to see a system, such as the Americans have, where all freight is due and payable within seven days.

Management feels that their major competition is not other public carriers but private carriers. Shippers which are lost are normally lost because the shipper acquired his own in-house fleet. Other customers stay with the firm because of the high quality of service that is offered, which led one member of management to claim 'that to know us is to love us'.

Fleet

At this time, the company is operating five straight trucks, 11 diesel highway tractors and 19 gas city tractors. The fleet is a mixture of General Motors, Ford and International Harvester, although the engines and drive trains have been standardized. The tractors are coupled with a fleet of 47 trailers which includes two pups, three container chassis, four stake and racks and thirty-eight 40 foot and 45 foot dry vans. The majority of the tractors are 1973 vintage or newer, with an average age of four years.

Firms

Maintenance

At this point, the company is doing 90 percent of its maintenance work inside. This includes rebuilding the diesel tractor engines at around 200,000 miles. The gas engines are presently causing some problems and are having to be rebuilt at around 70,000 miles as a result of specifying horsepower too low for the weight to be pulled.

Labour

The company employs 36 unionized drivers. Until recently relations with the union have been fairly good, however pressure for wage increases could potentially pose difficulties.

Other than arguments over wages, management feels that they have a good group of workers. The company maintains a policy of only hiring experienced, qualified drivers rather than training drivers within the company.

Management

Management is presently undergoing a transition from first generation to second generation. Under the first generation, not a great deal of information was generated for decision making. Now with the transition, an increasing emphasis is being placed on generating reports for management. Monthly profit and loss statements and balance sheets are now prepared.

Budgeting was attempted for a short period, but due to the difficulty of predicting economic conditions, it was discontinued.

Carrier B

Operations

The company has a regular route (Class A) authority between the major points in Southwestern Ontario, as well as full load (Class C) authority from a major named point. The licenses include points in between the turning points, allowing the company to run peddle runs, rather than just point to point. The

company is basically a short haul carrier, with an average run being 70 miles. The company operates one terminal which serves as the hub of the entire operation.

Management defines the company as 'a glorified cartage company'. It is estimated that the company generates 70 percent of its revenue on an LTL basis with the remainder of the business being generated on the C authority. The company has no capacity for either perishable food stuffs or for the movement of bulk commodities.

History

The company was started in the 1920'S, prior to the advent of entry control in Ontario. Management was not active in the formation of the OTA or in the push towards control of entry for the industry.

Through acquisitions and applications to the OHTB, the company added Hamilton, Brantford, Oakville and Toronto to its operating authorities. Its most recent license was granted by the Board at a cost in excess of \$25,000.

Customers

The company has 1500 active customers, of which 300 represent the core of the business. It is estimated by management that this 30 percent generates 70 percent of revenue, however, no information on customer volumes is maintained on a regular basis. Customers are whoever controls the method of transportation, which means that the company has both shippers and consignees as customers.

The customer base has been fairly stable over time, although there is some turnover on the fringes. At one time, the company lacked a diversified customer base which caused a certain amount of seasonality in their revenues, but they have eliminated this seasonality through the attraction of new customers.

Service is the basic competitive edge that the company attempts to maintain. All shipments are delivered overnight. Customers that have left the company have done so in search of lower rates, not for better service.

Fleet

The company has 75 tractors, including ten gas for city use. These are matched with 160 trailers, which include stake and racks and container chassis but no pups or reefers. The company also has 30 straight trucks, primarily for in-town use.

Company policy is to maintain the tractors for up to ten years. It is estimated that the average tractor in the fleet is five years old. Replacement cost for the highway tractors is estimated to be \$39,000 when bought in batches of three from General Motors or Ford. The company is in the process of specifying engine and drive train components, and it is estimated that 25 percent of the fleet is now standardized. When disposed of at the end of ten years, the tractors sell for between \$1,000 and \$1,200 without tires.

The tractors are in use approximately 50 hours per week, while the trailers, because of spotting, are only in use for 25 hours. On average, a tractor is driven 50,000 miles in a year and a trailer moves about half that distance.

Maintenance

The company has its own repair shop, where 90 percent of all repairs are done. The diesel engines are rebuilt at between 250,000 and 320,000 miles. The gas engines are not rebuilt but replaced with purchased engines.

Labour

The company employs 95 drivers and ten dock workers, who are all union members. The drivers earn an average of \$18,000 per year, based on an hourly rate of \$7.65 plus \$.192 per mile. Drivers bid for routes on the basis of seniority, with some of the more attractive routes allowing a driver to increase his earnings to \$25,000 per year.

Management feels that labour relations are very good. It points to the labour turnover of one person per year as evidence. The majority of workers have been with the company for five years or more. Management attempts to hire only experienced drivers and is presently in the position where they have experienced drivers working on the dock waiting to get into a truck.

Management

The company is presently changing from second generation to third generation family management. There is not a great deal of control information available because of the extensive experience of the present managers. Management has been able to run the company by 'feel', but it is realized that this situation cannot continue. Plans are presently underway to implement new information systems. A computer has recently been acquired. It is expected that over the next two years the computer will be developed to aid in management of the company.

Carrier C

Operations

The company is located just 40 miles from downtown Toronto. Fifty percent of its business is generated within the Metro-Toronto Cartage Area. The company serves 33 small communities and seven medium to large communities, including Toronto.

Truckload movements account for 40 percent of the company's business. Management would prefer LTL movements, but is happy to get customers. Due to the large number of carriers in the area, the truckload movements are extremely competitive.

The company is a 'soup to nuts' carrier, offering both heated and refrigerated service to its customers. The company does not have any capacity to move bulk commodities.

History

The present owner purchased the business in 1965 after being involved in the trucking industry for several years.

The company did not always operate in the Metro-Toronto Cartage Area, but as the Area expanded it grew to include the company's zone of operation.

Firms

Customers

The firm has an active customer base of 450 accounts. Sixty customers account for 70 percent of revenue and one customer, in the deregulated area, accounts for 25 percent of revenue. Management of the company has not noticed a great deal of turnover in the customer base, in spite of the influx of carriers into the area.

The firm offers its customers one day delivery on its entire route. Management maintains that service is the only factor which keeps the customers, as the company does not cut rates from the CTTB tariff for LTL movements. In the case of large truckload shippers, management will negotiate a special rate, based upon the cost of providing the service.

Fleet

The company operates a fleet of eight tractors, 21 trailers and ten straight trucks. Two tractors and nine straights are gas. The trailer fleet includes four stake and racks. The tractor fleet has an average age of four years, and the trailer fleet is around nine years old. To replace a highway tractor would cost around \$45,000.

Maintenance

The company employs one full-time mechanic, insisting that anything that can be done inside is cheaper than having it done outside. Company policy is to rebuild the diesel engines at around 220,000 miles for an approximate cost of \$6,000.

Labour

The company is not unionized. The company has 15 drivers, one mechanic, one dispatcher and one secretary. The drivers work on a graduated pay scale running from \$7.10 per hour for the straight truck drivers and \$7.32 per hour for the tractor drivers. All of the drivers start out on the straight trucks and work their way up to the tractors. The company has a small family atmosphere about it, with all workers willing to put in a little extra effort to get things done.

Firms

Management

Management of the company is strictly a one man operation. The company is small enough, that with the help of the dispatcher no further managers are required. Management's major problem is the constant stream of exits and entry into the area by other carriers. The problem is that many of the firms do not appear to know what they are doing, and they needlessly depress rates, often below the total cost of providing service.

Management prepares monthly profit and loss statements for internal use. There is no budgeting done at this time, nor is there any lane or customer profitability analysis.

Carrier D

Operations

The company is headquartered about 70 miles from Toronto and operates as a regular route carrier between Toronto and points in Eastern Ontario. It also has truck load authority at several named points. The company generates the majority of its business either into, or, out of, Toronto, rather than between the smaller points on the route. The company hauls mostly truckload movements out of the small cities and LTL movements back from Toronto.

The company has three terminals. It is a general freight carrier, having capacity for all packaged goods, refrigerated service, heated service, and bulk commodities.

History

The company was started in the twenties, before the industry was regulated. Since inception it has acquired three carriers and has merged with another carrier in order to expand its routes.

The company made its last acquisition in 1976 and has decided to discontinue growing until the uncertainty regarding the industry in Ontario is resolved.

Firms

Customers

The company has 300 to 400 customers, of which 150 would be termed active. The largest customer accounts for only 10 percent of the company's revenue. This is a situation which management feels is desirable. Over time, the customer base has been fairly stable, with the company losing accounts to private carriage rather than to competing truckers.

The company provides overnight delivery to all the points that it serves. Management feels that this is required. If they could, the company would hold outbound shipments to consolidate them and reduce running costs.

The company maintains that only a few of its lanes are profitable but because of the terms of its operating authority, the company must serve the small unprofitable centres. For the most part, the company maintains a fairly good balance in and out of Toronto. Records are kept of the volume of each shipment, and they indicate that for a year, the trailers are 50 percent full into its eastern terminal and 60 percent full outbound from that terminal.

Fleet

The company presently operates 14 tractors, although it owns 21. Eleven of the operating tractors are diesel acquired since 1977. The gas tractors are older than 1970. The company also operates 11 gas straight trucks for local pick up and delivery.

In terms of trailers, the company has 41, broken down as follows:

- 19 45 foot vans
- 6 40 foot vans
- 2 45 foot stake and racks
- 6 40 foot stake and racks
- 7 tandem dump trailers
- 1 storage trailer

Labour

The company employs 20 non-unionized drivers. Presently, the company pays its straight drivers \$5.90 per hour and its highway drivers \$6.90 per hour. Labour management relations have been good with no expectations of future trouble. Management is

Firms

Pleased with the quality of its drivers and receives numerous compliments from its customers. The non-union labour gives the company some flexibility, for unlike union labour, the drivers will help unload shipments and are not constrained by stringent job classifications.

Management

The company is presently changing from second generation to third generation family management. At the present time, the company is generating excellent internal reports on capacity utilization, costs of service, equipment utilization and profitability. This process was started by the second generation of management and will be continued by the incoming generation. The company does formal budgeting, comparing actual results to forecast results. As well, the company has compiled long range plans outlining the proposed direction for the company.

Carrier E

Operations

This company has the most extensive operations of any of the companies surveyed. It has operating authorities in south western Ontario including most of the major centres between London and Toronto. Within this area, the company provides overnight delivery of all shipments. In addition to its A authority, the company has C authority from and to several named points.

The company is primarily an LTL carrier. LTL freight represents 60 percent of the volume and slightly more than 60 percent of revenue. The company maintains that it provides quality service to its customers, which is the reason for its continued success.

The company carries a full range of bulk commodities. It also provides heated and refrigerated service.

Firms

History

The company was started in the early twenties. Throughout its history, the company has expanded operations through acquisitions and hearings before the DHTB. The process of territory expansion has been very rational, with all additions to authority adding to the operations of the company. Not all of the company's acquisitions have stayed within the company -- those that did not work out were disposed of.

Customers

In its last billing period, the company issued 3,500 customer statements. The company does not maintain records indicating the breakdown of revenue by customers, but they do know that no one customer accounts for more than three percent of total revenue. The company is presently billing its customers weekly but will soon be changing to bimonthly billing.

Over its history, the company has had very good relations with its customers, resulting in very low turnover of accounts. Of the accounts that are lost, the majority go to private carriage.

The company sets its LTL rates according to the CTTB tariff. For major truckload movements, the company negotiates the rate directly with the shipper.

The company does not maintain any regular profitability analysis for either customers or lanes served. Only ad hoc analyses of specific customers are undertaken to determine whether the charges for the account should be changed.

Fleet

The company has a fleet of 100 tractors, which are not specifically designated as highway or city tractors. The company operates a fleet of 300 trailers including:

- 42 stake and racks
- 35 reefers
- 15 container chassis
- 2 tankers
- 206 dry freight vans

Firms

Among the dry vans are numerous pups which are used in the cities for pick up and delivery work. The company uses agents for LTL city work in the major centres in its territory. For truckload shipments the company does its own pick up and delivery.

Maintenance

All of the routine and light maintenance work is done within the company. Any work requiring specialized equipment, such as bearings, is sent out, for the company feels that its volume of work cannot justify an investment in the necessary equipment.

The company attempts to roll over its linehaul fleet every three years, before an engine replacement is required. At the present time, the company receives around \$7,000 to \$9,000 for a used linehaul tractor. New units cost \$39,000.

Labour

The company employs 120 drivers, 30 dock hands, ten shop workers and 20 administrative staff all of whom are unionized. Drivers earn \$7.60 per hour plus \$.183 per mile. Drivers bid for routes on the basis of seniority. A senior driver with a choice route can earn \$25,000. At this time, there is only a small differential between the dock workers and the drivers. The company has experienced drivers working on its docks.

Management

The company is managed by second generation family management. Due to the large amount of practical experience of the managers, the company has been operating with few management reports, however the company is presently updating its computer facility to provide more information.

Management of the company does not believe in budgets.

Firms

Carrier F

Operations

This Ontario carrier is a long haul carrier, operating between northern and southern Ontario. The company has regular route authority in northern Ontario, serving the area with several terminals. Aside from the northern terminals the company leases terminal space in Toronto.

The company operates on a 50 percent truck load basis because the southbound movements are primarily truck loads of raw materials. North bound movements are predominantly LTL.

In terms of commodities the company is very diversified. Major payloads include raw materials (timber and steel) as well as a full range of manufactured goods.

History

By Ontario standards the company is relatively new, having been purchased by its present owners in the early 1960's. Originally the company's limited operating authority confined its operations to serving its home community to and from Toronto. The new owners have adopted a stance of aggressive expansion, both through acquisition of small carriers and through hearings before the OHTB.

The company has been able to extend its network beyond Toronto into several major points in Southern Ontario. In addition to its A authority, the company also has C authority from and to its northern communities.

Customers

The company has 2,500 active accounts, none of which account for any more than five percent of revenue.

In the past the company had billed major accounts weekly but has recently changed to bimonthly billing for all accounts. The company felt that the weekly billing was confusing to its customers and did not result in a shorter collection period. A recent analysis of receivables, by management, indicated that the length of the collection period has dropped since the switch to bimonthly billing.

The company is a member of the CTTB and prices to tariff. In the case of major accounts the company does negotiate directly with the shipper to arrive at a rate. In management's opinion, the company is selling service to its customers rather than low rates.

Overnight delivery is promised for all deliveries within the company's area of operation.

Fleet

At this time the company owns 45 city tractors. In addition to its own tractors the company deals with owner/operators who perform long haul work. The company also owns 21 straight trucks and uses additional owner operated straights.

Since the company uses brokers for long haul work and keeps its own tractors only as back up, the fleet is relatively old. Average age of tractors at this time would be between four and five years.

For a number of reasons, but primarily because of recent reductions in the availability of brokers, the company is presently updating its tractor fleet with the intention of taking over the line haul.

In keeping with its diversified customer base, the company has a varied fleet, composed of:

- 1 reefer
- 37 vans
- 52 deck and rack trailers
- 3 tankers

Maintenance

In the past year the company has acquired a new facility and is in the process of moving its maintenance work there. Prior to this move, two thirds of the maintenance was being done near the home community and the remainder at the new location. Initial cost analysis of the new facility indicates that there will be significant savings due to this change. At the present company policy is to purchase rebuilt diesel engines for its tractors at around 250,000 miles.

Firms

Labour

In addition to its own work force the company deals with a number of contract suppliers of labour. All of the work force is non-union. Presently there are 83 drivers, 21 warehouse people, 11 repair people and 40 administrative personnel. Average driver's wages are \$7.34 per hour plus \$.18 per mile.

Management

The level of management sophistication and the quality of operating reports are impressive for this industry. Management is well informed of the company's progress on a weekly basis and is anticipating an increase in the level of operating reports, in the near future, with its purchase of a new computer.

This management performs receivables aging analysis, monthly profit and loss reports, capital budgeting and expense reduction analyses on a regular ongoing basis.

ALBERTA CARRIERS

Carrier A

Operations

The company operates pick-up and delivery vehicles in Calgary and in two regional urban centres in southern Alberta. It relies on leased owner/operators to do all of the line haul between these communities. During the day, company drivers deliver and pick up loads within the cities and the immediate surrounding areas, and then return to the terminals. At the terminals, the outbound freight is consolidated and loaded onto company trailers which are then hauled by the leased operators, during the night, to the destination city.

The majority of movements outbound from Calgary are LTL shipments. Calgary supplies southern Alberta with most of its consumer products. Loads from the regional centres to Calgary are primarily truckloads of manufactured goods coming from local manufactures.

Firms

As a rule, the company maintains a fairly good balance between its communities, implying a 50:50 split between truckload and LTL movements.

History

The company was started in 1961 through a takeover of another carrier's operations in one of the regional centres. The second urban centre has been added recently.

Customers

In the last billing period the company mailed 1300 invoices although they have approximately 1500 customers. The customer base is fairly stable. Many of the customers have been with the company since it started.

Customers are billed twice monthly, with management of the opinion that their competitors are billing at least as often. Despite this frequency of billing, 15 percent of the receivables are 60 days old or older. A large portion of the older receivables are for interline movements, or claims against other carriers.

Pricing

Pricing is based on the Western Tariff, although the company is not a member. Tariff is not the sole criterion for setting rates. The company receives a monthly profit and loss statement from a data service, and this is monitored to determine if adjustments to the rate schedule are required. The company does not routinely know if certain customers are more profitable than others, however special studies have been undertaken and a large beer haul was dropped because of its unprofitability.

Present Fleet

Due to the use of owner/operators for all of the line haul, the present fleet does not include any highway tractors. The company does own 15 city tractors, 14 of which are gasoline powered. In addition to the tractors, the company operates 13 straight trucks and three half-tons for pick up and delivery. The majority of the power units are 1972 or newer, with the

Manasement

The degree of management sophistication in this firm is impressive. Present management has been in place since the inception of the company. The managers have grown up with their company and are familiar with all of its aspects. They have also taken advantage of new techniques, such as EDP, in their operations.

Manasement feels it has a system which provides much of the information needed to run the company, but agreed that it was lacking detailed information regarding running costs per mile (with the exception of highway miles), the profitability of customers, the revenue percentage of major customers and maintenance records.

The company annually prepares a budget for the following year's operations. The budget is prepared from the 'bottom up,' meaning that a level of profit based upon the level of investment is the first item that is decided. This is then backed up to arrive at the levels of sales that must be generated. The sales are then broken down by terminal, by day, as targets for the three salesmen and terminal managers. Daily totals of revenue generation are kept and compared to the targets. Allowances are made for seasonal variation in the business when the budgets are drawn up.

Monthly income statements are received from a data centre. The statements compare actual results for the company and the terminals to the annual budget rather than to monthly goals, which limits the usefulness of these reports for monitoring performance.

Claims

This carrier complained of high claims. They feel that a large portion of their claims are a result of being the last carrier on a chain that stretches from eastern Canada. They are the ones that deliver the goods to the final customer, and as a result, they pay damages for an accident that may have occurred anywhere in transit.

Firms

average age being five years. The replacement cost for the city tractors is presently around \$20,000, with the straights costing about \$12,000.

The power units are coupled with a fleet of 35 trailers, including:

- 4 45' reefer units
- 14 45' dry vans
- 3 45' decks
- 2 26' decks
- 12 26' dry vans

The 12 small 26' vans are run as two trailer 'trains' for line haul.

Maintenance

The company does its own maintenance in rented garage space. It does no maintenance for the owner/operators and as a result, maintenance of the line haul fleet is not included in the company's maintenance costs. At the present time, the company has a policy of rebuilding their gas tractors when the engine starts using oil.

Labour

The cost to the company for its line haul is \$.51 per mile for one van and \$.52 per mile for a 'train'. The company also pays for the brokers' licenses (@ \$1,281 per tractor) and insurance.

Aside from the six owner/operators, the company has 35 to 40 of its own unionized drivers. Management feels that they do not have any serious labour problems as a result of the union.

Presently, the hourly rate for drivers is \$8.15/hour, and the average driver earns around \$15,000 per year. Management has not calculated the cost of the benefit package that they provide to the employees.

Firms

Carrier B

Operations

This company operates on probably the most competitive route in Alberta, between Calgary and central Alberta. On one of the company's lanes 40 carriers serve Red Deer which only has a population of 30,000.

The firm's operation is strictly point to point, with the company's equipment doing the pick up and delivery work, and a broker doing all of the line haul. The company leases one terminal in central Alberta and shares a common carrier terminal in Calgary.

The company does not specialize, but moves general freight. There is no capacity to haul either perishable food stuffs or bulk commodities. The majority of the company's revenue, 95 percent, comes from LTL movements, mostly from Calgary. There is a shortage of backhaul freight due to the surplus of carriers. The company's trailers return to Calgary empty most of the time.

History

The company has existed for over 25 years, although the present owners have had the company for only about a decade. When the present owners purchased the company it was a one man operation, running fruits and vegetables from Calgary. The new owners took advantage of the established name and diversified into other commodities, to the point where the company now hauls only general freight, and no fresh food. Aside from diversifying the commodity base, the new owners have increased volume by interlining with other carriers.

Customers

The company has 1,700 accounts, of which 1,100 to 1,200 are active. There is no large concentration of revenue among the customers, although four or five would account for 10 to 15 percent of revenue. Over the years, the company has been able to keep the majority of its customers while adding new ones. Management attributes this to the company's name and the high level of service. In an area where there is such a high carrier turnover, an established name helps create a favourable impression with the shipper.

Firms

The company bills its customers every two weeks. The majority of the customers are small shippers, with an average shipment weighing around 850 pounds.

The company feels that their high level of service helps maintain their customers, even in the face of severe price competition. Management feels that present rates, set by the Tariff Bureau, barely cover costs. For this reason, they will not cut this rate on anything under 10,000 pounds. For larger volumes the company is willing to negotiate rates with a shipper. There is no analysis of the profitability of individual customers.

Fleet

The company is operating five city tractors, two straights and 12 pups. The tractor figure does not include the leased highway tractor. Of the pups, six are new 28 foot FRB's, four are three to six year old vans, and the remaining two are decks.

The leased operator is paid \$.55 per mile for two, two hundred mile round trips per night at least five nights of the week. The owner/operator that the company deals with is a former employee of the company. The company provides the license plates for the highway tractor.

To replace the city tractors would cost \$14,000 to \$15,000 and the straights would cost \$12,000. The highway tractor would cost \$44,000.

Maintenance

The majority of the maintenance is done outside of the company. The company has sponsored a local mechanic in car racing, and as a result, obtains repair work at reasonable rates. Minor repair work, such as lubrication and oil changes, are done in the shared terminal service bay in Calgary.

Labour

The company employs six non-union drivers/handlers and some part-time dock help. The drivers are paid a monthly salary of \$1,350 plus a Christmas bonus of \$25 for every month worked in the year.

Firms

The lack of a union gives management a great deal of flexibility. There are no time clocks, and the workers will often work more than the prescribed work day. In return, management is lenient with regard to time off for personal reasons. The good working relationship is shown in low turnover. All of the drivers have been with the company for five years or more.

Management

Management is a family affair, with several family members active within the company. Records are kept of daily weight movements, both north and south bound, as well as daily revenue figures. Trends in the volume of the business have been identified, and attempts are being made to level seasonal peaks. At this time, the volume of business does not warrant the use of EDP.

Expansion plans are done largely on intuition rather than with any formal system of analysis. The new FRB's were purchased because they would 'supply a little more volume', but this was not formally weighed against their cost.

Management has considered expanding the operating territory of the company, but is not favorably disposed to do so. It is felt that any expansion would result in management being spread too thin and could result in reduced profitability. Because of the extreme competitiveness of the lanes which this carrier serves, management believes that operations have to be controlled very carefully.

The company has no budgeting procedure and there are no plans for one.

Firms

Carrier C

Operations

This company serves Vulcan and Lethbridge from Calgary. All pick up and delivery work is done during the day, with the linehaul done at night using company tractors, owner/operators and subcontractors. Subcontractors own their equipment but put the company's name on the door. In return, they receive 75 percent of all billings they handle, but are responsible for all operating costs.

The company is primarily an LTL carrier receiving at least 95 percent of revenue from LTL movements. In spite of the large amount of LTL shipments, only 10 to 15 percent of the freight moved is cross-docked, because, in the majority of instances, the loads are single pick up and are loaded right on the PUPS, at the shipper's dock, for delivery. There is more movement from Calgary than to it. The company is a general freight carrier, with no capacity for either perishable food stuffs or bulk commodities.

History

The company was started in 1965 by the present owner/manager. Since that time, the business has grown substantially to where it now owns two terminals, one in Lethbridge and a new one in Calgary. Since it was started, the company has expanded its route, going from High River to Vulcan and Lethbridge, but in the process dropped the High River service.

Customers

The company presently has 1,000 accounts, of which 800 to 900 are active. Of the active accounts, 300 form the backbone of the company. There has been some turnover in the accounts, largely as a result of customers seeking lower rates.

The company is a member of the Western Tariff Bureau, and for the most part, prices to tariff. The company was opposed to the recent eight percent rate increase passed by the Bureau for two reasons. In the first place, they did not feel that they needed the increase, and secondly, they feel that the members which voted for the increase do not charge to tariff anyway.

Firms

The company is selling service rather than rates to its customers. All deliveries are made the next day, or if the customer requires it, the same day. The customer pays a premium for same day service.

All accounts are billed once a month. Management is of the opinion that more frequent billing does not help with cash flows and is an unnecessary expense.

Fleet

At this time, the company operates four highway tractors and seven city power units. The highway tractors are two years old on average, and the city units are six years old. The power units are matched to a fleet of 22 trailers, which includes 17 PUPS, two 40 foot vans and three decks. The company presently has on order six new FRB PUPS and two decks. The highway power units have a replacement cost of \$48,000. The city tractors are bought used because of price and could be replaced for between \$5,000 and \$7,000.

Labour

The non-union workforce includes 23 drivers and handlers. The hourly rate is \$6.25 per hour with a benefit package of 18 percent.

The owner/operators receive 15 percent of the bill in-town and \$.60 per mile on the highway. The owner/operators pay all of their own costs, including licenses and insurance.

Management is generally pleased with the workforce, but there is some problem with turnover.

Management

The company is run with each of the terminals, linehaul and the administration centre as profit centres. Each of the profit centres is allocated a percentage of revenue against which its costs are compared. This provides the company with a profit analysis by terminal. A potential problem with the system is that the revenue allocations are arbitrary.

Firms

The company has an in-house computer which provides a wealth of operating information. Cost information is all presented on a per truck basis each month.

At this point no budgeting is being done.

Carrier D

Operations

The company has recently become part of a large extra provincial carrier, but this has not altered the operations within Alberta significantly. The company serves communities both north and south of Calgary and competes in the Calgary-Edmonton corridor. The company has terminals in four Alberta communities.

Pick up and delivery work is done during the day, and line haul work is completed during the night. In all areas, the company offers overnight delivery.

At one time, the carrier was primarily an LTL carrier but is presently undergoing a transition to truckloads. At this point, truckload movements account for 80 percent of the weight moved and 70 percent of the revenue. The reason for making the transition seems to be to reduce the amount of cross docking of shipments.

Presently, the company is well balanced between Edmonton and Calgary and Calgary south. The company is a general freight carrier, with no capacity for either bulk commodities or perishable foods.

History

The company was started in the late 1950's operating between Calgary and Edmonton. It was acquired by two partners in 1968 who diversified the customer base and expanded the operations to several other urban centres in central and southern Alberta. In 1978 the company was acquired by its present extra-provincial parent to provide financial resources for fleet modernization. The company is now operated as an autonomous division inside Alberta.

Firms

Customers

The company has 2,200 accounts, but two or three major accounts generate between 50 and 60 percent of revenue. Accounts have been stable over time.

It is company policy to bill once a week, but in practice, the billing period is closer to nine days. A significant portion of accounts receivable are over 60 days. Part of the reason for the long collection period is that many customers are headquartered in eastern Canada, and payment must come from there. This is one of the reasons why the company is moving out of LTL movements.

Fleet

Since the recent change in ownership, the company has replaced its power units with 20 new tractors at a cost of \$48,000 per tractor. The power fleet is standardized which should simplify maintenance. Prior to acquiring the new fleet, maintenance was running 16 percent of sales. Not enough history with the new fleet has been acquired to estimate present maintenance expenses.

The company has a fleet of 22 five-ton straights but is presently operating only six of them. Replacement costs of these trucks is around \$20,000. Trailer fleet for this particular carrier is not relevant, for the division draws out of the parent company's fleet of 800 trailers.

Maintenance

All light maintenance work is done inside, and all major repairs are done outside the division. Rather than rebuilding diesel engines the division has a policy of purchasing engines. New engines cost \$11,000, compared to \$9,000 for rebuilding, but the engine has a 50,000 mile warranty, and the tractor is not down as long as when an engine is being rebuilt.

Labour

The division employs 70 non-union drivers and dock workers and has 20 administrative personnel. Wages for the city drivers are \$7.35 per hour, and the highway drivers are paid \$.18 per mile. The dock workers are paid between \$5.00 and \$7.35 per

Firms

hour.

Labour relations are described as being fairly good, however there is a fair amount of turnover, largely due to workers quitting in the summer to return to their homes in eastern Canada.

Management

The company belongs to the Western Tariff Bureau and LTL movements are rated at tariff. On truckload movements, the division negotiates the rate with customers.

Management does a great deal of analysis of the cost of service for the various customers and has decided on a standard cost of \$.65 per mile for all pick up and delivery. However, a recent check of 75 loads revealed an actual cost of \$.72 per mile for the freight handled. To arrive at a cost figure, records are kept of driver's time, linehaul costs, and pick up and delivery time. These are collected by the office in Calgary and then compared to the revenue generated. If the revenue is not high enough, the customer is told that there will be an increase in rates.

There is no formal budgeting procedure in this firm.

Carrier E

Operations

Since this company was started eight years ago, it has changed ownership twice and altered its routes significantly. It has recently been acquired by an extra provincial carrier, to operate as an autonomous intra-provincial division. Since reducing the number of communities served during the past two years, it is now serves Edmonton, Calgary and Lethbridge. Abandonment of lanes was due to competition. The company decided it could not profitably operate in the discontinued lanes.

Originally the company started as an LTL carrier providing a high level of service. At one time the company had 65 percent of all LTL movements between Calgary and Edmonton. Now the company is moving to truck load movements. This was accomplished by raising the rates on LTL movements in an attempt to drive customers away.

Firms

The carrier is basically a general freight carrier but the bulk of its movements are of perishable foods. This has been true since the inception of the company. The company has no capacity to handle bulk commodities.

History

Started eight years ago, the company was acquired by an industrial firm which operated the company for two years and then sold it recently to its present owners for the book value of the equipment plus a small premium. The company had lost a significant amount of money over the last year and a half.

When it was originally started the company served Edmonton and Calgary. Management later expanded operations to all of central and southern Alberta. It appears to have been this rapid increase in costs for terminals, with no corresponding volume increases, that caused the company financial difficulties.

The company has contracted its operations to cut overheads. They now interline with the parent within Alberta for extra provincial movements and they interline with other intra provincial carriers to serve communities no longer served directly.

Customers

At one point the company had 5,000 accounts, of which 250 provided the bulk of revenues.

In the early years the customer base was fairly stable, but with the trend towards truck load movements a number of the LTL customers left seeking lower rates.

The company has maintained a policy of billing its customers weekly. This does not appear to have done much to shorten the length of receivables however.

Originally the company priced all LTL movements to tariff and negotiated the rates of truck load movements with the shipper. When the decision was made to move out of LTL movements rates were set above tariff.

Fleet

The fleet has undergone major changes. At the same time that the company moved to discourage LTL movements it converted its fleet to PUPS. With the move to PUPS a truck load movement became defined as any movement over 5,000 pounds.

The company had five highway tractors, 42 city power units, 88 twenty-eight foot PUPS and four 45 foot vans. All of the highway power units and PUPS were new. The PUPS run in 'trains' of three between Calgary and Edmonton.

Maintenance

Maintenance was done inside for all except specialized repairs. No records were maintained as to how often servicing was required or how long an engine was run before rebuilding was necessary.

Labour

Management was generally pleased with its 75 non-union drivers, who were paid rates comparable to Teamster rates of \$7.25 per hour and \$.18 per mile for line haul drivers. At times labour turnover posed problems, caused management believed by the transient nature of the Alberta work force.

Management

As would be expected there was a high level of management turnover, associated with the changes in ownership of the company. As a result, there appears to have been some confusion in operating reports and decisions. The decision to get out of LTL movements is an example of this confusion. This move was made to reduce the portion of revenues going into terminal costs. It was decided to eliminate dock workers to reduce costs, but at the same time the company trailer fleet was changed to one suited to LTL movements.

Internal operating reports were provided by an in house computer system. A wealth of operating information was supplied to management. In spite of this the company did not budget, did no lane analysis or customer profitability analysis. This lack of analysis is particularly surprising in light of the substantial office personnel the company had at times.

Firms

TABLE 1
THE FIRMS: A CAPSULE SUMMARY

Ontario Carriers							Alberta Carriers				
Firms	A	B	C	D	E	F	A	B	C	D	E
Inception Date	1948	1924	1965	1920	1920	1953	1961	1952	1965	1959	1971
Territory	Cnt Ont	SW Ont	Cnt Ont	E Ont	SW Ont	N Ont	S Alta	Cnt Alta	S Alta	S&Ont Alta	S&Cnt Alta
Customers	400	1500	450	400	3500	2500	1500	1700	1000	2200	5000
Major Customers	10	300	60	150	N/A	N/A	1300	1100	800	2-3	250
Fleet											
Straights	5	30	10	11		21	13	2		22	42
Owned-tractors											
- diesel	11	65	6	11	100	45	1			20	5
- gas	19	10	2	10		19	14	5			
Brokers (linehaul)							6	1			
Trailer											
- Vans (including pups)	40	135	17	25	206	37	26	12	19	N/A	92
- Other	7	25	4	16	94	61	9		3	N/A	
Avg. Tractor Age	4 yrs.	5 yrs.	4 yrs.	5 yrs.	4-5 yrs.	5 yrs.	5 yrs.	3 yrs.	4 yrs.	New	1-2 yrs.
Estimated Replacement		\$39,000	\$45,000		\$39,000	\$50,000		\$44,000	\$48,000	\$68,000	
Labour											
Drivers	36	95	15	20	120	83	40	6	23	70	75
Unionized Y/N	Y	Y	N	N	Y	N	Y	N	N	N	N
Rate		\$7.65 + 19.2/mi.	\$7.32	\$6.90	\$7.60 + 18.3/mi.	\$7.34+18c	\$8.15	\$1350/mth	\$6.25	\$7.35+18c	
Management	Moving to 2nd Generation	Moving to 3rd Generation	Proprietor Moving to 3rd Generation	Proprietor Moving to 3rd Generation	2nd Generation Family	Proprietor	Original Partners	1st and 2nd Generation Family	Original Proprietor	Corporate Takeover	Corporate Takeover
Relative Size	IV	V	I	II	VI	VI	IV	I	II	III	VI
Size Legend											
	Class I - >500,000 (sales)			Class IV - 1,550,000 - 1,999,999 (sales)							
	II - 500,000 - 999,999 (sales)			V - 2,000,000 - 4,999,999 (sales)							
	III - 1,000,000 - 1,499,999 (sales)			VI - <5,000,000 (sales)							

Firms

References:

- 1) Wyckoff, Organizational Formality and Performance, op cit.
- 2) "Produce truckers say easy treatment of U.S. haulers endangers industry", Globe & Mail, March 14, 1979.
- 3) Ship-by-truck, published by the Ontario Trucking Association, 1978
- 4) Alberta Motor Transport Directory, published by the Alberta Trucking Association, 1978

Data

Chapter 5 The Data

A significant amount of data, both qualitative and quantitative, has been collected from the carriers participating in the study. At all levels of management, in both provinces, the cooperation we received was excellent. To a large degree this attitude of cooperation reflects the importance of the deregulation issue to the industry.

Notwithstanding the cooperation we received, there are some caveats about the data in this study. One problem was with the records that are kept by the firms. Much of the detailed information which we sought was simply not available. However, this should not detract from the importance of what information there was.

Secondly, in any study, one must deal with the biases of the sources of information. In all but two cases, those interviewed were strongly in favour of regulation and have no doubt let this creep into some of their observations. This is inevitable, just as it is for those that oppose regulation to see the facts in a light most favourable to their case. In order to nullify any possible biases, every attempt was made to corroborate information, either within the firm or with an outside source. To the best of our knowledge, the firms interviewed did not discuss the research with one another and in no way tried to present a united front.

Finally, this was an exploratory study undertaken within only a very few weeks to meet the requirements of the Economic Council. For this reason the number of firms studied is restricted.

We attempted to include a cross-section of firms in both provinces, but because of the requirements that the Alberta firms be only intra provincial and that the Ontario firms be as similar as possible to the Alberta firms, this study does not include the operations of any of the large carriers, like Canadian Freightways in Alberta, or similar large carriers in the east.

Because our sample size is small, conclusions regarding differences in the operations of the firms in the two provinces must only be taken as tentative. It will require a much more extensive study to amplify and clarify the apparent differences between the motor carriers in Alberta and Ontario that this study has identified.

Data

The data collected from the firms will be presented in the following format. Under each heading both provinces will be discussed in order that similarities and differences will be evident. Tables will be used to facilitate comparisons. In all instances, no information will be given to indicate the identity of the firm under discussion. It is for this reason, the firms are not presented in the same order as in Chapter 4 and we switch to identifying the firms by number, rather than by letter as in the last chapter.

AN OVERVIEW

Ontario

All of the firms interviewed in Ontario were general commodity carriers. When asked to define the nature of the goods carried most responded that their's was 'a soup to nuts' operation. The carriers covered segments of Ontario, as defined by their operating authorities. In no case did a carrier's authority allow the carrier to serve two major centres without serving additional smaller points. The carriers all operated on the basis of some geometrical pattern, whether it represented a circle, square, rectangle or triangle.

Alberta

Here again, the carriers defined themselves as general commodity carriers, although their fleets are not as diversified as their Ontario counterparts. Unlike their Ontario counterparts, the Alberta carriers operate intercity, from point A to point B.

History

Ontario

Several of the Ontario firms were founded in the twenties. Only one of the Ontario carriers was started after 1960. Territorial growth of the companies has occurred primarily through acquisition since regulation hinders unilateral expansion of the service area by a carrier.

Data

All of the firms indicated a very rational approach to their acquisition processes. A candidate for acquisition above all had to have authority that added to the firm's existing authority, without any significant duplication. In the absence of growth through acquisition, applications for new authorities or amendments of existing authorities was attempted. This method of territorial expansion seems to be less favoured, largely due to the unpredictable nature of the DHTB's decisions.

Alberta

The sample firms in Alberta are significantly younger than their Ontario counterparts. All, except one, of the firms interviewed has been started since the late fifties. The one exception has been in business for 26 years, but only under its present owner since 1968.

If it is desired, territorial growth in Alberta is a straightforward matter. All of the carriers have authority to run anywhere in the province and can change their territory at will. None of the firms interviewed have attempted to increase their area of service. One had recently collapsed its service area by dropping Medicine Hat, Lethbridge and Red Deer from its operations.

Ownership

Ontario

All of the Ontario firms studied were family owned and managed. In only one instance had any of the ownership left the family, and that was not a controlling interest. Except for the younger firms, all were either changing to second or third generation family management.

Alberta

The Alberta firms were not as uniform in terms of ownership. Two of the firms, the two largest, had recently been acquired by extra-provincial carriers. For one firm, it was its second change of ownership within two years. Of the other carriers one is a partnership, while the remaining two are family owned and managed.

Data

Competition

Ontario

In Ontario the major emphasis of competition is on service. Overnight, or same day delivery was mentioned by all the carriers as one of their most important considerations. In much the same manner they mentioned treatment of claims and any other problems that arise.

This does not preclude the importance of the cost of the service that the carrier provides. In all cases, the carrier charged at a maximum what the Ontario tariff allows. In the case of the volume shipper, prices below tariff could be negotiated in order to receive the business. Although it has been argued that regulation gives the carrier unwarranted monopoly power, the carriers do not see it this way. In all of the interviews it was stressed the carrier was forced to provide adequate service at a reasonable price by the shipper. Failure to do so would result in the shipper transferring the business to a carrier that would. In none of the markets studied did a regulated carrier have a monopoly due to the lack of a competing carrier.

One of the carriers generated 50 percent of his business in the Metro Toronto Cartage Area. The metropolitan Toronto segment of this market is a free entry area for all intents and purposes. In his opinion the major criterion for maintaining a customer was service. While he had lost customers in the past due to lower rates, he had found that the majority returned because the service was not adequate at the lower rates.

The major competition that the carriers feel they have is the private carrier. In many instances they cannot understand why the decision to go private is made, but they all agree that they lose the majority of their accounts this way. This is particularly damaging in the smaller communities, where the loss of freight to the private carrier hurts the lane.

Alberta

Like the Ontario carriers, the Alberta carriers claimed to compete on service rather than on rates. Discussions with people involved in the industry, however, indicated that a substantial amount of rate cutting does take place.

Data

The firms interviewed were either members of the Western Tariff Bureau or used the Tariff as a pricing guide and maintained that they were pricing to this tariff. Large volume shippers could set volume rates, and the resultant rate would be filed with the Bureau. In some cases the carriers maintained that they would charge more than the tariff, as a result of the awkwardness of the commodity or because of a high claims rate for a commodity.

There is a great deal of rate cutting taking place in Alberta as established firms attempt to hold and expand their customer base and as newcomers attempt to lure business away from established carriers. All of the carriers claimed that the problem with new entrants was that they did not understand the business and their costs. As a result new entrants often set the rates too low to be profitable. This problem was particularly severe on the Calgary/Red Deer lane.

As in Ontario, the private carrier has a particularly negative impact on the for-hire service to the smaller communities. A point common to both provinces was the demand for service from a private carrier when his fleet was unable to operate or meet demand.

Pricing

Ontario

Not all of the firms surveyed were participating members of the Tariff Bureau but all used the tariff as a guide for setting rates. From the interviews it appears that the costs of providing service are not of primary importance when it comes to rate setting. Instead, consideration is given to the amount of competition, the nature of the commodity and the amount of freight that the commodity can absorb. No rate is set, however, without some consideration of cost.

The shipper holds a great amount of market power. He has the ability to shop around for a carrier who is willing to move the freight at the cost that he desires. This practise is particularly evident in the case of truck load movements.

Data

Alberta

Not all of the firms interviewed in Alberta were participating members of the Western Tariff Bureau. Those that were not, however, maintain that they price to tariff. The Western Tariff is based on the cost of providing service, taking into account the commodity and the volume on a particular lane. This results in a high tariff for many of the smaller communities that are not volume centres.

Like their Ontario counterparts, all of the firms expressed a willingness to make deals with volume shippers. They would base these deals on cost and file a separate rate with the Bureau for the commodity and customer.

Backhauls

It must be realized that backhauls or return shipments are largely the function of the economy within which the carrier operates. Basically, the issue of backhauls is one of accessibility to traffic to carry. It represents an important issue in this industry. If a carrier is to survive, there is a minimum cash flow required from the volume carried to pay for all operating costs and to compensate the owner or investor. Ultimately, this cash flow must be provided by the shippers served. That is, each shipper must pay a price for the service which ultimately compensates the carrier for that service. If a linehaul is appropriately balanced -- with backhaul volume adequately related to fronthauls -- so that the trucks or trailers are loaded in both directions of travel, then both front and backhaul shippers share in supporting the carrier's costs. On the other hand, if a lane is unbalanced, the front haul shipper alone must compensate the carrier. Obviously, in such a situation the fronthaul shipper will be paying more for service than if the truck was also earning "on its way home".

Ontario

In Ontario, industry is distributed widely across the province. For this reason, and because Ontario has many population centers of significant size, there appears to be less of a backhaul problem.

Data

Carriers 1, 2, and 3 indicated that for the most part they were running between 75 and 100 percent balanced for all of their LTL movements. This is of course a flexible situation with the balance changing with the activity of the shippers that the companies serve. Carrier 3, who is presently carrying mostly truckload movements indicated a balance problem with return shipments from points outside his A authority. A lack of shipper contacts resulted in his trucks moving empty on the inbound journey, at least to a point where the A authority allows for the collection of LTL shipments. Carrier 5 operates a balanced operation, with truckload movements in one direction and LTL in the other. Carrier 6 operates a very short haul business and is not concerned with backloads.

Alberta

In Alberta, the distances involved are greater than in Ontario. Since the distances involved represent significant costs to the carriers, every effort is made to achieve balanced loads. Carriers 1, 2, 3 and 4 have had success with load balancing. Carrier 5, however, serving Red Deer from Calgary is running empty from Red Deer a high percentage of the time. This is caused by two factors, the high concentration of carriers in Red Deer and the lack of outbound shipments from the city.

Equipment Utilization

Like the question of backhauls, equipment utilization may be as much a function of economic circumstances as regulation. This should be considered when looking at the differences between the two provinces.

Ontario

All carriers in the survey operate primarily ten hours per day. This means that equipment sits idle for more than 50 percent of the available time. Aside from this common sense observation, none of the companies maintained statistics regarding utilization of equipment. As a proxy measure, statistics describing sales generation per piece of equipment was used. The results of this analysis are shown in Table 1.

Data

Table 1
Equipment Utilization

Firm	1	2	3	4	5	Mean
Sales per Tractor (000's)						
Ontario	\$54	\$92	\$52	\$50	\$110	\$71
Alberta	\$52	\$58	\$66	\$93	n/a	\$67

Alberta

All of the Alberta firms operated on the basis of 24 hours per day. Orders were picked up and delivered during the day and the line haul was done at night. This leads to an increase in trailer utilization. In the majority of cases the line haul was not done by company owned tractors but by a broker who was driving for himself. When determining sales per tractor the broker fleets were included in the total number of power units.

Overhead Levels

An attempt was made to examine overhead costs and overhead staffing levels by calculating sales per total number of employees (Table 2.)

Table 2
Sales per Employee
(\$000's)

Firm	1	2	3	4	5	Mean
Ontario	\$36	\$48	\$34	\$36	\$42	\$39
Alberta	\$26	\$29	\$31	\$35	n/a	\$30

As well the ratio of drivers and terminal staff to administrative staff was also examined (Table 3).

Financial Characteristics

A substantial amount of financial data was gathered from the firms, although for some carriers the several years of data we sought simply did not exist. All of the data we were provided is summarized in the following tables.

Data

Table 3
Ratio of Line Workers to Administrative Staff

Firms	1	2	3	4	5	Average
Ontario	4.5	5.3	10.5	n/a	3.4	6.0
Alberta	2.4	5.0	4.0	4.3	n/a	4.0

The financial data is presented in ratio form primarily to highlight comparisons between the firms and the provinces. In addition, this form of presentation allows us to present the data without violating our promises to keep actual financial data confidential.

Financial Structure

We begin our examination of the financial information with an examination of the firms' balance sheets (Table 4). In preparing this table we calculated the total working assets for each firm. Working assets were defined as the sum of the working capital (current assets less current liabilities) plus fixed assets and any other miscellaneous assets. Each element of the balance sheet was then divided by the amount of the working assets to generate the ratios in table 4.

Operating Statistics

Operating results for the firms are reported in tables 5, 6 and 7. Tables 5 and 6 summarize the most current year's operations for each carrier. Table 7 then highlights important trends in the firms' operations over the past several years.

In preparing the operating statistics reported in these tables we have attempted to classify cost elements as consistently as possible across the firms. In table 7 we have generally calculated sales and earnings trends using 1977 as our base year.

Finally, tables 8 and 9 report in more detail two aspects of operating costs with which the study was particularly concerned -- maintenance and insurance costs.

Data

TABLE 4
BALANCE SHEET DATA
as at 1978 fiscal year end

All Components Expressed as a Ratio to Working Assets

	<u>Alberta</u>					<u>Ontario</u>					
	Firms										
	1	2	3	4	Avg*	1	2	3	4	5	Avg
Working Capital	5	(10)	9	(7)	2	2	63	(11)	45	(6)	18
Fixed Assets	75	110	90	105	90	102	33	106	30	89	72
Other Assets	20		2	2	8	-	4	5	24	17	10
Working Assets	100	100	100	100	100	100	100	100	100	100	100
Long Term Debt	20	166	54	31	35	52	7	41	-	59	31
Equity	80	(66)	46	69	65	48	97	59	100	41	69

*Excluding firm 2

TABLE 5

Income Statement

Ontario Firms

All costs expressed as a % of revenue
for fiscal year 1978

	<u>Firm</u>					
	1	2	3	4	5	Avg.
Sales	100.0	100.0	100.0	100.0	100.0	100.0
<u>Variable Costs</u>						
Direct Labour	48.9	27.1	46.1	41.7	14.0	35.6
Leased Operators	1.0	37.0	0.6	NA	37.4	19.0*
Fuel and Oil	10.0	5.1	9.9	NA	3.6	7.1*
Maintenance	<u>10.7</u>	<u>3.8</u>	<u>7.1</u>	<u>NA</u>	<u>11.1</u>	<u>8.1*</u>
Total Variable	70.6	73.0	63.8	NA	66.1	68.3*
<u>Fixed Costs</u>						
Administrative	5.6	16.4	12.7	NA	11.6	
Salaries						
Advertising and	1.1	0.3	1.1	NA	0.4	
Promotion						
Bank Charges	2.0	Ø	3.1	NA	2.3	
Bad Debts	Ø	0.3	Ø	NA	0.5	
Claims	0.2	0.6	0.2	NA	0.8	
Depreciation	5.4	1.0	9.6	NA	4.5	
Insurance	1.9	0.9	1.7	NA	1.2	1.4
Licence	2.6	1.0	2.4	NA	1.2	1.8
Warehouse	4.5	1.7	0.4	5.0	NA	
Other	<u>3.0</u>	<u>(4.8)</u>	<u>1.4</u>	<u>NA</u>	<u>10.9</u>	
Total Fixed	<u>26.3</u>	<u>17.4</u>	<u>32.6</u>		<u>33.4</u>	<u>27.4*</u>
Total Costs	<u>96.9</u>	<u>90.4</u>	<u>96.4</u>	<u>83.5</u>	<u>99.5</u>	<u>95.7</u>
Average Operating Ratio						<u>93.34</u>

* Based on four firms

Data

TABLE 6

Income Statement

Alberta Firms

All costs expressed as a % of revenue
for fiscal year 1978

	<u>Firm</u>				
	1	2	3	4	Avg*
Sales	100	100	100	100	100
<u>Variable Costs</u>					
Direct Labour	39.4	30.6	47.3	37.0	41.2
Leased Operators		12.2	1.0	18.9	6.6
Fuel and Oil	6.9	6.9	6.1	2.9	5.3
Maintenance	<u>6.7</u>	<u>16.5</u>	<u>6.8</u>	<u>5.5</u>	<u>6.3</u>
Total Variable	53.0	66.2	61.2	64.3	59.5
<u>Fixed Costs</u>					
Administrative	13.8	6.2	NA	5.4	
Salaries					
Advertising and	1.0	0.3	1.0	1.4	
Promotion					
Bank Charges	1.2	4.8	2.9	0.6	
Bad Debts	0.4	0.8	NA	0.4	
Claims	1.0	1.6	0.6	2.2	
Depreciation	9.8	5.1	6.3	5.9	
Insurance	2.8	3.7	1.3	3.4	2.5
Licence	0.8	5.4	0.5	0.6	0.6
Warehouse	8.1	32.8	NA	0.7	
Other	<u>3.0</u>	<u>2.3</u>	<u>18.6</u> ¹	<u>9.5</u>	
Total Fixed	<u>41.9</u>	<u>63.0</u>	<u>31.2</u>	<u>30.1</u>	<u>34.4</u>
Total Costs	<u>94.9</u>	<u>129.2</u>	<u>92.4</u>	<u>94.4</u>	
Average Operating				<u>102.73</u>	
Ratio					
(Excluding carrier 2)					<u>93.9</u>

¹ Includes all NA costs

* Excluding Carrier 2

TABLE 8
MAINTENANCE/TRACTOR

<u>Alberta</u>				
	Firm			
	1	2	3	4
\$/Tractor	3000		3463	3788
% of Revenue	6.7	16.5	16.8	6.8

<u>Ontario</u>					
	Firm				
	1	2	3	4	5
\$/Tractor	4914	2600	3003		7675
% of Revenue	10.7	3.8	7.1		11.1

TABLE 9
INSURANCE/TRACTOR

<u>Alberta</u>				
	Firm			
	1	2	3	4
\$/Tractor	529	936	244	923
% of Revenue	2.8	3.7	1.3	3.4

<u>Ontario</u>					
	Firm				
	1	2	3	4	5
\$/Tractor	335	195	255		907
% of Revenue	2.6	1.0	2.4		1.2

Data

Motor Carrier Statistics

Because of the limited amount of data available to this study and a concern about generalizing beyond the few firms studied, an attempt was made to compare our results to Statistics Canada's comprehensive survey of the Motor Carrier Industry (published by the Transportation and Communications Division, reference 53-222). We faced two difficulties in undertaking this comparison. Because of the immense task in compiling the Survey, current, 1978 data is not available. We were only able to obtain the 1977 report and it is this 1977 data that is used in our analysis.

The second difficulty arises from the lack of generally accepted accounting definitions in the industry. We have attempted to reclassify the Survey data to make it comparable to the data collected for this study, but differences may exist in how cost accounts are defined between the two studies.

Table 10 reports balance sheet components for the Survey firms. Comparison of Table 10 with Table 4 suggests that the carriers in our study have characteristics similar to the Class I and Class II carriers included in the Survey. This suggestion is not unreasonable since the firms we studied also had sales in the \$500,000 to \$5,000,000 range.

Table 11 attempts to compare the operating statistics for the firms studied. Here we were handicapped because the data gathered (tables 5 and 6) are for the firm's 1978 operating years, while the Survey data is from 1977. While for this reason the data is not comparable, it is interesting that the general pattern of costs for the sample firms is similar to that reported in the Statistics Canada Survey. Both our firms and the Survey firms operate at approximately 60 percent direct costs, although our Ontario firms are above this average and our Alberta firms are below. We cannot explain this difference, but suspect it may well be attributable to problems in cost definitions.

Secondly, our sample firms have operating ratios which are similar to the Survey statistics. In drawing this conclusion we are obviously assuming that no major changes in cost structures took place between 1977 and 1978 and that changes in fuel and operating costs have been matched by corresponding revenue or rate increases.

Data

In Table 12 asset and return trends are summarized. While direct comparisons between this table and Table 7 are tenuous, the Survey supports the greater asset and sales growth in the west.

The earnings and return statistics for the sample firms appear more volatile than the national data. This is reasonable given the small size of the sample in this study. On the other hand, the firms we studied appear to generate slightly better returns than those reported in the Survey.

Finally, Table 13 summarizes the Survey data in finer detail, by class and type of carrier. In this comparison the firms in this study appear similar to the Common Carriers, although the returns on assets and equity for our firms are below those in the Survey sample.

The firms reported in this study were included because they had characteristics worth studying and because they were willing to cooperate in the study. Because these firms were not selected through a probability sampling process, the reader may have legitimate concerns regarding how representative our firms are of the trucking industry. The comparison of our data with the Statistics Canada Motor Carrier Survey seems to suggest that the firms we studied are similar to the remainder of the industry and that we can have confidence in the conclusions reached from this study.

A Methodological Question

The existence of the Statistics Canada Motor Carrier Survey raises the question -- if such national statistics are available, could questions about the relative profitability and efficiency of the Ontario and Alberta industries not be answered by means of the Survey data. An analysis of Tables 12 and 13 suggest that the answer to this question is the Alberta carriers are faster growing (in assets and sales) and, with the exception of the very small class III carriers, generate better returns (on assets and equity) than their Ontario counterparts. Unfortunately, the problem with these observations is that they can only be made about 1977. We do not know how recent operations compare. Nor does the Survey reflect directly on the regulation/deregulation issue because results for intra and extra-provincial carriers are not segregated. Finally, the Motor Carrier Survey provides few insights into why operating ratios differ, and it these insights with which we are concerned.

Data

It is only through detailed, firm by firm, analysis that the information needed to explore the questions of operating differences can be addressed.

Data

TABLE 10
MOTOR CARRIER
BALANCE SHEET COMPONENTS
as at 1977

	Ontario			Alberta		
	Size Class			Size Class		
	I	II	III	I	II	III
Working Capital	(5)	(4)	(17)	1	(5)	(11)
Fixed Assets	68	85	91	85	96	97
Other Assets	37	19	26	14	9	14
Working Assets	100	100	100	100	100	100
Long Term Debt	43	39	44	46	48	51
Equity	57	61	56	54	52	49

Legend:

Size Class I Revenue > \$2,000,000

II Revenue from \$500,000 to \$1,999,999

III Revenue from \$100,000 to \$499,999

Source: Statistics Canada, 53-222

TABLE 11
 MOTOR CARRIER OPERATING STATISTICS
 ALL CARRIERS
 1977

Class	Ontario				Alberta			
	I	II	III	Sample Firms	I	II	III	Sample Firms
Revenue	100%	100%	100%	100%	100%	100%	100%	100%
Direct Labor	24	23	26		15	20	21	
Leased Op's	18	19	11		31	26	18	
Fuel & Oil	7	10	12		6	8	10	
Maintenance	10	12	13		9	13	12	
Variable Cost	60	64	63	68.3	61	67	65	59.5
Fixed	36	32	31	25.6	34	29	33	32.8
Operating ratio	96	96	94	93.9	95	96	94	92.3
Interest	1.4	1.1	--	1.8	1.5	1.3	--	1.6
Total	97.4	97.1	94	95.7	96.5	97.3	94	93.9

TABLE 12

MOTOR CARRIER

ASSET & EARNING TRENDS

	Ontario						Alberta					
	Size Class						Size Class					
	I		II		III		I		II		III	
	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976	1977	1976
Asset Trend	100	87	100	96	100	95	100	82	100	70	100	93
Sales Trend	100	87	100	97	100	85	100	80	100	71	100	89
Earnings Trend	100	81	100	88	100	72	100	92	100	96	100	65
Operating Return on Equity	19.5%	17.8%	21.9%	20.6%	32.0%	20.5%	23.3%	29.1%	25.1%	30.3%	34.8%	25.2%
Operating Return on Assets	7.0%	6.6%	7.6%	7.0%	10.4%	7.8%	8.0%	9.0%	7.3%	10.0%	10.1%	7.1%

Data

TABLE 13
MOTOR CARRIER PERFORMANCE BY SUB-CLASS

	ONTARIO						ALBERTA					
	1976			1977			1976			1977		
	OP's	ROA	ROE	OP's	ROA	ROE	OP's	ROA	ROE	OP's	ROA	S/A
<u>General Freight Carriers</u>												
Class I												
I	3.9%	6.7%	17.7%	3.9%	6.6%	17.9%	8.8%	15.3%	30.6%	7.3%	12.5%	1.69
II	3.3	6.2	17.0	5.1	9.8	26.7	4.1	13.0	5.7	3.1	6.1	1.96
III	3.6	5.7	15.6	3.6	16.1	32.3	3.9	6.9	24.5	(3.5)	(12.9)	1.69
<u>Common Carriers</u>												
Common												
I	3.9	6.9	18.6	4.0	7.0	19.5	6.2	11.2	32.4	5.9	10.7	1.81
II	3.8	7.1	22.8	4.0	7.6	24.7	3.6	9.8	28.4	3.6	7.4	2.00
III	5.0	7.5	20.7	6.0	10.6	35.0	5.6	7.7	25.2	5.6	9.6	1.71
<u>All Classes of Carriers</u>												
All Classes												
I	3.7	6.6	17.8	4.0	7.0	19.5	5.4	9.0	29.1	5.0	8.0	1.69
II	3.9	7.0	20.6	4.0	7.6	21.9	5.1	10.0	30.3	4.0	7.3	1.92
III	5.1	7.8	20.5	6.0	10.4	32.0	4.4	7.1	25.2	6.0	10.1	1.67
<u>Sample Firms</u>												
Sample Firms												
1	n/a	2.0	3.0	3.1*	2.0	6.0	n/a	n/a	n/a	5.1*	5.0	1.48*
2	n/a	n/a	n/a	9.6	9.0	16.0	n/a	n/a	n/a	(29.2)	-	.66
3	n/a	3.0	16.0	3.6	-	2.0	n/a	16.0	44.0	7.6	7.0	1.75
4	n/a	18.0	23.0	16.5	14.0	13.0	n/a	19.0	31.0	5.6	-	2.25
5	n/a	7.0	19.0	0.5	8.0	26.0	n/a	19.0	31.0	5.6	-	2.25
Sample Average	7.5	15.0	6.6	6.6	6.6	12.6	17.0	37.0	30.0	6.1**	6.0	18.2**

*Based on 1978

**Firm 2 excluded

Quotes

Chapter 6 OBSERVATIONS

During our interviews, a number of areas were discussed that the management of the carriers felt were important. While we were not able to substantiate much of what was said, it should be noted that these opinions are common to all the carriers interviewed, except where noted.

Competition

As has already been discussed, the carriers all feel that their major competition is the private carrier. This is a form of competition that the carrier is powerless to combat. In most cases, the decision to go to private carriage by a shipper has nothing to do with the individual carrier. The transition occurs at a point when the operations of the firm can justify a company fleet. Normally, this means that rather than dealing with several common carriers, the shipper will only have to deal with one internal carrier.

While this trend is not particularly harmful in major centres, it has a detrimental impact on smaller communities. In the case of the small community, the use of a private carrier by the grocery outlet, the major retailers and the beverage companies can remove most of the inbound freight from the common carrier. This has a detrimental impact on both the carrier and the community which suffers a loss in the level of service provided to it. A point common to all the interviews was that not only did the private carriers remove a significant portion of the market, but they demanded high levels of service from common carriers for odd movements. This means that the private shipper takes all the "profitable" runs, and then expects the common carrier to pick up any of the undesirable movements.

Another area that all of the carriers agreed on was the nature of the competition among the common carriers. All of the firms compete with one another on price and service. What they object to is competing against people who do not compete in a rational manner. The Alberta carriers maintain that to a large degree, the firms entering the industry do not compete rationally. Specifically, the newer firms do not comprehend the full costs of providing their services. As a result, they will price their service below the actual costs of providing it, in an attempt to attract business. From an economic theory standpoint, this should not occur, as price should never fall below marginal costs. However, in this particular industry, new management lacks the necessary understanding of business and economic

Quotes

factors to adequately operate a business.

The Alberta government acknowledged this fact, in the Report of the Select Committee of the Legislative Assembly: Reviewing Intra-Provincial Trucking Regulations, in recommendation (5), where all new entrants to the industry were to be encouraged to enroll in a basic management course. The AMTB has now developed this course, but to date, have not had the necessary enrollment to offer it.

Without understanding the costs of operating his business, an owner/manager cannot operate in a rational manner. The result is that in an open entry system, these uninformed operators needlessly depress rates.

In Ontario, the dump truck industry followed the same pattern. Discussions with the Ontario Trucking Association indicated that rates now charged by dump truck operators are the same as they were five years ago. Rather dramatic improvements in operating efficiencies must have been achieved if dump truck operators have been able to meet the rapid acceleration in fuel and equipment costs while not introducing rate increases. While improved operations may account for holding prices, a more plausible explanation is that dump truck operators turn over rapidly because the demand for the service is such that the customers don't care whose name is on the truck, just as long as there is a truck there to perform the service. Continual turnover suppresses rates.

The following exchange with an OTA executive should clarify this point:

"What's happened in the dump truck industry is that the third and fourth wave of operators keep the price down, so that the price paid per ton mile for a movement of gravel today is about the same as it was five years ago, which has got to be below cost.

"Now, there are some shippers who recognize this, and are willing to pay the extra price for reliable, assured service. On the other hand, the dump truck broker, who gets a contract at a stated price and then proceeds to contract it out, to small owner/operators, is after the lowest rate he can find. This works out beautifully for the shipper, because he doesn't care that the people in those trucks are changing like a revolving door. He only cares if the gravel is moved from the pit to the job site. The fact that the guys who've been operating those trucks aren't the same year after year doesn't matter--a truck is

Quotes

a truck. It's got a driver, and he doesn't care about anything else. The fact is that he's been able to hold his price. The dump truck operators operate below cost because they don't know what their costs are. In the dump truck industry, the biggest pressure now is to unionize, so that we can collectively bargain as truckers for our rates and conditions of work.

"The problem is too many truckers believe what they earn is what they collect (less the cash they've spent for fuel and the odd repair). They just don't understand that their equipment is wearing out, or that they should be saving up for major repairs -- it's only the cash that counts. And we've seen it happen over, and over, and over, again. As for the lesitimate operator, he's got to compete against the price suppression effect of the guy who doesn't know what he's doing".

Uncertainty

There were two different types of uncertainty that we encountered in the study. In Alberta, the firms are uncertain as to their future, due to the ease of entry and exit. A firm does not know what competition it will be facing on its routes the next day. This is particularly damaging to the smaller firms. Their operating environment does not generate the confidence necessary for expansion plans and for replenishment of equipment.

In Ontario, the uncertainty is a direct result of government. Until action is taken one way, or another, on the question of regulation, the firms are unsure as to how they should plan for the future. All of the firms agree that the plan for their operations under deregulation would be completely different than under regulation. Changes in the quality of the service that the carrier presently provides will have to be made, as well as changes in the areas that the companies serve.

Rate Setting

In Alberta, the rate structure is essentially based on the cost of providing service. If a trailer must run back from a point empty because no backhauls are available, the inbound rate will reflect this. The carriers maintain that there is no subsidization of any routes.

Quotes

At first glance one is willing to accept this as being the case, but discussions with the AMTB indicated that, while there maybe no intra provincial subsidization, there may well be extra provincial subsidization. At this point not a great deal of information has been collected, but the theory is that once a carrier reaches a certain size the extra provincial authority is required for the carrier to remain profitable. Without the extra authority the carrier is constantly fighting a rearguard action against the smaller less sophisticated carriers. The extra provincial authority provides the carrier with a service advantage which in turn provides the necessary edge to charge a premium to the customers. It should be noted here that the two largest carriers in Alberta, that we studied, recently became parts of extra provincial carriers. Management agreed in both cases that without the extra provincial connection the operation was not economically viable.

In Ontario there are claims by the carriers that their higher traffic lanes must support the lower traffic lanes. In the absence of lane analysis, however this is difficult to substantiate. A more rigorous analysis of the Ontario rate structure is required to answer this question. The carriers did indicate that there are some cost based rates. The Stratford to Kitchener rate, for example, is higher than the London to Toronto rate simply because of the lack of volume on the lane.

Rates

Chapter 7 RATES

It was not our original intent to become involved in a comparison of rates between the two provinces, however in light of some of the data collected an investigation of rates became important. The primary reason for looking at rates was to substantiate the findings of McRae and Prescott (1) concerning general commodity rates. The McRae study suggested that Alberta general commodity rates were higher than Ontario rates, at least in 1975 and 1976. We were interested in attempting to establish if this rate difference still held true.

Discussions with industry association officials suggested that rate comparisons between provinces are at best questionable undertakings. In spite of these warnings the question was of such significance that the following rate study was attempted.

Comparable Lanes

The first part of the study was to attempt to find comparable traffic lanes for comparison. The importance of Calgary and Edmonton in Alberta, and Toronto, in Ontario is such that these centres serve to distort rates. Therefore it was desired to match cities off the mainline. In Alberta, Lethbridge and Medicine Hat were chosen and in Ontario St. Thomas and Barrie. These two sets of cities are both approximately 180 miles apart and are similar in total population.

The Rate Comparisons

Rather than look at specific commodity rates, we started with the general commodity tariffs (2,3). The tariffs for the Barrie/St. Thomas and Lethbridge/Medicine Hat lanes are summarized in Table 1.

In interpreting Table 1, and the other tariff tables in this chapter, the first section of each table is for per shipment movements of a given weight. The second section of the table is the rates, in cents, for a hundred pounds in the specified weight class. The following example should clarify the tables.

To ship a 250 pound shipment from Lethbridge to Medicine Hat would cost \$14.05. To ship 3,000 pounds over the same route would cost \$81.60 ($3000/100 \times \2.72)

TABLE 1

General Commodity Rates

Lethbridge to Medicine Hat

Pounds	0-100	101-150	151-200	201-251	251-300
Shipment Costs	\$11.00	\$12.50	\$12.50	\$14.05	\$14.05
Pounds	301-350	351-400	401-450	451-500	
Shipment Costs	\$15.55	\$15.55	\$17.10	\$17.10	
Pounds	500	1000	2000	5000	10000
¢/cwt	342	306	272	239	205

St. Thomas to Barrie

Pounds	0-100	101-150	151-200	201-250	251-300
Shipment Costs	\$14.50	\$19.85	\$24.05	\$27.50	\$30.85
Pounds	301-350	351-400	501-450	451-500	
Shipment Costs	\$34.50	\$37.55	\$40.55	\$43.55	
Pounds	500	1000	2000	5000	10000
¢/cwt	874	624	562	362	253

Rates

Returning to Table 1, it appears that the Alberta rates are significantly below those in Ontario. It is not until the large 10,000 pound shipments that the two rates even become close.

The Problem of Flas Outs

Unfortunately there are significant problems with the conclusion that the Alberta rates are lower because of the structure of the Alberta tariff. In Alberta specific commodities are 'flassed' out and are assigned a rate higher than the general tariff. Table 2 is a random selection of 40 of these commodities. It shows the total cost for shipping these commodities between Medicine Hat/Lethbridge and St Thomas/Barrie. For the 40 shipments the Alberta rate is higher in four weight classes out of six.

In the Alberta tariff there are a total of 211 commodities that are flassed out. Flas out factors range from 1.25 to 5. Appendix A is a list of these 211 flassed out commodities. An analysis of the appendix shows that everything from airplane parts to shrubs have been flassed out. Few commodities appear exempt from the surcharges.

To attempt to assess the impact of flassing out on rates, we calculated the average flas out factor for the 211 commodities in Appendix A. The weighted average flas out is 2.85. Applying this factor to the Lethbridge and Medicine Hat rates produces the rate structure shown in Table 3.

The process for creating Table 3 involved multiplying the rates for the Lethbridge to Medicine Hat movement by the average 2.85 flas out factor. Shipment rates are the greater of the stated shipment costs, or the number of pounds (divided by 100) in the shipment class times the 500 pound adjusted rate. These adjustments increase the Alberta tariff. In the previous example the 250 pound movement would cost \$29.25 and the 3000 pound shipment would cost \$232.50.

Comparing Table 3, the revised Lethbridge to Medicine Hat rates with the St. Thomas to Barrie rates, in Table 1, indicates that in most cases the Alberta rate is higher than the corresponding Ontario rate.

Rates

TABLE 2

Lethbridge/Medicine Hat versus Barrie/St. Thomas

TOTAL COST PER SHIPMENT
(in ¢)

Commodity	# of lbs.											
	250		500		1000		2000		5000		10000	
	Alta.	Ont.	Alta.	Ont.	Alta.	Ont.	Alta.	Ont.	Alta.	Ont.	Alta.	Ont.
Air Conditioners	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Auto Body Parts	3573	2750	4275	4355	8550	8740	13600	12400	29875	18100	51250	25300
Plastic Bags	7025	2750	8550	4355	15300	8740	27200	12400	59750	18100	10000	25300
Wooden Barrels (Empty)	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Bicycles	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Plastic Bottles	7025	2750	8550	4355	15300	8740	27200	12400	59750	18100	10000	25300
Brooms	2815	2750	2420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Cameras	2108	2750	2565	4355	4590	8740	8160	12400	17925	18100	30750	25300
Carriages	4918	2750	5985	4355	10710	8740	19040	12400	41825	18100	71750	25300
Carts (Hand, Set-Up)	3573	2750	4275	4355	7560	8740	13500	12400	29875	18100	51250	25300
Cork	3513	2750	4275	4355	7650	8740	13600	12400	29875	18100	51250	25300
Paper Cups	2108	2750	2565	4355	4590	8740	8160	12400	17925	18100	20750	25300
Cushions	7025	2750	8550	4355	15300	8740	27200	12400	59750	18100	10000	25300
Surgical Dressing	3513	2750	4275	4355	7650	8740	13600	12400	29785	18100	51250	23500
Dryers (Laundry)	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Evestroughing	3513	2750	4275	4355	7650	8740	13600	12400	29875	18100	51250	25300
Filters (Auto)	4918	2750	5985	4355	10710	8740	19040	12400	41825	18100	71750	25300
Hoist Stock	7025	2750	8550	4355	15300	8740	27200	12400	59750	18100	10000	25300
Foodstuffs	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Furniture (Household)	4215	2750	5130	4355	9180	8740	16320	12400	35850	18100	61500	25300
Glass (Ladel)	2108	2750	2565	4355	4590	8740	8160	12400	17925	18100	30750	25300
Humidifiers	2810	2750	3420	4355	9120	8740	12240	12400	23900	18100	41000	25300
Ladders (Alum.)	4215	2750	5130	4355	9180	8740	16320	12400	35850	18100	61500	25300
Matresses	4918	2750	5985	4355	10710	8740	19040	12400	41825	18100	71750	25300
Scouring Pads	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Paper	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Radios	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Empty Reels	3513	2750	4275	4355	7650	8740	13600	12400	29785	18100	51250	25300
Signs	4918	2750	5985	4355	10710	8740	19040	12400	41825	18100	71750	25300
Sleighs	4918	2750	5985	4355	10710	8740	19040	12400	41825	18100	71750	25300
Sporting Goods	2108	2750	2565	4355	4590	8740	8160	12400	17925	18100	30750	25300
Straws	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Television Sets	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Toilet Fixtures	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Toys (Metal)	3513	2750	4275	4355	7650	8740	13600	12400	29785	18100	51250	25300
Picture Tubes	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Urns	3513	2750	4275	4355	7650	8740	13600	12400	29785	18100	51250	25300
Aluminum Ware	3513	2750	4275	4355	7650	8740	13600	12400	29785	18100	51250	25300
Washing Machines	2810	2750	3420	4355	7120	8740	12240	12400	23900	18100	41000	25300
Windshields	3513	2750	4275	4355	7650	8740	13500	12400	29785	18100	51250	25300
Average	3671	2750	3762	4355	7107	8740	12478	12400	26268	18100	44850	25300

TABLE 3

Revised Lethbridge to
Medicine Hat Tariff

Pounds	0-100	101-200	201-300	301-400	401-500
Shipment Costs	\$11.00	\$19.50	\$29.25	\$39.00	\$48.75
Pounds	500	1000	2000	5000	10000
¢/cwt	975	872	775	681	584

Rates

The same procedure was followed for the tariff rates between Calgary and Medicine Hat and Toronto and Chatham, again two city pairs approximately equal distances apart. As can be seen in Table 4 the regular tariff is lower in Alberta than in Ontario, but when the flat out adjustment is applied the western tariff becomes higher. Exactly the same thing happens in Table 5, where Calgary to Red Deer and Toronto to Kitchener tariffs are compared.

Implications

The use of flassing out by Alberta carriers poses serious problems to any analysis of rate differentials. It can not be determined what proportion of traffic moves at the stated tariff in Alberta and what proportion would move at some higher rate. Studying the list of exempt commodities, indicates that a significant amount of traffic must move at some grossed up rate. Until a definite analysis is done of movement by commodity, however, any conclusions drawn about rate differentials at this point must be tentative.

On the assumption that only 50 percent of the Alberta freight moves at the flassed out rates the weighted rate structure for Alberta is shown in Table 6. When these rates are compared to the relevant Ontario rates they are, on average 40 percent higher. However when city pairs are compared the difference in the rates is varied. When Lethbridge, Medicine Hat is compared to Barrie, St. Thomas the rate difference is 22 percent. For the other two city pairs, we studied, the rate difference is 61.5 percent and 36 percent.

Further Investigation

Because our interpretation that the Alberta rates are higher has such serious implications, we attempted to verify our understanding of the tariff differences between the two provinces through discussions with Directors of the Western and the Canadian Transport Tariff Bureaus. These discussions raised several questions which led us to extend our investigation.

Rates

TABLE 4

Calgary to Medicine Hat

Pounds	0-101	101-200	201-300	301-400	401-500
Shipment Costs	\$ 9.90	\$12.35	\$14.80	\$17.25	\$19.70
Pounds	500	1000	2000	5000	10000
¢/cwt	394	328	295	243	187

Toronto to Chatham

Pounds	0-101	101-150	151-200	201-250	251-300
Shipment Costs	\$13.40	\$15.00	\$16.75	\$18.55	\$20.50
Pounds	301-350	351-400	401-450	451-500	
Shipment Costs	\$22.05	\$24.30	\$25.80	\$26.90	
Pounds	500	1000	2000	5000	10000
¢/cwt	495	455	385	245	170

Calgary to Medicine Hat (Adjusted)

Pounds	0-100	101-200	201-300	301-400	401-500
Shipment Costs	\$28.22	\$35.20	\$42.18	\$49.16	\$56.15
Pounds	500	1000	2000	5000	10000
¢/cwt	1123	935	841	693	533

TABLE 5

Calgary to Red Deer

Pounds	1-100	101-150	151-200	201-250	251-300
Shipment Costs	\$ 8.90	\$10.30	\$10.30	\$11.65	\$11.65
Pounds	301-350	351-400	401-450	451-500	
Shipment Costs	\$13.05	\$13.50	\$14.45	\$14.45	
Pounds	500	1000	2000	5000	10000
¢/cwt	289	242	221	179	138

Toronto to London

Pounds	1-100	101-150	151-200	201-250	251-300
Shipment Costs	\$12.80	\$14.05	\$15.80	\$18.05	\$19.25
Pounds	301-350	351-400	401-450	451-500	
Shipment Costs	\$20.95	\$23.10	\$24.45	\$25.20	
Pounds	500	1000	2000	5000	10000
¢/cwt	475	385	315	205	145

Calgary to Red Deer (Adjusted)

Pounds	1-100	101-200	201-300	301-400	401-500
Shipment Costs	\$ 8.90	\$16.48	\$24.72	\$32.96	\$41.20
Pounds	500	1000	2000	5000	10000
¢/cwt	824	690	630	510	393

TABLE 6

'FLAG OUT' MIX ADJUSTED RATES

Medicine Hat to Lethbridge

Pounds	0-100	101-200	201-300	301-400	401-500
Shipment Costs	\$21.18	\$24.07	\$27.05	\$29.93	\$32.92
Pounds	500	1000	2000	5000	10000
¢/cwt	659	438	389	342	395

Calgary to Medicine Hat

Pounds	0-100	101-200	201-300	301-400	401-500
Shipment Costs	\$19.06	\$23.78	\$28.49	\$33.21	\$37.93
Pounds	500	1000	2000	5000	10000
¢/cwt	759	627	568	468	360

Calgary to Red Deer

Pounds	0-100	101-200	201-300	301-400	401-500
Shipment Costs	\$17.14	\$19.83	\$22.43	\$25.12	\$27.82
Pounds	500	1000	2000	5000	10000
¢/cwt	557	466	426	345	266

Rates

The first concern raised was that neither the Barrie/St.Thomas or Medicine Hat/Lethbridge lanes are legitimate traffic lanes, in so far as, no carrier services these communities directly. Instead, Medicine Hat/Lethbridge traffic is routed via Calgary and Barrie/St.Thomas traffic would move via Toronto and/or London.

We acknowledge this criticism. Our response can only be that the movements are similar, they are just not direct. More importantly, this criticism reflects the real difficulty of finding comparable lanes for analysis -- it is very, very difficult. In addition, it is because of this criticism that we extended our analysis to the additional city pairs reported.

The second concern with our analysis, raised by our Western discussant, was that it made no sense that the Ontario carriers do not adjust their rates for bulky and/or especially valuable commodities. "Surely they charge more for television sets which are so highly susceptible to damage" was the illustration used.

The answers to these questions appears to be mixed. The CTTB tariff does incorporate a density requirement. Ontario general commodity rates are "subject to a minimum density of 10 pounds per cubic foot". In contrast the Western tariff is subject to a minimum density of 15 pounds per cubic foot.

Regarding adjustments for commodities, there is no general flag out component in the CTTB tariff similar to the commodity flag outs specified in the Western Tariff. But this does not mean adjustments do not exist. It only means they are not general. In Ontario adjustments are the result of independent action by a specific carrier for a specific commodity in a specific lane.

To understand the impact of independent action, in the CTTB tariff, we extended our investigation. Our first concern was to ensure that the comparisons reported previously, in this chapter, were not invalidated by independent actions. To address this concern we diligently searched through the CTTB tariff to identify all independent actions for all of the commodities included in Table 2. Our intent was to determine if any independent actions existed for the lanes we were analysing. We found no independent actions for the commodities included in Table 2 on either the Barrie/St.Thomas lane, or the Toronto/Chatham lane. And, for the Toronto/ London lane the only action was for truckloads of washing machines. Our interpretation is that flagouts are much more prevalent in Alberta than in Ontario.

Rates

But the fact remains, independent actions are taken in Ontario. This raises the question, what is the impact of these actions on the CTTB tariff? To address this question we identified all independent actions related to the list of commodities included in Table 2. We examined these independent actions and compared them to the regular general merchandise tariff for all shipments in central and western Ontario. The results of this analysis are reported in Table 7.

Our interpretation of Table 7 is that while there are some anomalies in the independent actions, these tariff revisions predominantly represent reductions from the general tariff. The majority represent either truckload or large weight rates. More specifically, the direct answer to our Westerner's query about television sets appears to be that the Ontario tariff does not rate them higher because they are more fragile.

This extension of our investigation of the Western and CTTB tariffs leads us to conclude that the Western tariff flaps up and the CTTB tariff flaps down.

A further criticism of our examination of rates and the conclusion that Alberta rates are higher comes from an Ontario Ministry of Transport official. His concern with our conclusions is that:

"the rates published in item 7267 CTTB 90-D are not necessarily representative of all Ontario general merchandise rates. Many movements occur under Ontario Grouping Triff No. 1, which contains an exception list, very similar to Alberta's list. This causes Ontario rates to be subject to the same upward factoring as Alberta"

"the commodities on the exception list cover only a small portion of the total amount of goods moving. Thus only a minority of goods actually moved are subject to upward factoring in both provinces".

Finally, "rates in item 7267, CTTB 90-D are subject to the 10 pound per cubic foot rule, e.g. if a commodity shipped weighs only 5 lbs. per cubic foot, weight of the shipment is doubled (to reflect 10 lbs per cubic foot) which in effect doubles the rate. Most commodities in the Alberta exception list are bulky items. For this reason, the comparisons in Table 2 may not be valid".

Rates

Our response to this criticism must be to again admit the complexity of the rate issue. The existence of multiple tariffs in Ontario for similar commodities seems incongruous, but does indicate a further reason why inter-provincial rate comparisons are so difficult.

Within the context of this study we were unable to establish the extent to which freight moves under the CTTB 90-D tariff or under the Ontario Grouping Tariff. Because we do not know what the relative movements are, it is difficult to judge the extent to which Ontario goods are susceptible to exception surcharges. Nor, in Alberta, do we know the rate structures of the non-tariff bureau firms.

Because of the limited sampling of rates undertaken in this study, and the extreme complexity of the rate process, it is not possible to draw definite conclusions about rate differences between Ontario and Alberta. The only conclusion that can be drawn is that attempting to make comparisons between the two provinces is an extremely difficult task. Rates are not solely set based on the distance travelled, but are dependant on other factors, one of which is volume of traffic. Therefore for any rate comparison to be valid it must attempt to look at rates between points an equal distance apart and with similar volume movements on both the front and the backhaul. Any rate comparison that ends up comparing Northern Ontario data with rates in Southern Alberta is going to be misleading. And it is very difficult to establish matching lanes. The effect of Calgary and Edmonton and the corridor between them has a profound impact on rates. A similar situation in Ontario does not exist. By the same token Toronto dominates Ontario in a way unlike any city in Alberta dominates that market.

These factors must all be considered when discussing rate comparisons, and because of this complexity it may simply not be possible to do a macro comparison of rates between the two provinces. To arrive at useful conclusions, based on realistic data the study may have to be done at the micro level, comparing like lanes and commodities.

TABLE 7
INDEPENDENT ACTIONS ONTARIO TARIFF

Commodity	Routing		Movement	Regular Tariff for 10,000 lbs., or actual weight	Independent Action	Routing		Movement	Regular Tariff for 10,000 lbs., or actual weight	Independent Action
	From	To				From	To			
Plastic Bags	Burlington	Chatham	10K 15K	253 N/A	122	Barrie	Toronto	20K	180-200	101
Bicycles	Hamilton	Chatham	500# 1000# 5K 10K	850 606 297 193	559 413 229 153	Burlington	Toronto	LTL 2K 10K	515 350 195 133	416 323 209* 113
Plastic Bottles	Toronto	Brantford	15K	125-165	113	Chatham	Toronto	24K	185	182
Brooms	Toronto	Windsor	20K	170-220	150	Toronto	Oshawa	24K	102-158	72
Cork	Toronto	Stratford	24K	145-180	86	Stratford	Toronto	500# 1000#	578 391	174 174
Cushions	Toronto	Oshawa	LTL 2K 5K 10K	615 403 214 155	235 227 149 102	Brampton	London	\$300 TL	174 170	174 150
Eavestroughing	Toronto	Kitchener	\$186 TL	140-170	93	Kitchener	Brantford	1000# 2K 10K 24K	403 214 155 N/A	380 325 87 49
Foodstuffs	Brantford	Chatham	500# 1000# 2K 5K 10K	850 606 547 271 193	631 452 340 173	Brampton	Toronto	500# 1000# 2K 5K 10K	578 391 269 174 122	402 313 280 169 120
Furniture	Oakville	Toronto	LTL 12K	452-583 144	367 136	London	Toronto	20K	145-180	83
Glass	London	Toronto	40K	170	76	Cambridge	Toronto	24K	140-170	80
	Toronto	Kitchener	30K 40K	160 160	86 71	London	Hamilton	20K	141-194	111
	Toronto	Oshawa	LTL 2K 5K 10K 20K	524-615 509 356 175 119	235 227 149 102 87	London	Toronto	20K	145-180	109
						London	Windsor	20K	163-218	142
						Toronto	London	20K	145-180	121
						Brantford	Hamilton	LTL	575	455

Legend

* anomalies

Rates

References:

- 1) James J. McRae and David M. Prescott, The Effects of Economic Regulation on the Canadian Common Carrier Industry: A Report Prepared for the Centre to Study Inflation and Productivity, Economic Council of Canada, April 1979.
- 2) Canadian Transport Tariff Bureau Association, Ontario Commodity Tariff No-90D, Rexdale Ontario, 1975 (as revised).
- 3) Western Tariff Bureau, Tariff 203, Calgary Alberta, March 1977 (revised)

Interpretation

Chapter 8 INTERPRETATION

THE MARKETS

Even on the basis of the brief summary of economic information presented in Chapter 3, some conclusions and useful insights can be drawn about the for hire motor carrier markets in Alberta and Ontario.

Population

Population is one indicator that can be used as a proxy for the volume of traffic within a market. Not only is the absolute value of the population important but also how it is dispersed throughout the market area.

Chapter 3 indicated Ontario has a much larger population located in many more communities. The number and size of the centres have important implications for the transportation industry, for they reflect to some degree the level of economic activity and its concentration. Alberta has only two centres of significant size, Calgary and Edmonton. These two cities dominate all else that occurs within the province. Ontario, with 17 centres of more than 100,000 people does not show the same degree of concentration.

If population can be used as a proxy for the volume of traffic, then the number of carriers per capita should give some indication as to how well the population is being served. In, Ontario, for 1975 there were 11,000 people for every motor carrier with annual revenues in excess of \$100,000. In Alberta there were 4,800 people for each comparable carrier. While there are more people, per carrier, being served by each Ontario firm, taking the physical size of the carriers into account reduces the significance of this difference. The Alberta carriers are much smaller, operating 12.6 versus 27.6 trucks and tractors in 1976 (12.9 versus 27.1 for 1975). As a result each Ontario truck served 426 people in 1976 compared to 395 for each Alberta truck (408 versus 370 for 1975).

The larger per capita investment in equipment in Alberta suggests that there may be an oversupply of carriers in Alberta. The reason for this belief is the excessive competition we observed on some lanes. The Calgary to Red Deer lane is the best

Interpretation

example. It had such an excessive supply of carriers that firms, we studied, had ceased operating to Red Deer, and we were told other large carriers had been unable to provide viable service to other markets in the Province.

Level of Economic Activity

In 1975 there were 12,245 manufacturing establishments in Ontario and 1,821 in Alberta. The Ontario establishments produced goods valued at \$44.4 billion versus \$4.7 billion in Alberta. Once again these figures can be used as a proxy for the volume of traffic that is being moved. In Ontario there was \$60 million of manufactured goods available for every motor carrier. In Alberta the figure was \$12.7 million. Of course much of this freight would move by alternate forms of transportation, but the fact remains that there is more traffic available to the Ontario carrier.

In 1976 an expanding economy and a decrease in the number of carriers in both provinces changed the figures but not the conclusions. In Ontario the value of manufactured goods per carrier rose to \$71.4 million and in Alberta to \$14.4 million.

The value of manufactured goods does not represent the entire amount of economic activity. When farm receipts, lumber production and natural resource activity are added, a more complete proxy for the volume of freight is estimated. In Ontario for 1975 these activities accounted for \$5.1 billion and in Alberta for \$7.6 billion. In Ontario this accounted for 10 percent of economic activity and in Alberta 62 percent. Obviously the natural resource and agricultural movements account for a much larger proportion of the Alberta economy and we would suspect a larger proportion of Alberta freight movements.

A short digression on rates and types of movements is in order at this time. Given the importance of natural resource movements and farm produce in Alberta it would seem likely that rate competition would be more severe for these commodities. By the same reasoning the general commodity rates in Ontario should reflect the importance of the movement of manufactured goods. This could help explain why the Ontario general commodity rates maybe lower than the Alberta rates. It is quite conceivable that regulation of the industry does not have the impact on rates that many believe, but that rates are primarily influenced by the structures of the market place and commodities to be moved.

Interpretation

Extra-Provincial Movements

The previous discussion provided some insights into the factors affecting the transportation industries in Alberta and Ontario. One would be either very brave or very brash to attempt to draw definite conclusions based on this information. It would be particularly misleading to do so because of the little information available about the volume of goods that move on extra-provincial versus intra-provincial carriers within each province. It is all well and good to point to Alberta and say that they have a deregulated intra industry and it appears to be adequately meeting the province's shipping needs. But, if only 20 percent of the goods that move within the province move by means of the unregulated intra-provincial carriers, then any conclusions may be misleading.

Unfortunately, we have no data concerning the distribution of freight between intra and extra carriers in Alberta. However given the recognized dominance of Canadian Freightways and the fact that many large trans-continental freight lines (often from Ontario) also serve the province, there is a significant likelihood that only a small portion of Alberta's freight is moved by the unregulated fleet.

THE CARRIERS

History

The Ontario firms are much older than the Alberta based carriers. This is possibly a result of regulation creating a more stable environment for the firms in Ontario but the major contributing factor appears to be the difference in the economic development of the two provinces. Alberta has not developed to the same extent as Ontario. And, the Alberta economy would have relied heavily on rail transport throughout its development.

Interpretation

Competition and Service

Right from the start, we would like to make clear that from the evidence that we have seen, companies in both provinces actively compete for customers.

While the nature of this competition may be different, we saw no evidence that would suggest that the Ontario firms feel more complacent about the need to attract new customers because of any perceived protection under regulation.

The carriers in both provinces maintain that the basic method of competition is service. In both markets management believes that only by providing the level of service that the shipper demands can the company hope to retain customers.

Without doing an actual shipper survey it is difficult to draw any conclusions about managements' service claims, however there are some proxies that may be used. One of these is revenue per foot of capacity (Table 1). Table 1 shows that revenue per trailer foot of the Alberta carriers is higher than for the Ontario firms. The reason for this difference is difficult to identify. Data regarding shipment weights, cubic capacity utilization, tons shipped or time spent on movements might have shed some light on the cause of the difference. Unfortunately, for the firms we studied, this information was simply not available. One plausible explanation for this difference maybe that the Ontario carriers are not able to consolidate shipments as extensively as the Alberta carriers because of the need to get the freight on its way.

Table 1
Sales per Foot of Trailer Length

Firms	1	2	3	4	5	Average
Ontario	\$744	\$816	\$516	na	\$1080	\$789
Alberta	896	1099	1120	395		878

Another aspect of service is the willingness of carriers to 'spot' trailers at a shippers dock in order that he may load on his own schedule. Again in the absence of any shipper data a proxy measure was calculated-- the ratio of trailers to tractors. In Ontario the average is 2.5:1 whereas in Alberta the ratio is

Interpretation

2:1. The higher trailer to tractors ratio in Ontario suggests that the carriers are more willing to service their customers by leaving trailers with them. Of course this is not the only possible explanation for the difference between the provinces. It may be that due to competitive pressures the Alberta firms simply can not afford to finance a higher trailer to tractor investment. Or, it may be that the Ontario firms 'spot' trailers in order to secure future shipments from major accounts. This implies that a great deal of economic power resides with the shipper in Ontario.

A final aspect of service involves how freight gets to small communities. In Ontario carriers run direct to these communities. Many carriers operate 'pedal runs' where freight for several communities is loaded on a trailer and then distributed as the trailer moves from community to community. And, these pedal runs are offered on a regular schedule, even if the trailer is not full which may reflect on the lower revenue per foot of trailer previously discussed.

In Alberta we did not see the same pattern. In Alberta freight does not reach the small communities by means of the inter-city carriers. Instead, each small town has its own local one or two truck operator who picks shipments up at the inter-city carrier's terminal for delivery to his community. In Alberta, we have the impression that only the private fleets provide extensive distribution or pedal runs. The only time an inter-city carrier would send a truck to a small community would be when he had a full truck load to move.

The differences in treatment of small communities between provinces appears to be both an impact of the economic differences between the provinces and of regulation. Alberta carriers run city to city because that is where the preponderance of freight moves. Ontario carriers run geometric patterns, circles, squares and triangles, both because freight is disbursed in patterns and because their operating authorities require it. Ontario carriers might not serve small communities directly if it was not required. We were told they would rather hold freight and tranship if it were not for regulation.

Where regulation has an apparent advantage for small communities it also may lead to excess levels of service. Until recently rates have not been a component of the OHTB's consideration of an application for an operating authority. As a result, the way to get a new authority, often was to create a new

Interpretation

type or level of service, such as same day delivery. We don't know what dislocations creating new services just to get licensed has caused, however it is possible some dislocations have occurred.

Pricing

The whole issue of service and the service/price tradeoff is extremely complex. The carriers believe service is the key to business. This may be true, however the emergence of the private fleet, in both provinces, and the Ontario illegal fleet poses questions about this assertion.

We were told, by a reliable industry source, that there are truck brokers in Ontario who can arrange for movements of freight at rates running half to two-thirds of the CTR tariff. These rates are possible apparently through the use of leased equipment and through the use of driver pools. If such arrangements exist for a firm for several months they look like a private fleet, while on a trip to trip basis, or day to day basis they verge on illegal carriage. In Ontario, any shipper can carry his own goods in his own truck, whether that truck is leased, rented or purchased. Such operations only become illegal if more than one shippers' goods are on the truck, or if the truck attempts to pick up someone else's freight for a backhaul home.

Operators of private fleets claim many reasons for operating their own trucks. Reasons range from price, to advertising, to service. One firm operating a large in-house fleet maintained that its fleet costs are 5 to 10 percent below what the firm would pay for competitive common carrier rates for the volumes it moves.

Another large private fleet distributing merchandise coast to coast claims that common carriers just can not provide the service that the private fleet can. Deliveries that take a week via the in-house fleet take 2 or 3 weeks by common carrier. Common carrier claims are higher due to greater amounts of damage and shortages, and LTL rates are about double the private fleet costs.

The manager of this private fleet concluded that running to major cities the common carriers can do as good a job as he can. It is the small communities (and even suburbs of major cities) where his trucks can and will go, but a common carrier does not,

Interpretation

that causes the problems of delay, damage and cost.

Both of these private carriers are in businesses where they generate their own backhauls. One is over 90% loaded both ways while the other is operating at about 75%. For both of these firms private carriage appears to be more responsive and less costly than common carriage.

The whole issue of private carriage and the existence or size of any clandestine fleet, poses several questions we have been unable to answer concerning the extent to which rate is really a much more important issue than the carriers we studied, believe it is. It raises questions about the costs and efficiency of private carriage and leased fleets. Perhaps, because these fleets are not supporting terminals, are not running partially loaded trucks and may not be paying for the overheads necessary to run a separate business, they do operate less expensively, we just do not know.

Price competition would appear to be more severe in Alberta. This should not be taken to mean that it doesn't exist in Ontario. A brief look at the tariff schedule of the CTTB will indicate just how many special low prices have been arrived at in Ontario.

The reason for the difference in Alberta seems to stem from the low entry barriers and the resultant influx of carriers. As a result one finds the same situation in Alberta that has been described for the Ontario dump truck industry. New operators enter and, in an attempt to attract business, lower rates. This forces rates down for all carriers.

Finally, we do not know what the effect of having to file rates with the OHTB has upon rates in Ontario. We suspect the impact is very small. The CTTB tells us that its members meet regularly to adjust their tariff. Filing any changes with the OHTB does not appear to pose problems, only clerical costs.

The whole question of service and price deserve much more attention. In his research, in the United States, Wyckoff found that price accounts for only five percent of the decisions to change carriers, while various service components comprised the other 95%. Since the price/service trade off appears to be so important it requires much more attention.

Interpretation

In summary, the following interpretations can be made:

- 1) As suggested by Wycoff, the carriers perceive that service is the most important competitive factor.
- 2) Trailer to tractor ratios suggest that Ontario firms maybe providing better service to their customers.
- 3) Price competition is more severe in Alberta as a result of the lower entry barriers.
- 4) The price/service tradeoff is not well understood.

Backhauls

Ontario carriers appear to have much better balance on average than the Alberta firms. This fact reflects the economies of the areas served more than any other factor. In Alberta there is a problem with economic imbalance between various areas, which is compounded by a large number of carriers. The city of Red Deer is a good example. There is one carrier for every 800 people in Red Deer. This oversupply results in a larger number of empty miles than is necessary to ensure that an adequate level of competition is maintained. This results in the industry in Alberta being less energy efficient than is desirable. Another issue that is worthy of further study.

Equipment Utilization

As has already been indicated revenue per foot of trailer space in Alberta is higher than for Ontario. It has been suggested that this difference may well be the result of a higher demand for service in Ontario.

Another measure of equipment utilization is revenue generation per tractor. To take into account the nature of the Alberta operations, brokers employed on a regular basis have been included in the calculation of this figure. Other studies which have shown a significant difference in revenue generation between Alberta and Ontario do not seem to have included these brokers. Failure to do so must result in misleading conclusions, for without the brokers the Alberta companies would have to purchase their own power units.

Interpretation

There may be many explanations why Alberta carriers use brokers -- including a lack of capital or significant seasonal peaks and valleys which may justify only short term commitments of equipment. For the Alberta firms, we studied, who use brokers extensively, neither of these explanations apply. The most prevalent user was financially able to finance equipment acquisitions. The second firm's broker was driving a tractor previously owned by the company. Neither of these companies had seasonal movements. There were no significant peaks and valleys in operations that would justify short term commitments for temporary power. In fact, both these firms had long term commitments to their brokers (much the same as monthly payments had the units been owned).

The high usage of brokers in Alberta appears to be due to a lack of investor confidence. It would appear to make sense for these carriers to invest in their own tractors because doing so would increase overall profitability by at least the return the broker is getting on his investment. The reason for not investing appears to be a desire for maintaining as much flexibility as possible in order to gain some protection against dramatic market fluctuations.

The figures we have gathered on equipment utilization do not suggest that there are any differences caused by regulation. The one difference that has been identified, the propensity to drop trailers, seems to be the result of shipper power in Ontario rather than any regulatory force.

Management

Management of the Alberta companies appears to be more sophisticated, considering their extensive use of computers and the resulting operating data. However this is probably an inaccurate impression of the two groups of managers. To begin with any comparison of management expertise, within the time limits of this project, is a risky undertaking. Secondly, the Alberta firms are younger (except for the two young Ontario firms which are at least as advanced as the Alberta firms in terms of the formal information available). This observation has led us to the opinion that the sophistication of management systems and reports is more a function of the experience of management than of any other factor. What is being done formally in the younger companies is being done informally in the older firms. With the coming generation change in the Ontario firms we expect this

Interpretation

situation to change. At the present time though, the Ontario managers run their companies more by intuition than through formal management plans and reports.

Financial Condition

The balance sheet data, presented in Chapter 5, perhaps most strongly highlights the financial strength of the Ontario carriers. Several of the Ontario firms have solid financial foundations. Conversely the large Alberta carrier was desperately over extended (which accounts for its subsequent demise).

As perhaps should be expected, the carriers' major investments are in rolling stock and facilities. Accounts payable typically provide financing for accounts receivable and negative working capital ratios appear in both provinces.

Operating Results

A better measure of management performance is a comparison of the operating results of the firms. One problem with the use of the operating margin is potentially incomparable accounting policies. There is no doubt that all of the carriers take full advantage of the income tax regulations to avoid as much tax as possible. To the extent, though, that they have used different accounting policies and depreciation rates (for example) discrepancies can exist in the operating margins. A further area of difference is the remuneration of officers and executives. A higher percentage of sales is being paid in Ontario than in Alberta for executive compensation. This does not necessarily mean larger staffs in Ontario. It only means that for personal reasons the Ontario owners are taking more revenue out (possibly to reduce tax costs to the firm or for estate planning purposes).

Another problem with attempting to compare cost structures of the firms is that two elements of cost are wholly beyond the control of management -- the cost of fuel (or at least that portion of provincial taxes in the price of each gallon of fuel) and the costs of vehicle license plates. There is as much as a 28 cent per gallon difference in the cost of fuel between the two provinces. The Ontario firms operate at a 1.8 percent (of sales) disadvantage simply because their fuel costs are higher.

Interpretation

Fuel is not the only cost that can not be controlled by management. Another cost is licencing, for which the Ontario average of 1.8 (percent of sales) is about equal to the Alberta average, however this picture changes when the obviously excessive licencing costs for carrier 2, in Alberta (5.4% of sales) is removed. The Alberta average drops to 0.6%. Again the Ontario carriers are at a disadvantage.

A final uncontrollable area of cost difference is insurance. It has been suggested elsewhere that insurance costs are a function of the number of miles run. From our investigation, it appears that total insurance costs are more a function of fleet size and the past safety record of the fleet. On average the Ontario firms are paying less for their insurance than their Alberta counterparts (1.4 versus 2.5% of sales). A possible explanation for this insurance saving appears to be in the maintenance costs of the Ontario carriers. The Ontario carriers are spending more of their revenue on maintenance. (8.1 percent versus 6.3, [again excluding carrier 2 in Alberta]). Literature on the industry and common sense suggest that maintenance will reduce mechanical failures which may lead to accidents and higher insurance rates. The Ontario firms seem to be trading increased maintenance costs for reduced insurance costs.

Table 2
Comparison of Operating Ratios

	Alberta	Ontario
Average operating ratios (successful firms)	93.9%	93.3%
Adjustment for:*		
Alberta fuel difference		(1.8)
Alberta insurance difference		1.1
Alberta licence differential		(1.2)
Alberta maintenance difference		(1.8)
Adjusted ratios	93.9	89.6

* Derived from tables 5 and 6 of Chapter 5

Interpretation

Summarizing the operating data it appears that the Ontario carriers may be more profitable than their Alberta counterparts (Table 2). Table 2 indicates that comparable Ontario costs (as a percent of sales) are below those of the Alberta carriers by a factor of 4.3%. This four percent of additional profits may be accounted for by the larger size of the Ontario carriers. We tried to match the carriers for size but that was not possible because there simply were no large Alberta intra-provincial general commodity carriers to be studied. If regulation contributes to carriers achieving a size where they can be efficient, regulation may be providing Ontario with larger and slightly more profitable carriers. An additional conclusion, must be that in spite of the most dire warnings of the deregulationists we could find no significant excess or monopoly profits accruing to the Ontario carriers. The Ontario firms were well run, but they were not significantly more profitable than their Alberta counterparts.

Size also explains why the costs of the Ontario firms appear more variable than the costs of the Alberta firms (68.3 versus 61.1%). The Ontario firms are larger and have more volume and revenue over which to spread their overhead costs.

Financial Trends

The financial trend information reported in Chapter 5 portrays a volatile industry, particularly in Alberta.

Sales of the Alberta carriers appear to fluctuate more rapidly than those of the Ontario Carriers. This may reflect cycles in the economy of Alberta. It may also reflect the impact of new carriers entering into the market. All of the Alberta firms indicated that shippers were transient, always on the move for a better price.

It is the earnings trend data which is most striking. With the exclusion of carriers 3 and 5, the Ontario earning trends are improving strongly. And, for both carrier 3 and carrier 5 the fall off in earnings can be attributed to deliberate management decisions to sacrifice current profits for growth. Both of these carriers have undertaken significant expansions in 1978 with asset growth of over 40 percent.

Interpretation

For the Alberta carriers, there is no similar explanation for the volatility of earnings. The only explanations management could provide were that competition erodes profits, that shipper power keeps rates down, and the impact of the AIB constraints on Canadian Freightways.

The return on equity and return on asset data has to be adjusted for the Ontario firms before any realistic comparisons can be attempted. Two of the Ontario carriers, carrier 2 and carrier 4, are long established carriers operating either out of very old terminals or from rented terminals for which only a nominal rent is being paid. Adjusting apparent income flows for this rent subsidization and adjusting asset and equity values to more realistic replacement values changes the return rates, reported in Chapter 5, significantly.

Allowing for the above adjustments, the return to owners of the Alberta firms is both substantially above that of the eastern firms and is much more volatile. This higher rate of return, in Alberta, may merely represent adequate compensation for the risks the carriers are taking, but it seems to effectively demonstrate that the Ontario carrier returns can not be considered to be excessive.

Results

Chapter 9 Conclusions and Recommendations

We began this study intending to establish if the deregulated market for intra-provincial motor carriers in Alberta has led carriers to operate differently than carriers in Ontario. Our second objective was to determine, where possible the advantages or disadvantages of regulation for the carriers and the shipping public.

The Findings

Carrier Size

As summarized in the previous chapter there are differences between the two provinces. The most outstanding difference must be that there are no large independent intra-provincial carriers in Alberta. We could identify several carriers, in Ontario, two of which are included in this survey, with annual revenues near \$10 million. The largest carrier we could identify in Alberta has revenues of only \$3,000,000 and that firm had just failed as an intra-provincial carrier.

The reasons for the lack of large independent carriers in Alberta is difficult to assess. It may simply be that poor management has destroyed the larger firms. But it is much more likely that the very extensive competition on that province's only major traffic lane, the Calgary-Edmonton corridor, prohibits any firm from achieving any significant size. In fact, the most healthy (profitable and growing) firms we studied, in Alberta served communities away from the corridor.

The inability of Alberta carriers to achieve significant size imposes costs on Alberta shippers. The Alberta firms can not obtain economies of scale available to larger carriers. As a result they have higher fixed costs proportional to revenue than their larger eastern counterparts. These higher costs are apparently reflected in Alberta rates.

Results

Cost Volume Relationships

This discussion of costs raises a major issue for any consideration of regulation and deregulation. Large carriers have cost advantages over their smaller competitors. But these advantages are not a mere reflection of size. A large portion of motor carrier costs, in spite of the belief of some economists, are not variable costs. Rather, this industry is a discretionary cost industry. Appendix B provides a detailed statistical analysis of the relationship between carrier costs and levels of activity.

Variable costs are typically considered to be those costs which vary directly with the volume of a firm's activity. Most types of variable costs have an explicit relationship with volume. One more gallon of gasoline refined requires another barrel of crude oil.

Discretionary costs, sometimes called managed or programmed costs are costs that arise from periodic decisions that reflect management policies. Discretionary costs may have no particular relation to volume.

Motor carrier management faces several critical questions in organizing its operations.

- nature of service to be provided
- capacity level to be provided
- source of road equipment
- operating policies

How management decides to answer these questions directly effects how a firm's costs will change as volume changes.

Nature of Service

The nature of the service a firm decides to provide has significant implications for its cost structures. Specifically the LTL (less than truck load) versus truckload decision has implications for terminal facility costs, pickup and delivery (P&D) fleet costs and manpower costs. When a carrier decides to compete in the general commodity LTL business he is committed to

- investments in terminals in addition to his base terminal.

Results

- investments in P & D (pickup and delivery) fleet
- manpower requirements to manage and operate these facilities.

The TL operator, on the other hand would not incur these costs. His operation would not require a P & D fleet, nor would it likely involve a network of terminals.

The manner in which terminal facilities are provided may make such infra-structure costs appear variable. For if a terminal is rented, rather than purchased one might argue that the rental costs would cease if management closed a given terminal. Likewise fleet rentals and or leasing can enable fleet costs to also appear flexible.

Unfortunately, the apparent flexibility inherent in renting and leasing is highly illusory. A LTL terminal has special requirements to smooth the flow of traffic through it and to reduce handling and damage claims. For this reason, general purpose buildings do not make effective terminals. Most carriers will design their facilities to meet the needs of their operations. Few financiers will provide a special purpose building on a month-to-month rental basis. To get what he needs the carrier either purchases his own building or is committed to long term lease/rental arrangements. Likewise, vehicle lessors are not interested in providing equipment for short term periods except at very high rates. The lessor must generate sufficient cash flow from the vehicle to meet his debt commitments and costs, and unless the vehicle is placed into a fleet on a long term basis, short term rental rates become prohibitively expensive. Our experience with one major equipment lessor indicated that four years was a minimum acceptable lease period for a tractor. If the firm desired to cancel the lease before the end of the contract period, it could, but only by purchasing the tractor for the value assigned by the leasing company.

Results

Capacity Level

The level of capacity represents an extremely difficult decision. A carrier's business can not grow, or perhaps even survive if a fleet is too small and equipment is not available when required by shippers. On the other hand, idle capacity acquired to meet demand peaks represents additional financing and maintenance costs. Complicating these issues is the seasonality of nearly all carriers which results in peak loadings at least during particular months of the year and perhaps even days of the week.

A second issue inherent in the capacity decision is that it is basically a one-way decision. Capacity can be added fairly readily, although, in today's equipment market, firms are waiting six months and longer for tractors to be manufactured to carrier specifications.

While capacity can be added to meet increased demand, fleet reductions pose significant difficulties. Transportation equipment depreciates rapidly, and the dumping of excess equipment into the used equipment market often implies real dollar losses for the firm attempting to dispose of that equipment. Used equipment markets are highly volatile. In a period of economic expansion demand for used equipment may be high leading to good used pieces. Likewise strange events, such as the 121 braking system fiasco in the U.S. can create an artificial demand for older equipment (or Canadian built equipment) for which 121 systems were not compulsory.

It is in periods of inactivity that fleet disposal is difficult.

Sources of Equipment

Because of the difficulty of planning equipment capacity levels, carriers may opt to not run their own tractors or even trailers. Typical alternatives are to utilize broker's or to rent or lease.

Results

Brokers are typically independent operators who own and drive their own tractors. Usually these operators are available on a contract basis for a specific haul or time period. They are typically compensated on a mileage basis.

The typical issue for a carrier who opts for brokers, is that the independent operator may not be reliable. Independents are noted for their here today, gone tomorrow, behavior. This behavior is understandable, if a better paying load is available elsewhere, or if a given broker is utilized only on a hit or miss basis.

To keep good brokers, carriers may have to make activity commitments or guarantees which effectively convert apparent variable labor and equipment costs to fixed costs.

The cost of renting long haul equipment on short term basis is also expensive. For this reason rentals are not practical for carriers. Long term leases (typically for a guaranteed minimum number of miles or period of years) imply commitments not really different from buying and financing. Here too, apparently variable costs really are fixed for significant periods of time.

Operating Policies

Finally, operating policies can have a direct effect on a firm's costs. A decision, for example to pay drivers' salary rather than a mileage or hourly rate effectively changes the relationship of labor cost to volume. If management decides that in order to maintain experienced drivers it is willing to pay them to perform maintenance, or to sell or undertake other duties during slow months, driver costs can become fixed.

A decision to self-insure, that is not to insure tractors and trailers against collision or other damage losses effectively eliminates any direct relationship between activity level and volume.

Administration and promotion costs are obviously discretionary costs. Management decides how many accounting staff, what level of computer facilities, what advertising budget they are prepared to support.

An understanding of cost structures is important to the discussion of deregulation because some economists consider trucking to be an industry with a high degree of variable costs. It is their position that because costs are variable (that they naturally adjust if levels of activity change) that additional competition will not injure existing carriers. Presumably, it is their contention that if new competition makes a given portion of a carrier's operation uneconomic, he will merely discontinue that operation, and that since his costs are variable they will no longer continue and he will be no worse off.

The issue in this perception is that many carrier costs are not directly variable within an operating year, and potentially even over several years. As explained in the previous discussion a firm may not be able to change courses dramatically without incurring significant losses because commitments for vehicle leases, space rentals or leases may represent legal liabilities even though excess capacity exists.

Carriers facing high uncertainty will attempt to make costs as variable as possible. Rather than investing in a new terminal, even though service may require it, a carrier will make do with existing facilities. He will accept higher damage claims and bottlenecks in peak periods.

Likewise rather than increasing his fleet, or updating through the purchase of new tractors the carrier will look to brokers for additional power.

We saw the impact of high uncertainty in the Alberta market. The Alberta carriers had configured their operations and operating policies to create variable costs. Mainhaul power fleets were often provided by brokers. Terminals were often shared between several carriers. And, perhaps most significantly, the Alberta carriers were for sale. Almost every carrier we talked to in Alberta implied or stated that his firm could be acquired. In Ontario the firms were not for sale. The Ontario firms were family owned with every intention of continued family involvement.

Results

Attempts by the Alberta carriers to operate in a manner which allows for ready adjustment of operations to volume shifts is appropriate to the potential volatility of the Alberta market place. The issue is are these policies good for the shipper?

Answers to this question are difficult to establish, but several impressions were established during the study. The Alberta motor carrier industry is volatile. Carriers do come and go. Potentially this volatility works against the shipper/consignee since a reliable means of transportation or distribution can not be assured. More significantly, carrier failure (as we observed in eastern Alberta) may leave communities without freight service for indeterminate periods of time.

Secondly, the Alberta carriers do not do "pedal runs". All of the Alberta carriers interline freight for communities surrounding their terminals with small (one truck) local operators. This interlining potentially adds to the possibility of additional damage and to service delays.

Finally, the openness of the Alberta market seems to have exacerbated the problems of backhauls. One result maybe higher front haul charges to the Alberta shipper.

While there are significant differences between the Alberta and Ontario carriers there are also similarities. Carriers in both provinces believe service is and has to be the foundation of the motor carrier industry. Rates are important, but above all else reliability is what counts. Interestingly, the Alberta carriers, even though they are free to service the entire province, do not do so. Each of the firms studied attempts to service an established market area just like the Ontario carriers.

The major operating differences between carriers in the two provinces involve hours of operation and the use of trains. The Alberta carriers appear to use their highway power to better advantage than the eastern carriers. But this may simply be a function of the shorter runs many of the eastern carriers have.

Alberta has moved heavily to the use of pup trailers and trains. Through the cooperation of the Alberta government trains of three pups are regularly pulled between Calgary and Edmonton, and two pup trains are common on other highways in the province. This practice reduces line haul costs for the Alberta carriers.

Results

Three unit trains are not legal in Ontario. Perhaps more significantly, the Ontario operators dislike trains because they are believed to be unsafe. Whether changes in legislation would lead to the economies of trains is unclear.

In general, our impression is that Alberta carriers operate differently than the Ontario carriers, but it is extremely difficult to clearly relate these operating differences to the regulatory structure in Ontario. More importantly there appears to be no clear advantage for the Alberta shipper in the fact that Alberta intra provincial motor carriers are unregulated. In small communities the Alberta shipper lacks direct inter-city service. He appears to face substantially greater uncertainty over the continued existence of his carrier, or of a particular service being continued. And, it appears he may face higher rates, at least for general freight movements.

Conclusions

We began this study to explore the intra provincial trucking industry and the impact of regulation upon it.

Perhaps our most significant conclusion must be that we believe the Ontario market is susceptible to destructive competition. We believe the Ontario motor carrier situation will be chaotic if it is deregulated without a great deal of skill and care -- much more care than was taken in the recent decisions to deregulate movements of fruits and vegetables.

In Ontario we appear to have many potential components of destructive competition: 1) We have excess labour. Almost every firm we interviewed has trained drivers serving as dock hands while waiting for truck.

2) We have ease of entry. Easy down payments and financing are available to purchase trucks and tractors. Without entry control we could expect more drivers to try running their own equipment.

3) We have apparent shipper dissatisfaction with rates and service as reflected in the significant acceptance of private carriage.

4) There already exists a reputedly large illegal fleet which is only too ready to move general merchandise.

Results

For all of these reasons movement toward deregulation in the Ontario market should only be undertaken with great, great care. There are many questions yet to be answered. Many of these questions are critical to any reasoned consideration of the regulation/deregulation controversy.

- 1) It is not clear just what the objective of government, shippers, or even communities, is for the common carrier fleet.

If one accepts the implicit objectives of the OHTB, which appear to be to maintain an industry that will provide service to all communities at rates which are not prejudiced against small communities and shippers, then deregulation poses severe threats. We do not doubt that deregulation will lead to cost based rates. Lanes with high volumes will have low rates. Lanes with low volumes could have very high rates and reduced service. The signs are there now. Ontario carriers flag down for large volume movements and the illegal fleet pursues truck load shipments. To compete, existing carriers will have to reduce large volume rates. To receive service small communities will have to pay for that service.

The question of objectives still remains. It may well be the most difficult of all the questions related to the regulation/deregulation discussion.

- 2) The discussion of service itself raises important questions. Throughout this study we, and the carriers, have made assumptions about what services shippers desire. We have not, however dealt directly with shippers so we can not say what service levels are appropriate.

Only further research of shippers need can begin to really address this question.

- 3) This study only scratched the issue of rates and our findings are at best tenuous. A great deal more work is needed to really understand what happens to rates under deregulation. The problem is that rate comparisons are extremely difficult to do. Finding comparable lanes can be very difficult and it is our experience that motor carrier tariffs are not easy to work with.

Results

We do know that the key to the comparison of rates is the comparability of the specific lanes being compared. Anyone attempting to compare rates between sectors of this country is most strongly advised to incorporate lanes in their analysis.

4) Further to the issue of rates, we have no real evidence concerning the relationship between published tariffs and rates actually charged. All of our carriers assured us that they only hauled at tariff and we have no reason to dispute their statements. On the other hand we were also told that rates below tariff do exist and of how excessive refunds for claims and other tactics can be used to reduce actual costs to shippers. This whole area of pricing simply needs more study.

5) The service/price trade off is not well understood. The existence of significant private carriage fleets in both Alberta and Ontario indicate that this is another problem needing further investigation.

6) We do not understand why private carriage is becoming so popular, nor how private fleets operate. Dimensions of this concern encompass service, cost, equipment utilization, promotion and numerous other questions. Further study of these dimensions is needed. At the very least, common carriers need to know what they are up against. At best government may be able to remove some barriers that will allow common carriers to improve service to meet private carriage demands.

7) A further question raised by the existence of the private carriage fleet concerns the level of alternate modes of trucking. We just do not know the extent of private carrier operations, nor the extent to which their very existence may be contributing to higher common carrier costs and rates because they are skimming the very high volume movements.

8) The reputed existence of an illegal fleet raises serious questions about enforcement and the commitment of the Ontario government to maintaining its for-hire carrier fleet. We know of carriers who have been badly hurt by predatory pricing by illegal operators. Illegal carriers about whom the government would, or could do nothing. Illegal carriers who left the market to the mortally wounded Ontario carrier after the

Results

damage was done. The thoroughness, usefulness and cost of enforcement requires extensive investigation.

9) Finally, our study has raised several questions about energy efficiency, economies of scale and operating efficiency. Each of these questions is worthy of further extensive investigation.

Recommendations

This study has raised many major questions about motor carrier operations and about the potential impact of regulatory changes. Our first recommendation must be that understanding the motor carrier industry and the problems it faces only begins with this study. A great deal of work remains to be done.

We would like to see the motor carrier industry and government at both federal and provincial levels, mount extensive research efforts to address the questions we have raised.

We have noted that uncertainty leads motor carrier operators to modify their plans and the manner in which they operate. It is not clear whether regulation is good or bad for this industry, but it is very clear that uncertainty is extremely harmful. We had carriers in Ontario tell us that they are postponing expansion plans because they are so unsure of the way in which the industry is going. And, in Alberta we were told carriers had no plans to expand (even though a market may exist) because potential competition was so severe. This fear is not healthy in either market. If firms will not grow, how are the transportation needs of tomorrow to be met?

Regulation in Ontario has led to the development of large strong independent intra-provincial motor carriers. Anyone proposing to tamper with the climate which led to the development of this industry would be well advised to be very, very certain about their objectives and the impact of any proposed changes upon the carriers who make up the industry. The motor carrier industry is vulnerable and with it so is Ontario's widely dispersed industrial economy.

It is very unclear just what deregulation would mean for Ontario's carriers or indeed for Ontario's shippers. Potentially at least we would see concentration on the major traffic lanes and service restrictions to outlying communities. This is the practice in Alberta. Secondly, cost based rates may mean large increases for individual commodities, communities and shippers --

Results

rates considerably higher than current levels.

At the present time we suffer from a lack of a comprehensive understanding of the impact of deregulation on the motor carrier industry. At the same time, the Americans through their deregulation activities provide Canada with an opportunity to learn about the costs and benefits of deregulation without carrier failures or violence on our highways. Perhaps the very best action we can take is to defer any decision while we watch and learn from the American experience.

Alberta Tariff

Appendix A

ALBERTA TARIFF

Commodities Flagged Out

Advertising Matter, K.D., other than flat

AGRICULTURAL IMPLEMENTS

At carriers discretion is subject to Rules 1 and 2 in Item 1010 or is carried by special arrangement.

Aircrafts, Aircraft Fuselage
Aircraft Wings, Tail Assemblies, Fuel Tanks, Landing Gears, Pontoons,
Blowers, Domes or Turrets
Air Conditioners, Air Cleaners, Coolers, Dehumidifiers, or Washer and Blower
or Fans, combined, NOIBN, as per Item No. 56930 of classification
Aluminum Ware
Antennas, K.D., in boxes
Auto Body Parts or Panels

Bags, Plastic water carrying
Bags, sleeping
Barbecue Grills, K.D.
Barrels, Wooden, empty
Barrels or Drums, Kegs, Pails or Tubs, Steel
Baskets or Hampers
Bathroom or Lavatory Fixtures, china or earthenware, toilet bowls, toilet
tanks, sinks, bathtubs
Bathtubs, sheet metal, enamelled

Batting, Batts or Wadding, Cotton Jute or Sisal, other than in machine
pressed bales
In machine pressed bales

Bicycles
Boards or Sheets, asbestos, loose, O.R.D.
Boards or Sheets, cork or slate, loose
Boats or Canoes - 2,000 lbs. each at applicable rate
Bottles or Jugs, plastic
Bottles, Thermos or Vacuum
Boxes, crates or coops, S.U.
Boxes, corrugated, K.D., Flat
Brooms
Brushes
Burial Vaults, Set up

Cabs, Tractor or Trucks, S.U.
Cameras, Projectors or Photo supplies
Canopies, iron or steel, without glass, for tractor and other equipment
Cans, tin, 1 quart or less
Cans, tin, over 1 quart
Cans, garbage, nested
Cans, garbage, not nested
Carpets and Rugs
Carriages, baby, Go Carts
Carts, hand, set up
Caskets, S.U., in boxes
Caskets, S.U., wrapped
Chimneys, aluminum and steel

Alberta Tariff

Conduit or pipe fibre, bituminized or indurated; in boxes or crates
Conveyors, Escalators or Elevators, K.D.; in boxes or crates
Conveyors, Escalators or Elevators, K.D.; loose
Coolers, picnic, sheet metal
Coolers, expanded, synthetic resin
Cores or Tubes, Sonotubes, Paperboard, not telescoped
Cores or Tubes, Paperboard, telescoped
Cork
Culverts, S.U.
Culverts, nested - subject to cube measurement and cube rating
Cups or containers, plastic
Cups, Paper, S.U., nested
Cushions or pads, expanded, synthetic resin

Decorations and/or Ornaments
Diffusers, Air, cone type or air stoffler type
Displays, Advertising, S.U.
Displays, Advertising, K.D., other than flat
Doors, wood, metal and/or plastic, loose
Doors, garage, wood, metal and/or plastic, other than folded
Dressings, surgical flat
Drums, fibre
Dryers or Racks, clothes
Dry Goods:
 Comforters or Quilts
 Clothing, hanging, in boxes
 Coats, Fur, Natural or Synthetic
 Cotton, Absorbent
Drying Machines, Laundry, household
Ducts, sheet metal, seams closed

Eavestroughs, not nested
Elbows, stove pipe, nested
Elbows, stove pipe not nested
Evergreens, decorative, cut
Explosives, Caps lasting, Safety fuse

Fans, exhaust and roof ventilators, combined
Figures, images or ornaments, other than paper mache or plastic
Figures, images or ornaments, paper mache or plastic
Filters, automobile, air
Filters, furnaces
Filter oil
Fireplaces, metal
Fireplaces, plaster
Fixtures, fluorescent or lighting, or parts thereof
Fixtures, store or restaurant, booths, counters, check out counters, show-
 cases, reefer showcases, soda fountains and soda fountain outfits
Florist stock, flowers, fresh, cut or potted
Foam articles, sponge, rubber or plastic
Foil wrap
Foodstuff:
 Break, Bakery goods, other than biscuits and fruit cake
 Candy or confectionery, hollow mould
 Confectionery, popped corn

Alberta Tariff

Confectionery, puffed rice
Cereals, flaked, toasted or shredded
Cereals, puffed or popped
Chips, potato, puffs or twists
Cones, ice cream
Food, frozen
Footwear, boots and shoes
Frames, door or windows, S.U., not exceeding 8 x 7 ft.
Frames, door or windows, S.U., exceeding 8 x 7 ft.
Freezers, Household
Furnaces, Heating
Furniture or Furnishings, Household or Office
 Beds, continental or roll away
 Boards, Ironing
 Bureaus, Dressers and Drawers, S.U.
 Cabinets, Filing, Steel
 Cabinets, Kitchen
 Chairs, Aluminum
 Chairs, S.U., Stacked or Nested
 Chairs, S.U., Not Stacked or Nested
 Chairs, K.D.
 Chairs, Folded Flat
 Chairs, Office
 Chairs, Stacked (two per carton)
 Chesterfields, Davenport or Sofa, or upholstered Chairs; in cartons or
 polyethylene wrappers
 Chesterfields, Davenports or Sofas, or upholstered Chairs; wrapped, paper
 Desks, Steel or Wooden
 Furniture, N.O.I.B.N., set up, in cartons
 Furniture, N.O.I.B.N., setup, wrapped
 Furniture, N.O.I.B.N., K.D., not flat
 Furniture Parts, N.O.I.B.N., S.U.
 Furniture Parts, K.D., not flat
 Tables, K.D.F.
 Tables, S.U.
Furs
Glass, crated
Glass, sealed or insulated units, in crates
Glazing Units with frames, combined
Globes, glass or street lamp
Golf Carts, self-propelled, uncrated, as 5,000 lbs. each at Applicable rate
Golf Carts, crated, as 4,000 lbs. each at Applicable rate
Hats
Heaters, Space
Hides, Pelts or Skins, not dressed or tanned, dry
Hides, Pelts or Skins, dressed or tanned, and Fur or
 Hair not removed, O.R. Det.
Honeycomb Paper or Pulpboard
Household goods or Personal Effects released value not exceeding 10 cents per
 pound per article, in boxes or crates - Also see Rule No. 380 for additional
 charge. Not in boxes, crates or improperly packed
Humidifiers
Instruments, Musical and Parts for Instruments
Insulation or pipe covering, not expanded
Insulation, Cellulose, in polyethylene bags

Alberta Tariff

Insulation, expanded synthetic resin, plastic foam
Insulation, various kinds

Ladders, aluminum

Ladders, wooden

Lamps, Table or Floor, without shades

Lamps, Table or Floor, with shades

Lamp Standards, with twin cross arms attached

Lamp Standards, with single cross arms attached

Lamp Standards, curved

Lamp Standard Cross Arms, twin, curved

Lamps, Electric (Bulbs) incandescent

Lamps, Electric (Tubes) fluorescent

Lamps, X-mas Lights with or without electric cords

Lockers, set up

Luggage

Machines, copying

Machines, set up, loose or on skids

Machines, coin operated

Machines, Merchandise vending and/or Cooler combination

Machines, Pinsetting, crated

Mattresses and Box Springs, packaged

Mattresses, not incartons

Motorcycles, crated

Motorcycles, not crated

Notions or Novelties

Organs or Pianos

Pads, chick

Pads, sanitary

Pads, scouring

Pails, Cups or Containers, paper or plastic, not nested

Pails, Paperboard, S.U., nested

Paper, corrugated

Paper, Facial Cleaning

Paper, Napkins

Paper, Toilet

Paper, Towels

Pillows

Pipe, Auto, exhaust

Pipe, Conductor, not nested (Metal Downspout)

Pipe or Tubing, aluminum

Pipe, plastic, weighing less than 15 lbs. per cu ft.

Pipe, Stove, not nested

Preservers, Life

Radios and Record Players

Radios, Record Players, combined

Radios, Record Players and Television, combined

Alberta Tariff

Ranges, Stoves, or Micro-wave Ovens
Recorders
Reels, cable, pipe or wire, empty
Refrigerators

Sample Cases or Trunks
Sash: Aluminum, glazed
 Wooden, glazed

Shades, Lamp
Signs, plastic or glass
Signs, neon

Sleighs or Vehicles, childrens

Smallware Appliances, Household Electrical, Viz: Toasters, frying pans, hair
dryers, kettles, coffee percolators, blenders, crock pots, electrical fans,
etc.

Sporting Goods, athletic or gymnastical
Sprayers, field, garden or orchard, K.D.
Spreaders, fertilizer

Spring or Spring Assemblies, Mattresses, Davenport, Sofa, Cushion or Seat, other
than fully machine compressed

Stable, Barn or Poultry House Equipment:

Brooders or Incubators, S.U.

Brooders or Incubators, K.D., flat

Feeders or Waterers, K.D., flat

Stable, Barn or Poultry House Equipment, S.U.

Stable, Barn or Poultry House Equipment, K.D., not flat

Stands, N.O.I.B.N., S.U.

Straws, drinking

Synthetic Resin or Synthetic Resin Articles, foamed or expanded, N.O.I.B.N.

Tanks, Glass lined

Tanks, moulded fibre glass

Tanks, hot water, steel

Tanks, Hydro pneumatic

Tanks, air cushion or expansion

Tanks, butane or propane

Tanks, storage, fuel or oil

Tanks, plate or sheet, steel

Television Sets

Tiles, drain tile, earthenware

Tires, rubber, bicycle

Tires, rubber, passenger, truck, mobile home

Tires, rubber, pneumatic, Tractor rear wheels

Toboggans, self-propelled

Toilet Fixtures, toilet bowls, toilet tanks, sinks, bathtubs

Toys or Games, N.O.I.B.N.

Toys, sheet metal

Toys, synthetic resin

Toys, stuffed or plush

Trailers, Boat or Toboggan - 2,000 lbs. each at the Applicable Rate

Trailers, Camp or Tourist, two wheeled crated, 4,000 lbs. each at the Applicable
Rate

Uncrated

Trailers, Camp or Tourist, for mounting on Automobile or Trucks, 10,000 lbs.
each at the Applicable rate

Trees, Shrubs or Vines, exceeding 5 ft. high but not exceeding 10 ft. high

Trees, Shrubs or Vines, 5 ft. high or less, roots,
wrapped or loose

Completely enclosed in bags or boxes

Troughs, barn, sheet metal, set up

Tubes, Picture, television

Urns, beverage or dispensing

Ventilators, chimney or roof

Vehicles, self-propelled, not named in these exceptions Special Arrangement

Wagons, farm, K.D.

Ware, Aluminum

Ware, Sheet Metal, nested

Ware, Sheet Metal, not nested

Washing Machines, household, dishes or laundry

Water softening equipment, in cardboard containers

Windshields, glass for vehicles

Windshields, crated, O.R.D.

Woodenware

Wool, steel

Cost Volume

Appendix B

Analysis of Cost Volume Relationships

In this appendix we statistically address the question of carrier cost behavior.

The Data

This analysis begins by examining the detailed monthly operating data provided by two firms in our sample. Data for twelve months of the first firms operations are summarized in Table 1, while Table 2 reports the data for seven months of operations for firm II.

Cost Volume Relationships

The relationships between revenue (the measure of activity available) and costs for these firms are summarized by the correlation matrices reported in tables 3 and 4.

Examination of tables 3 and 4 indicate that for firm I driver salaries, fuel and oil, and vehicle leasing costs are significantly correlated with revenue. That is these costs seem to vary directly as revenue (volume) changes. For firm II only its driver costs and its profitability are directly related to volume.

The significance of this analysis is that for both firms major costs are not related to revenue. For firm II neither the cost of its fleet, nor the terminal costs vary as volume changes. For firm II, because so much of its costs are basically fixed, what fluctuates with revenue is profits.

The Analysis Extended

Inferences drawn from statistical analysis of only a few data points is tenuous at best. For this reason, the statistical analysis for this appendix was extended to include data for an additional carrier not previously included in the study. This carrier's data is included because it was available, because its records provided extensive data and because a physical measure of

TABLE 1

CARRIER I

Summary Montly Operating Data, 1978

MONTH	Revenue	Depreciation	Maintenance	Fuel	Financing	Leasing	Salaries	Claims	Administration	Profits
1	\$67047	\$3743	\$7399	\$4367	\$2018	\$ 0	\$32669	\$1254	\$ 8855	\$ 8693
2	65170	3771	3066	3266	1692	0	30116	46	9342	10843
3	76227	3721	5615	5247	1382	0	36499	437	4230	20485
4	76244	3271	4527	3146	1121	0	33029	611	11549	19783
5	65852	3721	2800	3810	1370	0	27850	459	9995	15394
6	76596	2741	3254	4643	1369	0	35290	1193	9906	17355
7	80189	2700	4043	4872	1356	0	34269	61	8703	22858
8	88920	2774	6526	5619	1764	0	40551	607	9539	25309
9	88823	2531	6041	5582	1668	5405	44800	222	7948	8682
10	64162	3145	7224	4913	2352	0	34949	44	16006	-3865
11	85276	2360	4993	5454	1794	5421	42710	219	13531	7338
12	86081	2540	6838	5775	1130	2710	41223	6	43257	-21936

Cost Volume

TABLE 2

CARRIER 11

Summary Monthly Operating Data 1978-1979

MONTH	Revenue	Drivers	Vehicles	Other	Terminal	Promotion	Administration	Profit
1	\$127932	\$62686	\$32752	\$5364	\$6497	\$2842	\$13434	\$ 4357
2	155041	73240	54948	5733	5910	1769	14385	18061
3	131613	68843	35830	5350	7508	2098	14701	-2717
4	121227	61840	32792	5129	6894	2305	14233	-1966
5	132488	70933	37218	6324	7611	2083	14793	-6474
6	113479	59893	35378	5792	6897	2741	12797	-10219
7	137462	65196	38311	5354	6209	3126	17850	1416

Cost Volume

TABLE 3

CARRIER I

Revenue Cost Correlations

	<u>Revenue</u>
Revenue	1.000
Depreciation	-0.810
Maintenance	0.235
Fuel	0.705
Financing	-0.328
Leasing	0.618
Salaries	0.868
Claims	-0.149
Administration	0.243
Profit	0.001

TABLE 4

FIRM II

Revenue Cost Correlations

	<u>Revenue</u>
Revenue	1.000
Drivers	0.849
Vehicles	0.419
Other	0.143
Terminal	0.506
Promotion	0.457
Administration	0.435
Profit	0.854

Cost Volume

activity -- milease, was available.

Briefly, carrier III is a long haul carrier serving the Ontario market with a fleet of six tractors and ten trailers. Carriers III's data for the past two years is summarized in Table 5, while Table 6 reports the relationships between costs and revenue.

In preparing table 6 and the other statistical analyses of Carrier III, two months of data (months 2 and 22) have been excluded from the analysis. Both of these months represented unusual circumstances for the carrier and are not representative of the carrier's typical operating costs or cost volume relationships.

Examining table 6, Carrier III's driver manpower, leased vehicles and terminal costs are related to revenue. It is interesting to speculate why for this carrier terminal costs fluctuate with volume while for carrier II no such relationship existed. Carrier III is a highly seasonal business, while carrier II is much less seasonal. To deal with this seasonality, Carrier III utilizes a large portion of part time terminal help paid on an hourly, as needed basis. Carrier II terminal manpower is much more stable and therefore so are its manpower costs.

The Relationship Between Cost and Milease

In addition to its financial records, Carriers III maintains extensive milease records for its fleet. These records provide an additional opportunity to examine the behavior of costs, but now versus a physical measure of activity -- miles operated. This relationship is summarized in Table 7. In table 7 manpower, hired vehicles and fuel costs are related to milease. Perhaps surprising is the relatively low correlation between fuel and milease. This can be partially explained by the variety of weight the firm moves and by driver behavior. Carrier III gross vehicle weights vary from 65,000 to 80,000 pounds. This weight difference will effect fuel consumption. Also fuel consumption patterns are significantly different between winter and summer. Average fuel consumption for the summer of 5-6 miles per gallon drops to 3-4 miles per gallon in the winter when the tractors are less efficient due to wind, ice and cold weather.

TABLE 5

CARRIER III

Summary Operating Data Twenty-four Months Ended October 31, 1978

MONTH	Mileage	Revenue	Man- Power	Main- tenance	Fuel	Hired Vehicles	Licencing	Terminal	Admini- stration	Depre- ciation	Other	Profit
1	43076	\$43427	\$ 9403	\$2511	\$ 5473	\$ 9796	\$ 2185	\$ 8905	\$ 4992	\$1745	\$3354	\$ 1770
2	57098	96612	14638	7641	12971	31993	4610	14675	4112	1815	1780	5936
3	45472	60569	11718	3844	7148	19390	2020	12481	8269	1815	1597	-4522
4	78281	66387	12278	3870	4295	22141	2795	11158	6448	1499	3324	5223
5	56461	63340	12338	1561	5906	15834	3808	10831	5024	1499	1437	7977
6	66682	66194	13869	5285	6915	17715	2959	13133	5375	1499	1616	1059
7	49360	57647	12725	3147	7900	13845	1553	10270	6537	1499	3636	3804
8	44085	29430	12940	3943	5008	8868	2577	10272	9913	1499	2634	-23460
9	40645	41265	8341	2353	4838	6002	2607	9699	6803	1499	2745	1863
10	23149	30381	6432	1822	3037	3908	2000	7436	7314	1499	2642	-429
11	30217	34249	7285	1586	4068	4727	757	7425	8162	1499	964	-300
12	53247	54799	11848	1262	10518	9200	10373	11248	17522	1499	-607	-19313
13	40378	40369	9181	3222	6060	5518	2356	8895	9239	1407	4633	-878
14	69646	62028	14478	5873	10343	13024	2805	11072	9161	1407	9277	3139
15	37290	51361	10538	2849	7393	7250	3744	15167	4909	1407	5029	3130
16	37348	58648	11062	7551	6632	8318	1726	11549	6389	1407	1037	5051
17	50207	66185	15291	1882	6947	9464	5265	12865	8429	1407	1375	6009
18	45753	57296	10590	3209	5737	9989	3003	11098	10490	1271	6582	8489
19	64676	51457	13078	3634	7876	6434	3160	13455	7797	1271	8314	3066
20	45074	50919	8685	3428	4784	10364	2468	9619	10228	1271	2184	2249
21	20837	32157	5536	5078	4111	5818	1117	8973	10699	1269	-378	-10826
22	89707	33129	10632	3693	5768	2954	2007	5701	11085	1271	717	-9266
23	39882	47709	7824	2075	6068	16562	1682	4718	7760	1271	3729	3475
24	52286	30656	10091	3957	7713	6522	2476	5781	10538	772	2974	-14200

TABLE 6

CARRIER III

Revenue Cost Correlations

	<u>Revenue</u>
Revenue	1.000
Manpower	0.707
Maintenance	0.175
Fuel	0.457
Hired Vehicle	0.707
Licencing	0.328
Transport Margin	0.746
Terminals	0.635
Administration	-0.205
Depreciation	0.284
Other	0.140
Profit	0.559

TABLE 7

CARRIER III

Mileage Cost Correlations

	<u>Mileage</u>
Mileage	1.000
Manpower	0.781
Maintenance	0.187
Fuel	0.503
Hired Vehicle	0.629
Licencing	0.320
Transport Margin	0.189
Terminals	0.398
Administration	-0.056
Depreciation	-0.016
Other	0.393
Profit	0.179

Cost Volume

Further Analysis

We examined the cost volume relationships for carrier III in greater detail through regression analysis. The results of this analysis are summarized in Table 8. Table 8 explicitly identifies the fixed and variable components of each cost category (if a relationship between mileage or revenue exists).

In table 8 the regression equations are of the general form:

$$Y = A + bX$$

These equations describe straight lines fitted through plots of the various costs against revenue or mileage. These equations can be interpreted as follows:

Y is the estimated value of the relationship. It is equal to

A -- which is a constant value established where the regression line crosses the vertical axis of the graph, and

b -- the amount by which the value of Y increases for every additional mile driven or dollar of revenue earned times the miles operated or income.

In each equation 'a' represents the minimum level of cost which occurred across all the levels of mileage or revenue reported. It is for this reason that 'a' is an acceptable estimate of the fixed portion of each cost. On the other hand 'b' tells by how much total cost is increased by adding one more mile or dollar of revenue. It provides an estimate of the real variability of each cost.

Table 8 illustrates that many of Carrier III's operating costs are effectively fixed, particularly compared to a physical measure of activity. Depreciation, administrative expenses, terminal expenses are all unaffected by miles operated. And, even maintenance costs are not directly related to mileage. The fact that terminal expenses are related to revenue effectively illustrates the discretionary nature of these costs -- as revenue increases management is willing to acquire more terminal help.

TABLE 8
CARRIER III
SUMMARY OPERATION RESULTS AND REGRESSION RELATIONSHIPS

	1977	%	1978	%	Regression Equations								
					Independent Variable Mileage	T*	R ²	T**	Independent Variable Revenue	T*	R ²	T**	
Mileage	587,773		591,084										
Revenue	644,300	100	581,900	100	\$21,653 + 0.599 M	2.97	.45	4.03	\$ 9,698 + 0.748 R	1.01	.45	4.03	
Manpower	133,800		127,000										
Maintenance	38,800		46,500		3,885 + 0.145 M	3.05	.61	5.60	3,391 + 0.146 R	2.01	.50	4.47	
Fuel	78,400		79,400		2,401 + 0.020 M	2.03	.03	0.85	2,297 + 0.021 R	1.66	.03	0.79	
Hired Vehicles	163,400		102,200		3,153 + 0.067 M	2.49	.25	2.58	2,912 + 0.068 R	1.91	.20	2.29	
Licensing Permits	38,200		31,800		--	0.04	.39	3.62	-3,628 + 0.283 R	1.11	.49	4.46	
Tolls & Ins.					839 + 0.043 M	0.59	.10	1.51	399 + 0.049 R	0.24	.10	1.56	
Transport Costs	452,600	70	386,900	66									
Transport Margin	191,700	30	195,000	34	11,496 + 0.097 M		.03	0.86	-5,373 + 0.430 R	2.31	.56	5.01	
Sundry Revenue	25,100	4	45,500	8									
Operating Margin	216,800	34	240,500	42									
Terminal Expenses	128,000		118,900		6,976 + 0.071 M	3.93	.15	1.94	4,040 + 0.125 R	2.31	.40	3.67	
Admin. Expenses	90,500		106,700		8,789 + 0.010 M	4.08	--	.25	10,518 + 0.045 R	4.26	.04	0.93	
Depreciation	18,900		15,400		1,429 + 0.001 M	9.22	--	.07	1,195 + 0.004 R	6.86	.08	1.32	
Total Overhead	237,400	37	241,000	41									
Loss	20,600	3	500	1	-5,881 + 0.108 M	0.90	.03	0.81	-19,562 + 0.376 R	3.05	.31	3.01	

* Student's t associated with the estimate of "a"

** Student's t associated with the estimate of "b"

Cost Volume

Summary

The carrier operating costs reported in this appendix fluctuate, but not necessarily directly with volume. Some costs behave as we might intuitively expect, such as driver wages because drivers are typically paid on a mileage basis. But other costs follow different patterns.

Unless an explicit examination is undertaken of a carrier's operating policies, type of service and investment decisions, it is not possible to estimate cost volume relationships.

HC/111/.E35/n.3
Bonsor, Norman C 1944-
Studies of trucking
regulation, vol. II dijn
 c.1 tor mai

APR 27 1989

REFERENCE COPY