ABSTRACT

An Analysis of Canada - Venezuela Cargo Flow and Trade with Special Reference to Wheat, Seed Potatoes and Newsprint

by

Peter G.M. Smith

M.A

Department of Economics and Political Science

This study is concerned with an analysis of cargo flow using a single equation econometric model.

Part One presents cargo flow analysis in general terms giving specific models that may be used for forecasting. In Part Two, the political background of Venezuela is outlined and the impact that Accion Democratica has made on the various sectors of the economy is spelled out in detail. An examination of the external sector and Canada - Venezuela trade and cargo flow concludes this part. In Part Three, Venezuelan imports of wheat, seed potatoes and newsprint are examined and equations are given that might be useful in forecasting. All three of these commodities have been affected in some way by Accion Democratica and limitations on the use of these forecasting equations illustrate this fact.

AN ANALYSIS OF CANADA - VENEZUELA CARGO FLOW AND TRADE WITH SPECIAL REFERENCE TO WHEAT, SEED POTATOES AND NEWSPRINT

by

Peter G. M. Smith, B.A.

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfilment of the requirements for the degree of Master of Arts.

Department of Economics and
Political Science,
McGill University,
Montreal.

April 1968.

TABLE OF CONTENTS

Chapter	Page
PREFACE	ii
INTRODUCTION	iv
PART ONE	
I. CARGO FLOW ANALYSIS	1
Recent Activity in the Field of Cargo Flow Analysis	1
Difficulty of Obtaining Data	2
Shipping Statistics	4
Multilateral Trade Patterns	5
Cargo Forecasting	6
Short Term Forecasts	7
Medium Term Forecasts	8
Long Term Forecasts	8
Origin and Destination Studies	9
Radial Analysis	10
Gravity Models	11

TABLE OF CONTENTS (Continued)

Chapter		Page
II.	METHOD OF ANALYSIS	13
	Direct Cargo Analysis and Forecast	13
	Trade Analysis and Forecast	14
	Trade Translated Analysis and Forecast	15
	The Single Equation Model	16
	Identification	20
	Estimation by Ordinary or Simple Least Squares	23
	The Reliability of Forecasts	24
	Prediction of Independant Variables	24
	Prediction of Dependant Variable	25
	Measurements of Accuracy	27
	PART TWO	
III.	THE POLITICAL BACKGROUND	29
	What is Accion Democratica?	29
	The Tyrants	30
	Accion Democratica	32
	The Programme of Accion Democratica	35

TABLE OF CONTENTS (Continued)

Chapter		Page
III.	THE POLITICAL BACKGROUND (Cont'd)	
	Agricultural Policy	36
	Industrial Policy.	40
	Education	42
	Petroleum	44
	Planning	46
	Summary	49
IV.	THE VENEZUELAN ECONOMY 1950-1965	51
	Performance by Sectors.	55
	The Structure of Domestic Product . . .	58
	Investment.	59
	Agriculture	64
	The Industrial Sector	66
	Summary	72

TABLE OF CONTENTS (Continued)

Chapter		Page
V.	VENEZUELA: THE EXTERNAL SECTOR 1950-1965	73
	Composition of Imports	77
	Cargo Flow into Venezuela	81
	Imports by S.I.T.C. Grouping	84
	Imports by Country	88
	Regression Analysis	89
	Summary	90
VI.	CANADA - VENEZUELA TRADE AND CARGO FLOW 1950-1965	91
	Comparative Performance of Exports to Venezuela	92
	Venezuelan Imports of Canadian Goods	93
	Canadian Exports to Venezuela from the East Coast, the West Coast and via the United States	94
	Composition of Canada - Venezuela Trade	97
	Imports from Venezuela	99
	Cargo Flow to Venezuela	100
	Composition of Cargo Flow	102

TABLE OF CONTENTS (Continued)

Chapter		Page
VI.	CANADA - VENEZUELA TRADE AND CARGO FLOW 1950-1965 (Cont'd)	
	The Transport of Goods from Canada to Venezuela	104
	Regression Analysis	107
	Summary	108
	PART THREE	
VII.	WHEAT AND WHEAT FLOUR	110
	Wheat and Wheat Flour Production in Venezuela	110
	Consumption Patterns	113
	Regression Analysis	115
	Imports of Wheat and Wheat Flour . . .	118
	The End-Use of Wheat Imports	118
	Origin of Wheat 1959-1965	120
	The Influence of Freight Rates	120
	Summary	125

TABLE OF CONTENTS (Continued)

Chapter		Page
VIII.	SEED POTATOES	127
	Potato Production 1950-1965	128
	Projections	129
	Supply of Potatoes	129
	Demand for Potatoes.	132
	Trade in Seed Potatoes 1950-1965 . . .	135
	Canadian Exports of Seed Potatoes to Venezuela 1950-1965.	138
	Regression Analysis	139
	Summary.	141
IX.	NEWSPRINT	143
	Education.	143
	Illiteracy	145
	Civil Strife	146
	Newsprint Consumption.	146
	The Relationship between National Product and Income Elasticity of Demand	147
	Imports of Newsprint	149
	Regression Analysis.	152

TABLE OF CONTENTS (Continued)

Chapter	Page
IX. NEWSPRINT (Cont'd)	
Newsprint Imports	152
Exports of Newsprint from Canada to Venezuela	153
Newsprint Moving Via West Coast Canada and Via the United States. .	153
Summary.	155
CONCLUSIONS	157
EXPLANATION OF SYMBOLS USED IN REGRESSION ANALYSIS	160
APPENDIX	163
BIBLIOGRAPHY	177

LIST OF TABLES IN TEXT

Table		Page
3-1	Venezuela: Agrarian Reform..	39
4-1	Venezuela: Average Annual Growth Rates of Total and Per Capita Gross Domestic Product and Real Income.	52
4-2	Venezuela: Average Growth Rate, By Periods, In Agriculture, Mining, Petroleum and Manufacturing.	55
4-3	Venezuela: Structure of the Domestic Product. Percentages of G.D.P. Contributed by Agriculture, Mining, Petroleum and Industry.	58
4-4	Venezuela: Gross Investment by Sectors . .	59
4-5	Venezuela: Gross Investment by Sectors as Percentages of Total.	60
4-6	Venezuela: Accumulated Gross Foreign Investment	61
4-7	Venezuela: Accumulated Gross Foreign Investment by Sectors as Percentages of Total	62
4-8	Venezuela: Employment in Agriculture . . .	66
4-9	Venezuela: Industrial Output. Selected Industries	68
4-10	Venezuela: Industrial Sector, Capital Stock and Labour Force	71
5-1	Venezuela: Commodity Imports	73
5-2	Unit Sale Price of Venezuelan Oil.	74

LIST OF TABLES IN TEXT (Cont'd)

Table		Page
5-3	Net Autonomous Capital Movements	76
5-4	Venezuela: Percentage of Private Consumption Accounted for by Domestic Agriculture, Industry and Imports	78
5-5	Venezuela: Import Shares	80
5-6	Venezuela: Importacion Ordinaria	82
5-7	Venezuela: Imports by Ports.	83
5-8	Venezuela: Imports by Ports as Percentages of Total	84
5-9	Venezuela: Tonnages Imported by Sea, by S.I.T.C. Group.	86
5-10	Venezuela: Values of Imports by Sea by S.I.T.C. Group.	87
5-11	Venezuela: Imports by Country of Origin. .	88
6-1	Canadian Exports to Venezuela 1950-1965. .	91
6-2	Indexes of Total Canadian Exports and Exports to Venezuela	92
6-3	Venezuela: Total Imports and Imports from Canada.	94
6-4	Venezuela: Total Canadian Exports, Exports via British Columbia Ports and Exports via the United States . . .	96
6-5	Value of Total Canadian Imports and Fuel Oil Imports from Venezuela	99

LIST OF TABLES IN TEXT (Cont'd)

Table		Page
6-6	Cargo Flow from Canadian East and West Coasts to Venezuela	101
6-7	Percentages of Total Cargo Flow to Venezuela by Vessel Originating from East and West Coast Canadian Ports . . .	101
6-8	Canadian East Coast to Venezuela Cargo Flow; Share by Major Commodity	102
6-9	Canadian West Coast to Venezuela Cargo Flow Showing Wheat as a Percentage of the Total	103
7-1	Venezuela: Total Demand for Wheat and Wheat Flour	112
7-2	Venezuela: Consumption of Flour by Useage	115
7-3	Venezuela: Forecasts of Imports of Wheat Based on Time Trend and Population and C.B.R. Estimates.	116
7-4	Spread of c.i.f. U.K. Parcels of Wheat Canada St. Lawrence Ports and U.S. Gulf.	124
8-1	Venezuela: Potatoes. Area under Cultivation, Yield and Production	128
8-2	Venezuela: Potatoes. Forecasts of Area under Cultivation, Yield and Production	130
8-3	Venezuela: Results of Regression Analysis of Potato Production against Time. Point Estimates.	131

LIST OF TABLES IN TEXT (Cont'd)

Table		Page
8-4	Venezuela: C.B.R. Estimates of Future Potato Demand	133
8-5	Venezuela: Potatoes, Production and Imports	135
8-6	Venezuela: Imports of Seed Potatoes Showing Canadian Seed and Percentage of the Market Held by Canada.	140
9-1	Venezuela: Primary and Secondary School Enrolment and Population Estimates. . .	144
9-2	Venezuela: Consumption of Newsprint . . .	147
9-3	Relationship Between National Product and Income Elasticity of Demand for Newsprint	148
9-4	Venezuela: Imports of Newsprint and Canadian Exports of Newsprint to Venezuela	150
9-5	Venezuela: Newsprint Imports. Unit Values from the United States and Canada . . .	151
9-6	Exports of Newsprint from West Coast of Canada to Venezuela	154

LIST OF TABLES IN APPENDIX

Table		Page
1.	Standard International Trade Classification: Groupings in English and Spanish	163
2.	Results of Regression Analysis: Venezuela Total Imports	164
3.	Exports from Canada to Venezuela by D.B.S. Group Including Major Items. . .	166
4.	Exports from Canada to Venezuela by S.I.T.C. Group Including Major Items. .	168
5.	Results of Regression Analysis: Venezuela. Imports from Canada and Cargo from East Coast and Great Lakes Ports	171
6.	Results of Regression Analysis: Venezuela. Imports of Wheat and Flour in Wheat Equivalent	172
7.	Results of Regression Analysis: Venezuela. Imports of Seed Potatoes . .	173
8.	Results of Regression Analysis: Venezuela. Exports of Seed Potatoes from Canada	174
9.	Results of Regression Analysis: Venezuela. Imports of Newsprint	175
10.	Results of Regression Analysis: Venezuela. Exports of Newsprint from Canada.	176

PREFACE

This study originated as an examination of shipping services between Canada and the Caribbean area. Because of lack of data, it was necessary to narrow the area of concentration down to one country in the Caribbean area.

I wish to thank Mr. Harvey Romoff, who acted as my adviser and who, despite a heavy schedule, was available for consultation whenever necessary. I am also greatly indebted to Mr. J.L. Eyre, President of Sagenuay Shipping, Ltd., who offered me part-time employment during a period of financial difficulty, and who freely discussed many of the problems which I touched on in my study and who was always willing to give me the benefit of his expertise in the field of transportation.

I wish particularly to mention Miss Miriam Tees and Miss Anthea Downing, of the Royal Bank of Canada library. Miss Downing's expert knowledge of sources of information were of special importance to my study and considerably shortened my labours.

Mrs. Penny Butcher had the difficult task of interpreting my cryptic first draft and presenting it in final typed form.

INTRODUCTION

This study is concerned with an analysis of cargo flow over routes from Canada to Venezuela. Most trade studies emphasize the value of transactions. The main concern of this thesis is the volume[1] of transactions.

A cursory examination of total cargo flowing revealed that the volume component is not successfully related, in the aggregate, to economic variables, or to population.

Illustrations are given in the text of how forecasting might be facilitated for certain commodities by the use of regression analysis. This technique is used as a tool and no claim is made that the intricacies of econometric theory are fully discussed in order to provide theoretical justification for using a specific model or specific data. Only the most elementary statistics of this type of analysis are mentioned - coefficients of determination, standard errors, Durban-Watson 'd' statistics etc.

The bulk of this thesis is descriptive, endeavouring to provide a background to Venezuela and to Canada -

---

1 - Volume is taken to be the physical weight of cargo. Unless otherwise stated volume is measured in short tons of 2000 lbs.

Venezuela trade. An introduction is also given to cargo flow analysis, a topic that is becoming more and more discussed by those interested in transportation, as the value of the knowledge of potential flows along a specific route is becoming more appreciated. It is pointed out in the text that forecasting is relatively new in the field of maritime transportation.

Canada - Venezuela trade was selected primarily because the shipping service from Canada, and more especially from the East Coast is well developed and statistics are available from Canadian sources. Furthermore the area is of special interest because of the high priority given to economic development by the Accion Democratica Government. In addition, within the geographical area of Latin America and the Caribbean, Venezuela has probably the best statistical information.

The thesis is divided into three parts. Part one, comprising chapters one and two, introduces cargo flow analysis and a model for forecasting cargo flows. Brief mention is made of several new techniques that have been developed to analyze cargo movement. No claim is made

that the model suggested for forecasting, the single equation, is the most ideal. This is merely a simple method that might be adapted with reasonable success for this type of analysis.

The second part of this study, comprising chapters three to six, inclusive, describes the Venezuelan political climate, with special reference to the Accion Democratica government, the Venezuelan economy in recent years and, more specifically, the external sector. The section closes with a discussion of Canada - Venezuela trade. The influence of government policy has been great in the external sector and this has affected Canadian exports. Discussion of the Accion Democratica government has been based on English language texts that have generally been favourable to this party of the 'Democratic Left'. No claim is made for objectivity in the political discussion. Clearly the position has been taken in this study that the dictator Peréz Jiménez was bad and his Accion Democratica successors were good. While the data cited strongly indicates that Accion Democratica has been interested in developing the economy on a rational basis, no attempt was made to research

Spanish language sources for contrary evidence.[1]

The third and final part of the thesis is devoted to a discussion of trade in wheat and wheat flour, seed potatoes and newsprint. Chapter seven, concerned with wheat and wheat flour, is rather more complete than the following two chapters as it was felt that any duplication of discussion in the latter served little purpose. Where projections have actually been made, these are primarily by way of illustration. No attempt was made to methodically present forecasts of flows for each of the commodities either as total imports into Venezuela or over a specific trade route from Canada.[2]

It was found that Canadian wheat moves from both the East and West Coasts, seed potatoes only from the East Coast, and newsprint mainly from the East Coast but that there were some shipments leaving from the West Coast and some proceeding through the United States. The regression analysis is not employed to forecast flows over the specific

---

1 - These documents are not available in Canada.

2 - A major reason for this, as pointed out in the text, infra p. 24., is the difficulty in forecasting the independant variables, especially price variables.

route, mainly owing to lack of data on freight charges. Where forecast equations are suggested, from all parts of Canada, the flow along a specific route must be estimated according to knowledge of freight charges or by a rule of thumb allotting a percentage of flow via a specific route according to past experience.

PART ONE

CHAPTER ONE

CARGO FLOW ANALYSIS

Cargo flow analysis is the examination of commodity flow over a specific trade route. To a large extent a study of this nature overlaps a trade study. Indeed much of the data used in cargo analysis must, by necessity, be data from official trade publications. The major difference however, lies in the fact that in cargo analysis, the emphasis is on the volume of flow rather than the value. The investigator would be interested, for example, in knowing how many vessels would be required to carry the total flow between point A and point B during period X.

The major objective of the analysis is to enable estimates to be made of future flows. In the case of this specific study, interest is centred on a well defined shipping route.

Recent Activity in the Field of Cargo Flow Analysis

Until very recently, the only published studies in this field originated in the United States. This was probably the result of the desire for documentation of

requests for subsidies by shipowners from the government.[1] The "container revolution"[2] has recently prompted future owners of container-ships and metal containers to engage in cargo flow research.

Difficulty of Obtaining Data

Information of international cargo flows is generally taken from published international trade data. This, however, does not always meet the requirements of cargo analysis. One of the difficulties is that trade statistics cover country to country trade and do not indicate specific regions of origin or destination of goods.

---

1 - For a highly critical appraisal of the system of subsidies to United States flag carriers see Ferguson, Lerner, McGee, Oi, Rapping and Sobotka The Economic Value of the United States Merchant Marine (Evanston, Illinois, The Transportation Centre of Northwestern University, 1961.

2 - A recent example of the hopes and fears of this 'revolution' is the series of articles under the title Container Transport in the Financial Times Monday May 8 1967 pp. 11 - 22.

Another difficulty is that weights given in trade statistics are net weights.[1] The cargo analyst is interested in the total deadweight[2] of the cargo. In some cases weight is not listed in official publications; or it may be entered in gallons, cubic feet, or some other measure which must be converted.[3]

The problem of a standard classification of commodities can be serious when trying to determine the exact nature of the cargo from trade sources. The increasing adoption of the Standard International Trade Classification (S.I.T.C.) and the conversion tables from their own classification system to S.I.T.C. of those nations not employing this system helps to eliminate the problem.

---

1 - Net weight is the weight of the commodity alone net of packing.

2 - Deadweight includes the box or container in which the cargo is packed.

3 - The United Kingdom Ministry of Transport published conversion tables. For a criticism of the accuracy of these tables see Martech, Port of London Authority Management Report Volume 11 Annexes (London, Metra International, 1966).

Shipping Statistics

Some countries[1] do publish statistics of gross cargo movement showing ports of origin for exports and ports of destination for imports.[2] However, the classification used in these publications leaves much to be desired.

The most serious criticism, for example, of Canadian data for international shipping centres around the category of 'general cargo' an all-encompassing item which renders meaningless any study of the individual commodities reported.[3] The problem can be traced to the method of collecting data.

"Shipping operating statistics are completed from reports made by operators or agents of vessels which arrive at, and depart from Canadian ports."[4]

---

1 - Notably the United States and Canada.

2 - For an appraisal of transport statistics available in Canada, see D. Eldon "Review of Transportation Statistics in Canada" in Royal Commission on Transportation Volume 111 (Ottawa, Queen's Printer, 1962) pp. 409-544.

3 - Dominion Bureau of Statistics Shipping Report Part One Catalogue No. 54-202 (Ottawa, Queen's Printer, Annually).

4 - Op. Cit. p. 6.

The decision of whether to report each commodity or simplify the task by reporting 'general cargo' is left to the 'operator or agents' and is thus subjectively determined. A more 'scientific' method of commodity classification is essential before these statistics can be used with confidence.

Multilateral Trade Patterns

In analyzing the trade from country A to country B there are various factors to be borne in mind.

There is a flow of 'traditional' goods, usually necessities, which might or might not be susceptible to competing sources. Shifts in the trade pattern away from the traditional source may be for reasons of price, quality, terms of payment, currency restrictions or may even result from the inability of the traditional source to supply the commodity.

In addition to traditional goods, new commodities enter the trade. As countries develop and incomes rise there is an increase in the purchase of luxury or non-essential items. Investment projects usually generate flows of imports. Here again the decision to use one

source rather than another will depend on many factors.

The creation of import substitution industry may affect some import sources rather more than others.

In cargo flow analysis, there is the additional complication of rival modes of transport. Differences in freight rates, time of transit or regularity of service may encourage importers to ship via alternative routes.

In short, the complexity of dealing with aggregate fluctuations of imports from a specific source and by a specific mode of transport on a determined trade route makes the econometric analysis of cargo flow very difficult. It may be possible to approximate aggregate flow in trade terms but without an exhaustive analysis of commodity by commodity flow it seems that little can be achieved that would be of use to one planning the allocation of vessels on a specific route.

Cargo Forecasting

Forecasts can be classified as short term, medium term or long term according to the length of period of forecast.

Short Term Forecasts

This is generally taken to mean forecasts for periods of under two years. As most countries take over a year to prepare their trade data it is exceedingly difficult to anticipate short term turning points in flows by econometric methods. In most cases there is no record of monthly or quarterly data of the economic variables most commonly employed in this type of analysis. This certainly is the case on the trade route studied in this paper.

An example of an interesting way of by-passing trade data for making short term forecasts is an attempt made at the International Wheat Council to forecast wheat flow for a short term period by examining charter fixings which are usually made three months or so in advance. This proved unsuccessful, however, as not all fixings are reported on the charter market.[1]

Irregular changes in the short term may be detected through intimate knowledge of the various commodity markets,

---

1 - Verbal communication with Dr. G.A. Hiscocks of the Department of Agriculture, Ottawa.

or by knowledge of policy decisions by government or industry.

The major problem in short term forecasting is that warning signals of change are made available too late for incorporation in a functional relationship.

Medium Term Forecasts

Given the existing data limitations this is perhaps the most effective period for which econometric techniques might be employed. In a period of two to five years in the future the structure of the economy will not have radically altered. Current investment decisions will be acted on during this period. Short term irregularities will take on less importance. Generally changes in trade patterns for individual commodities can be detected and revision of forecasts can be made on a year to year basis if new information comes to light.

Long Term Forecasts

In making forecasts for periods of over five years one must consider the possibility of radical changes in the structure of the economy. There may be a reduction of imports resulting from long term planning of import substitution industries or from lack of foreign exchange

owing to a loss of export.markets.

The process of urbanization may change demand patterns for import goods as might increased wealth of the territory and changes in distribution of that wealth.

There are many variables that will alter in the long term and equally as many alternate effects that these may have on imports. An attempt to make long term forecasts of imports would have to be extremely sophisticated. Account would have to be made of demographical, institutional and political factors as well as in depth investigation of demand patterns and supply potentialities. To do justice to any one commodity would involve a world wide supply and demand analysis incorporating all of the possible alternatives.

This study has a less ambitious goal. Attempts are made to establish a relationship that would be valid as a crude forecasting technique in the medium term. This is only attempted for a few basic commodities.

Origin and Destination Studies

Two techniques that have been recently employed to describe and forecast flows through United Kingdom

ports might be extremely useful as an aid to the point to point econometric relationship. These are radial analysis and gravity models.

Radial Analysis

The main object of this method is to describe the hinterland of a port. This is extremely important for the type of study made in this paper. At present we are limited to establishing flow relationships from broad geographical areas as we have no indication of possibilities of changes in flows through alternative ports.

In this approach a survey is made of all flows through ports in the area under study. Origin of goods is then plotted on a map which shows each port at the centre of a series of rings, each ring at a prescribed distance from the port. Thus we can estimate how much of the cargo flowing through a particular port originates within various distances from the port. An estimate can be made by observation of the extent of the hinterland as to how much lies within the hinterland of other ports. Knowing inland freight charges would enable an observer to judge the effect of any change in these charges on volume flowing through a given port.

The same approach can be made to imports through ports by plotting destinations.

This analysis indicated that in the case of London, for instance,

"94 per cent of the imports terminating within a radius of 25 miles of central London and 79 per cent of exports originating in the same area used the local port."[1]

There seems to have never been a survey in Canada of origin and destination of goods.[2] This is very surprising given the proximity of the United States and the known 'leakage' through U.S. East Coast ports. It appears that the hinterland of New York, for example, reaches well into Canada, at least for certain commodities.

Gravity Models

This is a mathematical analysis in which two parameters are estimated; one of which is a reflection of the

---

1 - Ministry of Transport Portbury Reasons for the Minister's decision not to authorize the construction of a new dock at Portbury, Bristol. (London, Her Majesty's Stationery Office, 1966), p. 5.

2 - A study was commissioned by The National Harbours Board which was to have been made public in 1967. This study involved a sampling of bills of lading of goods passing through Halifax.

size of the port and the advantages that size may bring to the exporter, the other reflects the distance of the origin of goods from the port. This latter parameter reflects the hypothesis that attraction of goods through a specific port is inversely related to distance.[1]

Having introduced cargo flow analysis the discussion turns to a description of the particular model that will be employed in the analysis of flow from Canadian East Coast and Great Lakes ports,[2] to Venezuela. This will occupy the next chapter.

---

1 - A full outline of the mathematical model, comprising seven equations, is given in Ministry of Transport op. cit. pp. 46-48.

2 - The East Coast and Great Lakes is the smallest area that is readily identifiable from Trade statistics. Furthermore, the problem of definition of the hinterland would seem to restrict our study to such an area.

CHAPTER TWO

METHOD OF ANALYSIS

Single Equation Models

Three specific methods of analysis by single equation will be examined. These are presented below.

A) Direct Cargo Analysis and Forecast

This is perhaps the most primitive method. Cargo flows are related to time and projections are made on this basis. No attempt is made to relate flows to economic determinants. It will be seen later that time does not explain variations of aggregate flow very well, but it is acceptable in some cases in explaining variations of individual commodities. It is difficult in most cases of aggregate flow to detect a trend but a trend may be present for individual commodities.

The model used is of the basic form:

$$Y = a + bT + u$$

where Y = Aggregate tonnage flow or tonnage of a specific commodity;

T = Time and

u = a random disturbance

Estimation is by ordinary least squares.

B) Trade Analysis and Forecast

The value of trade flow is deflated by an export price index to give volume.[1] This may be expressed as an index. The resulting aggregate volume is regressed against economic variables, again estimating by least squares. The relationship is of the form:

$$Y = a + bX + cP + u$$

where Y = value of trade flow in constant dollars.

X = an income variable

P = a price variable

and u = a random disturbance

To illustrate this model, exports from Canada to Venezuela were deflated by the Canadian general export price index. This was regressed against a ratio of the Venezuelan general import price index and the Canadian export price index and, as an income variable, the Venezuelan export quantity index. This is reported on in chapter six.

---

1 - In explaining this model only, the word "volume" is used to mean value divided by a price index and is not a weight measurement.

This still leaves the task of dividing up the shares of exports by the different modes of transport, which is estimated by observing the percentage of the flow being carried in the past by each mode and observing trends in known freight charges by the various modes. This method leaves much to be desired as there is not necessarily any close correlation between value in constant units and weight of an aggregation of commodities.

Regressions that are suggested as useful for forecasting in this study use the tonnage of individual commodities as the explained variable, income and price being explanatory variables.

C) Trade Translated Analysis and Forecast

To be useful to shipowners cargo analysis must ultimately be 'translated' into a measurement that would indicate either the amount of vessel space taken up or a deadweight measurement. Another measure of interest to the shipowner is that of revenue tonnage.[1]

---

1 - "The revenue-tons, sometimes called freight payable tons, of a voyage or series of voyages, are the measurement tons of measurement cargo (commodities whose charges are computed on a measurement unit) plus the weight tons of weight cargo (commodities freighted on a weight unit)." William L. Grossman Ocean Freight Rates (Cambridge, Maryland), (Cornell Maritime Press, 1956), p. 15. Tonnage is calculated on a measurement basis as a rule for those commodities which occupy more than 40 cubic feet per 2240 lbs.

To translate aggregate forecasts to weight or measurement is a formidable task. The weight of packaging must be estimated in order to arrive at a deadweight figure and the space occupied by each commodity must be estimated to arrive at the cubic equivalent of the aggregate figure. Changes in the composition of the cargo and in packaging techniques can make any rough estimation based on an average value subject to large errors.

Revenue tonnage on a specific route is generally an 'in-house' statistic known only to the individual operator. Some operators have managed to establish a working relationship between revenue tons and 'capacity to import' by countries on their routes.[1]

As there is no information published on revenue tonnage by route from Canada, no trade translated analysis is made.

The Single Equation Model

The major argument against using this model is that it does not accurately reflect economic reality. As Johnston expresses it

---

1 - Notably W.R. Grace (Grace Lines) on their service to the West Coast of South America.

"the essence of economic theory is the interdependence of economic phenomena and the determination of the values of economic variables by the simultaneous interaction of relationships."[1]

He goes on to observe the vital point that

"the immediate consequence of the simultaneous nature of economic relations is that in any single relation of the system a dependence is set up between the disturbance term and some, at least, of the explanatory variables in that relation"[2]

In his textbook, Johnston examines the possible sources of error in the estimation of the coefficients of single equations. The assumptions of the linear model estimated by ordinary least squares are violated in the following ways.

1. <u>There are observation or measurement errors in the variables</u>.

Where estimates are required of the structural

---

1 - J. Johnston <u>Econometric Methods</u> (New York, McGraw Hill, 1963) p. 146.

2 - <u>Loc. cit</u>.

parameters these would be biased and inconsistent. However for the purposes of this study, which is to establish forecasting relationships it is valid to use least squares estimates even though there may be errors in the variables.[1]

2. The disturbance terms are not serially independant.

In this case estimation by least squares is unbiased "but the sampling variances of these estimates may be unduly large compared with those achievable by a slightly different method of estimation", application of least squares formulas may seriously underestimate the variances of the coefficients and "predictions will be inefficient."[2]

There is a warning of this source of error, however, in the Durban - Watson 'd' statistic.

This statistic is calculated as the ratio of the sum of the differences of the residuals squared over the sum of the residuals squared. Tables are given for an upper and lower limit for combinations of the number of

---

1 - Ibid. p. 164.

2 - Ibid. p. 179.

observations and the number of explanatory variables. If the calculated statistic is less than the lower limit then we must consider auto correlation to be present. If calculated 'd' is between the upper and lower limits then we suspect the existance of auto correlation. Values of 'd' greater than the upper limit indicate that we can say with confidence that auto correlation is absent. Generally speaking a 'd' statistic of less than 2 is suspect.

Method used to eliminate Auto Correlation

Johnston outlines three methods of eliminating this source of error.[1] Perhaps the simplest method is to take first differences of the variables and apply ordinary least squares to these transformed variables. The 'd' statistic is then observed. If necessary, the procedure is repeated until auto correlation seems to have been eliminated.

---

1 - Ibid. pp. 192-195.

3. The explanatory variables are highly correlated with one another.

This is not a major problem for purposes of forecasting. If the relationship seems to be such that it would be expected to consistently remain in the future, then least squares estimates are perfectly acceptable.[1]

In our study, therefore, the only serious source of estimating error is likely to be auto correlation and one is aware of the problem by observing the Durban-Watson statistic; furthermore, there is a technique by which the source of error can be eliminated.

Identification

By using the single equation model we are implicitly saying that we are estimating the demand equation and not a 'mongrel' equation of the intersecting points of supply and demand, which one would expect to be randomly distributed over time. It is especially important that we identify the demand equation in certain commodities where the importing country is taking a major part of the

---

1 - Ibid. p. 207.

Canadian supply of specific commodities. In particular the country studied is a major buyer of Canadian seed potatoes.

In any case we fall back on the authority of Klein who says that

"If in a system of linear equations we are concerned with the identification of some particular equation, we say that the equation in question is identified provided it is not possible to derive, by linear combinations of some or all the equations of the system, another equation that contains exactly the same variables as the equation being considered."[1]

Furthermore "the more variable is the supply function and the less variable the demand function, the closer the scatter of points approximates the demand function and discriminates between the two relationships."[2]

Klein warns that simply adding a weak variable to the system is insufficient for identification, "One

---

1 - Lawrence R. Klein An Introduction to Econometrics (Englewood Cliffs, N.J., Prentice-Hall Inc., 1962) p. 13.

2 - Ibid. p. 17.

must add something substantial and significant."[1]

In the case of the supply of seed potatoes it may be said that the supply function is more variable than the demand function. The influence of weather and weather conditions on the quantity supplied is demonstratably important. The same justification can be given for wheat and its derivative wheat-flour; although because flour production is an "industrial" process one is on weaker ground in making this assumption.

For newsprint[2] one notices that the amount supplied to Venezuela in comparison to total supply is negligible. Any complete study would have to consider the universe of supply and demand. In this case it appears that we are possibly dealing with a mongrel equation, in the Klein sense of the word.[3] Fully aware of being on unsteady ground, the use of the single equation is justified

---

1 - Ibid. p. 18.

2 - This commodity has a productivity-based supply and we have no reason to say that the supply function varies to any great degree.

3 - Klein, Op. cit., p. 11.

by noting that if a relationship has been observed in the past which seems to be a good explanation of variations in the dependant variable then, ceteris paribus, this relationship can be expected to exist in the future.[1] The contentiousness of the latter statement is recognized.

Estimation by Ordinary or Simple Least Squares[2]

Least squares estimation is carried out in the manner prescribed by Johnston.[3] Standard errors of the coefficients are estimated, an 'F' statistic is calculated which indicates whether or not the independant variables have a linear influence on the dependant variable, a

---

1 - This line of argument might conceivably be extended to all of the commodities discussed as Canadian supply may be considered as only a part of total world supply. The argument in the preceding paragraph assumes that the Canadian seed potato qua a Canadian commodity is in fact distinguishable from other potatoes.

2 - The technique of estimating the various statistics is not entered into in this study as this would merely be a repetition of an already excellent exposition by Johnston.

3 - Johnston, op. cit., pp. 106 - 142

Durban-Watson 'd' statistic and the standard error of estimate for the dependant variable are calculated. Log transformations of the variables were used where it was thought that an improvement in the relationship would result.

The Reliability of Forecasts

There are two main factors involved in the prediction of future values: the plausibility of accurately estimating the independant variables and the estimation error involved in the relationship of the variables.

Prediction of Independant Variables

If we are fortunate, predictions will have been made of the income variables by government sources and we need only consider alternatives to these estimates. Prediction by extrapolation, usually taking an exponential growth rate, seems to be the commonest method used where information is incomplete for an accurate analysis of the economy.

Prediction of price variables is extremely hazardous. Without a complete analysis of the supply and demand of individual commodities, most estimates will be

educated approximations. As a practical rule, we might expect relative prices from alternative sources to be the same as at the time of the last observation, unless there is a strong reason for believing this will not be the case. One can allow a margin for suspected changes in the situation.

At best predictions of independant variables must be qualified by the statement that if the particular value of these variables are X_1 and X_2, for example, then the expected value of the dependant variable is Y_1 and that the error possible in this prediction of the X_i's must be in addition to the error of the relationship between the variables.

Prediction of the Dependant Variable

The variance of the prediction increases the further the observed X_i's are from the sample mean.[1] Johnston outlines the procedure for estimating confidence limits for predicted values in the case of a two variable

---

1 - Ibid. p. 37.

linear model.[1] The extension to the multivariate model is described by Ezekiel and Fox.[2]

For the two variable linear model a 100 (1 -E) per cent confidence interval for a predicted variable Y_o takes the following form[3]

$$(\hat{a} + \hat{B}X_o) \pm t_{e/2}\hat{\sigma}_u \sqrt{1 + \frac{1}{n} + \frac{(X_o - \bar{X})^2}{\sum_{i=1}^{n} x_i^2}}$$

where
- X_i = the independant variable
- X_o = the observed independant variable
- x_i = the deviation of X_i from the mean
- $\bar{X}$ = the mean of the independant variables
- n = the size of the sample
- $\hat{\sigma}_u$ = the estimated standard error of the disturbance term
- $t_{e/2}$ = the 't' value for a two-tailed test with n-2 degrees of freedom
- $\hat{a}$, $\hat{B}$ = least squares estimates of the parameters

It can be seen that the confidence interval will be larger

1. the larger the standard error of estimate, which can be estimated as the square root of the sum of the residuals squared over n-2.

---

1 - Ibid. pp. 34-39.

2 - Mordecai Ezekiel and Karl A. Fox. Methods of Correlation and Regression Analysis (New York, John Wiley and Sons Inc., third edition, 1959) pp. 320-322.

3 - Johnston, op. cit. p. 38.

2. the smaller the sample size, n.

3. the larger the deviation of X_o from the mean.

Less confidence can be given to predictions that are based on a structural relationship derived from a small sample or from a relationship that indicates a high standard error of estimate. Predictions are limited in value by the increasing size of the standard error of prediction as we take values of X_o more and more into the future.

Measurements of Accuracy

The purpose of forecasting is not to hit the actual value exactly but to give a general tendency of future values. It has been said that it is better to be vaguely right than to be exactly wrong.

A guage of accuracy of prediction when the actual values of the predicted variable become known is suggested by Ferber and Verdoorn.[1]

The percentage error is given as

$$\sum \left| \frac{\text{Actual - Forecast}}{\text{Actual}} \right| \Big/ \text{Number of Forecasts}$$

---

1 - Robert Ferber and P.J. Verdoorn, Research Methods in Economics and Business (New York, The Macmillan Company, 1962), p. 476.

The same authors suggest alternative methods of evaluating predictive accuracy.[1] For the purpose of this study, it is sufficient to note that these tests exist and that a systematic ex-post examination of forecasts is useful in establishing sources of bias, which have resulted in unsuccessful predictions.

In this chapter, the various approaches to cargo flow analysis have been surveyed and the model to be used in this study has been outlined. The value of forecasts has also been briefly discussed.

---

1 - Ibid. pp. 476-480.

PART TWO

CHAPTER THREE

THE POLITICAL BACKGROUND

It would be difficult to fully comprehend the changes in the economy of Venezuela since 1958 without giving an outline of the changes in political priorities which came about with the rise to power of the Accion Democratica (A.D.) movement.

What is Accion Democratica?

Robert J. Alexander has attempted to classify Latin American political parties. He puts Accion Democratica in the category of "National Revolutionary", that is in the same category as the Mexican Partido Revolucionario Institucional and the Alianza Popular Revolucionaria Americana (A.P.R.A.) of Peru.[1]

Needler says of "aprista" parties, as he calls the genus:

"The impulse that animates the "aprista" parties might loosely be termed "socialist" in the general sense

---

1 - Robert J. Alexander. Today's Latin America (New York, Doubleday, 1962) pp. 164-171.

in which the Christian Democrats are referred to as Christian Socialists .... They differ clearly from the Socialist parties proper, however, in being pragmatic, unbound by doctrine, not committed to nationalization of economic enterprises on principle, certainly not Marxist."[1]

The Tyrants.

For the greater part of the twentieth century Venezuela has been under the direct control of caudillos, most of whom were from the Andean state of Tachira. The most notorious have been Cipriano Castro, Juan Vicente Gomez, who ruled the country until 1935, and more recently, from 1948 to 1958 Marcos Pérez Jiménez "who returned to the violence and tyranny that had been traditional."[2]

These 'tyrants of the Andes' typified the paternalistic dictator who has plagued Latin American

---

1 - Martin C. Needler. Latin American Politics in Perspective (Princeton, Nostrand, 1963) p. 98.

2 - Robert J. Alexander. The Venezuelan Democratic Revolution (New Brunswick, New Jersey, Rutgers University Press, 1964), p. 18.

presidential palaces since the wars of independence.[1]

The important point to notice about these periods of dictatorship is that little consistent effort seems to have been applied to developing the economy. The incredible wealth that was accumulated from petroleum royalties either served to aggrandise the foreign bank account of the favoured few or was lavishly spent by the caudillos and their cohorts in public gestures giving little consideration to the overall development of the country.

Referring to Pérez Jiménez, R.J. Alexander makes the following comment:

"The principal objective of the dictator and those associated with him was to use their positions of power to enjoy themselves while the regime existed, and to pile up abroad as much wealth as possible, for use when they no longer could exercise their gangster-like control over the nation."[2]

---

1 - For a full discussion of the phenomena of paternalism, and more especially the patron-peon relationship in Latin America see John P. Gillin "Some Signposts for Policy" in Social Change in Latin America Today (New York, Vintage Books, 1960), pp. 36-38.

2 - R.J. Alexander, The Venezuelan Democratic Revolution, p. 43.

It was during the periods of Accion Democratica rule from 1946 to 1948 and again from 1958 through to the present time that an attempt was made to formulate overall policy that would encompass the goals of the economic well-being for Venezuela and its people. The enthusiasm and determination of the leaders and members of Accion Democratica is well worth recording.

Accion Democratica

This movement rose as a protest and democratic alternative to dictatorial rule, during which the vast majority of citizens had no participation in the running of their society. The general population was treated as children who were the wards of the caudillo. Any who stepped out of line were punished 'for their own sake.'

The week of February 6th to 12th, 1928 is memorable in A.D. history. The Federacion de Estudiantes de Venezuela (F.E.V.) planned a 'semana de estudiante', very much in the tradition of student programmes with social and cultural events. The president of F.E.V. at this time was Raul Leoni, now President of the Republic. Juan Vicente Gomez was the ruling tyrant. The week

turned into a protest against the harsh regime. Among the key speakers was Romulo Betancourt, later President of the Republic (1959-1963) who declared that "our poor people seem forgotten by God and crucified in republican anguish."[1]

The student meetings led to a general country-wide uprising that was put down by loyalist Gomecista troops. The post-disturbance utterances of the tyrant were typically paternalistic and his actions brutal.

"I have opened the doors of the University to the students and secured and paid fine professors that might learn honourable professions; .... since they do not wish to study, they can learn to work."[2]

Many students were imprisioned and many sent to labour camps. The leaders of the uprising became known as the "Generation of '28". A long dialogue followed amongst progressive leaders, usually operating under-ground or in exile. This continued throughout the rule of Gomez, that of his son-in-law, who succeeded him on

---

1 - Quoted by John D. Martz, Accion Democratica (Princeton, N.J., Princeton University Press, 1966), p. 23.

2 - Ibid. p. 24.

his death and throughout the terms of Gomecista sympathizers. Accion Democratica finally came to power in 1946 following a coup by the military who had approached A.D. leaders suggesting a co-operative effort to rid the country of the vestiges of the old dictators. Among the military people involved was Major Marcos Pérez Jiménez. At this stage it was clear that A.D. was a revolutionary party which had wide-spread support and, after years of dialogue, a well defined theoretical platform of social and economic reform. What was not clear was how this was to be put into effect.

The power structure in the country was such that any part of the A.D. programme would be likely to offend influential sectors. In 1948, the military became offended and staged a coup deposing A.D. President Romulo Gallegos, author of world renown, setting up a military triumvirate. In a very short time Pérez Jiménez was the sole member of the original trio and assumed absolute power.

Accion Democratica again went into exile and returned, again following a military coup, in 1958. Following a brief caretaker regime A.D. was elected to

power and Romulo Betancourt became the first elected president to serve his full term of office. He was succeeded by Raul Leoni in 1963 following an election. The military, however, always lurk in the background and during the recent period of representative government since 1958 there have been several abortive uprisings.

The Programme of Accion Democratica

With the fall of the dictatorship in 1958, A.D. set up a series of study groups and commissions to produce succinct statements of the party's doctrine and to indicate priorities. These were issued in the form of theses - of which six - on agriculture, education, organization, petroleum, politics and syndicalism were published.[1]

A.D. policies in the fields of agriculture, industry, education, petroleum and the co-ordination of the various development projects in the country will be discussed in the remainder of this chapter.

---

1 - Ibid. p. 229.

Agricultural Policy

Agrarian reform has been the goal of the progressives in Latin America for a great many years. The first actual reform took place in Mexico after the 1910 Revolution.[1]

The Economic Commission for Latin America (E.C.L.A.) explains the reasons for land reform in the following way:

"Reform is urgently needed for three main reasons:

a) to bring about structural changes such as would enable the savings potential to be used to the full and promote social mobility, with its important economic, social and political consequences;

b) to satisfy the demand of a rapidly increasing population that needs to improve its diet; and

c) to raise the level of living of the rural population."[2]

---

1 - For a discussion of this see Alexander, Today's Latin America, p. 63.

2 - United Nations, Economic Commission for Latin America, Towards a Dynamic Development Policy for Latin America (New York, United Nations, 1963), p. 39.

The first point mentioned by E.C.L.A. was especially important in A.D. priorities. It is estimated that a Latifundista minority controlled about 80% of the tillable land in Venezuela.[1] However, A.D. adopted a pragmatic point of view which they claimed was neither capitalist nor socialist. In the 'Tesis Agraria' it is pointed out

"We cannot be collectivists nor minifundistas,[2] nor capitalists in the extreme. We must not be animated by any preconceived prejudice. Each country must realize the agrarian reform that is appropriate to its needs .... The political, social, demographic and economic reality of the country .... is what must stamp its course and the positive forms of change."[3]

---

1 - Martz, op. cit. p. 239.

2 - Haiti and the altiplano of Bolivia are good examples of minifundia or a proliferation of minute holdings.

3 - Quoted by Martz, op. cit. p. 240.

A.D. has been implementing its agrarian reform policy and it is to their credit that Alexander, for instance, can find that "land distribution was accompanied by increases in output."[1]

Another goal of the Accion Democratica government is to achieve complete self-sufficiency in agriculture.[2] A measure of the importance that A.D. attaches to this sector is reflected in the amount of investment that goes into agriculture. During the years 1950-1958 10% of the total gross fixed investment in Venezuela went to the agricultural sector whilst under A.D. rule this has risen to 18% by 1962.[3]

---

1 - Alexander, The Venezuelan Democratic Revolution, p. 183. An argument of anti-reformists has been that land redistribution lowers national output.

2 - United States Department of Agriculture, Economic Research Service, Summary and Evaluation of "Long Term Forecasts of the Supply and Demand of Agricultural and Livestock Products in Venezuela", (Washington, D.C., U.S. Government Printing Office, June 1967), p. 9.

3 - Economic Commission For Latin America, Economic Survey of Latin America 1964 (New York, United Nations, 1966), Table 121.

Some indication of the extent of agrarian reform is seen in the following table in which the area of land distributed per year, the number of beneficiaries and the average area per household are shown:

Table 3-1. Venezuela. Agrarian Reform

Year	Land Distributed (thousands of hectares)	Number of Beneficiaries (households)	Area per Household (Hectares)
1959	460.8	5,874	78.4
1960	748.9	25,221	24.7
1961	156.1	11,074	14.1
1962	167.3	14,603	11.5
1963	137.1	9,656	14.2
1964*	192.7	10,250	18.8
	1,852.9	76,678	24.2

* First Ten Months.

Source: E.C.L.A. Economic Survey 1964 Table 124, p. 117.

In passing it may be noted that there has been a tendency to turn over lots of between 10 and 20 hectares in the later years recorded in the above table. This is in contrast to the rather larger lots of the

first two years. Alexander's statement, published in 1962, took into consideration a redistribution of land the average area per household of which was relatively higher than the average throughout the whole current experience of land reform.

Industrial Policy

The creation of import substitution industry has been a principle objective of the A.D. Government. To this end the Government has raised tariffs, created import restrictions and directly promoted local industries.[1]

"An indicator of the structural changes undergone by the Venezuelan economy .... is to be found in the fact that the coefficient of the volume of total imports, in relation to the gross domestic product, dropped from 27.2% in 1959 to 15.3% in 1964."[2]

An illustration of the protective methods used by the Betancourt government, given by Alexander, is

---

1 - Ibid. p. 118.

2 - Ibid. p. 112.

that of the restriction on imports of assembled automobiles after December 31, 1962.[1]

The pragmatic justification of import substitution is summarized in the following sentence of the anonymous voice of E.C.L.A.

"Given the impossibility of maintaining or accelerating the previous growth rate of traditional exports, recourse was inevitably had to import substitution - chiefly in respect of industrial items - in an attempt to counteract the disparities in question, and thus began the interally-geared development of the Latin American countries."[2]

The resurrection of the Venezuelan Development Corporation (C.V.F.)[3] was designed to give impetus to the industrialization programme by injecting the economy with financial aid to private investors and by organizing

---

1 - R.J. Alexander, The Venezuelan Democratic Revolution, pp. 196-197.

2 - United Nations, Towards A Dynamic Development Policy, p. 69.

3 - Corporacion Venezolana de Formento

industries controlled by the government.[1] The total amount of loans given out by C.V.F. in the year 1962 was more than during the entire period 1949 to 1957, the years of the Pérez Jiménez dictatorship.[2]

Education

The World Bank reported that in 1958 that "out of an estimated population of 6.8 million, more than 2 million adults were illiterate. Some 500,000 school-age children, or about 40 per cent of the total, were not attending school, and, if past trends were any indication, of those attending school the majority would not even complete the first three grades of primary education."[3]

The educational philosophy of Accion Democratica is perhaps best expressed in a passage, quoted by Martz, from the 1948 Organic Law of National Education, passed

---

1 - Alexander, The Venezuelan Democratic Revolution, p. 200.

2 - Loc. Cit. Table II.

3 - International Bank for Reconstruction and Development, The Economic Development of Venezuela (Baltimore, Johns Hopkins Press, 1961), p. 320.

shortly before the Gallegos government fell.

"Education is an essential function of the State and all the inhabitants of the Republic have the right to receive it freely in official facilities ....

Education has as its object the achieving of the harmonious development of the personality, forming citizens, preparing for life and for the exercise of democracy, fortifying the sentiments of nationality, nourishing the spirit of human solidarity and promoting national culture. In its content .... it is oriented preferentially toward the value of work as a fundamental civic duty .... and the development of the productive capacity of the Nation."[1]

The approach of the new representative government is a radical change from that of the dictatorship towards education. Accion Democratica stresses that education is the right of every citizen whilst previous regimes had reserved education for a small minority of the population.

---

1 - Martz, op. cit. p. 250.

Petroleum

This sector is important because of its earnings of hard currency and its consequent influence on the capacity to import. Royalties from petroleum have been fundamental as a source of general tax revenue and foreign exchange.

Oil became important in Venezuela after 1918 and by 1928 the country was the second largest producer in the world and the largest exporter.[1] Lopez Contreras, son-in-law of the dictator Gomez, and president after his death, first coined the expression 'sembrar el petroleo'.

"The idea was to take the money obtained by the extraction of wealth from Venezuela's soil and 'sow' it in the land in order to establish a healthy diversified economy."[2]

There seems to be little evidence that the idea expressed by Lopez Contreras ever developed past the

---

1 - Edwin Lieuwen, Venezuela (London, Oxford University Press, 1961), p. 48.

2 - Ibid. p. 54.

idea stage. It became at the very most an ill-planned public spending gesture.[1]

It was not until the A.D. regimes of 1945-1948 and post 1958 that an overall petroleum policy was put into practice. In the words of President Betancourt:

"The truth is that we are spending the proceeds of unrenewable, perishable wealth, and that we must spend it well, taking advantage of the extraordinary current situation of Venezuela to establish solid and durable bases for the Venezuelan nation."[2]

In short, the Accion Democratica policy has been to secure the greatest revenue possible from the oil industry, 'Venezuelanize' the industry within the limits of the concessional arrangements with foreign companies and employ the revenues from the industry to strengthen the economy as a whole, bearing in mind the dangers of too much reliance on petroleum.

---

1 - Ibid. pp. 55-56.

2 - Speech by Romulo Betancourt at Fourth Convention of State and Territorial Governors, Caracas, February 15, 1961 quoted in Alexander, The Venezuelan Democratic Revolution, p. 232.

Planning

The necessity of planning in Latin America has been stressed by the Economic Commission for Latin America.

"In virtually all the countries of Latin America the need to evaluate the situation as a whole, to co-ordinate means and ends, and to take decisions within a single coherent system, has led to the adoption of policies increasingly geared to planning."[1]

Indeed planning involves more than a mere setting of goals or making projections. It involves "institutional reforms transcending the current use of the traditional instruments of economic policy."[2] Furthermore, "social expenditure no longer means a philanthropic concession which deflects resources from economic investment, but has become a requisite for development."[3]

---

1 - E.C.L.A. Economic Survey 1964, p. 328.

2 - Ibid.

3 - Ibid.

The importance of planning was reflected in the Charter of Punta del Este in which the Alliance for Progress was formalized. "In recent years the Alliance has made the existence of national plans a virtual condition of external assistance."[1]

The A.D. Government has demonstrated its stress on planning by the setting up of the Oficina de Coordinacion y Planificacion, commonly referred to as CORDIPLAN. CORDIPLAN is directly responsible to the President of the Republic and its head has cabinet status.[2] The office was established in 1958.[3]

One of the functions of CORDIPLAN has been to co-ordinate the activities of the various ministries. Previously, each ministry had operated individually

---

1 - John Friedman, Venezuela: From Doctrine to Dialogue (Syracuse, N.Y., Syracuse University Press, 1965) p. 54.

2 - Alexander, The Venezuelan Democratic Revolution, p. 63.

3 - A complete list of all planning agencies in Latin America giving the years in which they were first established, the names of the responsible party for policy and the achievements of the agencies is found in E.C.L.A. Economic Survey 1964, pp. 336-339. Part Three of the 'Survey' is devoted to planning in Latin America.

without consulting any other part of the government apparatus. "No ministry or independant agency took into account work similar to its own being accomplished by other branches of the government."[1]

CORDIPLAN also participates in the drawing up of the annual budget. Officials from the financial branches of the government, the Central Bank, and the Ministry of Finance meet for several months in CORDIPLAN offices prior to the presentation of the budget.[2]

The national plans presented for the periods 1960-64 and 1963-66 were a direct responsibility of CORDIPLAN. The Venezuelan national plans are unique in the sense that there are year by year revisions made in these plans to accommodate changing conditions.[3]

CORDIPLAN has also been very active in regional planning, although as Friedman states, within CORDIPLAN

---

1 - Alexander, The Venezuelan Democratic Revolution, p. 63.

2 - Ibid. p. 64.

3 - Loc. cit.

"none of its own staff had been trained in problems of regional development and precise investment criteria were lacking."[1]

With regards to planning generally in Venezuela, Friedman attempts to look into the future and discusses the probable role of this function. "What is likely to occur is a decline in the central function of planning, but also a concurrent increase of rationality among a multiplicity of decision units related to each other in a loosely co-ordinated information decision system."[2]

Summary

Accion Democratica has its roots in the disturbances of the late 1920's. The party was a reaction to dictatorial rule that Venezuela has experienced during most of the twentieth century.

A.D. came to power in 1946 following a coup and was overthrown in 1948. In 1958, with the help of the

---

1 - Friedman, Op. cit. p. 45.

2 - Ibid. p. 74.

military as in 1948, the dictatorship was terminated by coup. In 1959 after nation-wide elections A.D. formed the government and has remained in power.

The outcome of many years in exile was the formulation of policy on the various aspects of government including the fields of education, petroleum, industry, agriculture and planning. This policy was expressed in a series of documents termed 'tesis'. These 'tesis' formed the working documents for concrete programmes which have since, in great measure, been carried out.

CHAPTER FOUR

THE VENEZUELAN ECONOMY 1950-1965

In the previous chapter the policies of the Accion Democratica government were discussed. The results of these policies are now examined.

The Economic Commission for Latin America has compiled information on Gross Domestic Product and Real Income,[1] which provides some indication of the performance of the economy. The years 1950-1958, those roughly effected by the actions of the Perez Jiménez regime and 1958-1964, those of Accion Democratica rule are isolated in Table 4-1. It can be seen that both the overall and per capita growth rates were lower as annual averages during the A.D. regime.

---

1 - E.C.L.A. explains its use of the concepts of product and income as follows: "the domestic product measures the country's net domestic production, real income measures the complex of goods and services at the country's disposal after part of the product has been traded for imported goods and services, with due regard to the final trade -- balance or balance of payments position, as the case may be." (United Nations, The Economic Development of Latin America in The Post War Period (New York, U.N., 1964), p. 7.

Table 4-1

Venezuela: Average Annual Growth Rates

Of Total and Per Capita Gross

Domestic Product and Real Income*

(Percentages)

Period	Gross Domestic Product (Total)	Real Income (Total)	Population	Gross Domestic Product (Per Capita)	Real Income (Per Capita)
1950-58	8.3	7.7	4.0	4.3	3.7
1958-64	5.1	5	3.6	1.5	-0.1
1958-61	3.6	2.2	3.6	-	-1.4
1961-64	6.6	4.8	3.5	3.1	1.3
1961-62	6.3	4	3.5	2.8	0.1
1962-63	5.9	1	3.5	2.4	1.6
1963-64	7.7	5.8	3.5	4.2	2.3

* Estimate based on values in bolivars at 1960 prices.
Source: E.C.L.A. Economic Survey of Latin America 1964
Table 116, p. 111.

Table 4-1

Venezuela: Average Annual Growth Rates

Of Total and Per Capita Gross

Domestic Product and Real Income*

(Percentages)

Period	Gross Domestic Product (Total)	Real Income (Total)	Population	Gross Domestic Product (Per Capita)	Real Income (Per Capita)
1950-58	8.3	7.7	4.0	4.3	3.7
1958-64	5.1	5	3.6	1.5	-0.1
1958-61	3.6	2.2	3.6	-	-1.4
1961-64	6.6	4.8	3.5	3.1	1.3
1961-62	6.3	4	3.5	2.8	0.1
1962-63	5.9	1	3.5	2.4	1.6
1963-64	7.7	5.8	3.5	4.2	2.3

* Estimate based on values in bolivars at 1960 prices.
Source: E.C.L.A. Economic Survey of Latin America 1964
Table 116, p. 111.

This was especially the case during the period 1958-61, during the provisional regime and the first two years of A.D. rule. There was "a considerable outflow of capital in 1959-61 resulting from disinvestments in the petroleum industry and from the flight of capital that took place in the rest of the economy."[1]

Friedman takes note of the problems which faced Accion Democratica in its early years:

"The years since 1958 have been difficult. The revolution coincided with a sharp decline in world markets for petroleum. Reduced oil exports were immediately translated into smaller government revenues. Public expenditures were curtailed with disastrous results particularly in the construction industry. More than a hundred thousand workers suddenly found themselves without jobs. The double collapse of the oil and construction booms that had marked the preceding decade pushed all other economic indicators downward. The spreading sense of depression was re-inforced by large-scale capital

---

1 - E.C.L.A. Economic Survey 1964, p. 111.

flight and the departure of thousands of foreign immigrants who had previously occupied key economic positions. Unemployment reached dangerously high levels estimated at 14 per cent of the labour force as late as 1962. Although the economy appeared to have made some recovery by that time, earlier levels were not quickly recovered."[1]

This phenomena is evident in Table 4-1. Per capita real income, it can be seen, actually dropped over the period 1958-64 and only by 1963-64 does it show signs, at 2.3%, of increasing significantly. The period 1958-61 witnessed an especially severe step backwards with an average annual fall in real per capita income of 1.4 per cent.

Unemployment has been high throughout the period since 1958 reaching 14.3 per cent of the labour force in 1961, and by 1963 falling to 11.3 per cent, which represented some 323,000 persons.[2]

---

1 - Friedman, op. cit., p. 10.

2 - E.C.L.A. Economic Survey 1964, Table 126, p. 120.

Performance by Sectors

The average growth rates over the periods 1950-58 and 1958-64 for the agricultural, mining, petroleum and manufacturing sectors are given in Table 4-2.

Table 4-2

Venezuela: Average Growth Rate, by Periods, in Agriculture, Mining, Petroleum, and Manufacturing

Sector of the Economy	Average Annual Growth Rates	
	1950-58	1958-64
Agriculture	5.7	6.4
Mining	44.0	-0.7
Petroleum	7.7	4.6
Manufacturing Industry	10.8	7.9

Source: E.C.L.A. Economic Survey 1964, Table 122, p. 116.

Agriculture is the only sector of those considered registering a higher growth rate in the latter period. A year by year analysis of this sector reveals that during

the first three years of the provisional and A.D. governments this sector grew at an average annual rate of 5.4 per cent. In the year 1961-62 the 'big push' in agriculture was evident with a 10.9 per cent increase over the previous year. But by 1963-64 the rate of increase had fallen back to 5 per cent.[1]

The mining industry grew at a fast rate during the dictatorship. This can be accounted for by the fact that at the beginning of the Pérez Jiménex regime little or no mining activity took place. For example, mining in 1950 contributed 20 million bolivars (in 1957 prices) to the Gross Domestic Product, the equivalent of 0.15 per cent of G.D.P. In 1965 this sector accounted for 402 million bolivars or 1.19 per cent of G.D.P.[2]

The petroleum industry show quite marked differences of annual growth rates when examined on a year to year

---

1 - Ibid. Table 122, p. 116.

2 - Banco Interamericano de Desarrollo, Division de Desarollo Economico y Social, Datos Basicos y Parametros Socio-Economicos de Venezuela 1950-1965 (Washington, D.C., B.I.D., April 1967) Tables 1 and 1'4.

basis. In 1962-63 the growth rate fell to 1.5 per cent, in 1963-64 it had recovered to 4.7 per cent. Policies of the A.D. government, already discussed in the previous chapter, presented a great deal of uncertainty in this industry and combined with the general decline in world oil demand and the internal civil strife during the 1963 election campaign no doubt explain the variations to a great degree.[1]

Manufacturing was perhaps typical of the reaction of the 'business community' to the new government. A high rate of growth took place during the dictatorship only to fall off sharply during the first three years of A.D. rule. The growth rate, however, recovered and with the exception of the turbulent election year has been steadily increasing.

This same pattern was the rule for gross domestic product generally. The 1963-64 overall rate had practically equalled that of the period of the dictatorship. Venezuela is a very good example of the sensitivity of

---

1 - Other factors to be taken into account when assessing performance in this sector include the price stability measures imposed by the Organization of Petroleum Exporting Countries and costs of production relative to other producers.

business activity to political uncertainties.

The Structure of Domestic Product

The agricultural, mining, petroleum and manufacturing sectors are again examined, this time noting the percentage of the gross domestic product that each contributes. This is shown below for selected years.

Table 4-3

Venezuela: Structure of the Domestic Product

Percentages of G.D.P. contributed by

Agriculture, Mining, Petroleum and Industry

Selected Years

Sector	Percentage of Total Gross Domestic Product 1950	1958	1960	1964
Agriculture	8.5	7.0	7.3	7.4
Mining	0.2	1.8	2.1	1.3
Petroleum	25.9	24.8	24.8	23.8
Manufacturing Industry	9.6	11.5	11.6	13.4

Source: E.C.L.A. Economic Survey 1964, Table 122, p. 116.

The gradual increase in agriculture since 1958 is to be noticed, as is the decrease in importance with relation to G.D.P. of the petroleum industry. The manufacturing industry, despite an erratic growth pattern, had assumed quite an important percentage of G.D.P. by 1964. In passing, it may be noted that the government sector which in 1950 contributed 6.6 per cent of the G.D.P. in 1964 only accounted for 4.1 per cent.[1]

Investment

Gross investment in the four sectors of the economy treated above is now examined.

Table 4-4

Venezuela: Gross Investment by Sectors

(In millions of 1957 Bolivars)

Selected Years

Sector of the Economy	1950	1955	1958	1960	1965
Total all Sectors	3264	5161	5896	4725	5885
Agriculture	365	570	540	669	872
Mining	9	277	84	293	79
Petroleum	694	884	1544	723	542
Manufacturing Industry	226	318	549	626	775

Source: Banco Interamericano, op. cit., Table 9.

1 - E.C.L.A. Economic Survey 1964, Table 122, p. 116.

The steady increases in gross investment in agriculture and industry as shown in Table 4-4, contrast with the petroleum industry where gross investment has fallen off noticeably and the more erratic behaviour of the mining industry where no clear trend is evident. Table 4-4 in terms of percentages is given below.

Table 4-5

Venezuela: Gross Investment by Sectors

As Percentages of Total

Selected Years

Sector of the Economy	1950	1955	1958	1960	1965
All Sectors	100.00	100.00	100.00	100.00	100.00
Agriculture	11.18	11.04	9.15	14.15	14.82
Mining	0.27	5.36	1.42	6.20	1.34
Petroleum	21.26	17.12	26.18	15.30	9.21
Industry	6.92	6.16	9.31	13.24	13.17

Source: Banco Interamericano, op. cit., Table 9'4.

Again the priorities in agriculture and industry during the A.D. rule are evident. There has been a

remarkable falling off of gross investment in the petroleum sector post 1958.

Accumulated foreign investment indicates the preference of non-nationals to invest increasingly in industry in recent years. This is seen in Table 4-6.

Table 4-6

Venezuela: Accumulated[1] Gross Foreign Investment

(In millions of bolivars)

Sector of the Economy	1950	1955	1958	1960	1964
Total all sectors	8893	13328	20247	20432	21627
Mining	215	945	1335	947	900
Petroleum	8245	11329	16984	17801	18696
Manufacturing Industry	170	477	577	529	888

Source: Banco Interamericano, op. cit. Table 8.

1 - Accumulated gross foreign investment is the sum of gross investment in all sectors before depreciation and amortization.

The breakdown of the above table in percentages of total accumulated gross foreign investment indicates the sensitivity of foreign investment, most noticeably in the manufacturing industry where only after the apparent suspicion of the capability of the A.D. government to maintain a favourable business environment was overcome did the percentage approach that of the dictatorship years.

Table 4-7

Venezuela: Accumulated[1] Gross Foreign Investment

By Sectors as Percentages of Total

Selected Years

Sector of the economy	1950	1955	1958	1960	1964
Total all sectors	100.00	100.00	100.00	100.00	100.00
Mining	2.41	7.09	6.59	4.63	4.16
Petroleum	92.71	85.00	83.88	87.12	86.44
Manufacturing Industry	1.91	3.57	2.84	2.58	4.10

Source: Banco Interamericano, op. cit. Table 8'4.

1 - Accumulated gross foreign investment is the sum of gross investment in all sectors before depreciation and amortization.

In 1963 there was foreign dis-investment in the manufacturing industry sector.[1] As investment from all sources in the industrial sector has been consistently increasing in the A.D. period, it would appear that the momentum in this sector is being maintained by local investment. Again 1963 is an exceptional year, when the level of investment fell in this sector.

The mining sector is quite erratic. There has been considerable foreign dis-investment since 1958. In the petroleum industry foreign investment reached a high in 1959, there was dis-investment in 1960, and the 1965 figure seems to indicate that the 1959 level is again being approached. It is clear, however, that foreign investment has diversified away from the petroleum industry into other sectors of the economy.

The discussion of the Venezuelan economy is rounded off with a brief consideration of the agricultural and industrial sectors.

---

1 - Banco Interamericano, op. cit. Table 8.

Agriculture

As was mentioned in the previous chapter it is the goal of the Venezuelan government since 1958 that the country be self-sufficient in agricultural products. "By the end of 1960 Venezuela was self-sufficient in fish, maize, rice, beans, peas, bananas and coffee. Substantial quantities of milk, potatoes, eggs, fruit, and wheat and some meat and sugar are still imported, but substantial progress is being made towards ultimate self-sufficiency in all basic dietary items save wheat."[1]

This is being achieved by a concerted programme of minimum producer prices, technical assistance, the advancing of credit on reasonable terms and import controls. Agrarian reform and irrigation projects are also factors of paramount importance in achieving this goal.[2]

There have been marked gains in productivity in certain crops grown in the country. "Historically, average yields have been increasing for sugarcane,

---

1 - Lieuwen, op. cit., p. 123.

2 - United States Department of Agriculture, Economic Research Division, Summary and Evaluation of Long Term Forecasts of the Supply and Demand of Agricultural and Livestock Products in Venezuela (Washington, U.S.D.A., June 1967), p. 9.

potatoes, cassava, coffee, bananas, plantains, rice and wheat. Average yields for corn, cotton, sesame, coconut, tobacco, beans, and cocoa have been decreasing. The total volume of production for all crops except beans, cocoa and wheat generally increased over the period 1950-1965, indicating that increasing land area has tended to offset any decline in yields."[1]

Agriculture has become less important as a source of employment within the economy. In the table below numbers employed in agriculture and the percentage that this represents of the total employed population are given for selected years.

---

1 - Ibid. p. 10.

Table 4-8

Venezuela: Employment in Agriculture

In Thousands of Persons and as a

Percentage of Total Employed Population

Selected Years

Year	Numbers Employed in Agriculture (000's)	Employment in Agriculture as % of Total Employment
1950	705	44.04
1955	795	41.32
1960	842	36.62
1965	916	33.67

Source: Banco Interamericano, op. cit. Tables 6 and 6'4.

The Industrial Sector

As was indicated in the previous chapter, the A.D. government has advocated the growth of this sector, especially with regard to those products that would be import substitutes. And, as in agriculture, various inducements have been made to enable this sector to expand.

"An index of Venezuela's industrial development is afforded by the fact that in the last five years more than 3,600 new enterprises were set up and over 760 of those already existing expanded their production capacity."[1]

A further illustration of the increase in production in certain individual industries is evident from the following table in which output in 1965 is compared with that of 1955.

The steel industry in the Orinoco region was directly promoted by the A.D. government as has been the petro-chemical industry, which produced some 239,000 metric tons of final and intermediate products in 1964.[2]

Sugar and flour are examples of industries that are import substitutes and these industries have been growing under the protective policies of the government. The cement industry also classifies under this heading. This industry was already producing some 500,000 metric

---

1 - E.C.L.A. Economic Survey 1964, Table 125, p. 118.

2 - E.C.L.A. Economic Survey 1964, p. 118.

tons in 1950, growing up with the construction boom and the conspicuous spending on real estate in the Caracas area.

Table 4-9

Venezuela: Industrial Output in Physical Units

Selected Industries[1]

Product	Unit	1955	1965
Sugar	10's metric tons	14406	34040
Flour	100's metric tons	5.1	301.7
Cement	100,000's metric tons	13	21
Steel	Metric tons	46,251(1958)	475,918(1964)
Manufactured rods	Metric tons	43,847(1958)	113,185(1964)
Pig Iron	Metric tons	0 (1958)	325,844(1964)

Source: E.C.L.A. Economic Survey 1964, Table 125, p. 118.

1 - For a more complete list see Banco Interamericano, op. cit. Tables 14, 15 and 16.

It must be mentioned that industrialization has not been confined in recent years to the capital but has spread out to Valencia in the state of Carabobo, to the Andes and, as previously mentioned, to the Orinoco region. One of the major problems of the Accion Democratica government, as for many governments in Latin America, is to stem the flow of people from the less prosperous areas in rural districts to the capital, and so eliminate the shanty towns that are so much a feature of Latin American capital cities.[1]

An example of the attempts by the A.D. government to diversify the geographical location of industry was the setting up in 1960 of the Corporacion Venezolana de Guayana to establish an industrial complex in the Orinoco region. This is where the steel mill is located. President Romulo Betancourt described this act in the following terms:

---

1 - For a discussion of the problem of the movement of population see Alexander, The Venezuelan Democratic Revolution, pp. 12-14.

"The Corporacion de Guayana is another fundamental instrument for the industrial development of Venezuela. The development of the steel plant is going to permit us to locate in Guayana a large nucleus of heavy industry and associated enterprises."[1]

Venezuela's policy of protection for its agriculture and industry has received the approval of the World Bank; "The mission is convinced that Venezuela must continue substantially to protect domestic agriculture and industry .... Without such protection, agriculture and industry could not have developed to their present levels nor could a high rate of growth in these commodity-producing sectors be maintained in the future."[2]

It is interesting to note that in the period 1950-1965 industry has not employed a greater percentage of the labour force, even though the capital stock of this sector has increased considerably. This is shown clearly in the following table.

---

1 - Quoted by Alexander in The Venezuelan Democratic Revolution, p. 207.

2 - International Bank for Reconstruction and Development, op. cit., p. 30.

Table 4-10

Venezuela: Industrial Sector,

Capital Stock and Labour Force

Selected Years

Year	Capital Stock (In millions of 1957 bolivars)	% of Total Capital Stock	Numbers Empl. in Industrial Sector (000's)	% of Total Labour Force
1950	1536	5.79	207	12.93
1955	2305	5.64	244	12.66
1960	4019	7.27	278	12.07
1965	5427	8.54	343	12.62

Source: Banco Interamericano, op. cit. Tables 6 and 6'4 and 7 and 7'4.

It would appear from the above evidence that the increase in industrial investment encouraged by Accion Democratica policies has been of a relatively capital intensive nature.

Summary

With the assumption of power the Accion Democratica government inherited a serious decline of economic activity. The policy of A.D. was, broadly speaking, diversification - the need to place less reliance on the petroleum industry - and intensive economic development. To this end agriculture and local manufacturing industry has been encouraged. The composition of the national economy has changed, it has acquired a broader base.

The Accion Democratica government has restored the level of economic activity to that of the years of the dictatorship overcoming both a suspicion and lack of confidence shown in the new representative government and the internal civil strife aimed at overthrowing the elected government. Although new investment in industry has attracted workers, the proportion of the working population employed in this sector is still the same as under the Pérez Jiménez regime.

CHAPTER FIVE

VENEZUELA: THE EXTERNAL SECTOR 1950-1965

In this chapter, Venezuelan trade in general is examined. Both in absolute terms and as a percentage of G.D.P. imports have fallen off in importance. The table below (5-1) shows commodity imports in U.S. dollars.

Table 5-1

Venezuela: Commodity Imports

In U.S. Dollars

Selected Years

Year	Commodity Imports ($U.S. millions)	Index (1950 = 100)
1950	6104	100.00
1955	10067	164.92
1957	17749	290.77
1958	15068	246.85
1959	15132	247.90
1960	11403	186.81
1965	13240	216.90

Source: Banco Interamericano, op. cit., Tables 34 and 34'3

The years 1957-1960 have been included to indicate the change of policy instituted by Accion Democratica with regard to the external sector. In 1957 imports increased considerably, by 52% over the previous year. They were progressively reduced during the early years of the provisional and A.D. governments.

The balance of payments situation as a whole was aggrevated by two factors after 1957. The first was the drop in oil prices. This is indicated in the following table.

Table 5-2

Unit Sale Price of Venezuelan Oil

Selected Years $US Per Barrel

Year	Unit Price	Index
1950	2.21	100.00
1955	2.39	108.14
1957	2.70	122.17
1958	2.58	116.74
1959	2.31	104.52
1960	2.23	100.90
1965	1.96	88.68

Source: Banco Interamericano, op. cit. Tables 21 and 21'3.

It is clear that the A.D. government inherited a situation of continually falling prices for this commodity, which in 1958 accounted for 87.54 per cent of the value of total exports of goods and services.[1]

The second aggrevating factor was the phenomenon of capital flight. Movements of net autonomous capital flow are examined in Table 5-3.

The heavy inflow in 1957 is a sharp contrast to the outflows which have persisted in later years. As was mentioned in the preceding chapter, commentators have expressed the opinion that the heavy outflow was a result of uneasiness felt about the newly elected government.

The precariousness of the balance of payments situation prompted Accion Democratica to cut back on merchandise imports. This was achieved by imposing restrictions on imports.

---

1 - Banco Interamericano, op. cit., Table 34'4.

Table 5-3

Net Autonomous* Capital Movements

In Millions of $US

(+ sign indicates inflow)

Selected Years

Year	Net Movement
1956	+ 863.8
1957	+ 1485.6
1958	- 256.4
1959	- 213.0
1960	- 312.6
1964	- 180.7

Source: E.C.L.A. Economic Survey 1964, Table 128, p. 122.

For example, as reported by the Economic Commission for Latin America, "To mitigate the loss of

---

* Autonomous Capital Movement includes both foreign and domestic capital. Items defined as autonomous or non-compensatory include direct investment, long term loans, official transfer payments and short term capital liabilities. E.C.L.A. Economic Survey 1964, pp. 25-27.

reserves, in 1959 the Government drew up a schedule of imports for which permits were required and at the same time increased the duties on another group of customs tariff items, with the two-fold aim of reducing imports of luxury consumer goods and encouraging import substitution in respect of other types of goods giving more protection to domestic industry."[1]

Composition of Imports

We turn to an examination of the effects of the "two-fold" import policy of Accion Democratica. There is little doubt that policy decisions effectively resulted in imports being cut-back. The importance of imports as a percentage of gross domestic product dropped quite sharply after 1957.

The phenomena of the lessened importance of imports can be seen when the percentage of private consumption accounted for by agriculture, industry and imports is examined. This is presented in Table 5-4.

---

1 - E.C.L.A. Economic Survey 1964, pp. 121-122.

Table 5-4

Venezuela: Percentage of Private Consumption

Accounted for by:

Domestic Agriculture, Industry and Imports

Year	Domestic Agriculture	Domestic Industry	Imports
1950	11.54	21.34	29.67
1955	10.94	33.80	19.03
1957	11.11	34.16	18.51
1958	9.55	33.83	20.32
1959	9.37	33.72	22.95
1960	12.14	37.57	14.06
1965	13.26	42.60	8.45

Source: Banco Interamericano, op. cit., Table 25'4.

Both in the case of agriculture and in the case of industry this percentage has increased, markedly so in the case of industry. The importance of imports in private consumption increased over the period 1955-1959. In 1959, restrictive measures were put into effect to reduce imports. By 1965, imports only accounted for 8.45 per cent of private domestic consumption.

To present an even clearer illustration of the lessening of importance of the import sector three further indicators are presented. These are: total commodity imports as a percentage of gross domestic product, imports of consumer goods as a percentage of total consumption and imports of capital goods as a percentage of gross fixed investment.

By 1964, all of these shares had dropped significantly from the period of the dictatorship. The extraordinary large imports in 1957 were largely made up of capital goods. Of total commodity imports of 5,800 million bolivars in 1960 prices, 3,642 million bolivars was attributable to capital goods, of which 3,161 million

Table 5-5

Venezuela: Import Shares. Selected Years.

Percentages

Year	Total Commodity Imports / Gross Domestic Product	Consumer Goods Imports / Total Consumption	Capital Goods Imports / Gross Fixed Investment
1950	22.2	11.7	34.3
1955	20.2	8.6	35.5
1957	25.4	6.9	60.3
1958	22.1	8.0	47.0
1959	20.8	10.4	33.3
1960	14.9	7.7	30.8
1964	11.4	5.5	23.1

Source: E.C.L.A. Economic Survey 1964, Table 127, p. 121.

was accounted for by machinery and equipment. Imports of machinery and equipment reached 52.3 per cent of gross fixed investment in that year. By 1964 this figure had fallen to 18.9 per cent.[1]

1 - E.C.L.A. Economic Survey 1964, Table 127, p. 121.

Cargo Flow into Venezuela

Having briefly examined the external sector, taking note of the balance of payments difficulties and the results of policy decisions by the A.D. government to produce a more favourable balance on current account, the discussion turns to tonnages entering the country by sea.

Venezuelan trade statistics are compiled in both value and weight. The weight composition of cargo over time can thus be examined.[1]

For selected years in the period 1959-1965 total tonnage of 'importacion ordinaria', that is total imports minus imports by mail and air imports, is examined. Owing to geographic barriers there is little flow by land from the neighbouring countries of Columbia, Brazil and Guyana. Importacion ordinaria therefore refers almost entirely to imports by sea.[2] The value that these imports

---

1 - The following discussion is based on trade statistics issued by the Ministerio de Fomento, Direccion General de Estadistica in their annual publication 'Boletin de Comercio Exterior', Caracas.

2 - E.C.L.A. reports that one hundred per cent of total imports is transported by sea or inland waterways. See E.C.L.A. Economic Survey 1964, Table 165, p. 158.

represent is also indicated.

Table 5-6

Venezuela: Importacion Ordinaria.

Selected Years. In metric tons and

thousands of bolivars.

Year	Metric Tons	Bolivars (000's)
1959	2,892,159	4,264,472
1962	2,250,557	3,399,937
1965	2,934,873	4,867,556

Source: Ministerio de Fomento, Boletin de Comercio Exterior.

The diversification of economic activity geographically is reflected in the percentages of the total import tonnage handled by individual ports. The Guayana industrial development project centered on Ciudad Bolivar and the development of industry in the Valencia region, served by Puerto Cabello, have caused these ports to gain in importance. The percentage of the total tonnage passing through La Guaira, feeding the capital Caracas, has fallen significantly over the period examined.

The tonnage through Maracaibo, centre of the oil industry, has also fallen in absolute terms and as a percentage of the total for the country.

Table 5-7

Venezuela: Imports by Ports.

In Metric tons. Selected Years

Year	Ports			
	La Guaira	Puerto Cabello	Maracaibo	Ciudad Bolivar
1959	1,332,764	698,996	445,826	119,037
1962	877,747	702,005	259,628	229,051
1965	1,073,004	1,060,290	285,272	299,261

Source: Ministerio de Fomento, op. cit.

Table 5-8

Venezuela: Imports by Ports.

Tonnages as Percentages of

Total Sea-borne Imports

Year	Ports La Guaira	Puerto Cabello	Maracaibo	Ciudad Bolivar
1959	46.1	24.2	15.4	4.1
1962	39.0	31.2	11.5	10.2
1965	36.6	36.1	9.7	10.2

Source: Ministerio de Fomento, op. cit.

Imports by Standard International Trade Classification Grouping[1]

Tonnages for each of the ten S.I.T.C. groups are examined in the following paragraphs. Venezuelan statistics are broken down by S.I.T.C. group for both value and weight.[2]

1 - The English and Spanish group descriptions are given in Table 1 of the Appendix.

2 - This is an improvement over Canadian statistics for which it is possible to obtain an S.I.T.C. breakdown in value but for which data is lacking in weight.

Over half the tonnage imported by sea is covered by categories 0- food, beverages and tobacco and 6- manufactured articles. In 1965, it is to be noted that these two categories accounted for 56 per cent of the total tonnage but only 34.3 per cent of the total value.

42.4 per cent of the value of imports are contained within category 7- transportation equipment but this only represents 10.1 per cent of the tonnage in that year. Breakdowns by group are shown in the following tables for tonnages and values and for both as percentages of the total.

In the short period observed groups 0- food, beverages and tobacco and 4- animal and vegetable oils and fats increased in terms of percentage of the total tonnage. Groups 6- manufactured goods and 8- miscellaneous manufactured articles are declining in importance with regard to total tonnage. In 1959, 35.7 per cent of the total tonnage of imports fell into category 6. This had declined to 26.5 per cent in 1965.

Table 5-9

Venezuela: Tonnages imported by Sea by S.I.T.C. Group. Selected Years.

(Metric Tons 000's) and Percentages of total.

S.I.T.C. Group	1959 Weight	1959 %	1962 Weight	1962 %	1965 Weight	1965 %
0	751	26.0	609	27.1	865	29.5
1	21	1.7	6	0.3	12	0.4
2	346	11.9	302	13.4	397	13.5
3	90	3.1	170	7.5	211	7.2
4	17	0.6	21	0.9	38	1.3
5	243	8.4	266	11.8	305	10.4
6	1033	35.7	672	29.9	778	26.5
7	335	11.6	173	7.7	295	10.1
8	54	1.9	30	1.3	30	1.0
9	2	0.1	2	0.1	3	0.1
Totals[1]	2892	100.0	2251	100.0	2935	100.0

Source: Ministerio de Fomento, op. cit.

1 - Discrepancies in totals due to rounding to thousands of tons.

Table 5-10

Venezuela: Values of Imports by Sea by S.I.T.C. Group. Selected Years in Millions of Bolivars

S.I.T.C. Group	1959 Value	1959 %	1962 Value	1962 %	1965 Value	1965 %
0	560	13.1	439	12.9	546	11.2
1	53	1.3	22	0.7	46	0.9
2	138	3.2	159	4.7	254	5.2
3	43	1.0	39	1.2	38	0.8
4	18	0.4	23	0.7	58	1.2
5	316	7.4	360	10.6	454	9.3
6	1210	28.4	933	27.4	1122	23.1
7	1646	38.6	1178	34.6	2065	42.4
8	267	6.3	225	6.6	262	5.4
9	13	0.3	20	0.6	23	0.5
Totals[1]	4264	100.0	3400	100.0	4868	100.0

Source: Ministerio de Fomento, op. cit.

1 - Discrepancies in totals due to rounding.

Imports by Country

The United States is the most important source of Venezuelan imports both in terms of value and weight. In recent years, Canada has been the next most important source of import tonnage, while West Germany has been the next most important source in value. In the Table below imports are examined by their country of origin by weight.

Table 5-11

Venezuela: Imports by Country of Origin.

In Metric Tons. Selected Years.

Country of Origin	1959	1962	1965
Canada	226,872	248,711	397,344
United States	1,210,781	926,986	1,291,525
West Germany	254,941	150,820	267,511
Belgium-Luxembourg	198,006	130,330	132,636
France	92,233	81,327	116,989
United Kingdom	178,787	246,582	105,243
Japan	34,361	45,946	153,486
Total All Countries	2,892,159	2,250,557	2,934,874

Source: Ministerio de Fomento, op. cit.

The increase in the tonnage from Canada and, more noticeably, from Japan over the period are of special interest.

Regression Analysis

Regressions were run in an attempt to relate imports in value to economic and demographic variables. Those equations which gave a reasonably high coefficient of multiple determination, i.e. ≥ 0.9, also showed Durban-Watson statistics well below 2; clearly indicating a high level of autocorrelation.

An examination of the residuals showed that they were consistently negative post 1960. This is only to be expected following the introduction of the A.D. restrictive measures on imports. Any mechanical use of the equations for forecasting would be biased as these policy decisions would invalidate this procedure.

The results of these regressions are shown in Table 2 of the Appendix.[1] It is to be noticed that in calculations A-6 and A-7, where values in constant bolivars are utilized, the coefficient of multiple determination is extremely small. In calculation A-1 population has the wrong sign.

---

1 - Symbols used in presenting the regression analysis are given on pp. 160-162.

Summary

Since Accion Democratica came to power there has been an effort to decrease the importance of imports. A.D. inherited a situation of falling oil prices in the world market and their accession to office brought about massive capital outflows. Early in the first A.D. term of power, after the 1958 revolution, import controls were instituted and local import substitution industry was encouraged. Import coefficients, mentioned in this chapter, tend to confirm the effectiveness of A.D. policy in stemming the flow of imports.

The geographic diversification of industry has led to a decline in the percentage of import tonnage flowing through La Guaira and Maracaibo and an increase through Puerto Cabello and Ciudad Bolivar.

Foodstuffs (S.I.T.C. category 0) and manufactured goods (S.I.T.C. category 6) made up over 50 per cent of imports by sea. The United States is by far the largest source of imports, both in value and in weight. Canada is the next most important source of import tonnage.

CHAPTER SIX

CANADA - VENEZUELA TRADE AND CARGO FLOW 1950-1965

In 1965 Venezuela was the largest Latin American market for Canadian exports. The value of Canadian exports to Venezuela in dollars and converted to an index appears in Table 6-1.

Table 6-1

Canadian Exports to Venezuela 1950-1965

Selected Years.

In $ Canadian and as an Index

Year	Value ($ Can. 000's)	Index (1950 = 100)
1950	25,391	100.0
1955	30,672	120.7
1960	35,345	139.2
1965	73,045	287.6

Source: D.B.S. 65-004 Trade of Canada, Exports by Commodity.

Comparative Performance of Exports to Venezuela

Canadian exports to Venezuela increased steadily throughout the period. After 1962, this increase was noticeably more rapid. Canadian exports to all sources in dollars have been converted to an index and in the next table we compare this index with the index of exports to Venezuela.

Table 6-2

Indexes of Total Canadian Exports

and Canadian Exports to Venezuela

Year	Index of Domestic Canadian Exports 1950 = 100	Index of Exports to Venezuela
1950	100.0	100.0
1955	137.1	120.7
1960	168.3	139.2
1965	274.6	287.6

Source: D.B.S. 65-004 Exports by Commodity.

It can be seen from the above that overall performance of exports throughout the period is matched by the performance of exports to Venezuela. There is a certain sluggishness in Canada - Venezuela trade in the first decade of the period under study, during which the overall export performance was better than that of the particular trade. However in the 1960's, the increase in trade with Venezuela surpassed total Canadian export performance.

Venezuelan Imports of Canadian Goods

Although Canadian Trade with Venezuela is dwarfed by the magnitude of Venezuela's trade with the United States, the Canadian share of the Venezuelan market has been increasing.

In 1965 imports of United States origin accounted for 50.8 per cent of total imports.[1]

---

1 - Banco Central de Venezuela, Informe Economico 1965 Table A 10-18, p. 488.

Table 6-3

Venezuela: Total Imports and Imports from Canada.

In millions of Bolivars. Selected Years.

Year	1 Total Imports	2 Imports from Canada	2 as percentage of 1
1950	1991	69	3.5
1955	3155	110	3.5
1960	3553	131	3.7
1965	5701	360	6.3

Sources: United Nations, Yearbook of International Trade
Ministerio de Fomento, op. cit.

Canadian Exports to Venezuela from The East Coast, The West Coast and Via The United States

There are three important trade routes along which Canadian exports to Venezuela flow. These are:

1) East Coast Canada and Great Lakes ports by vessel.

2) Via the United States by road or rail and then by vessel from a United States East Coast or Gulf Port.

3) From West Coast Canadian ports by vessel.

Flows by these three routes are examined (Table 6-4).[1] There appears to be no discernible trend of flow to Venezuela via the United States. Exports by this route were of great significance in 1950 and dropped off, as a percentage of total exports, through 1960. In 1965, however, they accounted for some 36 per cent of the total value of exports to that country.

Exports via British Columbian ports have become more important as a percentage of total exports through the period. To a very large extent this is a reflection of wheat shipments.

The initiation of container-ship service from the U.S. East Coast to Venezuela coupled with the excellent highway system from Canada to the U.S. East Coast would suggest that an increasing amount of goods to Venezuela will be 'leaking' through U.S. ports rather than proceding

---

1 - Exports via B.C. and via the United States are taken from different sources and to a certain extent overlap. Exports via B.C., for example, include exports leaving the Province by road or rail through the United States. To this extent, the statistics are only indications of percentages moving over the three routes and must not be taken as an absolute percentage distribution.

Table 6-4

Venezuela: Total Canadian exports,
exports via British Columbia Ports
exports via the United States.
In Millions of Canadian Dollars

Year	Total Exports	%	Exports via B.C.	%	Exports via U.S.	%
1950	25.4	100	0.9	4	11.8	47
1955	30.7	100	2.8	9	7.6	25
1960	35.3	100	5.6	16	5.9	17
1965	73.0	100	17.9	25	26.0	36

Source: Total Exports: D.B.S. 65-003 Exports by Countries.
Exports Via B.C. Government of British Columbia, Bureau of Economics and Statistics, Dept. of Industrial Development, Trade and Commerce, Preliminary Statement of External Trade through British Columbia Customs Ports.
Exports Via the U.S.: 1950-1960 D.B.S. 65-201 Trade of Canada, Summary and Analytical Tables, Table 18, Exports of Canadian Produce via the United States. 1965 D.B.S. 65-206 Exports by Mode of Transport.

directly by sea. One of the factors militating against the land-sea route in the past has been the high transfer cost from one mode of transport to another. With the new

unitized methods of cargo-carrying, these costs are greatly reduced. It is not within the scope of this study to explain the movements of cargo by one route rather than another, primarily because the raw data on rates, time of transit, inventory sizes etc. are not readily available. Any discussion of this would entail a separate study which would undoubtedly include extensive use of random sampling methodology. This study is confined to a description of the state of trade in general and an analysis of three commodities in particular, two of which flow almost exclusively by vessel from the East Coast of Canada. A brief description is now given of the composition of Canada - Venezuela Trade.

Composition of Canada - Venezuela Trade

Prior to the early 1960's, the Dominion Bureau of Statistics grouped commodities according to the major base component of final products. It is difficult to compare these with S.I.T.C. groupings.[1]

---

1 - For example, an item classified under S.I.T.C. group 6- manufactured articles - would have been found under the D.B.S. grouping appropriate to the base product used in the manufactured article.

Table 3 of the Appendix is a classification of exports from Canada to Venezuela by the D.B.S. grouping used prior to the change of group classification. The table is in terms of percentages that each group and each item within the group makes up of the whole of the Canada - Venezuela trade. The years 1950 to 1960 are covered. Table 4 of the Appendix is a similar table covering the years 1960 to 1965 but the groupings follow S.I.T.C. This latter method of illustrating the composition of trade is only available for this latter period.

As individual commodities, processed milk products, wheat, newsprint, plastics, automobiles and chassis comprised the bulk of the trade in 1965. Of these, processed milk products and wheat may show drastic reductions in future years. Processed milk production has been planned locally to supply the domestic market entirely. Wheat is discussed in the next chapter.

The increase in 1965 of imports of autos and chassis from Canada is interesting. It may be presumed that corporate policy is an important factor influencing the flow of this commodity.

Imports from Venezuela

Imports from Venezuela have in the post-war period been far greater than exports from Canada to that country. This is accounted for in large measure by imports of crude petroleum and other fuel oils into Eastern Canada.

In Table 6-5, the value of imports from Venezuela is shown together with the value of petroleum imports. It is to be noticed that this commodity comprises almost all of the imports from Venezuela.

Table 6-5

Value of Total Canadian Imports and Fuel Oil Imports from Venezuela (F.O.B.)

Year	1 Total Imports	2 Petroleum Imports	2 as Percentage of 1
1950	87,248	86,226	98.8
1955	187,226	186,842	99.8
1960	195,189	194,425	99.6
1965	254,670	254,253	99.8

Source: D.B.S. 65-006 Imports by Countries.

Cargo Flow to Venezuela

The discussion so far in this chapter has been in terms of value. The physical movement of goods between Canada and Venezuela is now considered.

Cuba aside, Venezuela receives the largest Canadian tonnage of all countries in the area.[1] In recent years there have been large movements to Venezuela from Western Canada consisting mainly of wheat flows in vessels under charter.[2]

In the following two tables, tonnages from the East and West Coasts are shown first in actual tons and then as a percentage distribution of total sea traffic from Canadian Ports.

---

1 - Although in terms of value, as previously stated supra p. 91, Venezuela is Canada's most important market in the area.

2 - For example, in 1964 the total tonnage from the West Coast was 315,140 of which 272,950 tons consisted of wheat. Source: D.B.S. 54-202 Shipping Report 1964 Part 1, pp. 65-66.

Table 6-6

Cargo Flow from Canadian East and West Coasts to Venezuela. In short tons (000's). Selected Years during period 1952-65.

Year	East Coast	West Coast
1952	99.3	3.9
1955	144.8	17.1
1960	141.0	72.6
1965	170.1	260.6

Source: D.B.S. 54-202 Shipping Report Part 1 (Ottawa, Queen's Printer, annually).

Table 6-7

Percentages of Total Cargo Flow to Venezuela by Vessel Originating from East and West Coast Canadian Ports

Year	East Coast	West Coast
1952	96	4
1955	89	11
1960	66	34
1965	39	61

Source: As per Table 6-6.

Composition of Cargo Flow

In examining the composition of cargo flow, it is found that wheat, newsprint and potatoes account for almost half of the total flow from the East Coast and wheat itself accounts for an even higher percentage of the total movement from the West Coast. The final two tables in this chapter examine this.

Table 6-8

Canadian East Coast to Venezuela Cargo Flow

Share by Major Commodity

Year	Flour	Wheat	News-print	Seed Potatoes	Total Four Commodities
1952	62	4	13	7	86
1955	63	2	7	5	79
1960	--	27	11	6	44
1965	--	17	18	7	42

Sources: D.B.S. 54-202 Shipping Report Part 1 and D.B.S. 65-004, Exports by Commodity.

The large flour flow in the early and middle 1950's was not fully compensated by a similar wheat flow from the same source when Venezuela established a domestic milling industry. While shipments of wheat from the West Coast have more than made up for the loss of flour tonnage from the West Coast - the cargo liner services operating from the East Coast have not been compensated by an equivalent tonnage of wheat cargoes.

Table 6-9

Canadian West Coast to Venezuela Cargo Flow

Showing Wheat as a Percentage of the Total.

In 000's short tons.

Year*	Wheat Tonnage	Wheat as Percentage of Total Tonnage
1958	45.7	54
1960	51.4	71
1962	156.5	83
1965	208.8	80

* Previous to 1958 no wheat moved from the West Coast to Venezuela.

Source: Government of British Columbia, Preliminary Statement of External Trade and D.B.S. 54-202 Shipping Report Part 1.

With wheat taken away the flow left to regular service cargo liners from the West Coast is not very great - some 57,036 tons in 1965. It is to be noted in this latter year that 34,470 tons of sulphur moved out of the West Coast to Venezuela, presumably by bulk carrier. This leaves only some 22,566 tons to be shared amongst cargo liner operators.[1]

The Transport of Goods from Canada to Venezuela

Consideration of the services available for carrying goods to Venezuela from Canada concludes this chapter.

Goods from Canada to Venezuela move either by a regular liner service or by tramp vessel.

Liner services are well established from the Canadian East Coast and only a minor part of the flow from this coast moves by tramp vessel. This is generally confined to wheat shipments. On the West Coast the situation is reversed owing to the large portion of total flow to Venezuela that has consisted of wheat.

A major difference between tramp and liner service is the pricing of the carriage of goods. In simple

---

1 - D.B.S. 54-202 Shipping Report Part 1, 1965.

terms tramp rates are determined in a near perfectly competitive market[1] whereas liner services are oligopolistic.[2]

Tramp rates tend to fluctuate continuously according to economic conditions. That is, when trade is active, rates are high reflecting the demand on tonnage. In times of slow trade tramps are laid up and rates fall.[3]

---

1 - On the charter market there are many buyers and sellers. A large part of charter transactions are made on the floor of the Baltic Exchange in London. The "Baltic" operates in a similar manner to the stock exchange. Information is virtually perfect but the commodity - vessels for charter - could not be said to be homogeneous, as one vessel is generally not a perfect substitute for another in a given trade or for a given cargo.

2 - In the Eastern Canada - Venezuela Trade, the market is clearly duopolistic with the Venezuelans and Dutch competing as a team against the other carrier - a Canadian operator.

3 - This is a vastly simplified explanation. For a complete description of the tramp market, see Hector Gripaios, Tramp Shipping. (London, Thomas Nelson and Sons, 1959).

Tramp vessels do not maintain a regular schedule and generally do not operate continually over the same route.

Liner services, on the other hand, provide capacity on a fixed route, with sailings at regular intervals. The general practice is that operators over any given route attempt to fix common freight rates - they band together in conferences and impose penalties on inside or outside attempts to lower the freight rate.[1] A feature of the conference system is that rate levels tend to change infrequently in response to market and cost pressures.

The Canada-Venezuela liner service benefits from the fact that one of the major operators[2] has instituted its service as a backhaul to its bauxite shipments which are regularly brought north from deposits in Guyana. Thus it is likely that actual rates southbound are somewhat

---

1 - An excellent description of shipping conference operation is given in Sturmey, S.G., British Shipping and World Competition. The classic work on shipping conferences is Daniel Marx Jr., International Shipping Cartels (Princeton, N.J., Princeton University Press, 1953).

2 - Saguenay Shipping Limited of Montreal.

lower than would be the case if purely dry cargo operators serviced the route. There is little general cargo movement from the Caribbean to Canada. Bulk commodities are generally pre-allocated for the northbound voyage to captive industrial carriers. A European and a Venezuelan carrier are engaged in the trade picking up the odd sugar cargo on the northbound leg.

Regression Analysis

Following a model suggested by Klein[1] regressions were run in an effort to explain an index of Canadian exports to Venezuela (minus wheat and flour).[2] The independent variables selected were the ratio of the Venezuelan Import price Index to the Canadian Export Price Index and the Venezuelan quantity export index. These indexes were converted to U.S. dollars and 1959 was taken as the base year. The results are reported in Table 5 of the Appendix (calculations B-1 and B-2). Only the coefficient

---

1 - Klein, op. cit. pp. 33-48.

2 - Which have behaved in a peculiar way for reasons outlined in the following chapter.

of the Quantity Index is significant. The presence of autocorrelation is indicated by the low Durban-Watson statistic.

Calculation C-1 relates cargo flow from the East Coast to time. The relationship is not successful.

Summary

Venezuela is Canada's best customer in Latin America. Canada is the second largest source, behind the United States, of Venezuelan import tonnage. Cargo flows by three main routes from Canada to Venezuela;

1) From the East Coast (including the Great Lakes),
2) From the West Coast and
3) Via the United States.

With the advent of unitization and an excellent highway system there is reason to believe that 'leakage' via the United States will increase. Most cargo at the present time moving from the East Coast is carried by regularly scheduled cargo liners.

The first and second parts of this study have been concerned with describing the model to be used in the analysis of individual commodity flows and presenting a

general political and economic background to Venezuela. Part three examines the flow of three major commodities and employs the simple econometric model to explain movement and as a possible tool for forecasting future flows.

PART THREE

CHAPTER SEVEN

WHEAT AND WHEAT FLOUR

Wheat and Wheat Flour Production in Venezuela

Wheat production in Venezuela is limited for ecological reasons[1] and has been in the region of one thousand metric tons in recent years (Table 7-1).

Since 1958, a flour milling industry has been established to such an extent that flour imports, which have normally covered the major part of internal demand, are now only marginal. This follows the general A.D. policy for creating import substitution industries. Flour production in 1965 was 301.7 thousand metric tons.

According to a recent publication of the International Wheat Council,[2] in 1965 there were 8 flour mills in Venezuela with a capacity of 1,437 metric tons of flour

---

1 - Consejo de Bienestar Rural, Long Term Forecasts of the Supply and Demand of Agricultural and Livestock Product in Venezuela (Jerusalem, U.S.D.A., 1965) p. 53. (Hereafter referred to as C.B.R.)

2 - International Wheat Council, Secretariat Paper No. 5 Trade in Wheat Flour (London, I.W.C., March 1965) p. 45.

per day. On a 24 hour, 300 days per year basis this would mean an approximate capacity of 431.1 thousand tons. In 1965, therefore, the flour mills were operating collectively at about 70 per cent capacity. This would in itself seem reasonable as capital equipment presumably would be built to accommodate future rather than present demand.

The birth of the flour milling industry is described by the representative of the Canadian Department of Trade and Commerce in Caracas.[1]

He lists the mills in operation and under construction at that time. The bulk of the milling activity is in the Caracas-Valencia urban areas which are served by the seaports of La Guaira and Puerto Cabello respectively. He notes that 'there may be a notable addition to production capacity with the building of a large mill at Maracaibo, financed by a large American mill and a

---

1 - W.G. Brett, "Venezuela Turns to Flour Milling" in Foreign Trade fortnightly publication of The Department of Trade and Commerce, Ottawa, August 30, 1958, pp. 28-30.

Table 7-1

Venezuela: Total Demand for Wheat and Wheat-flour in Wheat Equivalent 1946-1965.

In thousands of metric tons.

Year	Flour* Imports	Wheat Equivalent	Wheat Production	Wheat Imports	Total Demand for Wheat	Flour* Production
1946	69.4	99.1	6.0	--	105.1	4.2
1947	88.8	126.9	5.5	.1	132.5	3.9
1948	94.3	134.7	5.4	.1	140.2	3.8
1949	87.8	125.4	4.6	.1	130.1	3.3
1950	113.5	162.1	4.6	1.2	167.9	4.0
1951	126.5	180.7	4.2	2.2	187.1	4.4
1952	121.3	173.3	6.3	4.1	183.7	7.3
1953	133.4	190.6	3.1	3.5	197.2	4.6
1954	143.3	204.7	2.0	3.9	210.6	4.2
1955	178.7	255.3	1.8	5.5	265.6	5.1
1956	185.7	265.3	3.1	7.2	275.6	7.2
1957	157.6	225.1	2.1	18.7	245.9	14.6
1958	142.9	204.1	2.9	92.8	299.8	67.0
1959	30.6	43.7	1.3	253.9	298.9	178.6
1960	3.2	4.6	.8	308.4	313.8	216.5
1961	6.6	9.4	1.2	344.7	355.3	242.2
1962	1.3	1.9	.6	317.5	320.0	236.4
1963	3.1	4.4	1.1	354.5	360.0	257.2
1964	4.1	5.9	1.2	533.3	540.4	303.3
1965	4.9	7.0	1.3	552.5	560.8	301.7

Source: Consejo de Bienestar Rural, Long Term Forecasts of the Supply and Demand of Agricultural and Livestock Products in Venezuela (Caracas, Venezuela, November 1964, Published for the United States Department of Agriculture by the Israel Programme for Scientific Translations, printed in Jerusalem by S. Monson). p. 52, 1946-1961 and Banco Central de Venezuela, Informo Economico.

* Not in wheat equivalent.

local financier."[1]

On the subject of Canada maintaining her share in this market through wheat sales it is interesting to note his remarks that "Canadian suppliers can expect stern competition from the United States and Argentina. However, Canada sells the world's finest wheat ...."[2]

The "stern competition" from the United States has been very significant.

Consumption Patterns

During the second half of 1962 a national survey of family income and expenses was carried out in Venezuela as a joint project of the Central Bank of Venezuela (B.C.V.), the Ministry of Development, the Office for Co-ordination and Planning of the Presidency of the Republic (CORDIPLAN), and the Consejo de Bienestar Rural (C.B.R.).[3]

---

1 - Ibid. p. 29. This has materialized see Bank of London and South America Fortnightly Review of 17th January and 21st November 1959. It was recommended by the Venezuelan Development Corporacion (C.V.F.) in mid 1959 that no more concessions be granted to flour mills.

2 - Ibid. p. 30.

3 - For a complete description of the area covered and methodology, see C.B.R. op. cit. Appendix part one, pp. 153-178.

Estimates of price and income elasticities were derived from the survey. Rural and urban areas were treated separately in order to reflect the different patterns of consumption.

In their treatment of wheat and wheat flour six categories were defined as indicative of distinct uses of flour. Consumption was estimated for five of these categories. The sixth category - wheat flour equivalent of wheat utilized in animal feeds - was taken as the residual between the five categories and imports.

From data for the year 1961, C.B.R. estimates for total consumption of flour are broken down by usage.

A further 28,700 (10.4%) metric tons of wheat expressed as flour equivalent was used for animal feeds bringing the total to 248,680 metric tons of flour equivalent or 355,300 metric tons of wheat equivalent.

Table 7-2

Venezuela: Consumption of Flour in Metric tons by Usage. 1961.

Usage	Tonnage	As Percentage of Total
Direct Home Consumption of Flour	27,726	11.2
Bread*	131,423	53.7
Cake Products*	10,476	4.4
Crackers*	7,494	3.0
Pastas	42,868	17.3
Total	219,981	89.6

Source: C.B.R. op. cit. p. 54.

Regression Analysis

Regressions were run of imports of wheat and wheat flour against population and against time (calculations D-2 and D-3), Table 6 of the Appendix. This is a much less sophisticated method than a C.B.R. model which incorporated rural and urban differences in

* Expressed as flour.

consumption patterns[1] - a factor a great importance in contemporary Latin America. Calculations D-2 and D-3 show rather low Durban-Watson statistics suggesting that a variable is absent in explaining the flow. Calculation D-1, however, shows a Durban-Watson Statistic of over two and the coefficient of multiple determination is reasonably high. On the other hand of the three explanatory variables only population is significant. Forecasts as extrapolations of calculations D-2 and D-3 are compared to C.B.R. forecasts.

Table 7-3

Venezuela: Forecasts of Imports of Wheat[2] Based on Time Trend and Population and C.B.R. Estimates.

In Metric Tons.

Year	C.B.R. Estimates	Independant Variables Time (D-2)	Population (D-3)
1965	433,009	425,036	444,480
1970	572,323	512,986	552,380
1975	744,067	600,986	676,980

Source: C.B.R. op. cit. p. 58 and calculations D-2 and D-3 (shown in Table 6 of the Appendix).

1 - C.B.R. Projections were made separately for rural and urban demand.

2 - It is assumed that all wheat flour is produced domestically.

It is interesting to note that actual wheat imports in 1965 were already 629,000 metric tons[1] indicating that both calculations on past import experience and C.B.R. estimates were seriously under-estimating the true values.

The U.S.D.A. points out that feed consumption is increasing rapidly and notes the fact that projections were exceeded in 1965 by a relatively large amount:

"The demand for food wheat and feed wheat, or a substitute for them may exceed the study projections"[2] and furthermore that "changes in government policies and relative prices will determine whether the demand will be filled by wheat or a substitute."[3]

There was a sharp increase in flour production in 1964 and 1965 over the years 1960 to 1963, suggesting an

---

1 - This is the U.S.D.A. figure, see U.S.D.A. op. cit. Table 23, p. 50.

2 - U.S.D.A. op. cit. p. 13.

3 - Ibid.

increase in capacity. If the demand schedule is also shifting during this period then one would only be obtaining an intersection of the points of the two schedules and not detecting points along a defined demand curve. The single equation is not very useful for the purposes of forecasting in this case or as a tool for explaining the movement of the series over time.

Imports of Wheat and Wheat Flour

As Venezuelan wheat grown locally is negligible, comsumption is taken to be synonymous with imports. In this section, the end use pattern of wheat is examined. Recent trends in Venezuelan buying is documented and an attempt is made to relate the source of purchases with freight rates.

The End Use of Wheat Imports[1]

Examining the distribution of end-use for 1961 and the C.B.R. forecasts[2] for 1965, 1970 and 1975, it is

---

1 - Calculated from data given in op. cit. pp. 53-57.

2 - C.B.R. op. cit. pp. 55-57.

found that wheat for use in bread is expected to remain the major end-use for imported wheat. In 1961, flour for bread employed 54 per cent of imported wheat and by 1975 it is forecasted to have fallen to 50 per cent. Wheat for use in animal feeds is expected to become more important in the future. In 1961, wheat for this purpose accounted for some 12 per cent of wheat consumed[1] but by 1975 C.B.R. expects that 21 per cent of wheat imports will be for use in animal feed. Although not explicitly stated by C.B.R. it is to be expected that this latter increase will not be due solely to an increase in livestock population, but also to an 'education' process that would result in a shift in the demand curve for animal feed with wheat content. Again the shift in the demand schedule would rule out the confident use of the single equation to describe events in this market.

---

1 - In flour equivalent.

Origin of Wheat 1959-1965

The United States has consistently been a strong competitor to Canadian wheat sales in this market. In fact only in 1962 did Canada supply more wheat to Venezuela than did the United States. There is no consistent trend, although during the years 1962-1964 Canada supplied a steady 47 per cent of Venezuela's wheat imports. Argentina only supplies relatively small amounts.

Figures from Canadian sources[1] indicate that wheat shipments to Venezuela from this country have fallen off in 1966.[2]

The Influence of Freight Rates

United States wheat is bought predominantly from the U.S. Gulf. Canadian wheat to Venezuela has left

---

1 - D.B.S. 65-004 Exports by Commodity, December 1966.

2 - Tonnages in the last three years from Canada in thousands of short tons:
1964 ..... 301.7
1965 ..... 237.3
1966 ..... 128.7

Canada in recent years mostly via the West Coast, although there is some flow from the East Coast.[1]

Wheat is generally carried in bulk in tramps. Fixings are made on the charter market, usually a time or voyage charter. Because of the proximity of the U.S. Gulf to Venezuela, freight rates are lower than from either East or West Coast Canadian ports.[2]

---

1 - A percentage breakdown for selected years is as follows:

Year	East Coast	West Coast
1958	50	50
1962	14	86
1965	12	88

Source: D.B.S. 65-004 Exports by Commodities and Government of British Columbia, op. cit.

2 - In 1966, for example, the rates below were quoted for 10,000 tons lots to Venezuela:

Origin	Rate $US per long ton	
Great Lakes	11.00	(8800 ton lot)
British Columbia	7.35	
St. Lawrence	6.50	
U.S. Gulf	5.50	

Source: Maritime Research Inc. Charter Fixtures (New York, annually).

Wheat sometimes is carried in small lots in liners. The freight rate, however, is correspondingly higher.[1] An element on liner rates is payment for regularity of service.

It has been shown by the International Wheat Council that variations in freight rates are to some extent compensated by movements in the f.o.b. price.

"Changes in the cost of ocean transportation usually affect the price of grain which moves in international trade but in order to maintain a competitive price in the c.i.f. markets the export price may not move accordingly."[2]

Proxy values of c.i.f. U.K. prices in $US were taken for shipments from the St. Lawrence and U.S. Gulf ports. Ideally, one should be examining c.i.f. Venezuela prices from West Coast Canada and Gulf ports directly.

---

1 - For example wheat in bags was quoted at $US 18.00 per short ton plus $US 0.03 per bag from East Coast ports in 1966.

2 - International Wheat Council, Secretariat Paper No. 1 International Wheat Prices, (London, I.W.C., 1961) p. 22.

It is not possible either to obtain c.i.f. prices for Venezuela, as this country publishes its statistics f.o.b., or to obtain any series of c.i.f. U.K. prices from Western Canada. It must be accepted that the charter market for vessels on the East Coast of Canada is different than that on the West Coast, in accordance with the availability of vessels in the area. It must further be recognized that the port of export for grain is to a great degree determined by the Canadian Wheat Board taking into account such factors as the congestion in the various port areas.[1] It might be noted that rail rates on grain from points in Western Canada to Vancouver and Fort William are statutory.

In the period 1954-55 to 1964-65 Gulf prices were lower (c.i.f. U.K.) in all years except during 1962-63. The spread for selected years is shown in Table 7-4 together with the percentage of the Venezuelan market held by Canadian grain.

---

1 - During the years in which a large portion of Venezuelan grain has been moving from the West Coast, there have been very large shipments of grain to the U.S.S.R. moving out of East Coast Ports.

Table 7-4

Spread of c.i.f. U.K. Parcels of Wheat Canada St. Lawrence Ports and U.S. Gulf and Percentage of Venezuelan Market Held by Canada. Selected Years.

Year	Spread ($US/Metric Ton)* (Canada St. Lawrence - U.S. Gulf)	Percentage of Venezuelan Wheat Imports from Canada
1959	3.98	32.2
1962	1.81	46.8
1965	4.12	37.5

Canadian Wheat is No. 2 Manitoba Northern
U.S. Wheat is No. 1 Hard Winter

Sources: International Wheat Council, World Wheat Statistics (London, I.W.C., annually) and Venezuela, Ministerio de Fomento, op. cit.

Regressions were run to attempt to explain the percentage of the Venezuelan market held by Canadian grain in terms of the price spread between St. Lawrence and

* Spread is for crop years. i.e. 1960 = crop year 1959-60.

U.S. Gulf quotations c.i.f. U.K. (as a proxy). The coefficient of multiple determination would indicate that only about 25 per cent of the movement in the series is accounted for by price changes.[1] It is to be noted that several of the Venezuelan flour mills are owned by U.S. interests and that the source of imports of wheat might be to some extent influenced by that fact.

Summary

Venezuela has changed over from being a flour importer to becoming a large importer of wheat to supply the new flour milling industry. Local mills have sufficient capacity to supply internal demands.

Forecasts were made of consumption (which is the equivalent of wheat imports, as little wheat is grown in Venezuela) using the single equation approach. It was found that this approach possibly neglects shifts of the demand schedule and that all that results is a 'mongrel' equation. Wheat appears to be price-sensitive

---

1 - Calculation D-6, see Table 6 of the Appendix.

and probably policy-influenced with regard to the choice of source of purchase.[1] Because of this latter factor, in particular, no attempt was made to forecast flows from Canada.

---

1 - Conversations with people in the milling industry also revealed the fact that the very high quality Canadian wheat may be too much of a luxury for bread in developing economies. A lower grade, cheaper wheat fulfilling the minimum nutrient requirements may appear more attractive to buyers.

CHAPTER EIGHT

SEED POTATOES

This commodity is of interest for two principal reasons. First, as a result of the Accion Democratica policy of self-sufficiency in agriculture there have been practically no imports of table potatoes in recent years. Secondly, for ecological reasons, local seed production is negligible and Canada is the major source of seed for the potato crop. A further reason is that whereas in the previous chapter doubts arose as to the use of the single equation, there is a very real possibility that forecasts can be accurately made of potato demand and thus of seed demand by single equation. It will be seen that forecasts will probably have to be qualified by technological progress, in the form of a greater output of table potatoes using a given amount of seed.

Potato Production 1950-1965

There have been significant increases in both land area and yield per hectare for potatoes grown in Venezuela over this period. The Accion Democratica government has maintained a minimum guaranteed price to producers and has given aid in financing, storage and marketing.[1]

The following table indicates area under cultivation, yield and total production.

Table 8-1

Venezuela: Potatoes. Area under Cultivation, Yield and Production. Selected Years.

Year	Area (000's Hectares)	Yield Kilos/Hectare	Production 000's Metric Tons
1950	10	3,055	29
1955	10	4,491	45
1960	18	7,348	134
1965	16	8,403	136

Source: U.S.D.A. op. cit. Tables 14, 15, 16, pp. 38-40.

1 - C.B.R. op. cit. p. 133.

This commodity is a good example of Accion Democratica agricultural policy being realized.

Projections

A) Supply of Potatoes

C.B.R. makes the following comment: "it is obvious that the potato demand will be covered by the domestic supply and that forecasts based on the historical trend are reliable."[1]

This statement is based on consideration of government support for this crop, increased yields and the minimum price policy.

It is estimated by C.B.R. that the area under potato cultivation would increase to 26,000 hectares by 1975 and that the yield would be 8,000 kilograms per hectare. C.B.R. forecasts together with 1965 actuals are shown in Table 8-2.

For 1965, C.B.R. had overestimated the area under cultivation and underestimated the yield in their projections. However, point estimates are extremely hazardous

---

1 - C.B.R. Ibid.

Table 8-2

Venezuela: Potatoes. Forecasts of Area under Cultivation, Yield and Production. Selected Years.

Year	Area 000's Hectares	Yield Kilos/Hectare	Production 000's Metric Tons
1965 (Actual)	16	8,403	136
1965 (Forecast)	19	7,500	142
1970 (Forecast)	22	8,000	175
1975 (Forecast)	26	8,000	207

Sources: As per Table 8-1.

and the forecast was in the appropriate direction thus giving a good indication of the possible result.[1]

1 - The C.B.R. forecast was derived from the equation:

$$Y = 12,003 + 6,506T + U$$

where Y = Per capita supply of potatoes,

T = Time and

U = the error term.

The series was observed over the period 1946-1961.

An additional regression was run by the writer using time as the independant variable, but covering the period 1950-1965. The resulting point estimates are shown together with the C.B.R. estimates and 1965 Actuals.

Table 8-3

Venezuela: Results of Regression Analysis of Potato Production against Time.

Point Estimates. In Metric Tons.

Year	C.B.R.	Calculated[1]
1965 (Actual)	135,890	135,890
1965 (Estimates)	142,123	135,269
1970 (Estimates)	174,653	173,750
1975 (Estimates)	207,183	212,230

Source: C.B.R: op. cit. p. 132.

1 - From the equation $Y = 12179.55 + 7693.104T + U$
where Y = Potato supply in metric tons and
T = Time and
U = Error term.

B) Demand for Potatoes

Estimates have been made by C.B.R. of consumption both in rural and urban areas.[1] Price and income elasticities were also calculated from cross-sectional family data, by the same method as indicated for wheat and flour.

Demand was then forecast

1) Using a time series extrapolating the time trend and

2) Using the price and income elasticities in a cross-sectional model.[2]

Table 8-4 shows these estimates using both methods.

There are slight differences between the two estimates but both models indicate that domestic demand will be more than taken care of, other things being equal, by domestic supply.

---

1 - From the 1961 National Family Survey, respectively 9.171 Kgs and 18.356 Kgs per capita for rural and urban zones.

2 - This model is fully described in C.B.R. op. cit. pp. 98-100.

Table 8-4

Venezuela: C.B.R. Estimates of Future Potato Demand.

Selected Years. In Metric Tons.

Year	Time Trend[1] Model	"Elasticities" Model
1965 (Actual)	135,900	135,900
1965 (Estimates)	132,897	123,608
1970 (Estimates)	159,537	163,691
1975 (Estimates)	188,177	200,592

Sources: C.B.R. op. cit. pp. 98-99 and
U.S.D.A. op. cit. Table 11, p. 35.

The discussion so far has concerned table potatoes, sometimes referred to as 'Irish' or 'white' potatoes. Evidence has been presented showing that only in the future marginal supplies are likely to come from abroad. Potatoes tend to degenerate in the tropical soil of Venezuela and

1 - The time series projections of demand and supply differ, as prior to 1961 domestic supply was supplemented by imports and this data seems to have been incorporated in C.B.R. calculations.

practically all seed must be imported. Seed cannot generally be taken from its own crop.[1]

Rules of thumb seem to have been used in determining forecasts of seed that it would be necessary to import to satisfy crop projections. The figure given by C.B.R. is one sixth of the potato output. That is, one ton of seed potatoes is needed to produce six tons of table potatoes.

Apart from evidence that would seem to indicate a more favourable input - output ratio, there is the problem of identifying the amounts of seed potatoes that have been consumed in the country as substitutes for table potatoes. An attempt was made by Venezuelan authorities to stop this phenomena - brought about mainly when domestic supplies are short and because of restrictions on table potato imports - by dyeing seed potatoes with a distinctive colour.[2]

---

1 - For a discussion of this, see Department of Agriculture, Canadian Seed Potatoes in South American Countries (Ottawa, King's Printer, 1938), p. 11.

2 - W.D. Wallace Commercial Counsellor, Canadian Department of Trade and Commerce, Caracas, Venezuela Regulates Seed Potato Imports in Foreign Trade 19, September 1964, pp. 31-32.

Trade in Seed Potatoes 1950-1965

Venezuela was self-sufficient in table potatoes by 1962. Since this time, imports of potatoes for consumption have been marginal. A monopoly on the imports of potatoes, for seed and for consumption, is held by the Banco Agricola y Pecuario, a government agency.

Potato production and imports both for seed and consumption are now examined.

Table 8-5

Venezuela: Potatoes, Production and Imports.

Selected Years.

Year	Production	Imports	
		Table Potatoes	Seed Potatoes
	In 000's of Metric Tons		
1950	29	36.8	5.7
1955	45	24.5	7.8
1960	134	7.2	9.1
1965	136	0	13.0

Sources: C.B.R. op. cit., Table 77, p. 99 and
U.S.D.A. op. cit., Tables 16, 19, pp. 40 and 43.

The trends are clear in the above table. Production has increased greatly and imports of potatoes for consumption decreased from some 37 thousand tons to zero. Seed imports have increased along with local production, although less than proportionally.

Regressions were run to explain imports of seed potatoes (Table 7 of the Appendix). Independant variables included domestic potato production, price of table potatoes and time. Calculation E-3 proved to be the best fit. There appears to be no auto-correlation and the coefficient of multiple regression of .818 is reasonably high. However, the coefficients of production and price were not significant. The equation is in log form.

For effective use in forecasting, it must be possible to reasonably produce extrapolations of the independant variables. There is difficulty in doing this with price variables. The best that one can do is to say 'if such-and-such is the price, then the dependant variable will have a value as expressed by the equation.'

In recent years, the improvements in the input-output ratio of seed potatoes to potatoes has been

significant. C.B.R. forecasts for 1965 for seed requirement was double actual imports of seed, although forecasts of potato production were reasonably accurate.[1]

In normal circumstances, given a constant factor of seed conversion, the single equation approach appears to be a reasonable method of forecasting

a) as C.B.R. does by projecting potato production and estimating the seed requirement from the results or

b) incorporating potato production, an income variable and a price variable in one equation, as explanatory variables - although the difficulty of price forecasting may limit the effectiveness of this variable.

---

1 - Ratios of seed imports to production:

1960-62	(average)	9.1
1963-65	(average)	12.3

It appears that this is the result of improved farming methods - although it must be mentioned that the production of small seed potatoes locally, as yet on a very small scale, is responsible for some of the improved conversion ratio. See footnote infra p. 140.

Canadian Exports of Seed Potatoes to Venezuela 1950-1965

Canada was the principal supplier of seed potatoes to Venezuela during the entire period. Seed potatoes originate in the maritime provinces. Venezuela has stipulated that seed must be imported through La Guaira or Puerto Cabello, except in special circumstances.[1]

Venezuela has represented, in recent years, about 10 per cent of total seed exports from Canada.[2] Canadian exports of this commodity account for about 10 per cent of Canadian total production.[3] The Venezuelan market thus takes about 1 per cent of the total Canadian production.

Exports from Canada were examined by month. It was found that there are two peak periods during the months March to May and October to December. Over 50 per

---

1 - W.D. Wallace in Foreign Trade, September 1964, p. 32.

2 - Percentages of total exports of seed potatoes going to Venezuela: 1965 - 9.6%, 1966 - 10.1%. Source: D.B.S. 65-004 Exports by Commodities.

3 - Canadian Department of Agriculture, Economics Branch, Canadian Farm Economics, February 1967, p. 53.

cent of the total exported for the year to Venezuela had been exported by the end of May.[1] This would seem to suggest that crops are planted twice per year.[2] Demand for seed for each planting seems to be similar. It would be conceivable, therefore, that short term estimates of the following crop's seed requirement might be made by inspection of the previous crop's requirements. Monthly trade statistics of Canadian exports only have about a three month lag between the transaction and publication of the figures. A guide to the seed requirements of the second crop of the year, then, might be the quantity of seed exported for the first crop.

Table 8-6 illustrates the Canadian participation in the Venezuelan market for seed potatoes.

Regression Analysis

Regression were run incorporating the Canadian export price of seed potatoes in an effort to explain

---

1 - D.B.S. 65-004 Exports by Commodity, monthly. The years 1962-1966 were used to establish a seasonal pattern.

2 - This was confirmed by letter from the Canadian Department of Trade and Commerce.

Table 8-6

Venezuela: Imports of Seed Potatoes, Showing Canadian Seed and Percentage of the Market held by Canada in Representative Years.

Year	Seed Potato Imports In 000's of Metric Tons	Canadian Seed Imported	Canadian Share %
1950	5.7	4.9	86
1955	7.8	6.8	87
1960	9.1	8.0	88
1965	13.0	11.0	85

Sources: U.S.D.A. op. cit., Table 19, p. 43 and D.B.S. 65-004 Exports by Commodity.

imports from Canada.[1]

1 - The Department of Trade and Commerce in Ottawa communicated in a letter that small seed potatoes or 'pasillas' are used by farmers in Venezuela, and that their current price (October 1967) is around Bs 20.00 per 50 kilo crate in comparison to Bs 35.00 per crate for Canadian seed, and Bs 45.00 per crate for local grown seed. Local production of pasillas is only estimated by the Department to be about 9000 crates or 450 metric tons. Source: letter of October 6, 1967.

The results of the various calculations are shown in Table 8 of the Appendix. Calculation F-1 is interesting, however, as only the coefficient of domestic potato production is in doubt. The sign is negative for this coefficient. The price variable, on the other hand, has the right sign and the coefficient is significant at better than the .10 level - which might be considered acceptable for forecasting purposes. Calculation F-5 drops domestic potato production and appears perfectly acceptable for forecasting. It is to be noticed that in the case of all the regressions run the Durban-Watson statistic was high. There appears to be no auto-correlation present.

Summary

Venezuela has become self-sufficient in table potatoes and imports its seed requirements. Canada has a major share of seed potato imports. Projections made by the Consejo de Bienestar Rural indicate that, given the present help from the government, production of table potatoes should expand in line with estimated demand.

Because of apparent improvement in yields from a given stock of seed, projections employing an econometric relationship will not reflect reality. The method of the single equation model, however, appears to be useful, given knowledge of technical change. It was found that two seasonal peaks occur in Canadian shipments of seed potatoes to Venezuela indicating two plantings. The demand for Canadian seed at each planting appears to be approximately the same. Short-term forecasts might be made using this information.

CHAPTER NINE

NEWSPRINT

The consumption of newsprint has been influenced greatly by political events and political priorities. Education policy and the efforts to eradicate illiteracy are some of the factors that are important in determining demand for this commodity. Civil unrest has also undoubtedly contributed to fluctuations in newspaper output.

Education

As was mentioned in Chapter Two, the Accion Democratica government has placed great emphasis on the importance of education.

The situation at the time of the 1958 revolution is described by R.J. Alexander:

"So great was the neglect of the school system during the nine year dictatorship of Pérez Jiménez that less than half of the school-age population was in school in 1958."[1]

---

1 - R.J. Alexander, The Venezuelan Democratic Revolution, p. 246.

The result of the A.D. initiative in this field is illustrated quantitatively (Table 9-1). The great increase in school enrolment, especially in secondary schools, in the post-Jiménez period is evident. The inclusion of population estimates serves as a useful comparison.

Table 9-1

Venezuela: Primary and Secondary School Enrolment and Population Estimates.

Selected Years During the Period 1950-1965.

Year	Primary School Enrolment 000's	Index	Secondary School Enrolment 000's	Index	Population 000's	Index
1950	503	100.00	27	100.00	4974	100.00
1955	647	128.62	44	162.96	6150	123.64
1960	1244	247.31	105	388.88	7364	148.04
1965	1455	289.26	189	700.00	8725	175.35

Sources: Banco Interamericano de Desarrollo, op. cit., Tables 4, 5, 4'3, 5'3.

In the regressions run to explain imports of newsprint school enrolment has been used as an explanatory variable. Secondary school enrolment lagged by two years appeared to be a reasonable proxy indicating changes that improvements in the educational system had on the size of the reading public. This is a crude variable but it appears to explain newsprint imports fairly well.

Illiteracy

Whilst this undoubtedly overlaps with school education, the high incidence of adult illiteracy, which the A.D. government was determined to eliminate, makes this factor unique in itself. Unfortunately, there are no quantitative series of literacy rates. Furthermore, the standards used to judge a person literate, either vary from case to case or are so low that it would not necessarily follow that a literate population and a newspaper reading population are one and the same thing. The ability to read and write at a pre-secondary school level would not be any indication of a potential or actual newspaper conscious public.

Civil Strife

During the years 1950-1957, many newspapers were outlawed by the Peréz Jiménez regime. It is hard to connect in concrete terms any change in newspaper consumption patterns to periods of internal strife in the years 1963-1964, when there was considerable unrest in the country. But there was a visible drop in newsprint imports in these two years, if they are compared to 1962 imports. These years of civil strife also coincided with balance of payments difficulties when import restrictions were imposed to help the situation. The system of licencing and quotas imposed could quite conceivably have accounted, in large measure, for the fall in imports during 1963-64.

Newsprint Consumption

Some estimates have been made by the United Nations of newsprint consumption, both total and per capita. These confirm the fairly consistant upward trend. More especially, they indicate the greater increase in newsprint consumption during the years of Accion Democratica rule.

Table 9-2

Venezuela: Consumption of Newsprint.

Selected Years.

Year	Total Consumption 000's metric tons	Per Capita Consumption kilograms
1950	10.5	2.1
1955	16.1	2.8
1960	23.5	3.5
1964	38.1	4.5

Source: United Nations: Statistical Yearbook.

The Relationship between National Product and Income Elasticity of Demand

Estimates of Income elasticities of demand were made by the Secretariat of the Food and Agriculture Organization of the United Nations, from a cross-section analysis of newsprint demand using data from the years 1952-54.[1] It was found that the higher the per capita income of the country, the lower the elasticity. Selected

1 - The method is fully explained in F.A.O., World Demand for Paper to 1970 (Rome, F.A.O., 1960), pp. 1-25.

results are shown below.

Table 9-3

Relationship between National Product and Income Elasticity of Demand for Newsprint.

Selected Levels of N.N.P.

Per Capita Net National Product in $U.S.	Income Elasticity
86	2.86
168	1.97
272	1.82
399	1.71
487	1.55
552	1.52
866	1.12
1182	1.05

Sources: Food and Agricultural Organization of the United Nations, World Demand for Paper to 1970 (Rome, U.N. 1960), p. 5.

Evidence is presented by the same source that these elasticities should perhaps be lower in the less developed countries, but the fact of the tendency of the

elasticity to fall with the rise in income is well established.

A 'saturation level' is also postulated by F.A.O. that is, an income level at which consumption will level off. This saturation level is estimated to be in the region of 60 kilograms per capita for newsprint. It is to be noticed that Venezuelan consumption is well below that level.

Imports of Newsprint

There are no newsprint mills in Venezuela. All local demand must be satisfied by imports.

Canada, the world's largest newsprint exporting nation, supplies a major portion of Venezuela's needs. From the standpoint of Canadian producers this market does not demand very high quality newsprint and there appear to be no problems of supply to Venezuela from this country.

Newsprint enters Venezuela tariff-free and has done so throughout the period under study.

The importance of Canadian newsprint in this market is clear from Table 9-4 which shows Venezuelan imports.

Table 9-4

Venezuela: Imports of Newsprint and Canadian Exports of Newsprint to Venezuela Selected Years.

Year	Total Newsprint Imports (Short Tons)	Canadian Exports of Newsprint to Venezuela (Short Tons)	Canadian Exports as a Percentage of Venezuelan Imports
1950	11,601	9,931	85.6
1955	22,000	10,046	46.0
1960	25,923	17,421	67.4
1965	47,000	36,198	78.1

Sources: Newsprint Association of Canada, Newsprint Data (Montreal, annually) and D.B.S. 65-004 Exports by Commodity.

In the late 1950's and the early 1960's, Canada's market share was reduced substantially. It has been stated that Canadian newsprint was being under-sold by newsprint from the United States.[1]

1 - D.I. Campbell in Foreign Trade: "Venezuela Buys More Pulp and Paper" September 22, 1962, p. 21.

This appears to have been the case, as is seen below where the unit value of newsprint entering Venezuela (f.o.b.) from the United States and from Canada have been calculated.

Table 9-5

Venezuela: Newsprint Imports Unit Values (f.o.b.) from the United States and Canada in Bolivars per Metric Ton.

Year	Unit Values of Newsprint per Metric Ton in Bolivars	
	From The United States	From Canada
1959	435	501
1962	592	518
1965	625	602

Source: Boletin de Comercio Exterior. S.I.T.C. No. 641-0101 Papel de diario de hasta 60 gramas per m 2.

It can be seen that in 1959, Canadian newsprint was indeed more expensive than U.S. newsprint but that by 1962 this situation had changed.

Regression Analysis

An analysis was carried out, using regressions, for total newsprint imports and for exports of Canadian newsprint to Venezuela. The results are reported in Tables 9 and 10 of the Appendix.

Regressions of Newsprint Imports

A simple time trend exhibits the highest coefficient of determination (Calculation G-3). Calculation G-4 successfully relates newsprint imports to an index of industrial production and secondary school enrolment, lagged two periods. The coefficient of determination is .896 and the Durban-Watson "d" statistic indicates that there is no auto-correlation present. Calculation G-5, the logarithmic form of the previous calculation, is equally acceptable showing a higher coefficient of determination and similarly no auto-correlation. Both coefficients in G-5 exhibit the expected positive sign and the standard errors, although by no means ideal, are acceptable.

Calculations G-1 and G-2 are not acceptable as the coefficients of the index of per capita disposable income are not significant in either case.

Regressions of Exports of Newsprint from Canada to Venezuela

Five calculations were made to explain Canadian exports of newsprint to Venezuela (Calculations H-1 to H-5 in Table 10 of the Appendix). Newsprint exports run against time gave a coefficient of determination of .797. However, the Durban-Watson statistic calculated for this relationship clearly indicates that time alone is an inadequate explanation of variations in the dependant variable. Calculation H-4, in which newsprint exports are related to secondary school enrolment (lagged two periods) and the difference between the U.S. and Canadian f.o.b. prices of newsprint is barely successful. The standard error of the latter coefficient, whilst having the theoretically correct sign, is barely significant. No auto-correlation appears to be present in this relationship. The same regression in log form is less acceptable.

Newsprint Moving via West Coast Canada and via the United States

In recent years, newsprint has been moving from the West Coast of Canada. There have also been some flows via the United States. For the years 1961, 1964 and 1965,

there appears to be about 2,000 short tons annually passing through the United States to Venezuela.[1]

Newsprint exports to Venezuela from the West Coast of Canada started in 1959 and the amounts are still fairly small. This is seen in Table 9-6.

Table 9-6

Exports of Newsprint from West Coast of Canada to Venezuela.

In Short Tons 1959-1965 (Selected Years).

Year	Tonnage	As Percentage of All Canadian Newsprint to Venezuela
1959	1494	8.8
1962	1794	8.6
1965	6096	16.8

Sources: D.B.S. 65-004 Exports by Commodity and Government of British Columbia, Department of Industrial Development, Trade and Commerce, Preliminary Statement of External Trade Through British Columbia Customs Ports (Annually).

1 - Classified as 'Paper for printing'. Source: D.B.S. 65-206 Exports by Mode of Transport (Ottawa, Queen's Printer, annually).

Summary

With the election of the Accion Democratica government great emphasis was placed on education and reducing the alarmingly high rate of adult illiteracy.

There being no newsprint mill in Venezuela, local demand is filled by imports. Canada as the world's leading newsprint exportingnation, is now supplying a major part of the market. It appears that this commodity is price sensitive. In the late 1950's and the early 1960's the United States was the largest supplier to this market, being able to supply the commodity at lower unit values.

Regressions relating imports of newsprint to an index of industrial production and secondary school enrolment lagged two years are acceptable as crude forecast instruments. Similarly, the use of equations relating Canadian exports of newsprint to Venezuela in terms of secondary school enrolment and the difference between the Canadian and the U.S. unit price can be used with less reliability owing to the high standard errors of the coefficients, as crude forecasting instruments. These

forecasts must be qualified by a knowledge of the institutional practices of the market - such as the practice of making long term contracts - in some case as long as ten years, which tie down the source of supply for a considerable period.

CONCLUSIONS

Three commodities that comprise over 40 per cent of the total cargo flow from Canada to Venezuela have been examined in this study.

The political and economic background presented in Part Two explained the policies of Accion Democratica and data was provided to document the effectiveness of this policy in the economy generally.

It was found that certain difficulties prevented the automatic use of a single equation to explain imports of wheat and flour and it was postulated that this might be the result of a shifting demand curve, in which case a 'mongrel' type equation resulted.

Price seemed to play a role in determining the source of wheat purchases but it was felt that policy decisions of the U.S.-owned mills influenced the choice to a certain degree. No equations were suggested for use as forecasting instruments of flows from Canada.

Venezuela takes about one per cent of the Canadian seed potato crop. The single equation was used

with some success in explaining both imports from all sources and exports from Canada. However, the considerable improvement in the conversion factor in recent years makes direct forecasting of seed potato flows rather hazardous. A preferable method might be to forecast local potato production and apply a conversion factor for seed, incorporating known information of technical improvements. The equation explaining flows from Canada included the Canadian export price and time as the independant variables.

Equations derived to explain newsprint imports and exports from Canada of this commodity incorporated secondary school enrolment lagged by two years as a 'cultural' variable. The explanation of exports of newsprint from Canada was not very successful.

Whilst it cannot be claimed that the regression analysis using the data of this study is completely successful, it can be claimed that the method, per se, is useful if one bears in mind the peculiarities of the commodity that is being dealt with. The changing conversion factor for seed potatoes must be considered, for

example, in any forecast of this commodity.

A knowledge of the political priorities that the government attaches to the economy and to the external sector in particular, helped to explain irregularities that appeared, especially those that were not quantifiable.

Symbols Used in Regressions Analysis

(Results are Reported in Tables of the Appendix)

Symbol	Variable
Y*	Per Capita National Income in Current Bolivars.
P	Population (in thousands).
T	Time.
Y	National Income in Current Bolivars (millions).
D	Per Capita Disposable Income in 1959 Bolivars.
D*	Index of Per Capita Disposable Income in 1959 Bolivars.
M	Imports in Millions of Current Bolivars.
M'	Imports in Millions of 1959 Bolivars.
I	Index of Canadian Imports by Venezuela in $US (1959 = 100).
I'	Venezuela Imports Price Index, adjusted to $US (1959 = 100).
V	Venezuela: Quantity Export Index. (1959 = 100).
C	Canadian Export Price Index, adjusted to $US (1959 = 100).
G	Cargo from Canadian East Coast and Great Lakes to Venezuela in Short Tons.
W	Wheat and Wheat Flour Imports (Venezuela) in Wheat Equivalent in Thousands of Metric Tons.

Symbols Used in Regression Analysis

Symbol	Variable
F	Venezuela: Domestic Price of Flour in Current Bolivars. Per Metric Ton.
WC	Percentage of the Wheat Imported by Venezuela originating from Canada.
DW	Difference in the f.o.b. Price between Canadian and U.S. Gulf Wheat in US Cents.
Z	Venezuela: Seed Potato Imports in thousands of metric tons.
Z*	Venezuela: Seed Potato Imports in Metric Tons.
Z'	Venezuela: Domestic Potato Production in Metric Tons.
ZT	Venezuela: Domestic Potato Production in Thousands of Metric Tons.
ZP	Venezuela: Domestic Potato Price in Bolivars per 100 Kilos.
Y'	Per Capita National Income in 1958 Bolivars.
CZ	Canadian Seed Potato Exports to Venezuela in Short Tons.
CP	Canadian Seed Potato Export Price in Bolivars at the Free Exchange Rate per Short Ton.
N	Venezuela: Newsprint Imports in Short Tons.
S	Venezuela: Secondary School Enrolment lagged 2 Years (thousands).

Symbols Used in Regression Analysis

Symbol	Variable
IP	Index of Industrial Production. (1953 = 100.)
CN	Canadian Newsprint Exports to Venezuela in Short Tons.
CP*	Canadian Export Price of Newsprint in Bolivars/ Short Tons.
DN	Difference between U.S. and Canadian f.o.b. Newsprint Export Prices. In U.S. Cents.
	(Unless otherwise stated, Variables refer to Venezuela).

Free Exchange Rates. One Dollar U.S. in Bolivars.

1950	3.35
1955	3.35
1960	3.35
1965	4.50

Appendix. Table 1

Standard International Trade Classification:

Groupings in English and Spanish.

Group No.	English	Spanish
0	Food and Live Animals	Productos Alimenticios
1	Beverages and Tobacco	Bebidas y Tobaco
2	Crude Materials, Except Fuels	Materiales Crudos no Comestibles Excepto Combustibles
3	Mineral Fuels, Lubricants and Related Materials	Combustibles y Lubricantes Minerales y Productos Conexos
4	Animal and Vegetable Oils and Fats	Aceites y Mantecas de Origen Animal y Vegetal
5	Chemicals	Productos Quimicos
6	Manufactured Goods Classified Chiefly by Material	Articulos manufacturados Clasificados Principalmente Segun el Material
7	Machinery and Transport Equipment	Maquinasias y Materiales de Transporte
8	Miscellaneous Manufactured Articles	Articulos Manufacturados Diversos
9	Commodities and Transactions not Classified According to Kind	Animales Vivos N.E.P., Transacciones Especiales, Oro y Otros Valores

Table 2.

Results of Regression Analysis.

Venezuela: Total Imports.

Calculation Number	Time Period	Regressions
A-1	1950-1964	$M = 34450.94 + 4.52Y^* - 8.08P + 1734.71T$ (122.96) (0.95) (5.37) (1321.11) $R^2 = .835$ $S_{Y.X} = 476.19$ D-W = 1.80
A-2	1950-1964	$M = -3335.37 + 3.306Y^* - 154.37T$ (85.08) (0.623) (65.24) $R^2 = .897$ $S_{Y.X} = 318.35$ D-W = 1.10
A-3	1950-1956 1958-1964	$M = 1144.52 + 0.14Y$ (128.34) (0.02) $R^2 = .744$ $S_{Y.X} = 480.20$ D-W = 1.01
A-4	1950-1956 1958-1964	$M = -1057.30 + 1.91Y^*$ (100.07) (0.24) $R^2 = .844$ $S_{Y.X} = 374.42$ D-W = 1.18
A-5	1950-1956 1958-1964	$\text{Log } M = -1.03 + 1.35\text{Log } Y^*$ (0.01) (0.15) $R^2 = .869$ $S_{Y.X} = 0.05$ D-W = 0.96

Table 2 Cont'd

Calculation Number	Time Period	Regressions
A-6	1950-1965	$M' = 1638.30 + 1.37D$ $(225.39) \quad (0.77)$ $R^2 = .185 \quad S_{Y.X} = 901.54 \quad D\text{-}W = 0.77$
A-7	1950-1965	$\text{Log } M' = 1.61 + 0.61 \text{Log } Y^*$ $(0.02) \quad (0.32)$ $R^2 = .205 \quad S_{Y.X} = 0.09 \quad D\text{-}W = 0.69$

In the tables showing the results of regression analysis, the standard errors are shown in Brackets below the coefficients and

R^2 = Coefficient of Determination

$S_{Y.X}$ = Standard Error of Estimate

D-W = Durban-Watson 'd' Statistic

Appendix. Table 3

Exports from Canada to Venezuela by D.B.S. Group

Including Major Items for Selected Years

During the Period 1950-1960.

As Percentages of Total.

D.B.S. No.	Item	1950	1955	1960
	Agricultural and Vegetable Products	38	39	20
6139	Oats	0.8	1.3	1.0
6169	Wheat	0.3	0.6	14.2
6230	Malt	0.5	0.3	1.4
6269	Wheat Flour	23.9	32.8	-
9180	Seed Potatoes	1.2	1.5	1.9
	Animals and Animal Products	13	22	32
5150	Whole Milk Powder	2.6	15.4	22.3
5152	Skim Milk Powder	0.2	0.5	1.2
5319	Eggs	2.0	2.3	5.4
	Fibres, Textiles and Textile Products	2	1	1
	Wood, Wood Products and Paper	7	9	13

Table 3 Cont'd

D.B.S. No.	Item	1950	1955	1960
34020-75	Woodpulp	0.8	-	1.9
35109	Newsprint	4.4	4.1	6.6
35249	Bond and Writing Paper	0.1	1.0	1.3
	Iron and Its Products	12	10	14
58095	Vehicle Parts and Accessories	0.4	-	-
58019	Autos and Chassis	1.4	0.3	2.5
	Non-Ferrous Metals and their Products	15	8	8
45109-49	Aluminium and Manufactures	8.3	1.5	1.9
45204-99	Copper and Manufactures	2.0	3.4	1.5
	Non-Metallic Minerals and their Products	1	3	2
27130-40	Asbestos (Fibres and Shorts)	0.6	1.2	1.5
	Chemicals and Allied Products	2	8	10
87019-99	Drugs, Medicines, etc.	0.2	0.2	0.9
42499	Plastics & Synthetics	0.3	1.5	4.2
	Miscellaneous Commodities	9	1	1

Calculated from D.B.S. 65-201 Trade of Canada, Summary and Analytical Tables (Ottawa, Queen's Printer, annually). The last appearance of this publication covered the years 1959-1960.

Appendix. Table 4

Exports from Canada to Venezuela by S.I.T.C. Group and Including Major Items. Selected Years for Period 1960-1965. (As Percentages of Total).

S.I.T.C. No.	D.B.S. No. (Revised)	Item	1960	1963	1965
0		Food and Live Animals	50.3	52.7	39.4
	5319	Eggs	5.4	-	-
	5150	Whole Milk Powder	22.3	15.0	12.5
	5152	Skim Milk Powder	1.2	0.5	1.5
	6139	Oats	1.0	1.2	0.5
	6169	Wheat	14.2	30.6	21.3
	6230	Malt	1.4	1.5	0.7
	6245	Oats Byproducts	-	0.2	0.8
1		Beverages & Tobaccos	0.4	0.3	-
2		Crude Materials Except Fuels	9.3	8.5	5.3
	34019-99	Wood Pulp	1.9	3.2	1.8
	47499	Asbestos	1.5	0.8	1.0
	27977	Sulphur	-	-	1.3
	9180	Seed Potatoes	1.9	2.0	2.0

Table 4. Cont'd

S.I.T.C. No.	D.B.S. No. (Revised)	Item	1960	1963	1965
3		Mineral Fuels, Lubricants and Related Materials	-	-	-
4		Animal and Vegetable Oils and Fats	0.1	0.1	-
5		Chemicals	4.3	2.8	2.7
	42499	Plastic & Synthetic Rubber - Not Shaped	4.2		1.0
6		Manufactured Goods Classified Chiefly by Material	16.2	20.1	19.9
	35109	Newsprint	6.6	5.2	5.7
	35249	Bond & Writing Paper	1.3	1.1	1.7
	45129	Aluminium	1.9	1.7	1.7
	45204	Copper	1.5	3.4	2.4
	44599	Sheet & Strip Steel	-	5.3	4.5
7		Machinery & Transport Equipment	16.3	13.5	31.7
	58019	Autos and Chassis	2.5	4.1	22.6
	58085	Motor Vehicle Engines and Parts	-	1.0	1.4
	69809	Washing Machines	0.8	0.9	0.7

Table 4 Cont'd

S.I.T.C. No.	D.B.S. No. (Revised)	Item	1960	1963	1965
	77121	Card Punching Equipment	0.5	0.8	0.6
8		Miscellaneous Manufactured Articles	2.5	1.2	0.9
9		Commodities and Transactions not Specified According to Kind	0.6	0.2	0.1

Source: O.E.C.D. Commodity Trade: Exports (Paris, O.E.C.D., annually) and
D.B.S. 65-201 Trade of Canada, Summary and Analytical Tables.

Table 5

Results of Regression Analysis

Venezuela: Imports from Canada and Cargo from East Coast and Great Lakes Ports

Calculation Number	Period							
B-1	1950-1965	I	=	30.875 (4.37)	−	$0.41\frac{I'}{C}$ (0.69)	+	0.97V (0.41)
		R^2	=	.555	$S_{Y.X}$	= 17.46	D-W	= 0.99
B-2	1950-1965	Log I	=	0.48 (0.02)	+	$0.04\text{Log}\frac{I'}{C}$ (0.68)	+	0.69LogV (0.38)
		R^2	=	.546	$S_{Y.X}$	− 0.09	D-W	= 1.04
C-1	1951-1965	G	=	131915.19 (6973.67)	+ 1971.75T (1614.09)			
		R^2	=	.103	$S_{Y.X}$	= 27008.90	D-W	= 1.29

Table 6

Results of Regression Analysis
Venezuela: Imports of Wheat and Wheat Flour in Wheat Equivalent

Calculation Number	Period	Regression
D-1	1950-1961	$W = -232.14 - 0.01Y^* + 0.07P + 1.20F$ $(5.15) \quad (0.04) \quad (0.02) \quad (2.30)$ $R^2 = .937 \quad S_{Y.X} = 17.83 \quad D\text{-}W = 2.18$
D-2	1946-1964	$W = 90.49 + 17.61T$ $(9.02) \quad (1.65)$ $R^2 = .871 \quad S_{Y.X} = 39.30 \quad D\text{-}W = 1.43$
D-3	1946-1964	$W = -232.29 + 0.08P$ $(8.50) \quad (0.01)$ $R^2 = .885 \quad S_{Y.X} = 37.07 \quad D\text{-}W = 1.56$
D-4	1950-1965	$W = -414.16 + 8.58D^* - 0.02P$ $(10.01) \quad (3.09) \quad (0.04)$ $R^2 = .896 \quad S_{Y.X} = 40.03 \quad D\text{-}W = 1.27$
D-5	1950-1965	$\text{Log } W = -2.76 + 1.64 \text{Log } D^* + 0.51 \text{ Log}P$ $(0.01) \quad (0.78) \quad (0.68)$ $R^2 = .929 \quad S_{Y.X} = 0.04 \quad D\text{-}W = 1.72$
D-6	1959-1965	$WC = 44.67 - 0.04DW$ $(4.40) \quad (0.03)$ $R^2 = .246 \quad S_{Y.X} = 11.64 \quad D\text{-}W = 2.05$

Table 7

Results of Regression Analysis
Venezuela: Imports of Seed Potatoes

Calculation Number	Time Period	Regression
E-1	1950-1963	$Z^* = 990.49 + 1.72Y' + 0.06Z'$ (709.02) (4.68) (0.04) $R^2 = .534$ $S_{Y.X} = 2652.89$ D-W = 1.65
E-2	1946-1961	$Z^* = -9435.05 + 0.02Z' + 149.45ZP + 663.72T$ (640.96) (0.04) (133.40) (329.47) $R^2 = .741$ $S_{Y.X} = 2563.85$ D-W = 2.14
E-3	1946-1961	$\text{Log } Z^* = 0.16 + 0.21\text{LogZ}' + 1.24\text{LogZP} + 0.04T$ (0.04) (0.38) (1.24) (0.03) $R^2 = .818$ $S_{Y.X} = 0.14$ D-W = 2.12
E-4	1946-1961	$Z^* = 844.70 - 0.01Z' + 845.96T$ (647.22) (0.04) (289.31) $R^2 = .713$ $S_{Y.X} = 2588.88$ D-W = 1.96
E-5	1946-1961	$\text{Log } Z^* = 2.67 + 0.12\text{LogZ}' + 0.68\text{LogT}$ (0.03) (0.24) (0.22) $R^2 = .844$ $S_{Y.X} = 0.12$ D-W = 2.42
E-6	1946-1965	$Z = 2.69 - 0.02Z' + 0.64T$ (0.68) (0.04) (0.32) $R^2 = .533$ $S_{Y.X} = 3.05$ D-W = 1.56
E-7	1946-1965	$\text{Log } Z = 0.23 + 0.03\text{LogZ}' + 0.63\text{LogT}$ (0.03) (0.23) (0.23) $R^2 = .783$ $S_{Y.X} = 0.13$ D-W = 1.97

Table 8

Results of Regression Analysis
Venezuela: Exports of Seed Potatoes from Canada

Calculation Number	Time Period	Regression
F-1	1950-1965	$CZ = 7992.11 - 0.05Z' - 14.08CP + 1210.58T$ $(624.36) \quad (0.04) \quad (7.63) \quad (364.44)$ $R^2 = .686 \quad S_{Y.X} = 2497.45 \quad D\text{-}W = 2.56$
F-2	1950-1965	$\text{Log } CZ = 3.78 + 0.04\text{Log}Z' - 0.15\text{Log}CP + 0.47\text{Log}T$ $(0.03) \quad (0.24) \quad (0.22) \quad (0.19)$ $R^2 = .712 \quad S_{Y.X} = 0.11 \quad D\text{-}W = 2.93$
F-3	1950-1965	$CZ = 5108.13 + 635.13T$ $(671.90) \quad (145.76)$ $R^2 = .576 \quad S_{Y.X} = 2687.58 \quad D\text{-}W = 2.29$
F-4	1950-1965	$\text{Log } CZ = 3.60 + 0.47\text{Log}T$ $(0.03) \quad (0.08)$ $R^2 = .700 \quad S_{Y.X} = 0.11 \quad D\text{-}W = 2.63$
F-5	1950-1965	$CZ = 7022.84 - 11.88CP + 793.12T$ $(640.13) \quad (7.63) \quad (172.00)$ $R^2 = .642 \quad S_{Y.X} = 2560.52 \quad D\text{-}W = 2.91$
F-6	1950-1965	$\text{Log } CZ = 3.94 - 0.15\text{Log } CP + 0.49\text{Log}T$ $(0.03) \quad (0.21) \quad (0.09)$ $R^2 = .711 \quad S_{Y.X} = 0.11 \quad D\text{-}W = 2.88$

Table 9

Results of Regression Analysis

Venezuela: Imports of Newsprint

Calculation Number	Time Period	Regression
G-1	1952-1965	$N = 2881.80 + 128.38D^* + 143.40S$ $(1061.12) \quad (240.57) \quad (62.60)$ $R^2 = .875 \quad S_{Y.X} = 3970.35 \quad D\text{-}W = 2.13$
G-2	1952-1965	$\text{Log } N = 2.62 + 0.50\text{Log}D^* + 0.43\text{Log}S$ $(0.01) \quad (0.87) \quad (0.19)$ $R^2 = .906 \quad S_{Y.X} = 0.05 \quad D\text{-}W = 2.03$
G-3	1946-1965	$CZ = 4307.19 + 2016.96T$ $(772.68) \quad (134.00)$ $R^2 = .926 \quad S_{Y.X} = 3455.52 \quad D\text{-}W = 1.89$
G-4	1952-1965	$CZ = 4482.00 + 98.63IP + 151.79S$ $(965.61) \quad (50.54) \quad (93.64)$ $R^2 = .896 \quad S_{Y.X} = 3613.00 \quad D\text{-}W = 2.35$
G-5	1952-1965	$\text{Log } CZ = 2.92 + 0.32\text{Log}IP + 0.46\text{Log}S$ $(0.01) \quad (0.16) \quad (0.31)$ $R^2 = .919 \quad S_{Y.X} = 0.05 \quad D\text{-}W = 2.18$

Table 10

Results of Regression Analysis
Venezuela: Exports of Newsprint from Canada

Calculation Number	Time Period	Regression
H-1	1952-1965	$CN = 9302.00 + 92.50D^* + 113.53S - 23.21CP^*$ (932.94) (246.18) (86.80) (29.35) $R^2 = .796$ $S_{Y.X} = 3490.74$ D-W = 1.55
H-2	1952-1965	$\text{Log } CN = -0.82 + 2.03\text{LogD}^* - 0.04\text{LogS} + 0.40\text{LogCP}^*$ (0.02) (1.50) (0.41) (0.73) $R^2 = .780$ $S_{Y.X} = 0.08$ D-W = 1.37
H-3	1948-1965	$CN = 5771.08 + 1201.73T$ (785.92) (151.49) $R^2 = .797$ $S_{Y.X} = 3334.39$ D-W = 1.01
H-4	1956-1965	$CN = 11600.18 + 110.95S - 1.13DN$ (1009.37) (18.65) (0.96) $R^2 = .837$ $S_{Y.X} = 3191.91$ D-W = 2.08
H-5	1952-1965	$\text{Log } CN = 3.69 + 0.43\text{LogS} - 0.07\text{LogDN}$ (0.02) (0.08) (0.11) $R^2 = .809$ $S_{Y.X} = 0.07$ D-W = 1.65

BIBLIOGRAPHY

Books and Articles

Alexander, Robert J. Today's Latin America. New York: Doubleday, 1962.

Alexander, Robert J. The Venezuelan Democratic Revolution. New Brunswick, New Jersey; Rutgers University Press, 1964.

Bank of London and South America. Fortnightly Review, 17th January, 1959, pp. 67-69.

Bank of London and South America. Fortnightly Review, 21st November, 1959, pp. 1169-1171.

Bloch, Ivan. "Cargo Forecasting," in Research Techniques in Maritime Transportation. Washington, D.C.: National Academy of Sciences, National Research Council, 1959.

Brett, W.G. "Venezuela Turns to Flour Milling," Canada, Department of Trade and Commerce, Foreign Trade, August 30, 1958, pp. 28-30.

British Railways Board. The Development of the Major Railway Trunk Routes. London: British Railways, 1965.

British Railways Board. The Reshaping of British Railways. London: Her Majesty's Stationary Office, 1963.

Campbell, D.I. "Venezuela Buys More Pulp and Paper," Canada, Department of Trade and Commerce, Foreign Trade, September 22, 1962, pp. 20-21.

Canada: Department of Agriculture, Economics Branch. Canadian Farm Economics, February 1967, pp. 52-53.

Canada: Department of Agriculture. Canadian Seed Potatoes in South American Countries. Ottawa: King's Printer, 1938.

Canada: Royal Commission on Transportation. 3 Volumes. Ottawa: Queen's Printer, 1961-1962.

Caribbean Commission. Root Crops and Legumes in the Caribbean. Washington, 1947.

Consejo de Bienestar Rural. Long Term Forecasts of Supply and Demand of Agricultural and Livestock Products in Venezuela. Jerusalem, United States Department of Agriculture, November 1964.

Currie, A.W. Economics of Canadian Transportation. Toronto, University of Toronto Press, 1959.

Economic Commission for Latin America. Economic Survey of Latin America 1964, New York: United Nations, 1966.

Escarpenter, Claudio, The Economics of International Ocean Transport, Madison, University of Wisconsin Press, 1965.

Ezekiel, Mordecai and Fox, Karl A. Methods of Correlation and Regression Analysis. Third Edition. New York: John Wiley and Sons, 1959.

Ferber, Robert and Verdoorn, P.J. Research Methods in Economics and Business. New York: The MacMillan Co., 1962.

Food and Agricultural Organization of the United Nations. World Demand for Paper to 1970. Rome, United Nations, 1960.

Friedman, John. Venezuela: From Doctrine to Dialogue. Syracuse, N.Y.: Syracuse University Press, 1965.

Gillin, John P. "Some Signposts for Policy", in Social Change in Latin America Today. New York: Vintage Books, 1960, pp. 14-62.

Great Britain, Ministry of Transport. Portbury: Reasons for the Minister's Decision Not to Authorize the Construction of a New Dock at Portbury, Bristol. London, Her Majesty's Stationary Office, 1966.

Gripaios, Hector. Tramp Shipping. London: Thomas Nelson and Sons, 1959.

Grossman, William L. Ocean Freight Rates. Cambridge, Maryland: Cornell Maritime Press, 1956.

Guthrie, John A. The Newspaper Industry. Harvard Economic Studies Volume LXVIII Cambridge, Mass., Harvard University Press, 1946.

International Bank for Reconstruction and Development. The Economic Development of Venezuela. Baltimore: Johns Hopkins Press, 1961.

International Wheat Council, Secretariat Paper No. 1. International Wheat Prices. London: I.W.C., 1961.

International Wheat Council, Secretariat Paper No. 5. Trade in Wheat Flour. London: I.W.C., 1965.

James, Frank Cyril. Cyclical Fluctuations in the Shipping and Shipbuilding Industries. Unpublished Ph.D. Thesis. Philadelphia, University of Pennsylvania, 1927.

Johnston, J. Econometric Methods. New York, McGraw-Hill, 1963.

Kierstead, B.S. and Levitt, Kari. Inter-Territorial Freight Rates and the Federal Shipping Service. Kingston, University of the West Indies, 1963.

Klein, Lawrence R. An Introduction to Econometrics. Edgewood Cliffs, N.J.; Prentice-Hall, 1962.

Lieuwen, Edwin. Venezuela. London: Oxford University Press, 1961.

Little, Arthur D. Inc. Analysis and Forecast of U.S./ Mediterranean Trade and Shipping With Emphasis on Trade Route No. 10. Mimeograph. Boston, Mass., 1964.

Leubuscher, Charlotte. The West African Shipping Trade 1909-1959. Leyden, Sythoff, 1963.

Mance, Osborne. International Sea Transport. London: Oxford University Press, 1945.

Margolin, Edward and McLewdon, William P. Transportation Factors in the Marketing of Newsprint. U.S. Department of Commerce, Washington, D.C. 1952.

Martech Consultants Limited / Port of London Authority. Britain's Foreign Trade. London, St. Clements Fosh and Cross Ltd., 1966.

Martech Consultants Limited (Metra International) Port of London Authority Management Report Volume 11. Annexes. London: Mimeograph, 1966.

Martz, John D. Accion Democratica. Princeton, N.J.: Princeton University Press, 1966.

Marx, Daniel, Jr. International Shipping Cartels. Princeton, N.J., Princeton University Press, 1953.

Nathan, Robert R. Associates Ltd. The Cargo Potential for Movement by Containerized Vessels between California and the North Atlantic States. Mimeograph, Washington, D.C., 1962.

Needler, Martin C. Latin American Politics in Perspective. Princeton: Nostrand, 1963.

Norton, Hugh S. Modern Transportation Economics. Columbus, Ohio. Chas E. Merrill Book, 1963.

Ogden, Montell. Canadian Agriculture, its Competitive Position. Washington, D.C.: United States Department of Agriculture, July 1958.

Organization for Economic Co-operation and Development. Techniques of Economic-Forecasting. Paris: O.E.C.D., 1965.

Sturmey, S.G. British Shipping and World Competition. London, University of London Press, 1962.

Sturmey, S.G. "Economics and Liner Services." Journal of Transport Economics and Policy. Vol. 1, No. 2, May 1967, pp. 190-203.

Suits, Daniel B. Statistics: An Introduction to Quantitative Economic Research. Chicago, Rand McNally, 1963.

Thorburn, Thomas, Supply and Demand of Water Transport. Stockholm, Business Research Institute of the Stockholm School of Economics, 1960.

Tintner, Gerhard. Econometrics. New York: Wiley, 1952.

United Nations. The Economic Development of Latin America in the Post-War Period. New York: U.N., 1964.

United Nations. Economic Commission for Latin America. Towards a Dynamic Development Policy for Latin America. New York, U.N., 1963.

United States Department of Agriculture. Summary and Evaluation of "Long Term Forecasts of the Supply and Demand of Agricultural and Livestock Products in Venezuela. Washington, D.C.: U.S. Government Printing Office, June 1967.

Wallace, W.D. "Venezuela Regulates Seed Potato Imports", in Foreign Trade, September 19, 1964, pp. 31-32.

Wallis, W. Allen and Roberts, Harry V. Statistics: A New Approach. Brooklyn, N.Y.: The Free Press of Glencoe, 1956.

Wilgus, A. Curtis Ed. The Caribbean: Venezuelan Development, Gainesville: University of Florida Press, 1963.

Statistical Sources

Banco Interamericano de Desarrollo, Division de Desarrollo Economico y Social. Datos Basicos y Parametros Socio-Economicos de Venezuela 1950-1965. Washington, D.C., B.I.D., April 1967.

British Columbia. Bureau of Economics and Statistics, Department of Industrial Development, Trade and Commerce. Preliminary Statement of External Trade Through British Columbia Customs Ports. Annually.

Canada. Dominion Bureau of Statistics. D.B.S. 54-202 Shipping Report Part One. Annually.

Canada. Dominion Bureau of Statistics. D.B.S. 65-003 Trade of Canada. Exports by Country. Monthly.

Canada. Dominion Bureau of Statistics. D.B.S. 65-004 Trade of Canada. Exports by Country. Monthly

Canada. Dominion Bureau of Statistics. D.B.S. 65-006 Trade of Canada. Imports by Commodities. Monthly.

Canada. Dominion Bureau of Statistics. D.B.S. 65-201 Trade of Canada. Summary and Analytical Tables. Irregular.

Canada. Dominion Bureau of Statistics. D.B.S. 65-206 Trade of Canada. Exports by Mode of Transport. Annually.

Food and Agricultural Organization of the United Nations. Production Yearbook. Annually.

Food and Agricultural Organization of the United Nations. Trade Yearbook. Annually.

Maritime Research Inc. Charter Fixtures. New York. Annually.

International Wheat Council. World Wheat Statistics. Annually.

Newsprint Association of Canada. Newsprint Data. Annually.

Organization for Economic Co-operation and Development. Commodity Trade:Exports Annually.

United Nations. Demographic Yearbook. Annually.

United Nations. Statistical Yearbook. Annually.

United Nations. Yearbook of National Accounts. Annually.

United Nations. Yearbook of International Trade. Annually.

Venezuela. Ministerio de Fomento, Direccion General de Estadistica. Boletin de Comercio Exterior. Annually.

Venezuela. Banco Central de Venezuela. Informe Economico. Annually.