A STUDY OF WHEAT DELIVERY PATTERNS AT COUNTRY ELEVATORS IN WESTERN CANADA

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Completely producer-controlled country delivery patterns for wheat, given the state of technology and natural environment, are reflections of producers' behavior as sellers in the local markets during unrestricted marketing periods. The purpose of the present study was to examine the influences and effects of the Canadian Wheat Board operations upon the delivery patterns for wheat in Western, Canada and the provinces individually, since 1935.

The geographical area covered is the Designated Area under the Canadian Wheat Board Act, including the Provinces of Manitoba, Saskatchewan, and Alberta plus the Peace River area of British Columbia.

The delivery patterns for 1921/22 to 1935/36 covered in 'The Timing of Wheat Marketing in Western Canada' by Working and his findings are first reviewed to establish the characteristics of the pre-1935 delivery pattern. Working's method was applied to the data since 1935 to determine whether the delivery patterns differed from those prior to 1935 under his terms and definitions.

Working reported that there were more or less definite patterns during the crop years 1921/22 to 1935/36.

Calculated results showed that, during the crop years 1936/37 to 1939/40 under Wheat Board operations and in the absence of effective quota controls, the patterns were quite similar to those of the previous 14 years. During the period since the introduction of the quota system in 1940/41, the patterns have been fairly close to the prewar patterns only in good marketing years. Under conditions of congestion the patterns have been markedly different. The degree of deviation from the prewar patterns has been dependent upon the restrictiveness of the quotas.

An alternative method of classification is then applied to the delivery data in order to relate the post-1935 delivery patterns to the major factors influencing them.

It appeared that, under Board operations, the delivery pattern during a crop year is related to the World demand for wheat relative to the world supply of wheat. The quotas are less restrictive when the world demand is strong relative to supply. The less restrictive the quotas, the closer are the patterns to the prewar ones. Under the quota system, transportation conditions and the capacity of storage facilities relative to the size of the seasonal supplies appear to be the limiting factors of deliveries, especially in the years of heavy surplus stocks.

Under the quota system, the delivery patterns for wheat in the province of Manitoba have had both higher average

weekly delivery rates and greater seasonal variations than the corresponding patterns in the other provinces. When the crop years 1945/46 to 1949/50, during which quotas were actually or practically open, are compared with the crop years 1954/55 to 1958/59, when quotas were quite restrictive, wheat deliveries in Manitoba have tended to be more adversely affected by quotas in terms of immediacy of deliveries, but less adversely affected in terms of proportions of the season's supplies delivered, than those in the other provinces.

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CHAPTER I

INTRODUCTION

I. A BRIEF HISTORICAL REVIEW

Canada is one of the world's greatest commercial wheat-producing countries. Her dependence upon wheat exports has made the wheat industry subject to changing world as well as domestic conditions.[1] Evolution in the industry has been slow and gradual, especially in its marketing system. In a period when the wheat economy was growing rapidly, to protect the interests of farmers and other concerns and to regularize the grain trade, the Manitoba Grain Act was passed in 1900, and later the Canadian Grain Act in 1912.[2] To cope with war and immediate postwar emergencies, the Board of Grain Supervisors was established in 1917 to handle the 1917 and most of the 1918 crop. A monopoly Canadian Wheat Board was established in 1919 to market the remainder of the 1918 crop and the 1919 crop.[3] During the recession of the early 1920s, there were beginnings of a wheat pooling

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[1]Easterbrook, W. T. and Aitken, Hugh G. J., Canadian Economic History (Toronto: The Macmillan Company of Canada Ltd., 1958), Chapter XX.

[2]Fowke, V. C., Canadian Agricultural Policy, the Historical Pattern (Toronto: The University of Toronto Press, 1947), Chapter IX.

[3]Grindley, T. W., "The Canadian Wheat Board", The

system to attempt to influence and stabilize the price level of wheat.[4] Inspired by Aaron Sapiro, a young American lawyer, the Alberta Pool was organized in 1923. In the next year, Saskatchewan and Manitoba followed suit, and the Canadian Cooperative Wheat Producers, Ltd. was formed to serve as the provincial Pools' central selling agency.[5] From 1930-35 under the Wheat Stabilization Act and through future tradings, wheat stabilization operations were conducted by Mr. McFarland, the manager of the Central Selling Agency appointed by the Federal government.[6] As a result of continuing strong demands by wheat producers, the Canadian Wheat Board was re-established on July 5, 1935, and was operated on a voluntary basis. During World War II, to meet heavy commitments to the Allies the Board was given monopoly power by an Amendment passed on September 27, 1943.[7]

II. EFFECTS OF BOARD MARKETING

According to economic theory, prices for wheat

Canada Year Book 1939 (Ottawa: King's Printer, 1939), p. 569.

[4]MacGibbon, D. A., The Canadian Grain Trade 1931-51 (Toronto: The University of Toronto Press, 1952), p. 173.

[5]Davisson, W. P., Pooling Wheat in Canada (Ottawa: The Graphic Publishers, Ltd., 1927)

[6]MacGibbon, op. cit., p. 17.

[7]Ibid., p. 89.

should affect the manner of wheat flow through marketing channels during a crop year, at least to a certain extent. The manner in which wheat flows in turn has important influences on wheat prices, farm incomes, and thus the manner of the flow of farm incomes from wheat sales. No detailed studies have been made on such questions as:

1. Whether the manner in which wheat flows through marketing channels in each crop year is different under different marketing system, and whether all provinces are similarly affected.

2. If they are different, what the main characteristics of the differences are.

3. If differences are found, how they might be explained.

4. The impact of different delivery patterns upon prices and income flows.

These questions may be important to Canadian wheat producers and other concerns; full research into them is, however, beyond the scope of this project. This study is limited to the first step of marketing, or off-farm sales only. Thus the relevant problems considered here are:

1. Whether off-farm wheat sales in each crop year have different patterns under different marketing systems, for each province as well as the whole Wheat Board area.

2. What the primary characteristics of delivery

patterns are.

3. How differences can be accounted for or explained.

This study will treat these three problems and serve as a basis for further studies.

III. SUBJECT MATTER AND OBJECTIVES

The subject matter of this study is the timing of wheat deliveries at country elevators in Western Canada, or in other words, the patterns of physical wheat flows from farms to country elevators for different crop years.

Objectives of this study may be stated as follows:

1. To compile data on wheat deliveries in an organized form for use in other studies related to this particular subject;

2. To identify and explain the delivery patterns;

3. To locate problematic areas and to formulate and state, if possible, the problems to which further studies may or need be devoted.

IV. DEFINITION OF A DELIVERY PATTERN

A country delivery pattern for wheat may be defined as the distribution of wheat deliveries made over the time period of one crop year.

Usually, not many farmers sell the entire merchantable portion of a crop. The ex ante available wheat supply of a

farm for a given crop year can be estimated to be equal to the new crop, plus the carryover from the preceding crop year, and minus an amount reserved for seed, feed and other farm uses. The ex post available wheat supply is equal to the total wheat deliveries made from the farm during the crop year plus the year-end salable farm stocks. For the Western Canadian crop as a whole, both the ex ante and ex post totals can also be calculated by summing up respectively the figures for individual farmers. Provided that every farmer has a planned marketing schedule for his produce, the aggregate of all the schedules whould be a planned delivery pattern for the Western Canadian crop as a whole. If all ex ante data were available, it would be possible to see much more clearly how, under given circumstances, farmers would plan, at the beginning of a crop year, on-farm dispositions and marketings of wheat over the crop year; and, by comparing the ex post pattern against the ex ante, it would be possible to see how farmers would modify their plans in response to a change or changes in one or more of the marketing and other conditions. But what can be obtained are only data of the ex post category. More specifically, under these circumstances, a country delivery pattern may be defined as the distribution of wheat deliveries, from farms to country elevators and other local shipping facilities, out of the seasonal supplies, over the time period of one crop year.

V. FARM DISPOSITIONS

Even based on the ex post data, the items of seed, feed and other on-farm uses of wheat are not so unimportant as can be ignored in any grain marketing study concerning general aspects. The emphasis of the present study mainly lies, from the ex post point of view, on the important characteristics of the wheat delivery patterns and how the patterns are affected by various influencing factors. Lack of adequate data on wheat utilization on farms makes it unfeasible to examine the effect of such uses on marketing patterns. For such a commercial wheat-producing area, however, omission of wheat used on farms will not likely cause too serious problems in the analysis.

VI. HYPOTHESES

1. As reported by Working,[8] there was a typical normal pattern of wheat deliveries from farms to country elevators under conditions of an open market. As long as the deliveries were completely farmer-controlled, the patterns for different crop years were more or less similar to each other. Many factors could affect the wheat delivery pattern. But the changes made in the wheat marketing system before July 5, 1935--the day on which the voluntary Canadian

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[8] Working, H., "The Timing of Wheat Marketing in Western Canada", Wheat Studies, 8:33-64, October, 1936.

Wheat Board was established--did not restrict deliveries, although some of them might influence the delivery pattern, through pricing and marketing policies, because:

1). The Grain Acts were passed to regularize the trade in grain rather than to restrict or control off-farm wheat flows;

2). Neither the Board of Grain Supervisors in 1917-18 nor the monopoly Canadian Wheat Board in 1919 put any limit on wheat deliveries;

3). The main objective of the three Pools was to influence and stabilize wheat price levels by influencing central market supplies. The Pools did not refuse to take members' wheat deliveries;

4). The wheat stabilization operations were conducted by Mr. McFarland during the 1930-35 period either to maintain the prevailing market price of wheat or to raise wheat prices to reasonable levels through purchase and storage programs for cash wheat and/or purchases and sales in the futures market. Farmer deliveries were not restricted.

5). During the period 1935-43 of the operations of the Canadian Wheat Board, the predominant market features were similar to those of the competitive open market. Unless measures were adopted by the Board to limit deliveries from farms to country elevators, the patterns would be nearly the same as the normal pattern under the open market.

Whether or not, and if so how much, the patterns for later years were affected by the board's marketing control measures in times of necessity depended upon the circumstances of the period and the characteristics of the respective measures.

6). During the time period since the Board was given monopoly power on September 27, 1943, it has periodically applied controls over wheat deliveries. It is hypothesized that the delivery patterns for the crop years from 1943/44 on are different from the typical pattern of earlier years. It is further hypothesized that the degree of the restrictiveness of the control measures is a significant factor in determining how much different the patterns are from the normal free market pattern.

7). The delivery patterns by provinces are component patterns of the aggregate pattern for Western Canada. It is hypothesized here that the effect of given marketing control measures in influencing the component patterns during a crop year would be similar to that on the aggregate pattern, and that the component patterns might not necessarily be equally affected.

VII. IMPORTANCE OF THE STUDY

The objective of the Wheat Board is stated in the Canadian Wheat Board Act, 1935, as 'the marketing in an orderly manner in interprovincial and export trade, of

grain gorwn in Canada'.[9] Should the hypotheses stated in the preceding section be proven true, the present study would provide information necessary for evaluating Board operations in achieving this objective.

However, 'orderly' marketing is not defined in the Act. Theoretically, the manner in which goods flow from producers to consumers may affect price and hence returns from sales. From the point of view of an entrepreneur, any method of marketing that will maximize net returns from sales can be called marketing in an orderly manner. Similarly, any method of marketing that will stabilize the price of a certain commodity may be termed as marketing in an orderly manner. More specifically, the importance of the present study is in providing part of the information necessary for assessing Board operations in achieving its object of 'orderly' marketing of wheat in terms of increased returns to producers, costs incurred, and equity of delivery opportunities among producers.

VIII. SCOPE AND SOURCE OF DATA

The time period covered is from the crop year 1936/37 to 1958/59. The years from 1921/22 to 1935/36, which were used in a similar study by Working, will also be introduced

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[9]The Canadian Wheat Board Act 1935, Part I.

for the purpose of comparison. The geographical area covered is the Designated Area under the Canadian Wheat Board Act of 1935, including the provinces of Manitoba, Saskatchewan, and Alberta plus the Peace River area of British Columbia, together sowing an average of close to twenty four million acres in wheat each year, or about 97% of the total Canadian acreage; and producing an average of 490 million bushels of wheat each year, or more than 95% of all Canadian wheat as indicated in Table I. For the prairie region as a whole, data on weekly country deliveries are taken from the Wheat Situation published by the Dominion Bureau of Statistics for the crop years 1936/37 to 1940/41; and for each of the three provinces, data of the same kind are taken from the Annual Crop Year Statements by the Board of Grain Commissioners for the crop years 1941/42 to 1958/59.

IX. METHODOLOGY

If data used in social studies were repeatable, it would be easy to determine the exact net differences between different marketing systems applied to a given environment as a basis for appraisal of these systems. But social data are not repeatable. Unless there can be found, despite other complicating factors, distinctively different general country delivery patterns under at least two particular marketing conditions, no meaningful conclusions could be drawn from

TABLE I

AVERAGE SEEDED ACREAGE AND PRODUCTION OF WHEAT IN CANADA*

	Seeded Acreage[a]		Production[a]	
	Thousand acres	Percent	Thousand bushels	Percent
Eastern Provinces	712	2.9	23,058	4.7
Western Provinces	23,838	97.1	467,307	95.3
All Canada	24,550	100.0	490,365	100.0

*Data from Handbook of Agricultural Statistics, Pt. I.

[a]Ten-year average, 1949/50 to 1958/59.

this study. To approach the problem this way, the Canadian wheat marketing history is separated into three periods, namely:

1. Open market period--before 1935,

2. Open market with voluntary Canadian Wheat Board--1935 to 1943,

3. Monopoly Canadian Wheat Board--after 1943.

In subsequent calculations, annual totals are equal to all off-farm sales plus total reported salable farm stocks. For each crop year, weekly wheat delivery rates, including all wheats, both in bushels and in percentage of annual totals are plotted against time, starting August 1 of one calendar year to July the 31st of the next. Allocations had to be made of deliveries in the first and last weeks of each crop year to the different crop years because delivery overlap the year ends. Average weekly delivery rates for each crop year, deviations of each week from the annual average, and average weekly deviations for each crop year are also computed to show the pattern of wheat deliveries to country elevators.

The bases for comparison adopted are somewhat arbitrary. For this particular study more than one method might be chosen. One method is superior to another if within the defined scope of a study it can provide more consistency and preserve comparability better than the other. Yet

there are cases where only one particular method is capable of application.

Two different methods are used in the present study: Working's method and an alternative one.

Working's Method

The first of the two was the method used by Working in his study titled 'The Timing of Wheat Marketing in Western Canada'. He observed that, under the open market system, there were two outstanding common features of the wheat delivery patterns in the Prairie Provinces of Canada. They were: (1) "the rapid rate at which deliveries are made in the early autumn";[10] and (2) "the uniformity of percentage rates of delivery in corresponding periods of different years."[11] His method seems to have been devised on the basis of these observed characteristics.

He first aptly defined "the period of rapid marketing in each season as that in which weekly deliveries were in excess of 3 per cent of the seasonal total."[12] He then proceeded to divide the seasonal pattern of wheat marketing into three movements by designating:

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[10] Working, op. cit., p. 33.

[11] Ibid.

[12] Ibid., pp. 42-43.

1. the "deliveries during this period of rapid marketing, with the addition of the small weekly deliveries made earlier in each season" as "comprising the main movement in the country marketing of the season's supplies";[13]

2. "the deliveries from the close of the main movement to the end of January as a secondary movement";[14] and

3. "only the deliveries after the end of January as deferred"[15] movement.

He further divided the period of main movement into three subperiods:

> (1) the interval between the beginning of rapid marketing and the date on which the first one-fourth of the season's deliveries are completed; (2) the interval occupied by delivery of the second one-fourth of the seasonal total; and (3) the interval occupied by the remainder or 'tail' of the main movement.[16]

For each of the fifteen crop years (1921/1922 to 1935/36) covered in his study, wheat delivery rates in percentages were computed. The significant calendar dates marking the start and end of each of the three subperiods were spotted and the length of each subperiod was calculated

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[13] Ibid., p. 43.

[14] Ibid., p. 51.

[15] Ibid.,

[16] Ibid., p. 55.

in days. Computations of total deliveries made in main movement, early slow marketing and 'tail' were done to arrive at 'average per week' values for each of the subperiods. Similar but much simpler computations were also performed for the secondary and deferred movements.

His main purpose for doing all these was, to illustrate more conveniently the important common characteristics of the wheat delivery patterns and to account for the differences between individual seasonal patterns by comparing the corresponding periods and subperiods, so defined, of different crop years.

The Alternative Method

During the period since the Canadian Wheat Board was established in 1935, there have been crop years in which the 'rapid rate' of wheat country deliveries in the early autumn disappeared altogether. There did not exist much 'uniformity' of percentage rates of delivery in corresponding periods of different crop years either. As a result the definitions put forward and the analytical method advanced by Working in his study are no longer meaningful for the years since 1935 as they were for the years before 1935. Consequently, the designing of a suitable method to supplement Working's was necessary.

Historically and traditionally, most of the Canadian export wheat and wheat products are sold to European

countries. The Eastern Canadian provinces also buy wheat and wheat products from the Prairie Provinces either to fill the gap between their own production and consumption, or to raise the quality of their wheat products by mixing high quality Western wheat with their own. Owing to this characteristic market structure, the major portion of the salable amount of each Western wheat crop is directed eastward for further disposition. Most of the wheat shipped eastward is moved through the Lakehead terminals at Fort William and Port Arthur because of their strategically important geographical location in the inland transportation system of Canada.

Secondly, the seasonal pattern of wheat shipments from Fort William and Port Arthur is, given all other conditions, determined by two important factors, namely: (1) the difference between rail and lake freight rates for wheat; and (2) the closing and opening dates of navigation on the Lakes. The higher the rail freight rate is than the lake freight rate, the more is the seasonal pattern of wheat shipments from these two ports affected by the closing and opening dates of the Lakes. Rail transportation for wheat is relatively expensive as compared with water transportation.

For the purpose of comparing and explaining the different seasonal delivery patterns, the alternative method is one in which periods of wheat marketings of a crop year

are defined in terms of calendar dates with special reference to the typical characteristics of the Canadian trade and inland transportation systems. Some evidence for this will be given later. The three wheat country marketing periods and two subperiods of a crop year are designated and defined as follows:

1. The time period from August 1 to the navigation closing date of a crop year is designated as the period of early marketings;

2. The time period from the navigation closing date to the navigation opening date the next spring is designated as the period of limited marketings;

3. The time period from February 1 to the navigation opening date is designated as the interval of conditional marketings;

4. The time period from the navigation closing date to January 31 is designated as the interval of supplementary marketings;

5. The time period from the navigation opening date to July 31 of a crop year is designated as the period of late marketings.

In Chart 1, as designated, the two curves show the average seasonal country delivery patterns, both expressed in percentages of seasonal total supply, for Western Canadian wheat for the two periods, 1921/22 to 1941/42 and

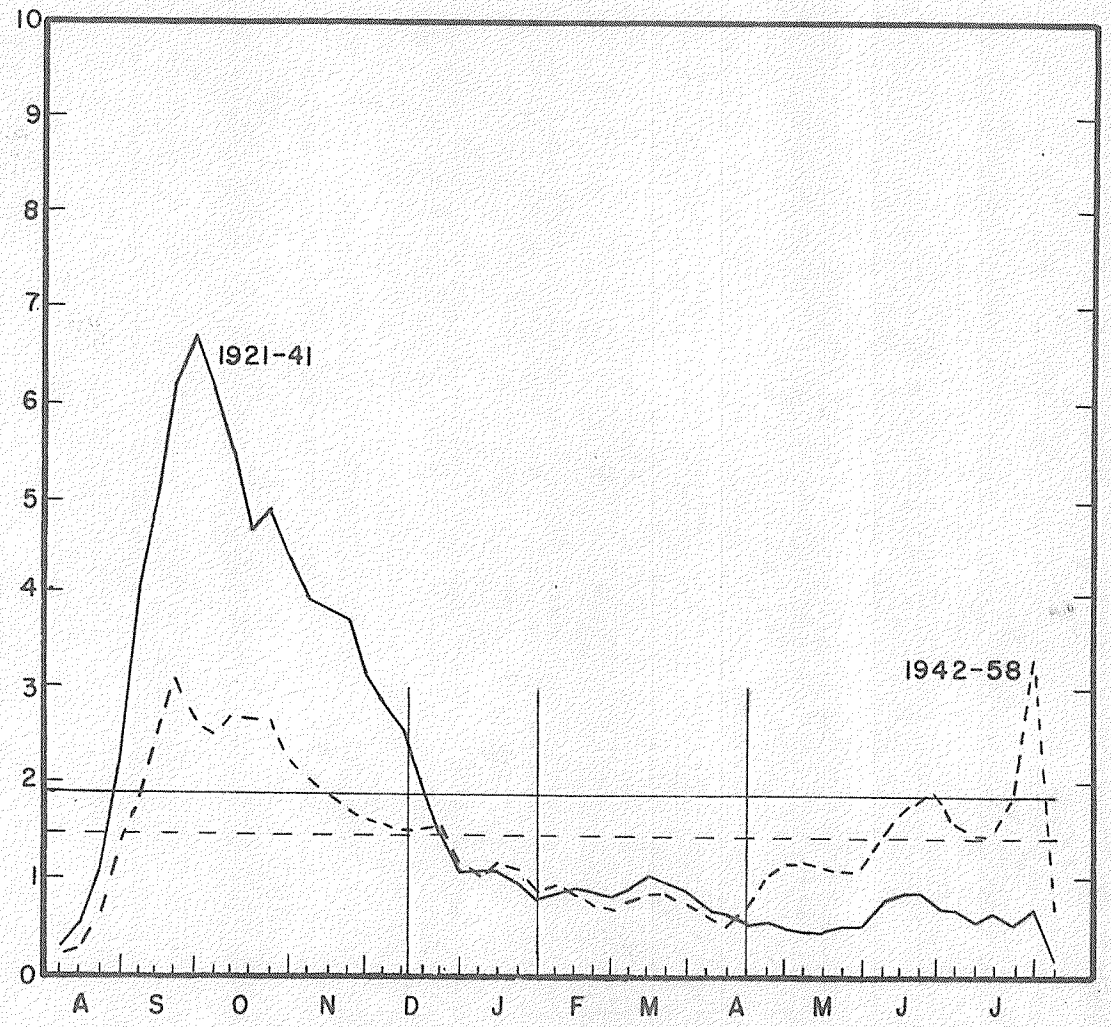

CHART I. PERCENTAGE WEEKLY DELIVERY RATES OF WHEAT IN WESTERN CANADA, 1921/22 to 1941/42 AVERAGE AND 1942/43 to 1958/59 AVERAGE

(Data for the crop years 1921/22 to 1935/36 are from Appendix Table II in "The Timing of Wheat Marketing in Western Canada" by Working; for the crop years 1936/37 to 1948/59, from Appendix Table I of the present study.)

1942/43 to 1958/59, respectively. The two horizontal lines indicate the seasonal average weekly delivery rates for the average patterns. The first vertical line marks the average navigation closing date, roughly December 13; the second vertical line, the 31st of January; and the third, the average navigation opening date, about April 15.

The first and third marketing periods are favorable in the sense that for most regions on the Prairies the transportation cost structure during these periods is at a relatively lower level than in the second. Futhermore, wheat country marketings in the first period are more favorable for producers than in the third because less farm storage expenses and risks are involved if they can sell their produce early in the season rather than late. Presumably in the interval between the close of navigation and January 31 there was still some commercial storage space available to take in more wheat without incurring extra costs and substantial deliveries were continued. Heavy deliveries could be made during the interval for conditional marketings only when temporary price or other advantages existed.

During the crop years 1921/22 to 1941/42 when country wheat marketings were not restricted in any way, an average of 74 per cent of the seasonal supplies was marketed during the period of early marketings. Of the other 26 per cent of the seasonal supply, an average of 15

per cent was delivered during the period of limited marketings; 9 per cent, the period of late marketings; and 2 per cent was in store as farm stocks, July 31. While in the years after 1941/42, when deliveries in many crop years were restricted by the quota system, an average of only 36 per cent was marketed during the period of early marketings. Of the rest, an average of about 16 per cent was marketed during the period of limited marketings; 25 per cent, during the period of late marketings; 23 per cent, in store as farm stocks, July 31. Noteworthy here is the close correspondence between the two average delivery patterns in the distribution of deliveries during the period of limited marketings.

X. FARMERS' DELIVERIES AND OFF-FARM SALES

Practically, farmers can make their wheat deliveries to country elevators without selling and getting paid for their grain. This was a common occurrence under the open market system. Deliveries and sales are thus two different things. Time intervals in between these two activities sometimes amounted to fifteen days or more (the maximum free of charge storage period at country elevators is 15 days, at terminals, 5 days).[17] Provision for this was made because farmers upon delivery might not feel satisfied with the dockage, grading or some other practices of the country

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[17]Nesbitt, L. D., The Story of Wheat (Calgary: Alberta Wheat Pool, 1949), p. 25.

elevators with which they dealt, and might apply for government inspection. In other cases farmers might prefer doing so for some anticipated price advantages. In fact, farmers' deliveries of their produce to the country elevators may be considered as a primary step of their sales-making process. For the sake of convenience these two terms can be used exchangeably without too serious confusion, and they are so used in the present study unless otherwise specified.

XI. INTRODUCTION TO THE FOLLOWING CHAPTERS

In Chapter II, the wheat delivery patterns 1921/22 to 1935/36 and Working's findings about these patterns are introduced and highlighted. The delivery patterns during the periods from 1936/37 to 1942/43 and from 1943/44 to 1958/59 are examined, by following Working's method in Chapters III and IV, respectively. In Chapter V all the patterns 1935/36 to 1958/59 are re-examined using the alternative method. In Chapter VI, the patterns by provinces under the quota system are compared. Summary and recommendations conclude the study in Chapter VII.

CHAPTER II

COUNTRY DELIVERY PATTERN FOR WHEAT UNDER THE OPEN MARKET SYSTEM

One of the prominent characteristics of agricultural production is that it takes a relatively long period. Almost all crops have definite growing seasons. The growing season of Western Canadian wheat is roughly from the beginning of May to the middle of August. Agriculture has been used as a classical example of an industry operating under free competition. But only during the period before July 5, 1935 has there been a purely open market system functioning for the wheat industry in Western Canada.

Under the mechanism of the open market system, wheat producers sold their produce at going market prices in the markets to buyers such as exporters, warehousing concerns and millers. So long as farmers were willing to sell, there was no limit on their sales. Given weather, marketing facilities, technological conditions, crop size, prices and price anticipations, etc., the exact country delivery pattern would be determined by wheat producers. Immediately after harvest, for financial, economic or other reasons, supplies offered for sale were heaviest. Heavy supplies had a depressing effect upon wheat prices. When prices were so low that the traders' expected future prices were high enough to more than

cover buying and storage costs, they would buy and store. As the season went by, the off-farm sales declined and the price of wheat rose gradually. During the crop year, the seasonal pattern of price movements and the pattern of country deliveries were thus the reverse of each other.

I. GENERAL FEATURES

As harvest time approached, each wheat producer would likely have a good idea about the portion of the estimated crop that he would put onto the market for sale within the coming marketing season, and about the time-quantity schedule for marketing the wheat during the crop year. Whether affected by weather conditions during the marketing season or not, it is unlikely that an individual farmer's delivery pattern would be continuous so as to spread his wheat marketings over each and every week of the crop year. For such a vast area as the great Canadian Prairie, where (1) agricultural regions in different natural environments and affected by different weather conditions have wheats reaching maturity at different times; (2) wheat farms are not of equal distance from the country elevators in their neighborhood; (3) storage availability is not the same on all farms; and (4) farmers are not homogeneous economically, financially and efficiency-wise, the aggregate time-quantity schedule of wheat marketings is different from that of the

individual producer. It is continuous. Besides, in selling their produce, the behaviour of most individual farmers, who were usually in a needy financial position around harvest and were faced with uncertainty about the future course of price movements under the open market system, was to sell large proportions of their seasonal supplies as soon as their crop was ready for market. As a result, for Western Canadian wheat as a whole, the marked feature of the aggregate delivery pattern for each single crop year was heavy marketings and high percentage delivery rates per week early in the marketing season. In his study covering the fifteen crop years from 1921/22 to 1935/36, Working described this:

> With favorable weather, deliveries each week for several weeks exceed 6 per cent of the total to be delivered during the season--a rate which, if continued, would permit delivery of the entire marketable supply in less than four months after the start of rapid marketing. The rate of delivery during the last fifteen seasons has never fallen as low as 3 per cent weekly, except temporarily, until 56-74 per cent of the deliveries have been completed. This period of the "main movement" is followed by a "secondary movement" at a much slower average rate and lasting until the end of January, by which time from 73 to 88 per cent of the season's deliveries have been made.[1]

The second outstanding feature characterising country delivery pattern for wheat under the open market was, as

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[1] Working, H., "The Timing of Wheat Marketing in Western Canada," Wheat Studies, 8:33, October, 1936.

reported by Working, the 'uniformity of percentage rates of delivery in corresponding periods of different years.' About this, he stated:

> Since the tendency is to market very rapidly in early autumn, it might be supposed that the relatively small deliveries represented by the first 50 per cent of the supply from a small crop would be completed in a shorter time than the first 50 per cent of deliveries from a bumper crop, requiring the marketing of twice as much wheat. Instead, the same percentage of total supply tends to be delivered each week whether the total be large or small.[2]

This feature best illustrates the likelihood that from one crop year to another farmers made roughly the same marketing decisions as to proportions of their seasonal supplies, rather than in physical quantities, to be marketed early and late in the season.

II. PARTICULAR FEATURES

The Main Movement

Following through his method as introduced in Chapter I, Working compiled two tables from the data. One was titled 'Significant Dates and Intervals in Country Wheat Marketing, 1921/22 to 1935/36,' shown here as Table II; the other, 'Rates of Marketing during Subperiods of the Main movement, 1921/22 to 1935/36,' shown here as Table III.

First one-fourth of deliveries. The early slow marketings during the period between August 1 and the date of

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[2] Ibid.

TABLE II.

SIGNIFICANT DATES AND INTERVALS IN COUNTRY WHEAT MARKETING, 1921/22 to 1935/36*

Crop year	Start of rapid marketing[a]	25 per cent point	50 per cent point	End of main movement[b]	75 per cent point	Length of intervals (days) To 25% point	Second 25%	'Tail'[c]	Third 25%
1921-22..	Sept. 2	Oct. 3	Oct. 28	Dec. 9	Dec.20	31	25	42	53
1922-23..	Sept. 1	Sept.29	Oct. 28	Dec. 8	Dec. 7	28	29	41	40
1923-24..	Sept. 7	Oct. 10	Nov. 15	Dec.14	Jan. 2	33	36	29	48
1924-25..	Sept.19	Oct. 9	Nov. 7	Dec. 5	Dec.19	20	29	28	42
1925-26..	Aug. 28	Sept.29	Nov. 10	Dec.11	Dec.12	32	42	31	32
1926-27..	Sept.17	Oct. 9	Nov. 5	Dec.10	Dec.18	22	27	35	43
1927-28..	Sept.23	Oct. 25	Nov. 22	Dec.16	Jan.18	32	28	24	57
1928-29..	Sept. 7	Sept.26	Oct. 30	Nov.30	Dec. 6	19	34	31	37
1929-30..	Aug. 30	Sept.12	Sept.30	Nov. 1	Nov. 6	13	18	32	37
1930-31..	Aug. 22	Sept.12	Oct. 18	Nov.21	Dec.17	21	36	34	60
1931-32..	Aug. 28	Oct. 5	Oct. 31	Nov.20	Jan.22	38	26	20	83
1932-33..	Sept. 2	Sept.20	Oct. 18	Oct.28	Jan.20	18	28	10	104
1933-34..	Aug. 18	Sept.19	Oct. 20	Nov. 3	Feb.15	32	31	14	118
1934-35..	Aug. 17	Sept.11	Oct. 17	Nov. 2	Jan.28	25	36	16	103
1935-36..	Aug. 30	Sept.18	Oct. 10	Nov. 1	Nov.28	19	22	22	49
Averages									
First 7..	Sept. 9	Oct. 7	Nov. 7	Dec.10	Dec.22	28.3	30.9	32.9	45.0
Last 7..	Aug. 25	Sept.18	Oct. 16	Nov. 6	Jan. 3	23.7	28.1	21.1	79.1

*From Working, "The Timing of Wheat Marketing in Western Canada," Wheat Studies, 8:44, October, 1936.

a. Weekly delivery rates in excess of 3 per cent of seasonal total.
b. Date at which delivery rate declined to 3 per cent or less.
c. Interval between completion of first 50 per cent of marketings and end of the main movement.

TABLE III

RATES OF MARKETING DURING SUBPERIODS OF THE MAIN MOVEMENT, 1921/22 TO 1935/36*

(per cent of seasonal total)

Crop year	Totals in			Average per week		
	Main movement[a]	Early slow marketing[b]	"Tail"[c]	To 25% point	Second 25% point	"Tail"
1921-22..	71.5	3.0	21.5	5.0	7.0	3.6
1922-23..	76.0	2.2	26.0	5.7	6.0	4.4
1923-24..	68.8	1.7	18.8	4.9	4.9	4.5
1924-25..	70.5	6.0	20.5	6.6	6.0	5.1
1925-26..	74.5	0.6	24.5	5.3	4.2	5.5
1926-27..	72.2	6.2	22.2	6.0	6.5	4.4
1927-28..	64.7	4.4	14.7	4.5	6.2	4.3
1928-29..	72.8	2.8	22.8	8.2	5.2	5.2
1929-30..	73.7	3.7	23.7	11.5	9.7	5.2
1930-31..	68.1	1.2	18.1	7.9	4.9	3.7
1931-32..	62.7	3.3	12.7	4.0	6.7	4.4
1932-33..	56.3	5.1	6.3	7.7	6.2	4.4
1933-34..	55.8	2.8	5.8	4.8	5.6	2.9
1934-35..	59.3	2.2	9.3	6.4	4.9	4.1
1935-36..	66.6	4.9	16.6	7.4	8.0	5.3
Averages						
First 7..	71.2	3.4	21.2	5.7	5.8	4.5
Last 7..	63.2	3.3	13.2	7.1	6.6	4.3

*From Working, "The Timing of Wheat Marketing in Western Canada," Wheat Studies, 8:45, October, 1936.

[a]Period up to end of rapid deliveries (excess of 3 per cent of seasonal total per week.

[b]Prior to beginning of rapid deliveries.

[c]Period of rapid marketing after 50 per cent of marketings have been completed.

start of rapid marketing comprised: (1) carryover from previous crop; and (2) deliveries from limited regions of earliest maturity. The date of start of rapid marketing thus reflected the deliveries of new wheat from a large area. After this point weekly delivery rates increased to a maximum of 10 per cent of the seasonal supply.[3]

By fitting into single equations as two variables the date of start of rapid marketing and the date on which the first 25 per cent of deliveries was completed for the two groups of crop years (the first seven years from 1921/22 to 1927/28 as a group and the last seven years from 1929/30 to 1935/36 as another) separately, Working was able to observe the functional relationships between these two variables as well as the differences between these two functions (see Chart II) as follows:

1. Both the equations had the same slope indicating that "... when rapid marketing started 10 days earlier, the 25 per cent point tended only about 5 days earlier"[4] He elaborated further: "The average rate at which the first one-fourth of the seasonal supply was delivered tended therefore to be slower when rapid marketing started early than when it started late."[5]

2. The introduction of the combine not only advanced in the later years the date of start of rapid marketing but

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[3] Ibid., p. 46.

[4] Ibid.

[5] Ibid.

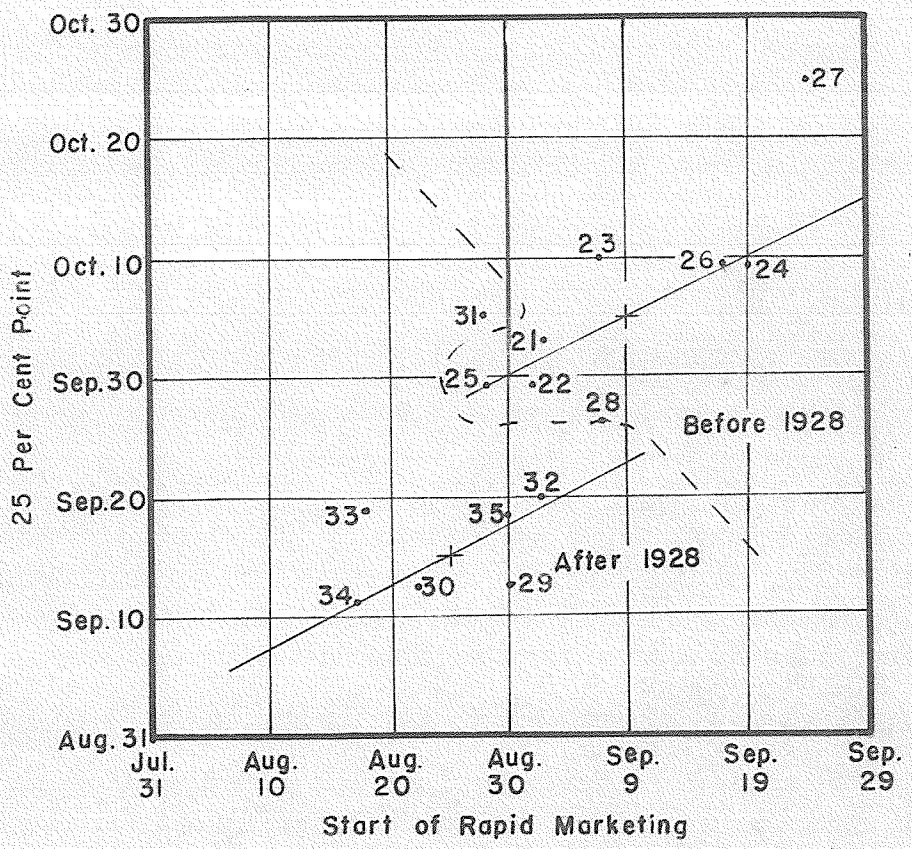

CHART II. RELATIONS BETWEEN DATES OF BEGINNING OF RAPID MARKETING AND 25 PER CENT, 1921-1935

(Chart 4 in "The Timing of Wheat Marketing in Western Canada" by Working. The crop year 1921/22 is labeled as 21, and similarly for other crop years and in subsequent charts. The upper line indicates the average relations between the two dates during the crop years 1921/22 to 1927/28; the lower, during the crop years 1929/30 to 1935/36.)

also shortened, rather than lengthened, the interval between the beginning of rapid marketing and the completion of the first 25 per cent of the deliveries. During the crop years 1929/30 to 1935/36 when the combine was in widespread use in Western Canada, rapid marketing had started 15 days earlier, from an average date of September 9 for the first group to August 25 for the second group; the 'normal' date of completion of the first 25 per cent of the seasonal supply had also advanced from October 7 to September 18, about 20 days. The average weekly delivery rate during this interval had been increased from 5.7 to 7.1 per cent of season's total supply. Note that the 'normal' dates meant dates read from the chart on which the curves of the above-mentioned equations are drawn.[6]

Second one-fourth of deliveries. Using the least squares technique, a single equation line was again fitted to the data (see Chart III). The relations between the 25 per cent point and the 50 per cent point of seasonal supply were indicated by the position and slope of the line. It appeared that, wheatever the date of the 25 per cent point, the interval between these two significant dates tended to be 30 days, for all the years covered in Working's study.[7]

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[6] Ibid.

[7] Ibid., p. 47.

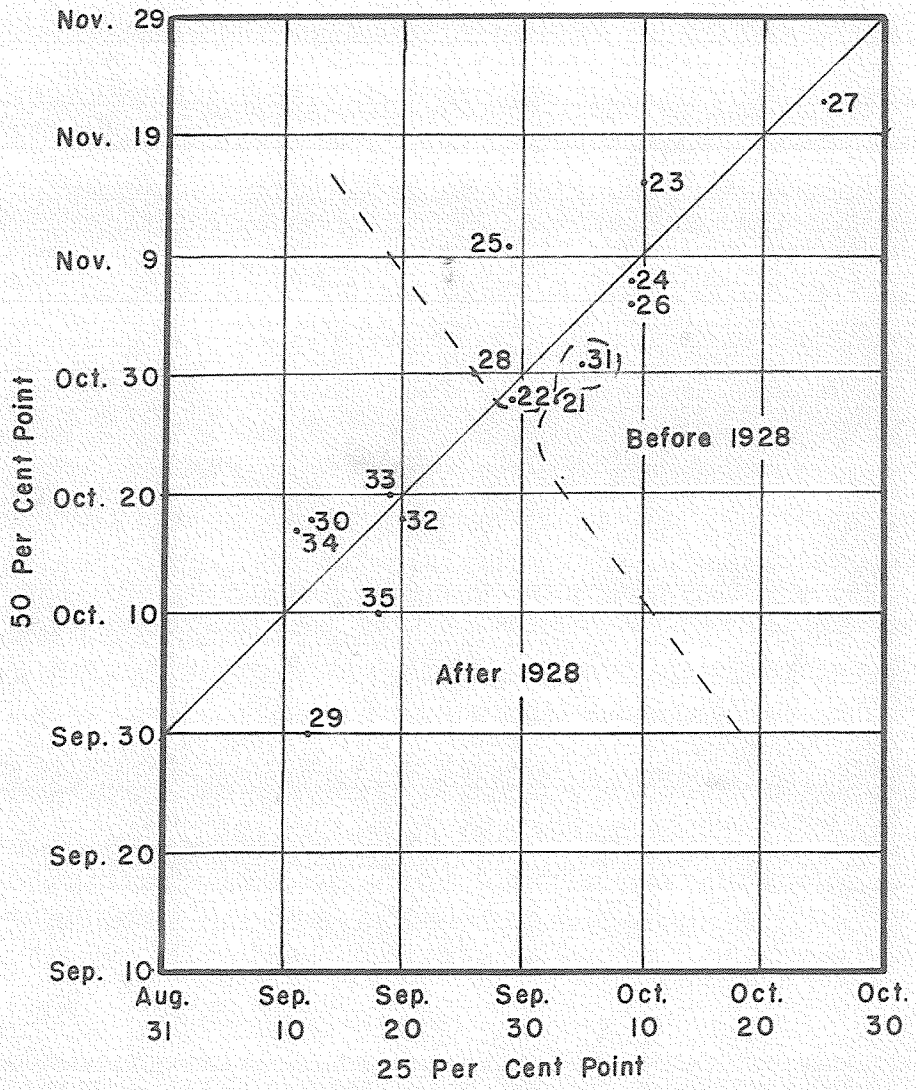

CHART III. RELATIONS BETWEEN DATES OF 25 AND 50 PER CENT POINTS, 1921-35 (Chart 5 in "The Timing of Wheat Marketing in Western Canada" by Working. The crop year 1921/22 is labeled as 21, and similarly for other crop years. The straight line indicates the average relations between the two dates during the crop years 1921/22 to 1935/36.)

As to the influences of weather conditions and prices on the weekly percentage delivery rates during this interval, for all the years covered in his study, Working described the results from his investigation:

> It appears, therefore, that under normal conditions the second one-fourth of the deliveries tends to be made at a rate of 6 to 7 per cent weekly, regardless of the total quantity to be marketed; that unfavorable weather conditions may reduce the average rate of delivery to 5 or even to 4 per cent, regardless of the total quantity to be marketed; and that a price incentive may greatly accelerate the percentage rate of delivery, provided the total supply to be delivered is small.[8]

With favorable weather conditions, delivery rates during this interval sometimes had been declining progressively, but more commonly had been approximately uniform.[9]

'Tail' of main movement. Referring to Working's definition, the 'tail' of the main movement comprised the deliveries of the main movement made after the 50 per cent point of the seasonal supply. Thus the percentage of deliveries marketed in the 'tail' reflected directly the proportion of the seasonal supply delivered during the main movement. For example, during the 15 years, when the latter varied from a maximum of 76 per cent in 1922/23 to a minimum of 55.8 per cent of the seasonal supply in 1933/34, the

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[8] Ibid., p. 49.

[9] Ibid., p. 47.

former varied correspondingly from 26 per cent to 5.8 per cent of the seasonal supply.[10]

Under normal conditions (ordinary weather conditions and prices), the average weekly delivery rate tended to be 4.4 per cent of the seasonal supply.[11] This rate varied from a high of 5.5 per cent in 1925/26 to a low of only 2.9 per cent in 1933/34.

The interval occupied by the 'tail' was inversely affected by the average weekly delivery rate; but it was chiefly determined by the amount of wheat, expressed in percentage of the seasonal supply, delivered in the 'tail' of the main movement.[12]

Given the proportion of the seasonal supply to be delivered in the main movement, favorable weather conditions resulted in higher than normal average weekly rates, shorter interval; unfavorable weather conditions resulted conversely. But if infavorable weather conditions occurred a few weeks before the end of the main movement, its effects tended to terminate the main movement earlier than it normally would.[13]

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[10] Ibid., p. 49.

[11] Ibid., pp. 49-50.

[12] Ibid., p. 49.

[13] Ibid., p. 50.

The Secondary Movement

Working summarized what he thought to be the relations among the three principal marketing movements as follows:

> Early in the marketing season farmers decide more or less consciously to hold a certain percentage of their marketable supply for delivery after the end of January. The proportion reserved for such deferred marketing has varied from about 12 to 27 per cent. Of the remaining 73 to 88 per cent, the greater part is delivered rapidly, under a good deal of pressure, and constitutes the main movement of the supply. As the task of delivering the portion not to be held for deferred marketing nears its end, however, effort is relaxed and deliveries proceed at a more leisurely pace. The secondary movement constitutes that portion of the supply which farmers do not care to hold for deferred marketing, yet are content to deliver more or less at their convenience.[14]

During the first eight of the fifteen years, the main movement had continued until late November or into December, with only 7 to 9 weeks left for the secondary movement. To market about 12.6 per cent of the seasonal supply (see Table IV) commonly during this movement, deliveries sometimes had been made at a rate 1.7 per cent or more. During the last seven crop years, through the widespread use of the combine, earlier and more rapid wheat marketings during the main movement tended to leave three more weeks, now ranging from 10 to 14 weeks, for the secondary movement than could be expected otherwise. The weekly delivery rate had averaged about 1.26 per cent of the seasonal total.[15]

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[14] Ibid., p. 51.

[15] Ibid., pp. 51-52.

TABLE IV

QUANTITIES AND RATES OF MARKETING IN THE SECONDARY MOVEMENT, 1921/22 TO 1935/36*

Crop year	Deliveries		Number of days	Average percentage weekly
	Million bushels	Percentage		
1921-22	24.8	10.3	53	1.36
1922-23	28.0	8.6	54	1.12
1923-24	47.9	11.2	48	1.64
1924-25	28.4	12.9	57	1.58
1925-26	45.1	12.5	51	1.71
1926-27	43.6	12.7	52	1.71
1927-28	57.8	14.0	46	2.13
1928-29	61.3	12.8	62	1.44
1929-30	34.9	14.4	91	1.11
1930-31	37.9	11.7	71	1.15
1931-32	37.1	13.7	72	1.33
1932-33	72.2	18.9	95	1.39
1933-34	40.1	17.0	89	1.34
1934-35	37.5	15.9	90	1.24
1935-36	37.2	16.8	91	1.29

*From Working, "The Timing of Wheat Marketing in Western Canada," Wheat Studies, 8:52, October, 1936. The secondary movement refers to the deliveries made from the time when rapid delivery rates (in excess of 3 per cent of seasonal supply per week) cease and the end of January.

The Deferred Movement

The amount of wheat reserved for delivery during the deferred movement was determined by two independent variables, namely: (1) the total seasonal supply; and (2) the percentage of the seasonal supply reserved for deferred marketing. The former was determined by the size of the Western Canadian wheat crop; while the latter was dependent upon the possible gain anticipated by farmers from postponing sales. Yet there existed no definite relationship between the physical quantity of wheat reserved for deferred deliveries and the percentage with which that quantity was expressed as a proportion of the seasonal supply (see Table V).[16]

In trying to visualize how deliveries had been timed during the deferred movement, Working subdivided the period beginning February 1 into four subperiods: (1) February-April, (2) May-June, (3) July, and (4) after July. By calculating deliveries made during each subperiod as a percentage of the total deferred marketings, he was enabled to recognize some important features[17] (see Table V):

1. For the first eight years from 1921/22 to 1928/29, about two-thirds of the deferred deliveries were made in February-April, one-fourth in May-June, 7 per cent both during July and as farm stocks, July 31.

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[16] Ibid., p. 53.

[17] Ibid., pp. 53-55.

TABLE V

DELIVERIES IN THE DEFERRED MOVEMENT, 1921/22 TO 1935/36*

Crop year	Million bushels		Deferred as percentage of season	Percentage of deferred movement			
	Season	Deferred movement		Feb.-April	May-June	July	After July
1921-22	240.2	43.6	18.2	61.1	23.5	6.5	8.9
1922-23	325.1	49.9	15.3	66.7	21.3	5.8	6.2
1923-24	426.1	84.9	19.9	64.9	20.7	5.4	9.0
1924-25	221.1	36.9	16.7	60.8	26.3	8.1	4.8
1925-26	361.4	47.2	13.1	64.6	21.2	8.5	5.7
1926-27	342.5	51.6	15.1	62.6	20.9	9.6	6.9
1927-28	413.9	88.1	21.3	62.2	27.1	6.9	3.8
1928-29	480.4	69.1	14.4	67.2	19.3	6.3	7.2
1929-30	241.5	28.7	11.9	45.5	28.6	10.7	15.2
1930-31	324.9	65.7	20.2	42.4	22.2	8.3	27.1
1931-32	271.0	64.0	23.6	48.7	37.2	5.0	9.1
1932-33	381.7	94.6	24.8	45.2	32.0	11.1	11.7
1933-34	235.3	64.0	27.2	38.6	32.3	17.1	12.0
1934-35	235.5	58.4	24.8	40.3	25.6	21.6	12.5
1935-36	221.6	36.7	16.6	37.8	38.9	10.9	12.4

*From Working, "The Timing of Wheat Marketing in Western Canada, Wheat Studies, 8:54, October, 1936. The deferred movement is defined as deliveries after the end of January.

2. Since 1929/30 the proportion of the deferred marketings delivered in February-April had been smaller, with increases spreading over the other subperiods, including farm stocks, July 31 (see Table V).

III. THE INFLUENCING FACTORS

Price and Price Judgements

Influence of price and price judgements on the country delivery pattern for Western Canadian wheat was mainly delivered before and after January 31 respectively. Farmers tended to lengthen the main movement, rather than to speed up deliveries weekly during the main movement, when they had decided to market a larger than usual percentage of the seasonal supply before January 31. But the rates of delivery in all the subperiods of the deferred movement tended to be affected equally when the proportion of the seasonal supply reserved for deferred marketings was unusually large or small.[18]

Working described the influence of price and price judgements:

> Price and price judgements have had relatively little influence on the timing of country deliveries over short intervals. Few farmers make much attempt to guess

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[18] *Ibid.*, p. 55.

> whether prices will be higher next week or next month. But if prices in the late autumn are unsatisfactory, farmers may withold for deferred marketing 15 per cent more of the season's supply than they otherwise would.[19]

The Combine

Technological innovations have been classified in economic theories as one of the exogenous factors. When a change in any exogenous factor is introduced to a certain economic function, its effect is to shift and change the function. Introduction of the combine on the Prairies in 1928/29 had the same effect on wheat marketings in the later years. Since the combine came into widespread use in Western Canada after 1928/29, the date of start of rapid marketing had been advanced about 15 days; and the date of completion of the first 25 per cent of the seasonal supply had been brought about three weeks earlier than in previous years.[20]

Weather Conditions

Farmers attempted to recover from delays caused by unfavorable weather conditions. But, according to Working, only "delays from bad weather occurring quite early in the period of rapid movement are more fully recovered, and delays occurring late are recovered to only a slight extent."[21]

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[19] Ibid., p. 34.

[20] Ibid., p. 33.

[21] Ibid., p. 48.

Crop Size

Since farmers tended to make their wheat marketing decisions in terms of proportions of their seasonal supplies, crop size had no significant effect on the seasonal delivery pattern calculated in percentages of the total seasonal supply.

CHAPTER III

COUNTRY DELIVERY PATTERNS FOR WHEAT UNDER OPEN MARKET WITH VOLUNTARY WHEAT BOARD (1935-43)

I. PRINCIPLES OF WHEAT BOARD OPERATION

During the crop years from 1935/36 to 1942/43, the Canadian Wheat Board was operated as follows:[1]

1. Prior to the commencement of a crop year, the Board announced the initial prices for the basic grades of wheat at different shipping points and set up a pool for the crop. Any loss occurred after the crop had been sold was to be carried by the Federal Treasury, and any surplus remaining after all the Board operation expenses was to be distributed to producers in the form of interim and final payments. The initial price was thus a guaranteed minimum price.

2. According to the terms of the Canadian Wheat Board Act 1935, wheat producers during this period had an option to sell their produce either in the open market or to the Wheat Board only when the Board's guaranteed minimum prices were above the market prices.

3. The Board did not take over marketing facilities. Instead, it used the trade's facilities by entering into agreement with the private companies.

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[1]Grindly, T. W., "The Canadian Wheat Board, "The Canada Year Book 1939 (Ottawa: King's Printer, 1939), p. 569.

4. The Board could have control over all the elevators licensed under the Canada Grain Act, and the transportation to and from any elevator, when some clauses of the Canadian Wheat Board Act were brought into effect.

II. THE BOARD AND COUNTRY WHEAT MARKETINGS

In fact, out of the eight crop years from 1935/36 to 1942/43 only in 1936/37 and 1937/38 did the Board refuse to take deliveries from farmers. No restrictions whatsoever were imposed by the Board on country deliveries up to the end of the 1938/39 crop year. In the crop year 1939/40, the first quota restriction was used in the form of a limitation of Board purchases of wheat to 5000 bushels from any one producer or farm unit in a single crop year.[2] The 1939 crop was large but the 5000-bushel restriction did not limit sales in the open market.

The elevator system was congested at the beginning of the 1940/41 crop year and, in view of another big crop, the 5000-bushel limitation was removed and the Board was given power to regulate deliveries. The Board for the first time issued permit books with an objective of dividing avail-

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[2] Davidson, C. B., et al., "The Canadian Wheat Board, 1939-46," The Canada Year Book 1947 (Ottawa: King's Printer and Controller of Stationery, 1947), p. 778.

able elevator space as fairly as possible among producers.[3]

With two big crops coming in a row, and with important export markets lost after the outbreak of the Second World War, a surplus was rapidly piling up. For the 1941/42 crop year, legislation was passed: (1) to reduce wheat acreage to 65 per cent of the 1940 level, quotas being issued in the form of bushels per authorized acre; (2) to limit the total marketings of Canadian wheat to 230 million bushels; and (3) to make a 1/45¢ per bushel per day storage payment to farmers for their wheat in store on farms.[4] Farmers could make wheat sales as before in the open market, however, but the total volume entering the marketing channels was controlled. This actually brought the use of the entire elevator system under the control of the Canadian Wheat Board. The 1941/42 crop was small, so by the beginning of December, 1941 all delivery points were on open quotas.[5]

In the 1942/43 crop year, the overall marketing limitation on wheat was set at 280 million bushels, and storage payments were continued. Quotas became very restrictive, for the 1942 crop was very large.

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[3] Ibid.

[4] Ibid.

[5] Ibid.

III. A CLASSIFICATION OF THE CROP YEARS

As mentioned in the preceding section, during this period the Wheat Board had operated differently to adapt to changing marketing conditions. What were the seasonal delivery patterns for wheat likely to be during this period? Did the degree that each individual pattern departed from those before 1935 depending on the extent to which each was affected by Board operations? Before looking into the data for answers, a classification of the crop years on the basis of different types of operations will be helpful.

1. The period without marketing controls and restrictions, 1935/36 to 1938/39:

During the years 1935/36 to 1938/39, the difference between the Board initial price and the free market price was the most important factor in determining the nature of market structure and, consequently, the delivery pattern for Western Canadian wheat. Within a crop year the Board took deliveries only when the market price was below the initial price for that particular year. At this point, a subdivision of the crop years under this group is in order.

1). The open market, 1936/37 and 1937/38. The initial price for both the crop years 1936/37 and 1937/38 was set at 87½¢ per bushel for No. 1 Northern at Fort William/Port Arthur or Vancouver. But 90¢ per bushel for the same wheat was set as the free market price level which the Board

would not take deliveries from producers. The market prices stayed above the 90¢ level throughout the two crop years; the Board did not take any deliveries.[6]

2). The open market with intermittent joint Wheat Board operations, 1935/36 and 1939/40.

In 1935/36, there were short periods in which the market price dropped below the initial price, which was set at 87½¢ per bushel for No. 1 Northern at Fort William/Port Arthur or Vancouver.[7] The situation was the same in 1939/40 when the initial price was set at 70¢ for the same wheat.[8]

3). The open market with the Wheat Board operating practically alone, 1938/39.

The initial price for the 1938/39 crop was set at 80¢ per bushel for No. 1 Northern at Fort William or Vancouver. The market price stayed below the initial price level throughout the crop year by a considerable margin. The Board took practically all the deliveries of the marketable wheat supply.[9]

2. The period with regulative marketing measures, 1940/41 and 1941/42.

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[6] Ibid.

[7] Ibid.

[8] Ibid.

[9] Ibid.

Wheat delivery was regulated through issuing of quotas, though the forms of quotas were not the same for these two crop years.[10] The 1941/42 crop year is grouped here due to the fact that the overall limitation of 230 million bushels applied to a small total seasonal wheat supply of 237 million bushels (ignoring the Eastern Canadian wheat) did not have any restrictive effect.

3. The period with restrictive marketing measures, 1942/43.

When a 280 million bushel limit was imposed in 1942/43 on a large total western wheat supply of 455 million bushels, the marketable portion was only 61.5 percent, and the pattern expressed in percentage terms would therefore be quite different from the others of this period. Quotas were of a restrictive nature.[11]

Possibly, if the seasonal total of actual deliveries in 1942/43 was used as a denominator in calculation of delivery rates, a pattern closer to those before 1935 might emerge. By so doing the restrictive effect of quotas can be eliminated, with only regulative effect left. Unfortunately, the pattern thus calculated would not be a sound basis for comparison. However, this assumption will be tested in the

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[10]There was no overall limitation on deliveries in 1940/41; the limitation on the 1941 crop was 230 million bushels.

[11]Davidson, et al., op. cit.

following sections.

IV. THE DELIVERY PATTERNS

This is a relatively short period including only eight crop years. Yet during the period the seasonal delivery patterns differed greatly from each other. A quick glance at the percentage delivery patterns in Chart IV (on page 47) will enable one to tell: (1) the almost complete disappearance of 'rapid' delivery rates in the early autumn of the 1942/43 crop year; and (2) the lack of 'uniformity' of percentage delivery rates between corresponding marketing periods of different crop years. To calculate a general pattern for all the eight crop years and generalize from it for prediction purposes as Working did is unwarranted due to two limitations: (1) that there are not enough observations; (2) that the delivery patterns for these crop years were affected differently by the varied and complicated Wheat Board marketing control measures. Consequently, the only approach is to compare the average patterns of each group of crop years, as classified in the preceding section, or even individual patterns, against those before 1935/36 and to account for their differences, or deviations, if possible. Under these circumstances, for purposes of comparison, Working's definitions and methods are followed.

Particular attention is called to the border-line 1935/36 crop year, which was also covered in Working's study.

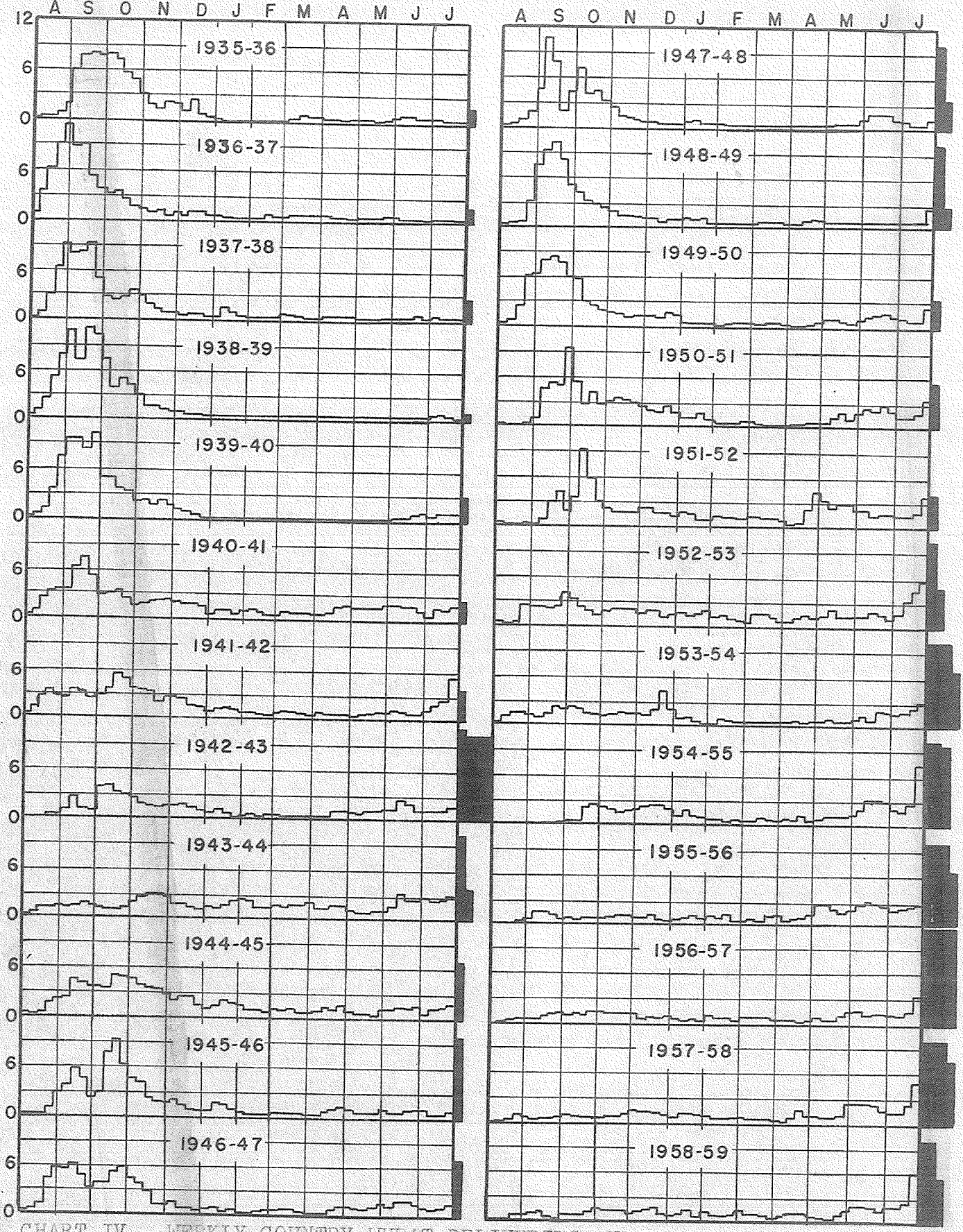

CHART IV. WEEKLY COUNTRY WHEAT DELIVERIES AND FARM STOCKS, JULY 31, IN PERCENTAGES, IN THE DESIGNATED AREA
(Computed from data in Appendix Tables I and II. Shaded areas at end end of each crop year represent farm carryovers on same scale as deliveries

The Main Movement

An average of 68.9 per cent of the seasonal supplies were delivered during the main movement in the crop years 1935/36 to 1939/40; 50 per cent in 1940/41 and 1941/42; and only a meager 13 per cent in 1942/43. Using the seasonal total marketings for 1942/43 as the denominator, the proportion delivered in the main movement was 35.4 per cent.

First one-fourth of deliveries. Start of rapid marketing in the crop years 1936/37 to 1939/40 was 11 days earlier, average about August 14, than the average date in the last seven crop years in Working's study, August 25. Even in 1940/41 and 1941/42 when wheat marketings were regulated by the Board, it was also 2 to 3 days earlier (see Table VI) than in 1929/30 to 1935/36, although later than in 1936/37 to 1939/40. The reason for rapid marketing to have started as late as October 2 in 1942/43 was twofold: bad weather conditions on the one hand and quota restrictions on the other. It was September 17, even using the total of actual deliveries as the denominator.

Coincidently, completion of the first 25 per cent of the seasonal supplies in 1936/37 to 1939/40, average September 7, was earlier by 11 days, the same as start of rapid marketing, than in the period from 1929/30 to 1935/36, average September 18. The first 25 per cent point was reached on much later dates in the other crop years of the

TABLE VI. SIGNIFICANT DATES AND INTERVALS IN COUNTRY WHEAT MARKETING, 1935/36 TO 1942/43 *

Crop year	Start of rapid marketing	25 per cent point	50 per cent point	End of main movement	75 per cent point[b]	Length of intervals (days) To 25% point[b]	Second 25%[b]	'Tail'[b]	Third 25%[b]
1935-36	Aug. 30	Sept.18	Oct. 10	Nov. 1	Nov.28	19	22	22	49
1936-37	Aug. 7	Sept. 1	Sept.18	Oct.16	Nov.16	26	17	28	60
1937-38	Aug. 13	Sept. 8	Oct. 1	Nov. 5	Dec.21	27	24	36	82
1938-39	Aug. 19	Sept. 8	Sept.27	Oct.28	Oct.29	21	19	31	33
1939-40	Aug. 18	Sept.11	Sept.28	Oct.26	Nov.18	25	17	28	52
1940-41	Aug. 23	Sept.25	Nov. 25	Oct.25	Apr.16	34	-	-	-
1941-42	Aug. 22	Oct. 10	Nov. 24	Dec.12	Apr.12	51	46	18	-
1942-43	Oct. 2	Nov. 27	June 18	Oct.16	-	-	-	-	-
1942-43[a]	Sept.12	Oct. 14	Dec. 18	Nov. 6	May 20	32	-	-	-
Average[c]									
1929-35	Aug. 25	Sept.18	Oct. 16	Nov. 6	Jan. 3	23.7	28.1	21.1	79.1
1936-39	Aug. 14	Sept. 7	Sept.26	Oct.26	Nov.21	25	19	31	57

*The significant dates and intervals for the 1935/36 crop year are from Table II; the rest are calculated from Appendix Tables I and II.

[a]The total of the seasonal deliveries in 1942/43 is used as a denominator in this calculation.

[b]The dash opposite 1942-43 in the '75 per cent' column indicates that the total of deliveries in the 1942/43 crop year was less than 75 per cent of the season's supply. The dashes in the other columns indicate that the respective intervals did not exist during these years because rapid marketings did not continue until completion of the 25 and 50 per cent points of the seasonal supplies.

[c]The system of abbreviation of crop years in averages throughout this study can be illustrated by an example: 1929-35 means the crop years 1929/30 to 1935/36.

period (see Table VI).

Both the dates of start of rapid marketing and completion of the first 25 per cent of the seasonal supply for each crop year except 1942/43 are dotted on Chart V. It can be seen that all the dots are scattered not only to the left of the broken line, which separates the two tendency curves for before and after 1928, but also to the left of the mean value (cross sign) of the tendency line for after 1928. The four dots for the crop years 1936/37 to 1939/40 are more to the left than the two for 1940/41 and 1941/42, with the former four all below whereas the latter two above the tendency line. The dates for the crop year 1942/43 can also be plotted if necessary. The delta sign indicates the same dates when the delivery pattern for 1942/43 is calculated on the basis of the season's total actual marketings. Roughly speaking, the corresponding length of interval and average weekly delivery figures were about the same for both the periods 1929/30 to 1935/36 and 1936/37 to 1958/59. The 1940/41 and 1941/42 crop years were featured with longer first intervals and smaller average delivery rates. Delivery rates lower than 3 per cent for quite a few weeks in 1941/42 brought the average weekly rate during the interval down to only 2.8 per cent. For 1942/43, rapid marketing discontinued before completion of the first 25 per cent point of the seasonal deliveries. But when the amount of the total season's

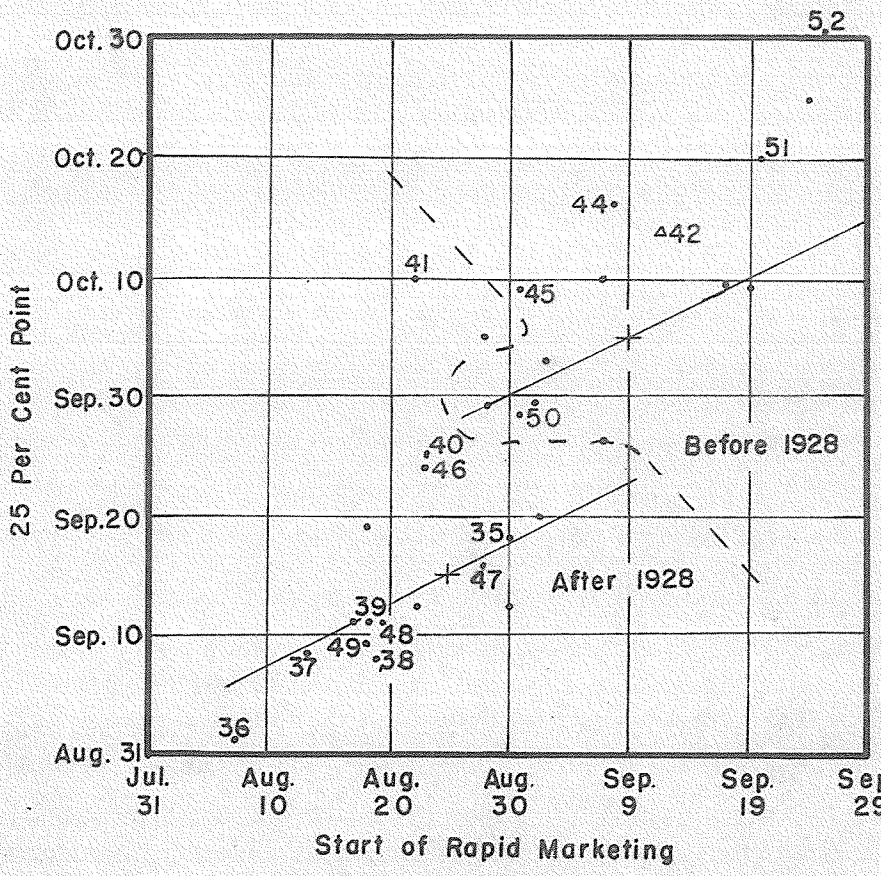

CHART V. RELATIONS BETWEEN DATES OF BEGINNING OF RAPID MARKETING AND 25 PER CENT, 1921/22 to 1958/59

(The origin of this chart is Chart II, except that the dots for the crop years 1921/22 to 1934/35 are not labeled. For the other crop years, data are from Tables IV and X. The delta sign for the crop year 1942/43 indicates the two dates when delivery rates are calculated on the basis of actual seasonal deliveries. During the crop years for which dots are missing rapid deliveries did not continue until completion of the 25 per cent point of the seasonal supplies.)

marketings is used as a denominator, length of the interval was 32 days and the average weekly delivery rate, 4.8 per cent (see Tables VI and VII).

Second one-fourth of deliveries. Completion of the second 25 per cent of the seasonal deliveries averaged 20 days earlier in the crop years 1936/37 to 1939/40, September 26, than in 1929/30 to 1935/36, October 16. Rapid marketings stopped short of the 50 per cent point in 1940/41. This was not so in 1941/42, however, but the second 25 per cent of the seasonal deliveries was completed late, on November 24. Even when calculated on the seasonal marketings basis, rapid marketing in 1942/43 did not continue until completion of the second 25 per cent point.

Average delivery rate during the second 25 per cent interval increased, by 2.7 per cent of the season's supplies, from an average of 6.6 per cent for 1929/30 to 1935/36 to 9.3 per cent for 1936/37 to 1939/40. Length of the interval had shortened by about 9 days, from an average of 28 days for the former period to 19 days for the latter.

Relations between the dates of completion of the 25 per cent and 50 per cent points are shown in Chart VI. The four dots for the crop years 1936/37 to 1939/40 indicate that completion of the 50 per cent point tended to be 20 days after completion of the 25 per cent point, whether the crop be large or small. The crop years 1929/30 and 1935/36

TABLE VII

RATES OF MARKETING DURING SUBPERIODS OF THE MAIN MOVEMENT, 1935/36 TO 1942/43*

(per cent of seasonal total)

Crop year	Totals in			Average per week		
	Main movement	Early slow marketing	'Tail	To 25 per cent point	Second 25 per cent point	'Tail'
1935-36	66.66	4.90	16.66	7.4	8.0	5.3
1936-37	66.66	1.01	16.66	6.5	10.3	4.2
1937-38	66.52	1.08	16.52	6.2	7.3	3.2
1938-39	75.36	3.21	25.36	7.3	9.2	5.5
1939-40	69.47	2.12	19.47	6.4	10.3	4.5
1940-41	42.09	3.75	-	4.4	-	-
1941-42	57.67	4.55	7.67	2.8	3.8	3.0
1942-43	13.03	5.88	-	-	-	-
1942-43	35.40	3.22	-	4.8	-	-
Average						
1929-35	63.20	3.30	13.20	7.1	6.6	4.3
1936-39	69.50	1.85	19.50	6.6	9.3	4.4

*The rates for the 1935/36 crop year are from Table III; the rest are calculated from data in Appendix I and II. Blanks in the table indicate that the relevant period did not exist in the crop years concerned because rapid deliveries ceased before the defined points were reached.

[a]The total of the seasonal deliveries in 1942/43 is used as a denominator in the second calculation for that year.

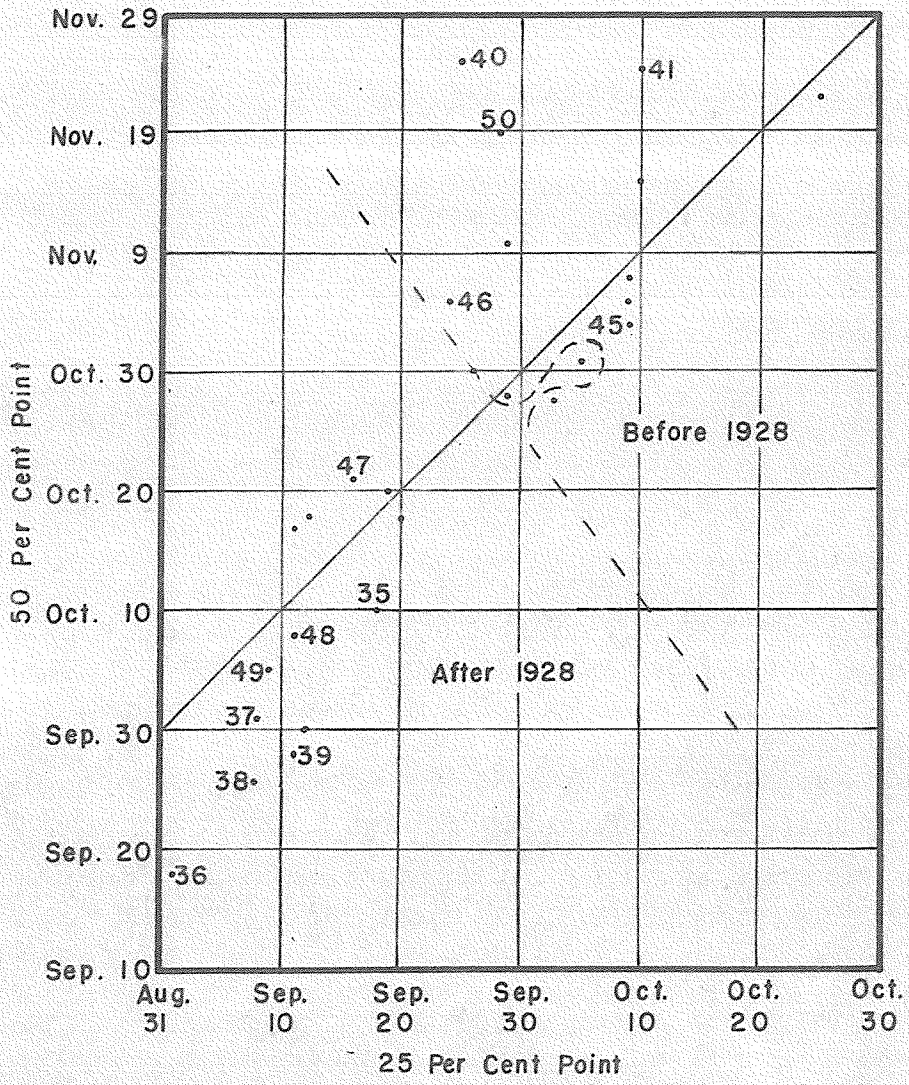

CHART VI. RELATIONS BETWEEN DATES OF 25 AND 50 PER CENT POINTS, 1921/22 to 1958/59

(The origin of this chart is Chart III, except that the dots for the crop years 1921/22 to 1934/35 are not labeled. For the other crop years, data are from Tables IV and X. During the crop years for which dots are missing rapid deliveries did not continue until completion of the 50 per cent point of the seasonal supplies.)

had the same relationships. Interesting to note is that the dot for 1929/30 represents a typical year featured by a small crop, favorable weather conditions and good prices.[12]

'Tail' of main movement. Amount of wheat, expressed in percentage of the seasonal supplies, marketed during the 'tail' averaged 6 per cent more in 1936/37 to 1939/40, 19 per cent, than in the preceding seven-year period, 13 per cent. Length of 'tail' was 10 days longer for the later period, 31 days, than for the earlier, 21 days. Average delivery rate in the four-year period remained at a mean of 4.4 per cent of the season's supply, exactly the same as before.

With usual price and price judgements operating, from 16 to 19 per cent of the season's supply had been marketed during the 'tail'. When the market price was lower than the Board price and was anticipated to remain at that level or decline, as in 1938/39, more than 25 per cent of the season's supply was delivered in about one month's time, at a delivery rate of 5.5 per cent weekly. But if fairly good prices were anticipated to improve further, as was the case in the 1937/38 crop year, producers took 36 days to complete 'tail' marketings of 16 per cent, at a much slower than usual rate of 3.2 per cent per week.

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[12] Working, "The Timing of Wheat Marketing in Western Canada," Wheat Studies, 8:49, October, 1936.

The Secondary Movement

Earlier start of rapid marketing and completion of the 25 per cent and the 50 per cent points of the season's supplies had left slightly over one week more for the secondary movement in the crop years 1936/37 to 1939/40, ranging from 12 to 15 weeks (see Table VIII), than in the crop years 1929/30 to 1935/36, ranging from 10 to 14 weeks. With about the same percentages left for marketing during the secondary movement, average weekly delivery rate was about .2 per cent lower during the later period, 1.05 per cent, than during the earlier, 1.26 per cent.

Wheat marketings during the crop years 1940/41 to 1942/43 were either regulated or restricted. Farmers behavior in marketing their wheat was affected. In the crop years 1940/41 and 1942/43, rapid marketings did not continue till the second 25 per cent of the seasonal supplies was completed. It did in 1941/42. But even so, the secondary movement could no longer be categorized as the residual marketings following the main movement.

The Deferred Movement

During the crop years 1936/37 to 1939/40, an average of about 40 per cent of the amount of wheat reserved for deferred marketings was delivered in February-April, 28 per cent in May-June, 19 per cent in July, and 14 per cent remained as farm stocks, July 31 (see Table IX). The per-

TABLE VIII

QUANTITIES AND RATES OF MARKETING IN THE SECONDARY MOVEMENT, 1935/36 TO 1942/43*

Crop	Deliveries		Number of days	Average percentage weekly
	Million bushels	Percentage		
1935-36	37.2	16.8	91	1.29
1936-37	28.7	17.0	107	1.11
1937-38	18.3	14.2	87	1.14
1938-39	38.2	13.0	95	.96
1939-40	61.0	13.8	97	1.00
1940-41	-	-	-	-
1941-42	23.3	9.8	50	1.37
1942-43	-	-	-	-
Average				
1929-35	42.4	15.5	86	1.26
1936-39	36.6	14.5	97	1.05

*The values for the 1935/36 crop year are from Table IV; the rest are calculated from data in Appendix Tables I and II. The secondary movement refers to deliveries made between the date when deliveries drop below 3 per cent per week and the end of January. Blanks appear when rapid deliveries did not continue until 50 per cent of the crop was delivered.

TABLE IX

DELIVERIES IN THE DEFERRED MOVEMENT, 1935/36 TO 1942/43*

Crop year	Million bushels		Deferred as percentage of season	Percentages of deferred movement			
	Season	Deferred movement		Feb.-April	May-June	July	After July
1935-36	221.6	36.7	16.6	37.8	38.9	10.9	12.4
1936-37	169.0	27.6	16.4	47.7	28.2	11.8	12.3
1937-38	129.0	24.9	19.3	47.3	26.1	12.3	14.3
1938-39	293.2	34.0	11.6	38.8	29.9	23.1	8.2
1939-40	440.8	73.6	16.7	25.9	26.9	27.9	19.3
1940-41	469.3	164.7	35.1	36.4	41.6	15.0	7.0
1941-42	237.1	77.0	32.5	28.1	24.8	35.2	11.9
1942-43	455.2	298.4	65.6	11.0	17.3	9.1	62.6
Average							
1929-35	275.9	58.9	21.2	42.6	31.0	12.1	14.3
1936-39	258.0	40.0	16.0	39.9	27.8	18.8	13.5

*The values for the 1935/36 crop year are from Table IV; the rest are calculated from data in Appendix I and II. The deferred movement is defined as deliveries made after the end of January.

centage distribution within the deferred movement was roughly the same as that during the crops years 1929/30 to 1935/36.

Farmers would not have kept as much of their seasonal supplies for deferred marketings during the crop years 1940/41 to 1942/43, if wheat marketings had not been regulated or restricted. In addition, there would not have been such a huge proportion of the seasonal supplies carried over as farm stocks, July 31, in 1942/43. As shown in Table IX, under regulative quotas in 1940/41 and 1941/42, only 7 to 12 per cent of wheat for deferred marketings were left as farm stocks, July 31; under restrictive quotas in 1942/43, the portion went up to close to 63 per cent.

V. THE INFLUENCING FACTORS

Technological Improvement

Further advance in start of rapid marketing and the other significant dates and still shorter intervals for the second 25 per cent of the main movement during the 1936/37 to 1939/40 crop years, as discussed in the preceding section, implies that there probably had been more widespread use of the combine and tractors on Prairie farms. Investigation of this development is beyond the scope of the present study.

An interesting question arises as to how much more advance in the respective significant dates and how much more shortening of the respective intervals might be expected to occur under still further technological change, provided

the delivery patterns for Western Canadian wheat were entirely farmer-controlled, and under usual conditions of weather and price. An a priori answer to this question would appear to be:

1. Start of rapid marketing could hardly be advanced any further unless the growing time of wheat were further shortened.

2. The dates of completion of both the first and second 25 per cent of the season's supply might well be advanced further by shortening the first and second intervals of the main movement, through fuller exploitation known delivery technology provided that elevator and transportation facilities would permit acceptance of deliveries without limit.

Price and Price Judgements

Apart from the influences of price and price judgements, the incentive provided by the Board minimum price guarantees affected wheat marketings in quite a different way. A good example to show the influence of price and price judgements is the 1937/38 delivery pattern. Price for wheat was fairly good in that year but it was expected to improve; farmers tended to slow down their deliveries during the main movement. Calculations showed that the three intervals of the main movement were the longest of the crop years 1935/36 to 1939/40, average weekly delivery rates during the

respective intervals were the lowest. An equally good example for illustrating how the incentive provided by the Board's higher than market price guarantees affected delivery patterns was the crop year 1938/39. The intervals of both the first and the second 25 per cent of the season's supply were the shortest of the period; the 'tail' was markedly long, but with almost the highest average weekly rate for all the three intervals. Producers rushed deliveries to the Board. The 75 per cent point was reached on a record early date, October 29 (see Tables VI and VII).

The 1938/39 delivery pattern, influenced by the extra incentive, can thus be considered as more rapid than normal. The 1935/36, 1936/37, 1937/38 and 1939/40 crop years, in which such an inducement was lacking, had delivery patterns the same as would be expected had the Board not existed.

Quotas and Crop Size

Crop size did not have significant influence on delivery patterns when wheat marketings were free from any quota controls in the crop years 1935/36 to 1939/40.

Theoretically, the delivery pattern can be viewed as a function having quotas as one of its independent variables. Quotas in turn can be considered as a variable dependent upon such independent variables as the aggregate demand for Canadian wheat; storage space, transportation

and other marketing facilities available; size of crop; government policies concerning wheat marketings, etc. Two categories of quotas were used by the Board during the last three crop years of this period. Of these two categories one was of a regulative nature, used in 1940/41 and 1941/42. The other was of a restrictive nature, used in 1942/43. Whether quotas during a crop year were regulative or restrictive depended upon the ratio of the overall limitation on deliveries to the size of the seasonal supply. The smaller the ratio, the more restrictive were the quotas. The regulated delivery patterns, as pointed out in a previous section, were closer to the prewar patterns than was the restricted pattern. It would be reasonable to say that quotas under which less than 80 per cent of the seasonal supplies could be delivered were restrictive.

Weather Conditions

Weather conditions affected the delivery patterns during this period in nearly the same way as before 1935/36.

The combined effect of quotas and weather conditions was a quite complicated matter. For instance, after the issuance of a certain quota, deliveries could be affected by bad weather conditions. In the opposite case, without a sizable quota issued at the beginning of a crop year, only small deliveries could be made even under unusually favorable weather conditions.

CHAPTER IV

COUNTRY DELIVERY PATTERNS FOR WHEAT UNDER COMPULSORY BOARD MARKETING AFTER 1943

I. THE COMPULSORY WHEAT BOARD AND COUNTRY MARKETINGS OF WHEAT

The Canadian Wheat Board in 1943 became the sole buyer of wheat from Canadian producers and the sole seller of wheat in Canada. The shift from the open market system to the monopoly Wheat Board system was accompanied by changes in the Canadian wheat trade mechanism. First of all, the function of an open market system in adjusting supply to demand was superseded by storage and price policies of the Board. No trader could buy wheat from producers and sell it in its primary physical form. Secondly, because they acted as agents of the Wheat Board at predetermined flat margins for the different services performed, the traders could no longer compete for business by lowering their service charges. On the part of the wheat producers, quotas to regulate their use of available elevator space became a necessary part of Wheat Board operations. For, in the absence of quotas, every farmer would attempt to deliver most of his season's supplies as soon as the crop was harvested. If all the farmers could do the same, deliveries would tend to be heavily concentrated in a very short period during and

immediately following harvest, assuming favorable weather conditions. This behavior would be entirely logical because, in making early deliveries to the Board: (1) farmers took no price risks; (2) farmers could avoid possible losses in both quantity and quality of their produce while it was stored on their farms; (3) farmers could avoid storage expenses; and (4) earlier income receipts would help farmers in meeting financial needs or making new investments.

II. OBJECT OF THE BOARD

The Canadian Wheat Board Act, 1935, states the object of the Board as 'the marketing in an orderly manner in inter-provincial and export trade, of grain grown in Canada.'[1] Ignoring all non-economic goals that may be involved in consideration of the Board, presumably the principles in the use of the quota system as a means to this objective should be: (1) to keep the Board in the most favorable competitive position in export markets so as to maximize its export sales proceeds, while assuring an adequate supply to domestic consummers; and (2) to ration the use of available marketing facilities as fairly as possible among wheat producers.

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[1] The Canadian Wheat Board Act 1935, Part I.

III. THE DELIVERY PATTERNS

From data compiled (see Chart IV) there does not appear to be much uniformity in the delivery patterns for the sixteen crop years after 1942/43. In years when world demand for wheat was strong, such as the post World War II years from 1944 to 1951, the deliveries tended to be very close to the prewar pattern. In other years, when world demand for wheat was small relative to supply, the rapid marketings during the early autumn disappeared altogether and the off-farm wheat sales tended to be distributed more evenly over time, with considerable amount of year-end carryover, but without any distinguishable regularity. This probably can be explained by the fact that in good marketing years the Board was able to export substantial quantities of grain and thus made space available by the end of the crop year for the coming new crop. Under these conditions, quotas were mostly of a regulative nature. In poor marketing years, a surplus was built up and the marketing channels were congested. At times farmers were unable to make deliveries unless some of the Board's holdings was sold or new storage space was built. Under these circumstances, quotas were not only regulative but also restrictive. Generally speaking, the higher the portion of the total seasonal supply that was marketed within the year the closer to the prewar pattern the off-farm sales were distributed.

With an understanding of the facts described in the preceding paragraph, unwise though it may appear that Working's definitions and method be followed further in this chapter, yet, if prewar unregulated and unrestricted wheat country marketings are considered entirely farmer-controlled, then by so doing probably there can be gained a better insight into how the farmers' aggregate behavior was influenced by the Board's quota system. Before the delivery patterns for the crop years covered in the present study are revisited in Chapter V, therefore, they will be subjected to Working's analytical procedure.

The Main Movement

Only in the five crop years 1945/46 to 1949/50 did rapid marketings continue beyond the 50 per cent point of the seasonal supplies. Rapid marketings in the crop years 1944/45, 1950/51 and 1951/52 ceased in between the first and second 25 per cent points. Weekly deliveries exceeded 3 per cent of the seasonal supply for merely two weeks in the early autumn of 1942/53 and it fell below the rate before the first 25 per cent point was completed. In the remaining seven crop years of this period there was no period of rapid marketings in the early autumn at all.

First one-fourth of deliveries. For the nine crop years 1944/45 to 1952/53 that had deliveries above 3 per cent of the seasonal supplies in the early autumn, start of

rapid marketing ranged from August 18 in 1949/50 to September 25 in 1952/53. In eight out of the nine crop years, rapid marketings lasted until after the first 25 per cent point of the seasonal supplies was completed. Date of completion of the 25 per cent point ranged from September 9 in 1949/50 to October 20 in 1951/52. Average weekly delivery rate varied almost the other way around, from 7.6 per cent in 1947/48 to 3.4 per cent in 1944/45. Variation between years is too great for expression in averages to be meaningful (see Tables X and XI).

When both the dates of start of rapid marketing and completion of the first 25 per cent of the seasonal supplies are plotted on a graph, the relations between them can more readily be seen. The dots for these crop years as shown in Chart IV are scattered all about the two tendency curves. The positions of the dots appear to reflect the increasing and decreasing of world demand for wheat relative to supply. Deliveries in the crop years 1951/52 and 1952/53 were to a considerable degree affected by bad weather conditions early in the season. Starting from the crop years 1944/45 and 1945/46 in the upper right quarter of the Chart and also above the tendency line for the years before 1928/29, the position shifts in a chronological order to the left and downward to the crop years 1948/49 and 1949/50, which are in the lower left quarter of the Chart and also below the tendency line for the crop years from 1928/29 to 1935/36,

TABLE X

SIGNIFICANT DATES AND INTERVALS IN COUNTRY WHEAT MARKETING, 1943/44 TO 1958/59 *

Crop year	Start of rapid marketing[a]	25 per cent point	50 per cent point	End of main movement	75 per cent point	Length of intervals (days)			
						To 25% point	Second 25%	'Tail'	Third 25%
1943-44	June 10	Dec. 3	Mar. 24	June 17	July 11	-	-	-	-
1944-45	Sept. 8	Oct. 16	Dec. 1	Nov. 24	Apr. 26	38	-	-	-
1945-46	Aug. 31	Oct. 9	Nov. 3	Nov. 9	Apr. 15	39	25	6	164
1946-47	Aug. 23	Sept.24	Nov. 5	Nov. 15	Apr. 27	32	42	10	173
1947-48	Aug. 28	Sept.16	Oct. 21	Oct. 30	May 18	19	35	9	210
1948-49	Aug. 19	Sept.11	Oct. 8	Oct. 14	Mar. 18	23	27	6	161
1949-50	Aug. 18	Sept. 9	Oct. 5	Oct. 6	Feb. 7	21	26	1	125
1950-51	Aug. 31	Sept.28	Nov. 19	Nov. 16	May 19	28	-	-	-
1951-52	Sept.20	Oct. 20	Jan. 11	Oct. 25	May 16	30	-	-	-
1952-53	Sept.25	Oct. 31	Feb. 27	Oct. 9	July 15	-	-	-	-
1953-54	Dec. 17	Nov. 26	June 15	Dec. 24	-	-	-	-	-
1954-55	June 8	Jan. 6	June 20	June 22	-	-	-	-	-
1955-56	July 25	Mar. 20	June 30	Aug. 2	-	-	-	-	-
1956-57	July 24	Feb. 14	July 25	July 31	-	-	-	-	-
1957-58	July 23	Feb. 1	June 27	July 30	-	-	-	-	-
1958-59	July 22	Jan. 7	June 1	July 29	-	-	-	-	-

* Calculated from data in Appendix Tables I and II.

[a]Rapid marketing is defined as weekly deliveries in excess of 3 per cent of the seasonal supply. During the crop years 1943/44 and 1953/54 to 1958/59, rapid marketings did not occur in the early autumn. Blanks occurring in the Table indicate failure to market 75 per cent of supply during the crop year and lack of rapid marketing during certain intervals.

TABLE XI

RATES OF MARKETING DURING SUBPERIODS OF THE MAIN MOVEMENT
1943/44 TO 1958/59*

Crop	Percentage of Total in			Average percentage per week		
	Main movement	Early slow marketing	'Tail'	To 25 per cent point	Second 25 per cent point	'Tail'
1943-44	-	-	-	-	-	-
1944-45	47.53	6.46	-	3.42	-	-
1945-46	53.54	3.85	3.54	3.80	7.00	4.13
1946-47	55.81	2.53	5.81	4.92	4.17	4.06
1947-48	55.44	4.50	5.44	7.55	5.00	4.23
1948-49	52.89	1.36	2.89	7.14	6.48	3.37
1949-50	51.92	3.61	1.92	7.13	6.73	13.43
1950-51	49.04	1.29	-	5.93	-	-
1951-52	29.72	5.07	-	4.65	-	-
1952-53	19.48	12.35	-	-	-	-
1953-58[a]	-	-	-	-	-	-

* Calculated from data in Appendix Tables I and II. The main movement refers to deliveries prior to the date at which weekly deliveries ceased to be in excess of 3 per cent of the seasonal total.

[a]1953-58 means "during each of the crop years 1953/54 to 1958/59". Rapid marketings (over 3 per cent of seasonal supply per week) did not occur in these years nor in 1943-44. Blanks occur in the table when calculations were impossible for this reason.

and then reverses itself. The crop years 1946/47 to 1949/50 tended to have the same relations as the crop years 1928/29 to 1935/36. The other years tended to have a relationship similar to the period prior to 1928/29.

Second one-fourth of deliveries. Only the five crop years 1945/46 to 1949/50 had a main movement comprising deliveries of more than 50 per cent of the seasonal supplies. Date of completion of the second 25 per cent point ranged from October 5 in 1949/50 to November 5 in 1946/47. Length of the interval varied from 25 days in 1945/46 to 42 days in 1946/47. Average deliveries weekly varied the other way around, from 7.0 per cent in 1945/46 to 4.2 per cent in 1946/47.

As shown in Chart V, the dots for the crop years 1945/46 to 1950/51 are dispersed along the tendency curve for the crop years 1921/22 to 1935/36. Starting from 1945/46, the position shifts again in a chronological order to the left and downward to 1949/50, and then back in the opposite direction. The crop year 1950/51 is also plotted because in that year rapid marketing discontinued close to completion of the 50 per cent point. All the crop years of this period except 1950/51 tended to have the same relations as in the crop years before 1936/37.

'Tail' of the main movement. The 'tail' of the main movement during the crop years 1945/46 to 1949/50 was featured

by very short intervals and small percentages delivered during the intervals. The former varied from 1 to 10 days; the latter from 1.9 to 5.8 per cent of the seasonal supplies, with average weekly deliveries remaining nearly the same as those during the prewar period. The large average weekly rate in 1949/50 is the result of calculation for an extremely short time period and is not meaningful.

The Secondary Movement

In the five crop years from 1945/46 to 1949/50, the amount of wheat delivered during the secondary movement varied from 42.4 million bushels in both 1945/46 and 1947/48 to 75 million bushels in 1949/50; when expressed as percentage of the seasonal supply, from 12.5 per cent in 1946/47 to 22.7 per cent in 1949/50. Number of days involved in the secondary movement varied from 77 days in 1946/47 to 117 days in 1949/50. Average percentage rate varied very little, within .2 per cent from an average of 1.24 per cent (see Table XII). The average rate for these five crop years is closer to that for the crop years 1936/37 to 1939/40 than to that for the crop years 1928/29 to 1935/36. The reason for this result was the relatively long average interval left over from short 'tail' in which to deliver about the same percentage rather than any advance in the significant dates of the main movement.

It is interesting to note that, under whatever

TABLE XII

QUANTITIES AND RATES OF MARKETING
IN THE SECONDARY MOVEMENT, 1943/44 TO 1958/59*

Crop year	Deliveries		Number of days	Average percentage weekly
	Million bushels	Percentage		
1943-44	-	-	-	-
1944-45	-	-	-	-
1945-46	42.4	16.1	83	1.4
1946-47	44.7	12.5	77	1.1
1947-48	42.4	14.9	93	1.1
1948-49	65.2	19.4	109	1.2
1949-50	75.0	22.7	117	1.4
1950-58[a]	-	-	-	-

* Calculated from data in Appendix Tables I and II. The secondary movement refers to deliveries made after rapid marketings ceased and prior to January 31.

[a] 1950-58 means "during each of the crop years 1950/51 to 1958/59". Blanks in these and earlier years occur because the period as defined did not exist in these years.

marketing conditions, for the crop years in which the 50 per cent point was completed before discontinuation of rapid marketings, the average weekly delivery rate during the secondary movement has varied relatively little. Whether this is also true in the other crop years will be examined in the following chapter.

The Deferred Movement

As discussed in a previous section, the delivery patterns during the period 1943/44 to 1958/59 was closely related to the conditions of world wheat demand and supply. The 1943/44 and 1944/45 crop years of this period were a transitional period from war-time surplus conditions into a period of increasing demand and rising prices for wheat. After that period quotas became more and more generous; the delivery pattern approached more and more closely the prewar pattern of marketings. The crop years 1951/52 and 1952/53 marked another transitional period. By then most of the war-torn countries had recovered their prewar agricultural production level. There was a weakening demand for wheat in the world markets. Besides, both the 1951/52 and 1952/53 crops were very big and the seasons late. Starting from that period, a surplus began to overshadow the Canadian market. Quotas again became restrictive. Only relatively small portions of the seasonal supplies could be delivered each crop year. In addition, deliveries tended to be distributed

evenly over time during each crop year.

The averages of seasonal supplies during the two transitional periods were quite different: 379.6 million bushels for 1943/44 and 1944/45, and 550.1 million bushels for 1951/52 and 1952/53. So were the averages of the physical quantities for deliveries after January 31: 184.6 and 281.1 million bushels respectively. It is interesting to note that, during the two transitional periods, the deferred marketings as percentages of the seasonal supplies and the percentage distributions of the deferred deliveries over the different subperiods after January 31 were quite similar to each other (see Table XIII). Relatively heavy deliveries during February-April resulted from: (1) large amounts of wheat shipped in 1943/44 and 1944/45 to meet urgent demand when navigation on the Lakes was closed; and (2) very late harvest of very big crops in both 1951/52 and 1952/53.

The average size of seasonal supplies and the average amount of wheat, both in absolute and relative terms, for deferred deliveries were much smaller during the period 1945/46 to 1950/51 than during the period 1953/54 to 1958/59. Distribution of the deferred marketings tended to indicate:

1. That the proportions delivered during May-June months of heavy farm labor requirements--were relatively heavier when percentages of the seasonal supplies for deferred marketings were small than when they were large;

TABLE XIII

DELIVERIES IN THE DEFERRED MOVEMENT, 1943/44 TO 1958/59*

Crop year	Million bushels		Deferred as percentage of seasonal	Percentages of deferred			
	Seasonal Supply	Deferred movement		Feb.-April	May-June	July	After July
1943-44	379.4	235.0	61.9	32.4	21.5	23.6	22.5
1944-45	379.9	134.2	35.3	32.9	24.2	22.7	20.1
1945-46	263.1	79.9	30.4	25.8	27.8	14.0	32.4
1946-47	359.1	113.9	31.7	22.1	40.7	15.7	32.5
1947-48	284.6	84.4	29.7	12.4	26.6	16.0	45.0
1948-49	335.9	93.1	27.7	21.8	17.5	15.6	45.1
1949-50	330.5	83.9	25.4	26.1	38.8	22.0	13.1
1950-51	387.7	131.2	33.8	14.6	44.1	26.0	15.3
1951-52	473.3	223.8	47.3	34.3	39.7	18.0	8.0
1952-53	626.9	338.4	54.0	23.4	21.5	28.2	26.9
1953-54	624.8	384.2	61.5	10.0	14.6	16.0	59.4
1954-55	453.8	319.9	70.5	11.9	23.3	22.9	41.9
1955-56	555.0	444.6	80.1	13.8	23.8	16.9	45.5
1956-57	680.9	524.2	77.0	13.4	14.7	11.0	60.9
1957-58	607.2	456.5	75.2	14.1	20.5	15.2	50.2
1958-59	493.7	348.3	70.6	22.2	19.3	22.3	36.2
Average[a]							
1943-44	379.6	184.6	48.6	32.7	22.9	23.1	21.3
1945-50	326.8	97.7	29.8	20.5	32.6	18.2	28.7
1951-52	550.1	281.1	50.6	28.9	30.6	23.1	17.4
1953-58	569.2	413.0	75.2	14.2	19.4	17.4	49.0

* Calculated from data in Appendix Table I, and II. The deferred movement is defined as deliveries made after the end of January in each crop year.

[a]Average for crop years 1943/44 to 1944/45 and similarly for subsequent groups of years.

2. That the percentage of deferred deliveries made in July were relatively about the same whether the proportion of the seasonal supplies for deferred deliveries was large or small;

3. That the amount for deliveries after July affects the percentages delivered in each period. When more was delivered during the other subperiods, less was left as carryover, and vice versa.

III. THE INFLUENCING FACTORS

The factors influencing the actual delivery patterns would appear to be:

1. Capacity of all marketing facilities;

2. The Board's carryover of all grains at the beginning of the crop year--the Board also takes part in the marketing of other grains and Board marketing of oats and barley was made compulsory on August 1, 1949;

3. Total volume of marketable wheat from farms; and its composition; for instance, wheat of lower grades was badly needed for feed purposes in the United States around the end of the Second World War;

4. The Board's marketing policies, e.g., The Board's pricing policy would affect the volume of grains sold;

5. The Board's actual sales of wheat and other grains. This, of course, depended upon world demand for wheat, assuming domestic demand constant in the short run;

6. The type and nature of quotas issued by the Board; for example, the initial quota was amended to a unit basis in 1954. A 100-unit initial quota would give farmers a choice to deliver 200 bushels of wheat, 500 bushels of barley or rye, or 800 bushels of oats. It was further amended in 1955 so that farmers could deliver their grains under the unit quotas issued in any combination;

7. Weather conditions;

8. State of technology.

Of the above listed factors, parts of the sixth and seventh, and the eighth have been discussed in Chapter III. Their effects on the delivery patterns during the 1943/44 to 1958/59 period were similar to those during the crop years 1940/41 to 1942/43. The first, second, third and some aspects of the sixth and seventh factors will be discussed in later chapters. The others are included here as a priori hypotheses only.

CHAPTER V

THE DELIVERY PATTERNS, 1935/36 TO 1958/59, REVISITED

I. RELATIONS BETWEEN AVAILABLE STORAGE SPACE, SIZE OF THE SEASONAL SUPPLY, AND THE DELIVERY PATTERNS

Assuming that Western Canada has an aggregate supply curve of and an aggregate demand curve for its wheat in the local markets during each crop year, then, both the prices that the producers are to be paid and the total volume of wheat to be sold are determined by the interplay of the supply and demand forces. The total volume of wheat sold expressed as a proportion of the total seasonal supply therefore determines the average weekly percentage delivery rate of the crop year.

Before the Board started using quotas to control wheat marketings in 1940/41, as pointed out before, the deliveries, due to the characteristic behavior of the producers as many individual sellers in the local markets, tended to be heavily concentrated early in the season. Unquestionably, since the Board first applied quotas effectively, the extent to which, given other conditions, delivery patterns deviated from the prewar ones has been dependent upon the quotas issued during each crop year. Since the prewar patterns were characterized by very heavy percentage delivery rates early in the season, the average weekly

deviations[1] were consequently high. The average weekly deviations for the patterns regulated or restricted by quotas would be expected to be lower, but in varying degree.

Given the state of technology, the capacity of all available marketing facilities theoretically would place a limit on the maximum speed at which wheat supplies can be accepted from the producers. Provided that, during a given time interval, the amount of wheat flowing out of the marketing channels is known, then the maximum volume of wheat that can be delivered from farms into the channels will be limited to the amount of outflow plus space available in storage facilities at the beginning of the interval. This limitation was not very serious under the open market system, since the storage space itself was somewhat more adjustable than under the compulsory Wheat Board. Besides, the flow of wheat out of the marketing channels of Canada would be at a faster speed under the open market system than under the compulsory Wheat Board, should the Board apply a more rigid selling price policy than otherwise. Consequently, the pressure of given wheat supplies upon given available storage facilities was often much smaller under the former than under the latter.

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[1] Average of absolute differences of the weekly deliveries from the average weekly delivery rate.

The price mechanism was allowed to function only partially during the crop years 1935/36 to 1942/43, as pointed out in Chapter III. The relationship between the capacity of storage facilities and delivery patterns before introduction of the quota system should be similar to that under the purely open market system, with the 1938/39 crop year as an exception. For the rest of the crop years of this period, the relationship should be the same as under the compulsory Wheat Board since 1943. The capacity of storage facilities relative to the size of the 1938/39 seasonal supply did not constitute a congestion situation. As a matter of fact the 1938/39 pattern, influenced by a minimum guarantee much higher than the market price, was characterized by an unusually long 'tail' and high weekly delivery rates throughout the main movement. In short, the delivery patterns were affected considerably by the availability of storage facilities under the quota system, but very little or not at all before.

There are 52 weeks in a crop year. It is constant. The average weekly percentage delivery rate therefore reflects the total volume of wheat sales or deliveries made out of a given seasonal supply by producers during the crop year. Whereas the average weekly deviation of the crop year reflects the distribution of deliveries over time. The disadvantage of the latter measure is that it does not indicate whether

deliveries are concentrated early or late in the season. Fortunately this disadvantage causes no difficulty in the case of the present study, because the calculated results do indicate, to a great enough extent, that, the higher the average weekly deviation, the more concentrated were the deliveries early in the season. Now, if the last statement of the preceding paragraph holds, then, the average weekly deviation must be positively correlated with the availability of storage facilities since the quota system, came into effect but not before.

The availability of storage facilities can best be measured by the ratio of the total storage space available at the beginning of a crop year to the size of the seasonal supply. The total storage space available is equal to the existing capacity of storage facilities minus that part already occupied by stocks of all grains in store. With respect to data on licensed storage facilities, they are available only for December 1. Nevertheless if this variable is relatively stable in the short run, these data can still be used without appreciable error.

The calculated results for the twenty four crop years 1935/36 to 1958/59 are shown in Table XIV. Both the average weekly deviation and the ratio for each of these crop years are plotted on Chart VII. During the crop years 1935/36 to 1939/40, the average weekly deviation tended to be high whatever the ratio was. The two variables for the

TABLE XIV

STORAGE CAPACITIES, SEASONAL SUPPLIES, AVERAGE WEEKLY DELIVERY RATES AND DEVIATIONS, 1935/36 TO 1958/59

Crop year[a]	(1) Total licensed storage capacities Dec. 1[b] (million bushels)	(2) All grains in (1) in Canada July 31[c] (million bushels)	(3) Seasonal supply[d] (million bushels)	(4) Ratio of (1)-(2) to (3)[e]	Average weekly deviation[d]	Average weekly delivery[d]
1935	419.9	207.6	221.6	.96	1.86	1.83
1936	420.6	120.6	169.0	1.78	1.83	1.88
1937	421.9	35.6	129.0	2.99	1.66	1.87
1938	423.1	26.4	293.2	1.35	2.09	1.90
1939	422.8	106.2	440.8	.72	1.92	1.84
1940	508.7	268.9	496.3	.51	.91	1.88
1941	599.4	444.5	237.1	.65	1.13	1.85
1942	602.0	407.4	455.2	.43	.60	1.11
1943	602.8	453.7	379.4	.39	.51	1.57
1944	596.4	351.0	379.9	.63	.95	1.73
1945	566.7	253.9	263.1	1.19	1.51	1.70
1946	495.2	90.1	359.1	1.13	1.27	1.79
1947	482.4	90.0	284.6	1.38	1.47	1.63
1948	486.0	65.5	355.9	1.25	1.57	1.67
1949	490.0	111.1	330.5	1.15	1.47	1.84
1950	506.0	129.8	387.7	.97	1.26	1.78
1951	526.2	239.4	473.3	.61	1.01	1.85
1952	539.3	308.7	626.9	.37	.67	1.63
1953	561.5	429.3	623.8	.21	.61	1.19
1954	581.0	472.3	453.8	.24	.87	1.31
1955	599.3	464.2	555.0	.24	.54	1.11
1956	622.2	490.4	680.9	.19	.36	1.02
1957	632.2	532.5	607.2	.16	.52	1.18
1958	639.1	523.6	493.7	.23	.53	1.39

[a]A crop year is designated by the first of the two calendar years.

[b]Data from Canada Grain Trade.

[c]Data from The Canada Year Book 1943-44, 1951, 1954, and 1959.

[d]Calculated from data in Appendix Tables I and II. Average weekly deviation is the average of the weekly deviations from the average weekly delivery. Average weekly delivery is equal to the seasonal deliveries divided by 52, the number of weeks in a crop year.

[e]This ratio indicates commercial storage space available for each bushel of wheat from the season's supply.

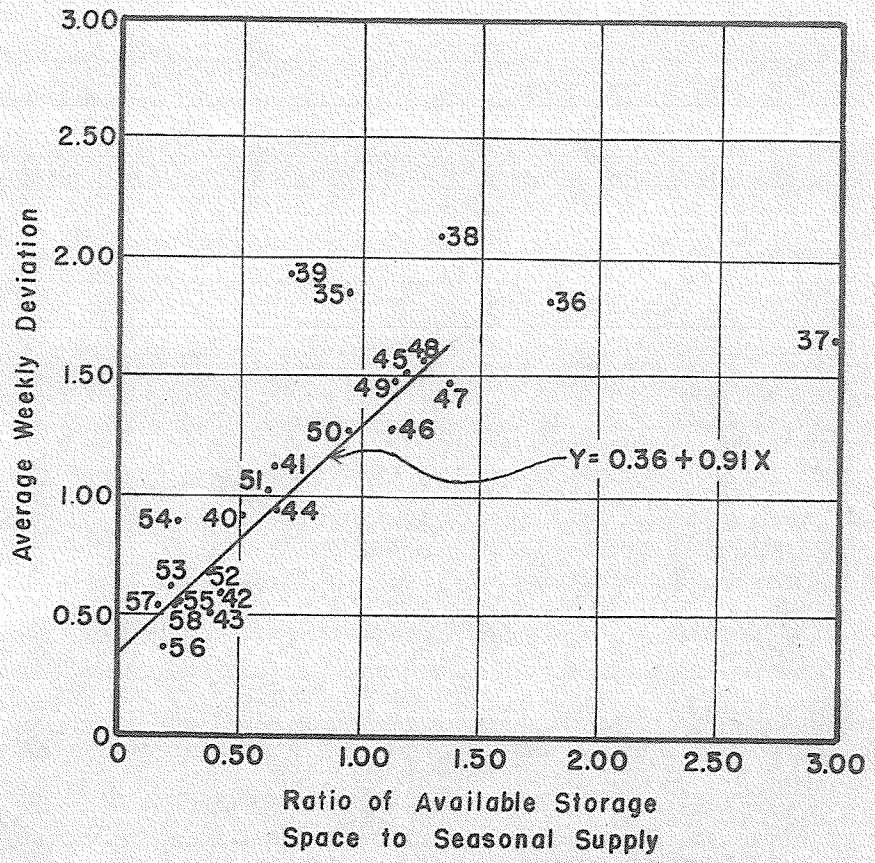

CHART VII. RELATIONS BETWEEN AVERAGE WEEKLY DEVIATIONS AND RATIOS OF AVAILABLE STORAGE SPACE TO SEASONAL SUPPLY, 1935/36 TO 1958/59

(Data from Table XIV)

rest of the crop years were closely and positively correlated. The average weekly deviation tended to be .91 higher when the ratio was 1 higher. This, however, has proven the point at issue.

II. WEATHER CONDITIONS AND CLIMATE

The influence of weather conditions upon the delivery patterns prior to the crop year 1940/41 should be the same as Working reported in his study. The climate of Canada did not constitute a distinctively restrictive factor on wheat deliveries because farmers were able to deliver major portions of the seasonal supplies early in the season. But since that crop year both weather conditions and the climate have affected wheat deliveries.

Weather Conditions

It has been a matter of routine for the Board to issue a certain quota around the beginning of a crop year. Assuming that, a given quota effective on a certain date was announced by the Wheat Board at the beginning of a crop year, producers normally would make deliveries in response to the quota to the assigned country elevators acting as agents of the Wheat Board. With favorable weather conditions, within a certain time period after the effective date of the quota, most producers supposedly could fulfill their shares of the quota. By the end of this movement there

would be a wave formed as a part of the delivery pattern. If weather conditions remained favorable throughout the crop year, the pattern would be composed of delivery waves of different sizes corresponding to the quotas issued during the crop year. In other words, the pattern would be one entirely quota-controlled. But bad weather conditions could cause delays or even interruptions in one or more of the waves. In essence, the effect of bad weather conditions on delivery patterns would be the same as it was before 1940/41. The time quantity selling plans of wheat producers might be delayed or even interrupted by bad weather conditions. Though this effect can be identified in some of the ex post patterns; in other cases it cannot. To identify the influence of bad weather conditions upon the delivery patterns under the quota system would require a complete knowledge about quotas issued and weather conditions during each of the crop years. Technological improvements in local grain delivery have probably reduced the influence of bad weather conditions on deliveries, however, this is beyond the scope of this study.

Climate

The average navigation closing date of the Lakes at Fort William/Port Arthur is about December 13; the average navigation opening date, April 15. These are actually factors belonging to the climate category. The Wheat Board

faces different transportation cost factors in the periods of open and closed Lake navigation. The crop year must therefore be divided into at least two different periods which require consideration separately. One is the period during which navigation is open; the other, the period of closed navigation. Furthermore, closing of navigation at Fort William/Port Arthur meant, to some extent, separation of use of the storage facilities in the East from those in the West.

An average of about half the Western Canadian wheat supply is directed through the Lakehead ports. In good marketing years the climatic influence upon the delivery patterns would be very small because major portions of the seasonal deliveries have been completed before close of navigation. In poor marketing years, as soon as navigation has been closed, either wheat shipping has had to be slowed down; or a certain level of shipping has been maintained by accelerating the wheat flows through the other routes, but at a higher cost for wheat from the regions affected.

When lake navigation closed, wheat deliveries to country elevators did slow down gradually. Fairly high delivery rates could be continued at first, but it became lower and lower later on. Fairly high delivery rates could not be resumed until navigation opened again the next spring. The exact distribution of deliveries was determined by the speed of wheat-flows through the other routes as well as the

capacity of storage facilities available at the time. Acceleration of the flow through alternative channels would give rise to a new spatial problem. The distribution of deliveries would depend a great deal more on the level of wheat shipping being maintained than on the capacity of storage facilities available then. During the period after the navigation opening date till July 31 of a crop year, the marketing conditions would be very similar to those before the navigation closing date.

So far as transportation costs are concerned, both the period from August 1 to navigation closing and the period from navigation opening date to July 31 are relatively favorable for shipping of wheat, and thus indirectly favorable for country deliveries. Unusually heavy marketings during the climatically limited marketing period could be achieved under unusual circumstances only.

III. THE DELIVERY PATTERNS UNDER THE ALTERNATIVE METHOD

After reviewing and highlighting Working's study in Chapter II, the delivery patterns for 1936/37 to 1939/40, 1941/42, and 1945/46 to 1949/50 were shown using the same method of analysis, to have more or less resembled those during the crop years 1921/22 to 1935/36. The method works well for these years but the others are shown to have been different. Besides, due to the disappearance, partially or completely, of the main movement in the later crop years,

many patterns have been left either unexplained or unsatisfactorily explained. Working's method, therefore, does not render all the delivery patterns comparable. However, through the use of it, an excellent insight has been gained into farmers' behavior in marketing their produce before the Wheat Board era and into the effects of the Board operations and measures in modifying this behavior. The main objective now is to try to bring all the delivery patterns covered in the present study onto a comparable basis.

Despite the complexity and irregularity of the delivery patterns, one feature in common is that, relatively, the percentage of the seasonal supply marketed during the period roughly from the middle of December to the middle of April has always tended to be low and has varied little from one crop year to another, as compared with the other periods of a crop year (see Chart IV). This period tended to coincide with the period of closed navigation. In addition, delivery rates during the last half, roughly, of the period tended to have been lower and less variable than during the first half.

A crop year is thus divided into three marketing periods and two marketing subperiods. Definitions and designations of these periods and subperiods were given in Chapter I.

Percentage Distribution of the Seasonal Deliveries

For each of the crop years, percentages delivered during the early, limited and late marketing periods and that carried over as farm stocks, July 31, are calculated respectively (see Table XV). The percentages are plotted in Chart VIII. It can be seen that the percentage delivered during the limited marketing period has never varied as violently from year to year as the others. Taking 15 per cent of the seasonal supply as its mean, the range of variation tended to have been within plus and minus five per cent about the mean.

Based on the relationships among these percentages, the delivery patterns can be grouped into three categories:

1. The delivery patterns with over 60 per cent of the seasonal supplies delivered during the period of early marketings belong to this category. Note that these patterns all have complete "main movements" by Working's definition.

2. All the patterns with from 30 to 60 per cent of supplies delivered during the early marketing period. Delivery patterns of this category tended to appear during crop years transitional either from a period of good marketing years to a period of poor marketing years or vice versa.

3. The delivery patterns with less than 30 per cent of the seasonal supplies delivered during the period of early marketings. The percentage delivered during the period of early marketings may be greater or smaller than during the

TABLE XV

PERCENTAGE DELIVERIES DURING VARIOUS MARKETING PERIODS
1935/36 TO 1958/59 *

Crop year	(1) Early marketings		(2) Limited marketings				
			Supplementary		Conditional		
	Percentage[a]	Ave. Wkly. rate[b]	Percentage[a]	Ave. Wkly. rate[b]	Percentage[a]	Ave. Wkly. rate[b]	Total percentage[a]
1935-36	78.47	4.19	4.99	.66	6.51	.48	11.50
1936-37	78.33	4.19	5.31	.70	7.07	.63	12.38
1937-38	73.26	3.94	7.44	.96	7.64	.69	15.08
1938-39	84.77	4.62	3.62	.47	4.51	.35	8.13
1939-40	80.83	4.25	2.47	.34	4.06	.33	6.53
1940-41	55.64	2.93	9.27	1.27	9.54	.88	18.81
1941-42	57.24	3.01	10.26	1.41	6.17	.73	16.43
1942-43	28.45	1.46	5.99	.87	6.19	.52	12.18
1943-44	27.09	1.43	10.97	1.51	15.61	1.58	26.58
1944-45	52.97	2.79	11.70	1.61	6.57	.84	18.27
1945-46	61.38	3.28	8.27	1.09	4.78	.51	13.05
1946-47	62.69	3.30	5.58	.77	5.24	.47	10.82
1947-48	65.08	3.40	5.26	.74	3.40	.30	8.66
1948-49	66.69	3.43	5.61	.82	3.69	.40	9.30
1949-50	68.50	3.61	6.12	.84	6.30	.50	12.42
1950-51	57.36	2.97	8.81	1.26	3.15	.32	11.96
1951-52	44.32	2.28	8.39	1.22	9.48	1.05	17.87
1952-53	37.52	1.89	8.50	1.32	8.49	1.08	16.99
1953-54	28.37	1.47	10.18	1.45	5.08	.47	15.26
1954-55	18.39	.96	11.12	1.56	6.06	.58	17.18
1955-56	14.44	.74	5.45	.79	7.02	.76	12.47
1956-57	17.74	.89	5.27	.82	8.73	.89	14.00
1957-58	16.09	.83	8.73	1.25	7.71	.70	16.44
1958-59	19.53	1.02	9.92	1.39	13.81	1.22	23.73
Average							
1935-39	79.13	4.23	4.77	.62	5.96	.50	10.73
1940-41	56.44	2.97	9.77	1.34	7.65	.81	17.62
1942	28.45	1.46	5.99	.87	6.19	.52	12.18
1943-44	40.03	2.11	11.34	1.56	11.09	1.21	22.43
1945-50	63.62	3.33	6.61	.92	4.43	.42	11.04
1951-52	40.92	2.09	8.45	1.27	8.99	1.07	17.43
1953-58	19.09	.99	8.45	1.21	8.06	.77	16.51

* Calculated from data in Appendix Tables I and II and III. Period of early marketings runs from August 1 to close of navigation; limited marketings, close of navigation to opening of navigation in the spring; late marketings, opening of navigation to July 31. Limited marketings are divided between "supplementary" marketings, made up to January 31, and "conditional" marketings, made after January 31. (Footnotes continued following pg).

TABLE XV

(continued from page 90)

Crop year	(3) Late marketings: Before July, Percentage[a]	(3) Late marketings: Before July, Ave. Wkly rate[b]	(3) Late marketings: July, Percentage[a]	(3) Late marketings: July, Ave. Wkly rate[b]	(4) Total percentage[a]	(4) Farm stocks, July 31 (per cent)[a]
1935-36	6.17	.76	1.81	.41	7.98	2.05
1936-37	5.35	.51	1.93	.44	7.28	2.01
1937-38	6.51	.62	2.38	.54	8.89	2.77
1938-39	3.46	.40	2.68	.61	6.14	.96
1939-40	4.76	.50	4.65	1.05	9.41	3.23
1940-41	17.84	1.67	5.26	1.19	23.10	2.45
1941-42	11.01	.84	11.44	2.58	22.45	3.88
1942-43	12.33	1.27	5.97	1.35	18.30	41.01
1943-44	17.79	1.50	14.61	3.30	32.40	13.93
1944-45	13.64	.99	8.01	1.81	21.65	7.11
1945-46	11.50	.95	4.25	.96	15.75	9.82
1946-47	14.70	1.41	4.97	1.12	19.67	6.82
1947-48	8.15	.78	4.76	1.07	12.91	13.35
1948-49	7.18	.58	4.33	.98	11.51	12.50
1949-50	10.17	1.13	5.58	1.26	15.75	3.33
1950-51	16.71	1.41	8.81	1.99	25.57	5.16
1951-52	25.50	2.01	8.51	1.92	34.01	3.80
1952-53	15.75	1.15	15.22	3.44	30.97	14.52
1953-54	10.04	.92	9.84	2.22	19.88	36.49
1954-55	18.78	1.69	16.12	3.64	34.90	29.53
1955-56	23.13	1.86	13.56	3.06	36.69	36.40
1956-57	12.95	1.11	8.46	1.91	21.41	46.85
1957-58	18.34	1.73	11.41	2.57	29.75	37.72
1958-59	15.44	1.50	15.78	3.56	31.22	25.52
Average						
1935-39	5.25	.56	2.69	.62	7.94	2.20
1940-41	14.43	1.26	8.35	1.89	22.78	3.16
1942	12.33	1.27	5.97	1.35	18.30	41.01
1943-44	15.71	1.25	11.31	2.56	27.02	10.52
1945-50	11.40	1.04	5.45	1.23	16.85	8.49
1951-52	20.63	1.58	11.31	2.68	32.49	9.16
1953-58	16.45	1.47	12.53	2.83	28.98	35.42

[a]Percentage of the total supply available for delivery during the crop year.

[b]Percentage divided by the number of weeks of the period or subperiod.

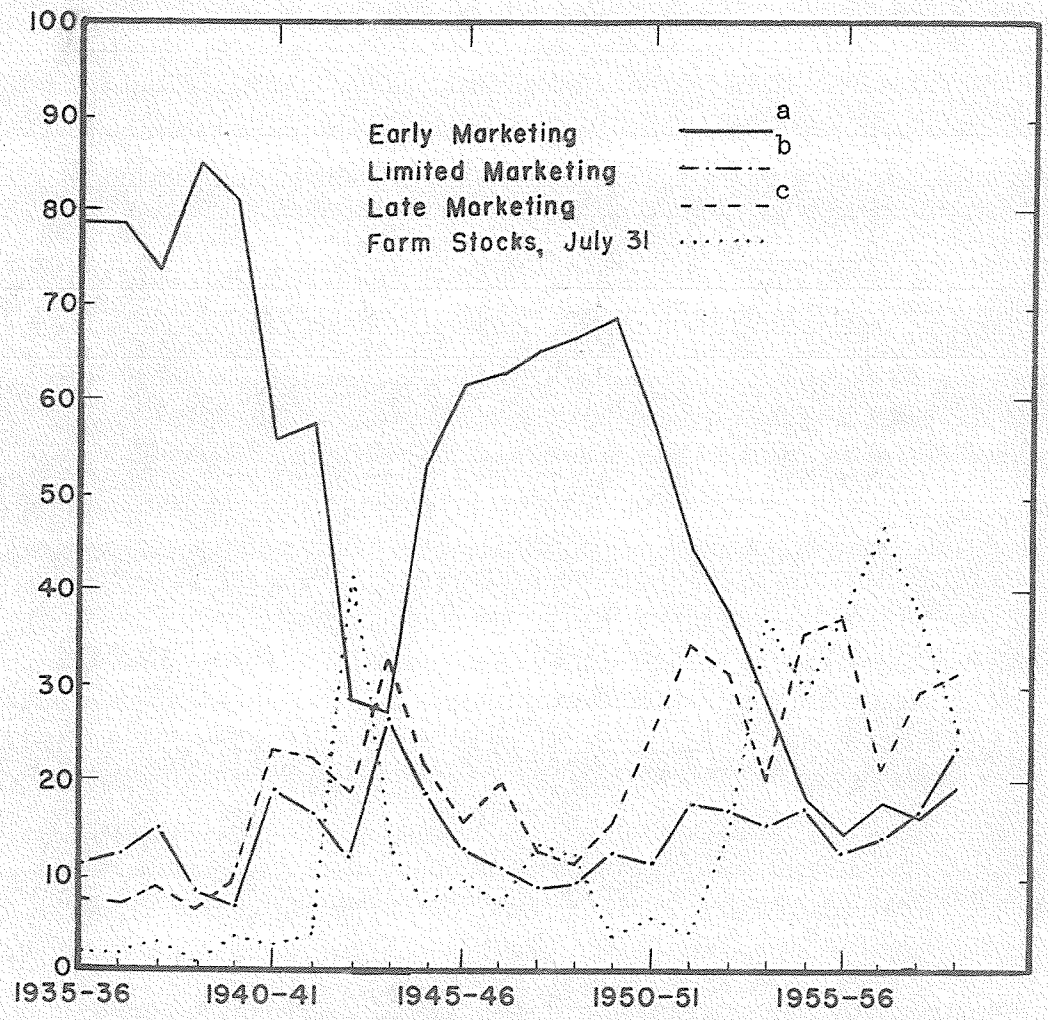

CHART VIII. PERCENTAGE DELIVERIES DURING VARIOUS MARKETING PERIODS AND FARM STOCKS, JULY 31, 1935/36 TO 1958/59

(Data from Table XV)

a. Prior to close of lake navigation
b. During period of closed navigation
c. From opening of navigation to July 31

period of late marketings. In all the years in this category more than 20 per cent of the seasonal supplies were carried over as farm stocks, July 31. Patterns of this category tended to have occurred in the crop years during which quotas were very restrictive.

The crop years 1935/36 to 1939/40 and 1945/46 to 1949/50 belong to the first category; the crop years 1940/41 and 1941/42, 1943/44 and 1944/45, and 1950/51 to 1952/53 belong to the second category; the crop years 1942/43 and 1953/54 to 1958/59 belong to the third category.

Average Weekly Deliveries

Period of early marketings. It is interesting to note that, for all the crop years having a complete main movement, the average weekly delivery rate during the period for early marketings has been over 3 per cent of the seasonal supplies. Under the quota system, there has never been an average weekly delivery rate during the period for early marketings as high as during the crop years 1935/36 to 1939/40. The lowest during the earlier period was 3.94 per cent in 1937/38; the highest during the later period was 3.61 per cent in 1949/50. The navigation closing date has been fairly regular. The average weekly delivery rate tended to be high when the percentage delivered during the early marketing period was high (see Table XV).

Period of limited marketings. Average weekly delivery rate during the subperiod of conditional marketings has almost always been lower than that during the subperiod of supplementary marketings, to whatever category the crop year might belong. For the crop years 1935/36 to 1939/40, the difference between the two averages is very small. It appears, therefore, more meaningful to view wheat marketings during the entire period of limited marketings as a residual of the rapid deliveries made during the period of early marketings, and those during the late marketing period as deferred deliveries, than to follow Working's division.

For the crop years under the quota system, the average weekly delivery rate during the interval for conditional marketings was usually only about half as high as that during the interval for supplementary marketings. This is evidence in support of the point raised before that the close of navigation on the Lakes did have the effect of indirectly and gradually limiting subsequent wheat deliveries.

During the crop years of the second category, efforts were made either to take in deliveries by building new storage facilities or to rush supplies to meet urgent demands even when navigation was closed. Average weekly delivery rates during both the two subperiods were relatively high, averaging well over 1 per cent, as compared with those of the crop years in the other two categories, which averaged well under 1 per cent. The crop years 1940/41 and 1941/42

can thus be viewed as transitional from the period free from quotas to the surplus condition in 1942/43; the crop years 1943/44 and 1944/45 as transitional from the surplus condition to the postwar good marketing years; the crop years 1951/52 and 1952/53 as transitional from the years of postwar shortages to another period of surplus. The 1950/51 crop year pattern, being judged this way, tended to be closer to the 1945/46 and 1949/50 patterns than to the 1951/52 and 1952/53 patterns.

Period of late marketings. There has been an apparent procrastination in late season wheat deliveries by producers under the quota system. For quite a few crop years the average weekly delivery rates during July has been over 3 per cent (see Table XV). The average weekly delivery rates during the last two weeks of July would be still higher, if calculated. The possible causes of this phenomenon may be:

1. It may have resulted entirely from the quotas issued.

2. The period from May to June is one during which labour requirements are heavy on farms. Most producers may not be able to spare the time to make deliveries until this period is over, even if they have unfilled delivery quotas at this time.

3. It may have been the farmers' practice to make more room ready in their own storage facilities during July for the coming new crop by delivering the old crop on whatever

quotas they might have then.

Farm Stocks, July 31

During the crop years when quotas were regulative or restrictive, relatively larger farm carryovers existed at the end of a crop year than during the crop years before the quota system was introduced. But why should this be so during the crop years 1945/46 to 1948/49 when quotas were actually or practically open? Why should these patterns be different from the prewar ones? It could not have resulted from such factors as prices and price anticipations, because during the 5-year pool for the 1945-49 crops, producers could not speculate on possible higher prices by postponing deliveries to the next crop year. To suppose that farmers wanted to hold a certain amount of their wheat supplies for unexpected feed, seed or other uses fails to explain why farm carryovers were so much higher than in years prior to 1942. Wheat stocks may have been considered by producers as a form of liquid assets during times of good prices so that quite a number of them would not sell all they could during a crop year. These are questions that can not be readily answered here. To provide answers to these questions, further studies on producers' marketing psychology or behavior would be necessary.

CHAPTER VI

WHEAT COUNTRY DELIVERY PATTERNS BY PROVINCES

I. PURPOSE

During a crop year, a delivery pattern for wheat in Western Canada is an aggregate of three separate delivery patterns for wheat in each of the provinces of Manitoba, Saskatchewan, and Alberta plus the Peace River area of British Columbia. Later, when speaking about the province of Alberta, the Peace River area of British Columbia is also included as a part of that province. An aggregate percentage delivery pattern is, in essence, a weighted average pattern of the three component percentage patterns.

An examination of the component patterns by provinces will serve a twofold purpose: (1) to identify the component patterns and their respective characteristics by comparing them with each other and accounting for their differences where possible; and (2) to help visualize the relationships between the component patterns and the aggregate by comparing the former with the latter.

II. RELATIONS BETWEEN THE AGGREGATE AND COMPONENT PATTERNS

The component patterns by provinces, during a certain crop year, may be similar to each other insofar as they are affected by factors in common; or they may differ from each

insofar as they are affected by factors in common; or they may differ from each other if they are affected by different factors or by certain common factors, but to different degrees. A factor which affects one or two of the component patterns may not necessarily affect the rest. For the component patterns to be affected by the same common factors to the same degrees would imply that the percentage patterns, aggregate and component, are uniform. This would be highly unlikely in such a large region with different harvesting dates production patterns and distances from markets. Now, supposing that a certain factor influences only one of the component patterns during a certain crop year, then, how much influence this factor has on the aggregate pattern would depend upon how much weight the affected component pattern carries into the aggregate pattern.

From the preceding chapters, it has been indicated that there are many factors which influence the delivery patterns. Some of the other factors will be examined below but the main emphasis here is on quotas. It has been shown, firstly, that there had been a more or less normal aggregate delivery pattern before the quota system was initiated by the Wheat Board in 1941/42; and secondly, that the patterns thereafter were different by greater or smaller degrees. Quotas are a factor which affect deliveries all over the Prairie generally, though not necessarily equally. If these

characteristics of the aggregate patterns are similar for the component patterns, then, firstly, each of the provinces would have a more or less normal pattern prior to the introduction of the quota system in 1941/42; and secondly, each of the component patterns under the quota system would be different, by varying degrees, from the old pattern for that province. Unfortunately, the data on weekly deliveries by provinces are not available for the crop years before 1941/42. Otherwise, it would be possible not only to confirm this inference, but also to determine, by comparing the provincial patterns under the quota system with previous patterns for the same areas, whether deliveries have been more adversely affected by quotas in one province than in another. Although the effects can also be measured to a certain extent by comparing the least restrictive quota years with the less restrictive, it cannot be as satisfactory.

III. THE AVERAGE PATTERNS

For each of the provinces, the average delivery rates for every week of each crop year were calculated from the data on weekly deliveries during the eighteen crop years 1941/42 to 1958/59. These average delivery rates are plotted in Chart IX. The plotted curves represent, as labeled, the 18-year average delivery patterns for the three Prairie Provinces; the horizontal lines, average weekly delivery

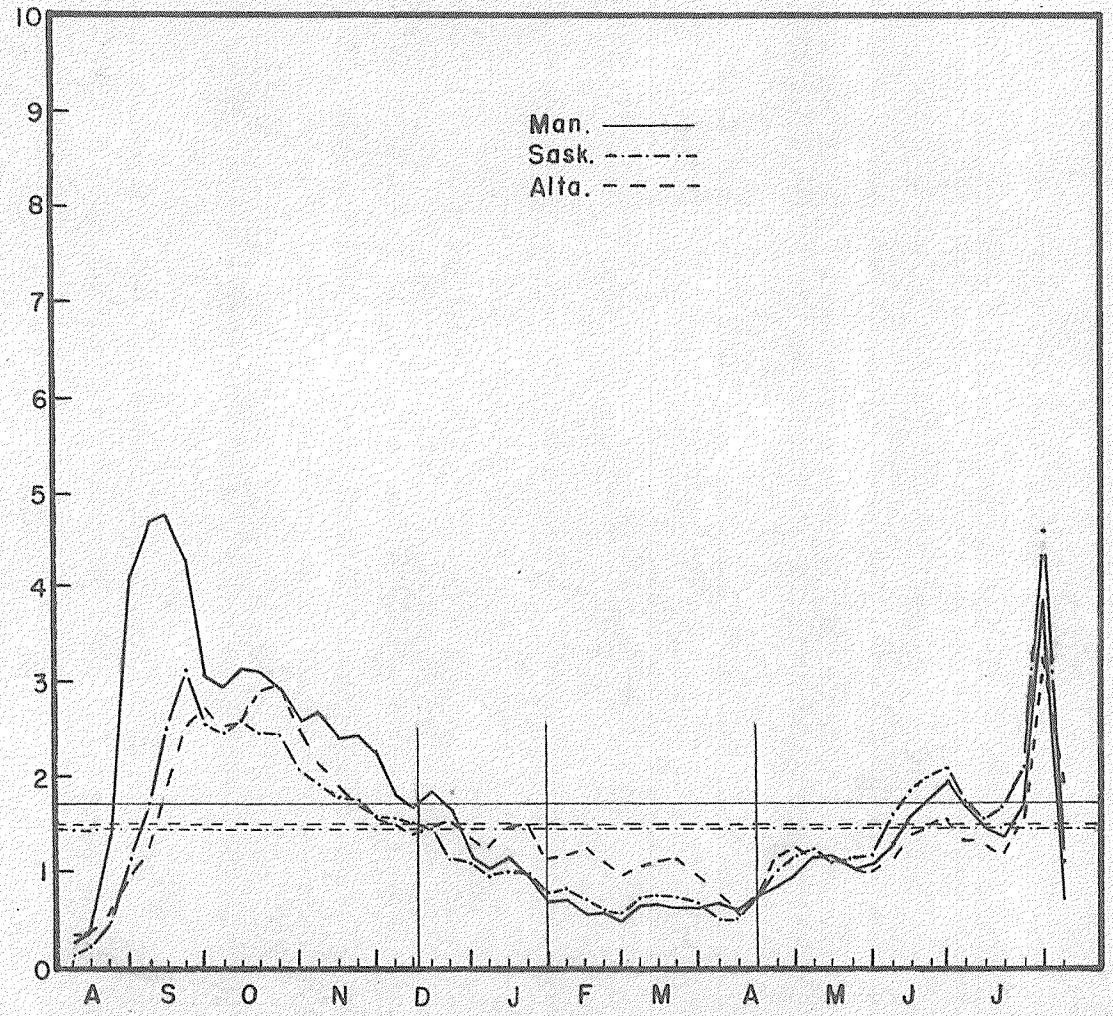

CHART IX. PERCENTAGE WEEKLY WHEAT DELIVERY RATES BY PROVINCES, 1941/42 TO 1958/59 AVERAGES
(Computed from data in the Annual Crop Year Statements by the Board of Grain Commissioners.)

rates for the average patterns.

These curves and lines indicate that:

1. Relatively, Manitoba farmers delivered a larger proportion of their wheat during the period of early marketings than did Saskatchewan and Alberta farmers and also delivered it earlier.

2. Relatively, Alberta farmers delivered more during the period of limited marketings than farmers in the other two provinces. This implies that there was less limiting effect of closed navigation on wheat deliveries in the province of Alberta than in the other two provinces. Or in other words, Alberta wheat relied more on the outlet through the Pacific coast ports than did that from other provinces.

3. Relatively, Saskatchewan farmers delivered more during the period of late marketings than farmers in the other provinces.

4. Relatively, Manitoba has had a higher average weekly delivery rate, 1.70 per cent, than the other provinces, around 1.45. Higher average weekly delivery rates meant greater proportions of the seasonal supplies were delivered (see Table XVI).

5. When these average patterns are compared with the 17-year average pattern for the Designated area as a whole (see Chart I), the average patterns for Saskatchewan and Alberta are closer to the aggregate than is that for Manitoba.

IV. THE PATTERNS

The eighteen delivery patterns 1941/42 to 1958/59 for Manitoba, Saskatchewan and Alberta are plotted in Charts X, XI and XII respectively. Patterns so expressed provide a visual impression of how, in each of the provinces, wheat deliveries have been distributed during each crop year, but do not provide an adequate basis for discriminative and clearcut comparison nor for simple and precise description.

Average Weekly Delivery Rate and Average Weekly Deviation

Average weekly delivery rate and average weekly deviation during each of the eighteen crop years 1941/42 to 1958/59 were calculated respectively for each of the provinces included in the Designated Area as shown, together with that for each of the aggregate patterns, in Table XVI. The properties of these two statistical measures were discussed in Chapter V.

Results again indicate that, relatively, there have been higher average weekly delivery rates and average weekly deviations in Manitoba than in the other provinces. When the averages of these two measures are calculated for the period 1945/46 to 1949/50 during which quotas were actually or practically open and for the period 1954/55 to 1958/59 during which quotas were very restrictive, comparisons can then be made between these two periods. The less the difference is between two corresponding averages for a province,

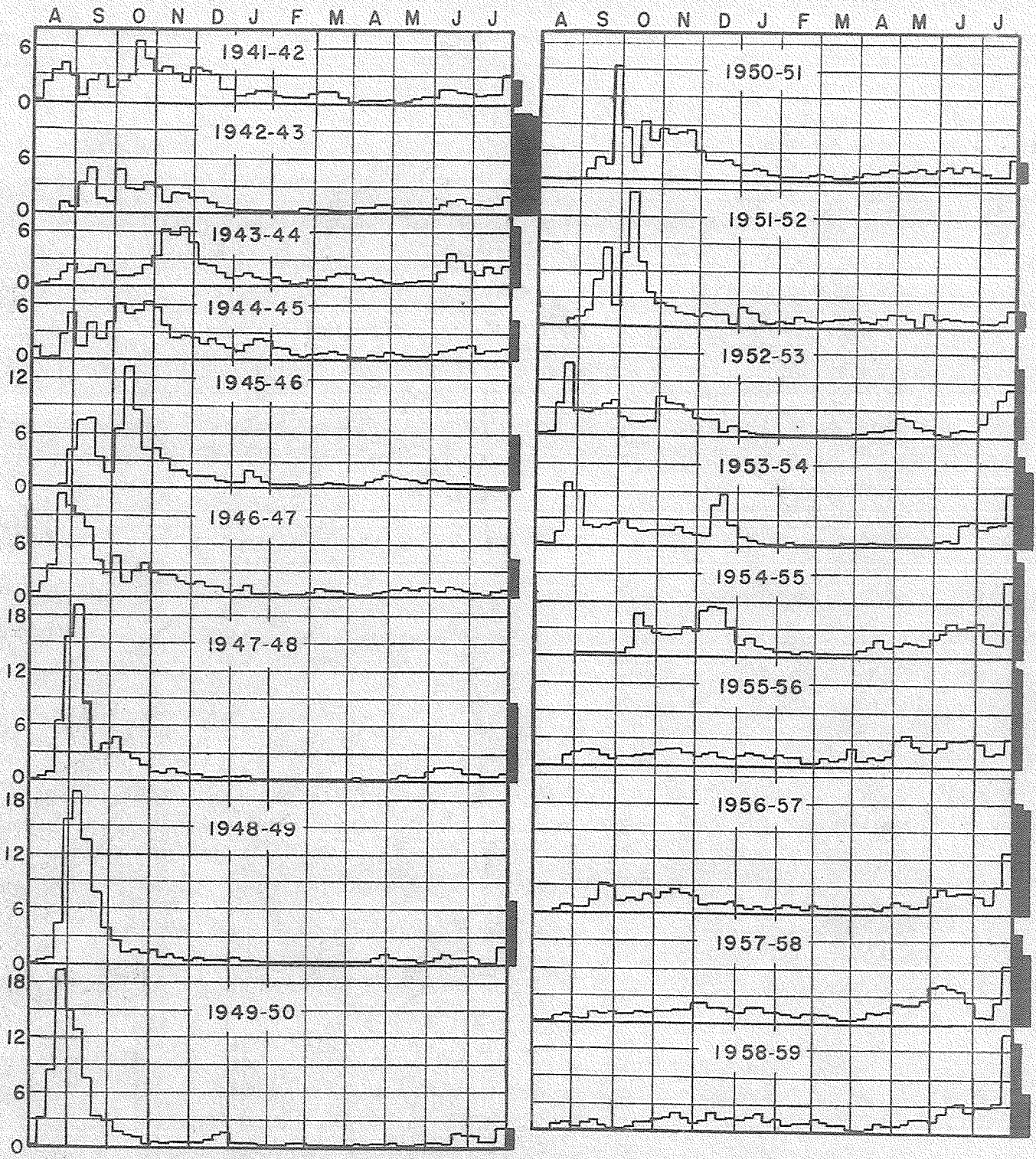

CHART X. WEEKLY COUNTRY WHEAT DELIVERIES AND FARM STOCKS, JULY 31, IN PERCENTAGES, IN THE PROVINCE OF MANITOBA
(Computed from data in the Annual Crop Year Statements by the Board of Grain Commissioners. Shaded areas indicate volume of farm carryovers on the same scale as weekly deliveries.)

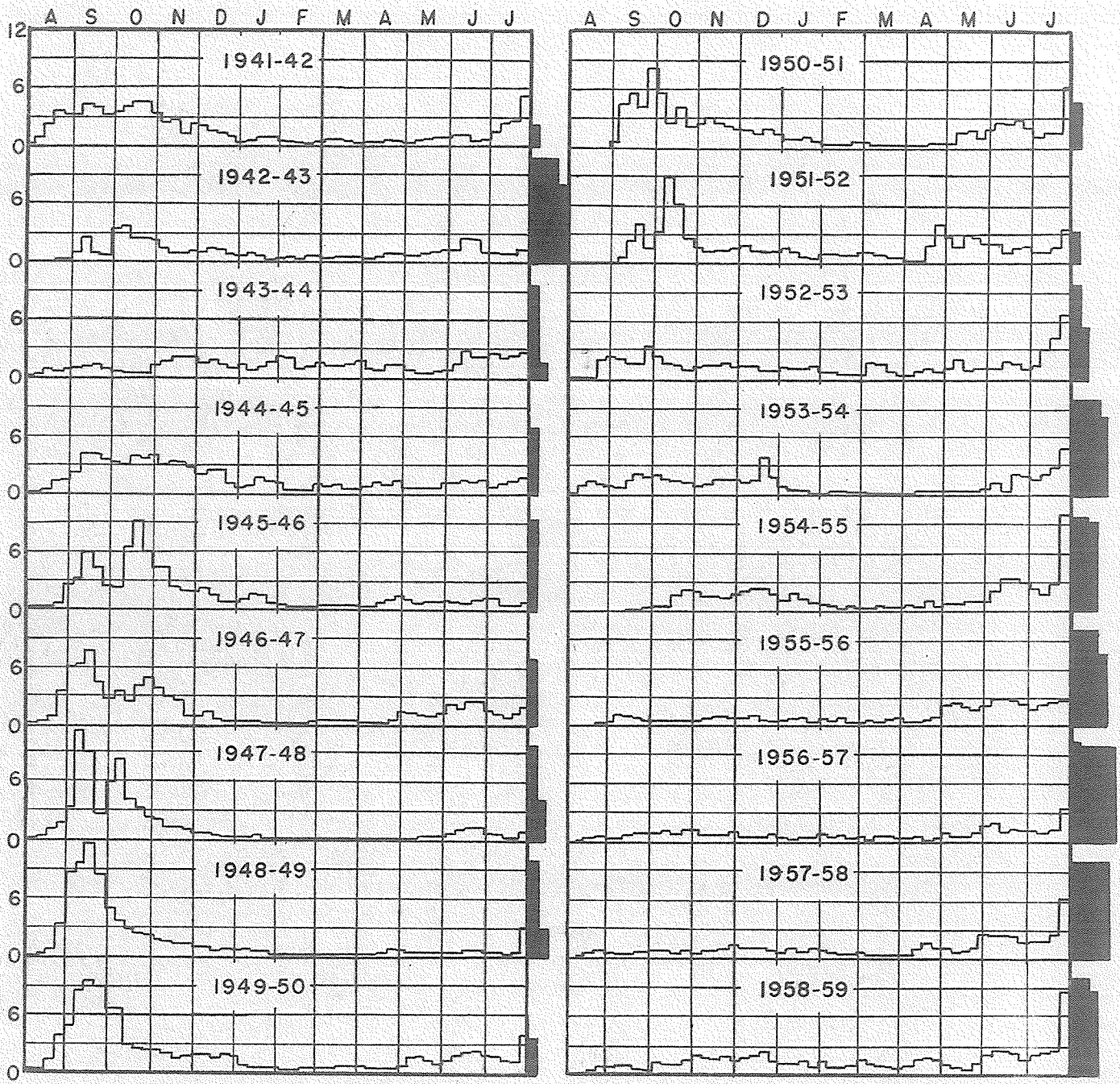

CHART XI. WEEKLY COUNTRY WHEAT DELIVERIES AND FARM STOCKS, JULY 31, IN PERCENTAGES, IN THE PROVINCE OF SASKATCHEWAN
(Computed from data in the Annual Crop Year Statements by the Board of Grain Commissioners. Shaded areas represent farm carryovers on same scale as deliveries.)

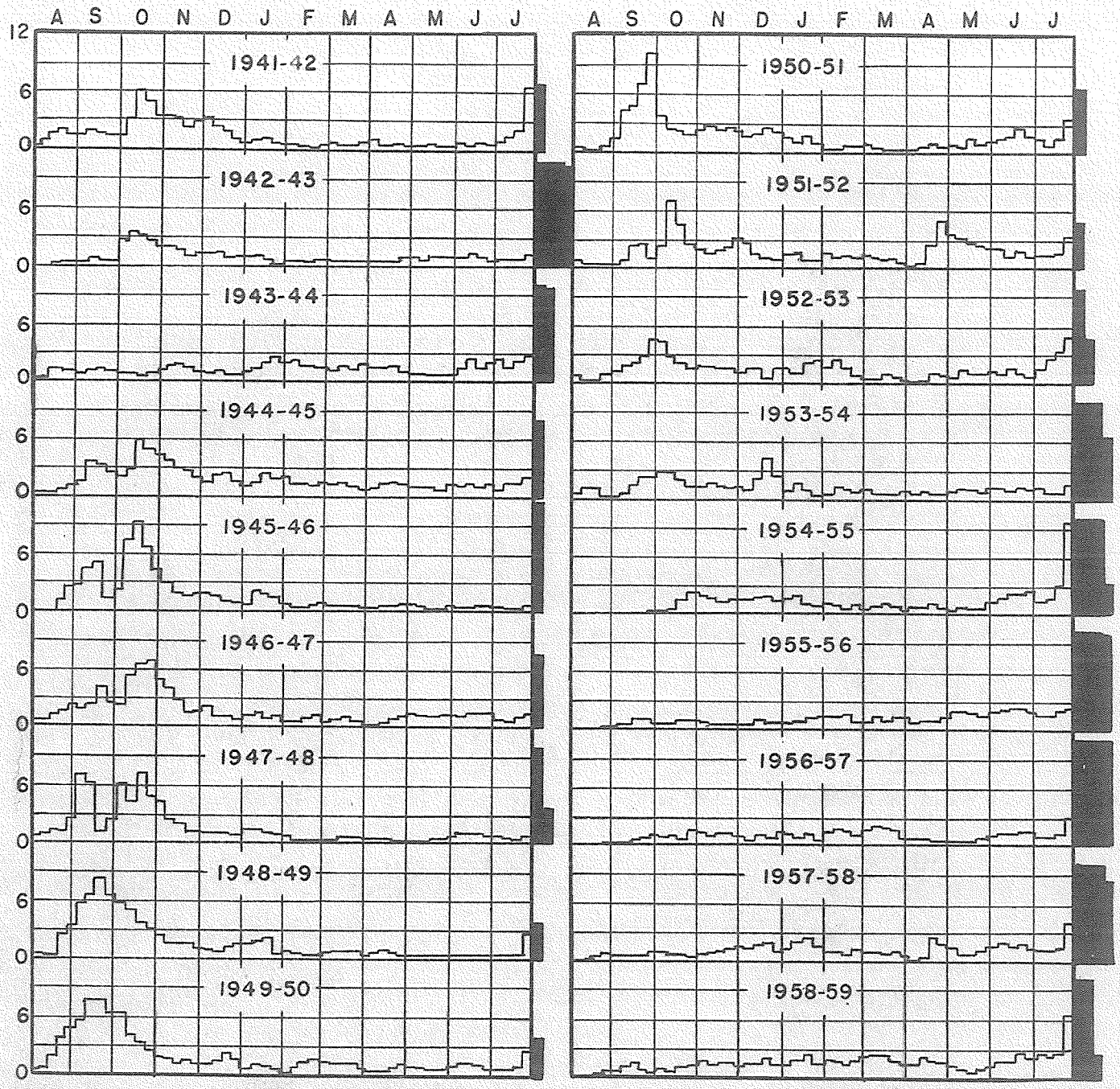

CHART XII. WEEKLY COUNTRY WHEAT DELIVERIES AND FARM STOCKS, JULY 31, IN PERCENTAGES, IN THE PROVINCE OF ALBERTA
(Computed from data in the Annual Crop Year Statements by the Board of Grain Commissioners. Shaded areas represent farm carryovers on same scale as deliveries.)

TABLE XVI

AVERAGE WEEKLY DELIVERY RATES AND DEVIATIONS 1941-42 TO 1958-59*

Crop year	Manitoba		Saskatchewan		Alberta		Designated Area	
	Average weekly delivery rate	Average weekly deviation	Average weekly delivery rate	Average weekly deviation	Average weekly delivery rate	Average weekly deviation	Average weekly delivery rate	Average weekly deviation
1941-42	1,87	1.13	1.88	1.25	1.78	1.07	1.85	1.13
1942-43	1.27	.87	1.11	.62	1.06	.54	1.11	.60
1943-44	1.74	.99	1.61	.53	1.44	.46	1.57	.51
1944-45	1.79	1.27	1.72	1.00	1.71	.82	1.73	.95
1945-46	1.78	1.62	1.71	1.31	1.68	1.23	1.70	1.51
1946-47	1.85	1.55	1.79	1.42	1.78	1.03	1.79	1.27
1947-48	1.75	1.94	1.60	1.53	1.64	1.27	1.63	1.47
1948-49	1.79	2.03	1.67	1.65	1.66	1.36	1.67	1.57
1949-50	1.88	2.12	1.86	1.51	1.85	1.31	1.86	1.47
1950-51	1.88	1.44	1.83	1.36	1.79	1.22	1.83	1.26
1951-52	1.88	1.47	1.86	1.02	1.82	.97	1.85	1.01
1952-53	1.77	1.31	1.62	.69	1.65	.73	1.63	.67
1953-54	1.57	1.23	1.18	.75	1.22	.50	1.19	.61
1954-55	1.72	1.32	1.36	.99	1.28	.74	1.31	.87
1955-56	1.62	.66	1.08	.64	1.06	.45	1.11	.54
1956-57	1.47	.78	.95	.38	1.08	.43	1.02	.36
1957-58	1.58	.82	1.15	.62	1.19	.45	1.18	.52
1958-59	1.64	.81	1.38	.62	1.49	.55	1.39	.53
Average								
1945-49	1.81	1.85	1.73	1.48	1.72	1.44	1.73	1.46
1954-58	1.61	.88	1.18	.65	1.22	.52	1.20	.54

* Calculated from data in Appendixes I and II for the Designated Area and from data in the Annual Crop Year Statements by the Board of Grain Commissioners for the provinces. The average rate is the percentage of available supplies delivered per week; average deviation is the average of the absolute differences between the average delivery rate and the actual rate for each week.

the less adversely affected are the deliveries in the province. The province of Manitoba had a greater difference between the averages of the average weekly deviations from 1.85 to .88, but a smaller difference between the averages of the average weekly delivery rates from 1.81 to 1.61, for the two periods than the other two provinces, from 1.48 to .65 and 1.73 to 1.18 for Saskatchewan, and from 1.44 to .52 and 1.72 to 1.22 for Alberta, respectively. This means that the opportunity for Manitoba farmers to deliver wheat has been less restricted for the crop year as a whole but the timing of their deliveries within the crop year has been delayed to a greater extent than is the case for the other two provinces.

The average weekly delivery rate for the aggregate pattern during a crop year is, in essence, the weighted average weekly delivery rate of those for the component patterns by provinces. The relationship between the average weekly deviation for the aggregate pattern and those for the component patterns during a crop year is quite complicated because this entirely depends upon whether deliveries from the different provinces have a supporting offsetting effect on the magnitude of the average weekly deviation for the aggregate delivery pattern. For illustration, the average weekly deviation for the aggregate pattern may be smaller than those for the component patterns by provinces, if heavy deliveries are made in one of the provinces when few are made

in the others so that deliveries are more evenly distributed aggregately than separately for each of the provinces.

Average Yield and Average Supply

Generally, quotas had been issued on a per acre basis, per authorized acre at first, later changed to per specified acre. Thus the relation between the average yields per acre for the provinces and the quotas issued by the Wheat Board during a crop year tends to be important in explaining why the provinces had been affectedly differently in wheat deliveries under the quota system. But average yield per acre is not a satisfactory measure because it does not indicate (1) how much of it is merchantable; (2) how much of it is utilized on farms; (3) how much of it is available for sale. Moreover, it does not take into account the carryovers from the preceding crop year. It is, therefore, unsuitable as a basis for comparison for the purposes of the present study.

A measure which does not have any of these disadvantages is average supply per acre. Average supply per acre during a crop year is defined as the average amount of wheat available for sale per acre of land seeded to wheat. The average supply per acre during a crop year can be computed by dividing the seasonal wheat supply by the total acreage of wheat for that crop year. Both the average yields and average supplies per acre for each of the provinces and

for each of the 18 crop years are shown in Table XVII.

The Relation of Average Supply Per Acre to Average Weekly Delivery Rate and Average Weekly Deviation

Suppose that a uniform quota on a per acre basis is issued by the Wheat Board during a crop year for provinces having different average supplies per acre. Then, the smaller the average supply per acre is in one province than in the others, the higher will be the average weekly delivery rate for that province than for the others. The average weekly deviation might also be higher if quotas proved less restrictive during the early part of the marketing year in the province with smaller supplies.

Due to higher average yields per acre and larger carryovers from the preceding crop years in quite a few crop years of the period since 1952/53 in both the provinces of Saskatchewan and Alberta than in Manitoba, the former had higher average supplies per acre averages of 25.2 bushels for Saskatchewan and Alberta respectively, than the latter, about 20 bushels per acre. Consequently, there were higher average weekly delivery rates as well as higher average weekly deviations in the province of Manitoba than in the other provinces (see Tables XVI and XVII).

Other Considerations

Average farm size. The Wheat Board started issuing initial quotas on a 'unit' basis in 1954/55. A farmer could

TABLE XVII

AVERAGE PER ACRE SUPPLIES AND AVERAGE YIELDS OF WHEAT, BY PROVINCE, 1941/42 TO 1958/59

Crop year	Manitoba				Saskatchewan	
	Seasonal supply[a] (thousand bushels)	Seeded acreage[b] (thousand acres)	Average supply per acre[c]	Average yield per acre[d]	Seasonal supply[a] (thousand bushels)	Seeded acreage[b] (thousand acres)
1941-42	43,100	2,465	17.5	20.7	118,226	12,195
1942-43	45,722	1,930	23.7	27.5	267.233	12,353
1943-44	43,622	1,575	27.7	24.8	220,580	9,622
1944-45	43,894	2,300	19.1	21.9	235.453	13,200
1945-46	31,928	2,020	15.8	19.2	156.156	13,610
1946-47	49,185	2,522	19.5	23.0	192,186	14,226
1947-48	35,033	2,497	14.0	16.8	154,477	14.226
1948-49	42,578	2,172	19.6	23.0	182,834	14,389
1949-50	47,063	2,887	16.3	18.0	180,456	15,737
1950-51	43,370	2,382	18.2	21.0	240,622	16,500
1951-52	45,995	2,326	19.8	22.8	290,042	15,635
1952-53	49,968	2,368	21.1	24.1	417.079	16,600
1953-54	44,032	2,300	19.1	20.8	411,221	16,800
1954-55	27,984	2,139	13.1	13.5	281,337	16,600
1955-56	36,634	2,075	17.7	20.2	361,752	14,100
1956-57	51,396	2,199	23.4	25.6	451,657	14,569
1957-58	50,642	2,200	23.0	22.3	409,953	13,365
1958-59	55,138	2,358	23.4	24.6	314,314	13,182

(continued)

[a]Data from Appendix Table I and II. Seasonal supply equals season's deliveries plus farm stocks, July 31.

[b]Data from Canada Grain Trade. Acreage seeded to wheat.

[c]Seasonal supply divided by seeded acreage.

[d]Data from Canada Grain Trade. Seasonal production divided by seeded acreage.

TABLE XVII

(continued from page 110)

Crop year	Manitoba				Saskatchewan	
	Average supply per acre[c]	Average yield per acre[d]	Seasonal supply[a] (thousand bushels)	Seeded acreage[b] (thousand acres)	Average supply per acre[c]	Average yield per acre[d]
1941-42	9.7	12.0	75,728	6,556	11.5	14.9
1942-43	21.6	24.7	142,214	6,370	22.3	26.8
1943-44	22.9	15.2	115,158	4,829	23.8	17.1
1944-45	17.8	18.3	100,584	6,400	25.7	15.5
1945-46	11.5	12.4	75,055	6,800	11.0	12.9
1946-47	13.5	14.6	117,713	6,983	16.9	18.2
1947-48	10.9	12.2	95,086	6,634	14.3	15.8
1948-49	12.7	13.3	110,520	6,259	17.7	18.4
1949-50	11.5	11.8	103,016	7,900	13.0	13.0
1950-51	14.6	16.5	103,649	7,500	13.8	15.6
1951-52	18.6	20.8	137,278	6,424	21.4	23.7
1952-53	25.1	27.0	159,882	6,404	25.0	26.9
1953-54	24.5	23.3	169,596	6,417	26.4	25.7
1954-55	16.9	10.2	144,455	5,968	24.2	17.9
1955-56	25.7	22.7	156,575	5,789	27.0	23.3
1956-57	31.0	24.4	177,849	5,296	33.6	26.5
1957-58	30.7	16.6	146,597	4,881	30.0	19.1
1958-59	23.8	14.6	124,271	4,704	26.4	20.4

make his choice to deliver 3 bushels of wheat, 5 bushels of barley or rye, or 8 bushels of oats to a unit of quota. In the following year, an amendment was passed to give farmers the right to deliver grains in whatever combinations they might wish. Initial quotas have been issued at the level of 100 units per farm since 1954/55. It is unlikely that all farmers will deliver on their initial quotas wheat only, or the same combination of different grains. If different grains are delivered in nearly the same combination in all provinces, however, the smaller the average farm size in a province the higher will be both the average weekly delivery rate and the average weekly deviation for that province.

The average farm size in the province of Manitoba has been only about 60 per cent of that in Saskatchewan; that in the province of Alberta, about 95 per cent of the average in Saskatchewan (see Table XVIII). This could also be one of the reasons why during the crop years 1954/55 to 1958/59, the province of Manitoba had higher average weekly delivery rates as well as higher average weekly deviations than the other provinces.

Climate. The close of navigation on the Lakes tended to have less limiting effect on deliveries in the province of Alberta than that in the other two provinces. Deliveries in Alberta under the quota system were distributed more evenly over time than in the other provinces. This probably

TABLE XVIII

AVERAGE FARM SIZE BY PROVINCES
1946, 1951, 1956 *

	Saskatchewan	Manitoba		Alberta	
Year	Average size of farm (acres)	Average size of farm (acres)	Size as per cent of Sask. average	Average size of farm (acres)	Size as per cent of Sask. average
1946	473.0	306.2	65	462.9	98
1951	550.5	338.5	61	527.3	96
1956	607.3	364.5	60	578.8	95

*Data from Agricultural Census of Canada 1946, 1951, and 1956.

explains why the province of Alberta has almost always had a lower average weekly deviation than the other provinces.

Maturity of wheat. Relatively early maturity of wheat in the province of Manitoba probably had been responsible for the earlier and more heavily concentrated deliveries in that province than in the other provinces, when quotas were relaxed by the Board during the crop years 1945/46 to 1949/50.

Production patterns. Specified acreage includes acreages of all wheats, barley, oats, rye, flax, summerfallow, and hay for forage. General quotas following the initial quota are on a specified acreage basis. In areas with a relatively low proportion of land utilized for wheat producers would be able to substitute wheat for other grains and deliver relatively large proportions of their total wheat output under a relatively low quota per acre. The wheat delivery patterns could thus be affected since wheat is of relatively high values, as compared with the other crops. General quotas might, therefore, affect differently crop regions with different production patterns because a uniform general quota could be relatively favorable to deliveries in regions with comparatively small wheat acreages, and hence small seasonal supplies, as compared with regions having large seasonal supplies of wheat per specified acre.

CHAPTER VII

SUMMARY AND RECOMMENDATIONS

I. SUMMARY

Completely producer-controlled wheat delivery patterns, in a given state of technology and natural environment, are reflections of producers' behavior as sellers in local markets during periods of unrestricted marketing.

It was reported by Working that, during the crop years 1921/22 to 1935/36, there were more or less definite country delivery patterns for wheat in Western Canada. As cited before, the outstanding features of the delivery patterns were: (1) 'the rapid rate at which deliveries are made in the early autumn'; and (2) 'the uniformity of percentage rates of delivery in corresponding periods of different years'.

The purpose of this study was to examine the influences and effects of Wheat Board operations on the delivery patterns for wheat in Western Canada, and the patterns by provinces as well, since 1935.

As a first step, the patterns for 1935/36 to 1958/59 were studied by following Working's method.

It appeared that, under Board operations as long as farmers were free to make deliveries according to their own marketing plans, the patterns tended to be very close to

those prior to 1935. The patterns in years when deliveries were controlled by the quota system departed more or less from the pre-1935 pattern. The extent of departure tended to depend on the degree of the restrictiveness of the quotas. The more restrictive the quotas during a crop year, the greater was the departure.

The 1936/37 to 1939/40 patterns, when the Wheat Board operated along with the open market system or either system operated practically alone, appeared to be quite similar to the pre-1935 pattern. There were some differences, however. These included earlier average dates of start of rapid marketings (delivery rates exceeding 3 per cent of the season's supply), earlier completion of both the first and second 25 per cent points, higher average weekly rates, and shorter intervals for delivery of the second 25 per cent of the season's supply. The possible reason for this might be more widespread use of the combine and tractors on the Prairie farms. Actually, the 1935/36 pattern was closer to the 1936/37 to 1939/40 patterns.

During the crop years 1940/41 to 1942/43, although wheat sales in the open market were continued, wheat marketings were controlled by the quota system. The effect of quotas on deliveries during these years tended to be just as great as it was after 1943 under compulsory Wheat Board marketing. Demand for wheat appeared to have been an important determining factor in the issuance of quotas. The

more of the season's supply that could be sold, the less restrictive the quotas were. The less restrictive the quotas, the closer to the pre-1935 patterns the deliveries tended to be. Since introduction of the quota system the previously typical "main movement" in the early autumn has been completed only in the years 1941/42, and 1945/46 to 1949/50. During the other crop years, rapid marketings in the early autumn were either discontinued before completion of the first 50 per cent or the first 25 per cent of the season's deliveries and, in several years did not occur at all. Under the quota system, there has never been any pattern close to the 1935/36 to 1939/40 patterns in terms of immediacy and rapidity of deliveries.

As a second step, the patterns for 1935/36 to 1958/59, and the patterns by provinces for 1940/41 to 1958/59 were studied, using an alternative method.

Under the open market system, with given supplies and demands, price was allowed to clear the market and the capacity of available storage facilities did not constitute a significant limiting factor on wheat deliveries. Under the quota system, either under the voluntary Wheat Board with a minimum price higher than the free market price, or under the compulsory Wheat Board, the patterns of deliveries tended to be closely related to the availability of storage space. During the crop years 1935/36 to 1939/40, the average weekly deviations of deliveries, a measure of the degree

of seasonality in deliveries, tended to be high whatever the ratio of available storage space to the seasonal supply, a measure of the availability of storage facilities. During the crop years 1940/41 to 1958/59, the average weekly deviation tended to be .91 higher when the ratio was 1 higher.

The climate of Canada has a definite influence on inland transportation, shipping costs, and wheat deliveries. During the crop years when deliveries were producer-controlled and during the good marketing years under the quota system, the influence of the climate on deliveries has been small because major portions of the seasonal supplies have been delivered before the close of navigation at Fort William/Port Arthur. In poor marketing years under the quota system, as soon as navigation has closed wheat deliveries have slowed down sharply. Usually, the average weekly delivery rates during the period of limited marketings when navigation was closed has been very low, with that during the later half of the period being lower and less variable than that during the first half. In other words, in poor marketing years under the quota system when little has been delivered before close of navigation, fairly heavy deliveries and rapid marketings tend to be made after navigation is opened again in the spring because of this climatic influence.

During the crop years 1935/36 to 1939/40 and 1945/46 to 1949/50 more than 60 per cent of the seasonal supplies were delivered during the period of early marketings; the

patterns had a complete "main movement". All the patterns which had a complete main movement, including the crop year 1941/42, had average weekly delivery rates over 3 per cent of the seasonal supply during the period of early marketings (prior to close of navigation). During the crop years 1942/43, and 1953/54 to 1958/59, when quotas were very restrictive, less than 30 per cent of the seasonal supplies was delivered during the period of early marketings and more than 20 per cent was carried over a farm stocks, July 31. The other patterns, 1940/41 to 1941/42, 1943/44 to 1944/45 and 1950/51 to 1952/53, do not fall into either of the two above-mentioned groups. These were transitional years between periods of good marketing years and periods of poor marketing years or the reverse. Deliveries during these crop years have been distributed more evenly over time. Therefore, these years had higher average weekly delivery rates during the period of limited marketings than did other years.

There has been an apparent procrastination in wheat deliveries during the closing months of the crop year by producers under the quota system. For quite a few crop years the average weekly delivery rates during July have been over 3 per cent of the seasonal supplies. Whether this resulted from the quotas issued, heavy farm labour requirement during the period from May to June, or from the producers' need to make more farm storage space available for the coming new crop by rushing deliveries during July to

fill whatever quotas they might have is an unanswered question requiring further study.

Year-end carryover much higher than pre-war during the crop years 1945/46 to 1949/50 when quotas were actually or practically open was beyond a ready explanation.

On the average, during the 1940/41 to 1958/59 crop years, the delivery patterns for wheat in the province of Manitoba have had both higher average weekly delivery rates and higher deviations about the average than those in the provinces of Saskatchewan and Alberta. In other words, producers in the province of Manitoba have delivered relatively more or their seasonal supplies earlier in the season than producers in the other provinces. But when comparing the crop years 1945/46 to 1949/50, during which quotas were actually or practically open, with the crop years 1954/55 to 1958/59, wheat marketings in the province of Manitoba tended to be more adversely affected by quotas in terms of immediacy of deliveries, but less adversely affected in terms of proportions of the seasonal supplies delivered, than those in the other provinces.

Relatively early maturity of wheat and more advantageous commercial location appeared to be responsible for the higher average weekly delivery rates and average weekly deviations in Manitoba during the crop years 1945/46 to 1949/50.

Due to the fact that quotas have been issued on an

authorized or specified acre basis, lower average supplies per acre in Manitoba since 1952/53 appears to have been at least partly responsible for higher average weekly delivery rates and average weekly deviations in Manitoba than in the other two provinces. Since 1954/55, initial quotas have been issued on a unit basis and the smaller average farm size in Manitoba (about 60 per cent of that in the other provinces), has tended to help maintain these differences between the delivery patterns by provinces.

Because of its location, wheat in Alberta relies less upon the marketing channels through the Lakehead ports than does that in the other Provinces. Deliveries in the province of Alberta have been less affected by the navigation conditions on the Lakes and thus more evenly distributed over time than in the other provinces. This probably explains why the patterns for Alberta have almost always had lower average weekly deviations than the corresponding patterns of the other provinces.

II. RECOMMENDATIONS FOR FURTHER STUDIES

During the course of the present study, quite a number of questions arose which could not be answered readily and satisfactorily but might have important bearings on this particular subject. Further studies on these problems would be helpful in gaining a better understanding of the economic and other effects of Board marketing. They are

described in the order of occurrence as follows:

1. Whether or not the marketing behavior of producers who were members of the Pools was different from that of non-members; that is whether the pricing aspects of the pooling technique had any effects in changing the producers' marketing behavior in regard to timing of deliveries.

2. Technological advances affected the completely producer-controlled delivery patterns, as reported by Working. Further analysis would be required to confirm or test the statement that further expansion in the use of the combine was responsible for the advances in the significant marketing dates and higher average weekly delivery rates for delivering the second 25 per cent of the season's supply during the crop years 1936/37 to 1939/40, as compared with the 1929/30 to 1935/36 crop years.

3. What have been the effects of Wheat Board operations on regional grain production patterns in western Canada?

4. How does the Wheat Board manage wheat shippings during the marketing periods when navigation is open and the period when navigation is closed and how should the Wheat Board adjust the channeling of wheat from different regions through different marketing routes in response to changes, regular or irregular, in transportation conditions?

5. What is the farmers' attitude towards making deliveries during the period of late marketings when, under quota controls, a very small portion of the seasonal supplies can be delivered during the period of early marketings? For example, what was the farmers' attitude towards holding unusually large farm stocks during years of good wheat prices and actually or practically open quotas?

6. How do farmers make their choice of different combinations of grains in making deliveries to the 'unit' quotas under different (guaranteed) price conditions? Do farmers in different farming areas make different choices?

7. What have been the effects of Wheat Board operations on farm wheat incomes and farm income flows over time from wheat sales?

8. What have been the welfare aspects of Wheat Board operations? E.g., have incomes been raised, made more secure, stabilized, or equalized? Have family farms been preserved? Have opportunities been expanded for beginning farmers? Have rural communities been benefitted?

Studies in several of these areas, and others, would be required before the impact of Canadian Wheat Board operations and policies on western agriculture can be fully assessed.

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APPENDIX

TABLE I. CANADIAN WHEAT COUNTRY DELIVERIES WEEKLY, AUGUST 1936-JULY 1959

(thousands of bushels)

Week Ending	1936-37	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47	1947-48	1948-49	1949-50	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59
Correction[a]	+1	0	-1	-2 (-3)[b]	+3	+2	+1	0 (-1)[b]	-2	-3	+1 (0)[b]	-1	-2	-3	+3 (+2)[b]	+1	0	0	-2	-3 (-4)[b]	+2	+1	0
Residual[c]	0	0	+40	+320	-602	-192	0	+5,981	+16,578	+11,795	-420	-134	+4,693	+2,438	-504	0	+5,649	+5,649	+8,932	+11,214	-12	0	+4,973
Week Ending	Friday	Friday	Friday	Friday	Friday	Friday	Friday	Friday	Friday	Friday	Friday	Friday	Thurs.	Thurs.	Thurs.	Thurs.	Thurs.	Thurs.	Wednes.	Wednes.	Wednes.	Wednes.	Wednes.
Aug. 6	1,714	203	608	692	2,406	1,344	160	689	1,644	278	1,680	805	1,047	894	736	2,019	2,939	1,822	-	-	86	495	212
13	6,188	1,185	2,231	3,018	4,511	3,277	15	1,810	1,070	327	2,396	1,708	1,397	2,695	206	829	1,149	6,731	4	-	827	1,661	564
20	10,788	4,189	6,563	5,694	10,717	6,163	360	3,993	2,046	423	4,989	3,859	2,120	8,329	188	852	3,266	9,260	5	184	1,824	3,077	1,801
27	15,614	8,348	14,921	16,907	15,120	8,278	1,708	4,172	5,369	2,044	14,706	6,431	10,570	19,855	885	1,318	14,893	8,717	3	2,360	3,950	5,514	3,858
Sept. 3	19,793	11,788	23,113	33,304	16,924	6,433	1,557	5,030	6,833	7,113	19,605	13,938	25,952	20,736	3,005	806	14,263	7,941	150	3,507	3,183	4,511	3,667
10	15,071	10,476	31,342	42,562	16,574	5,746	4,861	4,567	7,219	9,358	19,207	31,428	31,543	26,483	17,080	4,240	14,273	6,173	292	6,666	3,740	3,309	4,677
17	15,543	10,785	20,725	42,808	29,108	8,176	10,677	5,187	15,518	15,194	21,566	22,921	34,422	28,183	20,916	13,846	12,496	9,454	602	7,119	5,761	3,818	5,634
24	9,169	12,058	32,148	37,675	34,468	7,575	4,204	6,173	14,619	11,822	16,320	6,779	27,525	25,418	18,718	20,100	14,104	13,735	765	5,500	7,589	4,146	3,408
Oct. 1	6,818	6,545	30,241	45,911	24,692	5,926	3,432	4,981	12,663	5,445	10,246	13,626	17,807	19,679	36,817	8,346	25,014	12,501	1,559	3,018	8,757	5,259	2,682
8	5,449	3,784	21,443	22,430	12,888	6,785	15,948	4,007	12,430	7,113	12,231	21,220	14,001	19,330	20,858	16,905	19,657	14,687	2,005	3,867	7,157	6,169	5,257
15	6,471	3,340	11,143	22,638	13,997	8,947	16,650	3,206	12,129	19,991	12,348	11,999	11,245	9,783	9,914	43,770	13,330	12,416	2,631	3,219	8,629	5,712	4,774
22	4,564	3,850	14,556	17,201	16,190	13,382	13,008	3,249	17,890	24,042	17,722	13,270	9,256	8,042	15,342	27,526	11,759	9,842	8,745	3,974	6,846	4,914	5,426
29	3,413	4,930	11,974	15,632	11,540	11,702	12,049	4,015	17,119	15,726	20,119	9,794	7,873	6,497	9,283	13,773	8,632	8,166	10,779	4,060	9,885	5,274	6,589
Nov. 5	2,924	4,332	8,619	8,928	6,784	8,412	10,335	6,551	16,813	11,605	14,867	7,964	6,621	6,027	11,425	9,465	11,675	7,510	9,266	4,098	9,373	4,766	8,728
12	2,014	2,694	4,502	9,361	7,509	7,939	7,481	8,992	13,202	10,511	12,454	5,103	4,981	5,428	13,106	7,645	12,446	8,575	8,028	4,782	7,901	5,666	7,581
19	2,482	1,981	4,676	7,292	9,496	7,562	6,479	9,963	12,284	5,351	9,962	4,696	4,794	4,009	11,805	8,025	12,310	10,222	7,159	5,677	8,453	5,667	7,764
26	1,486	1,538	4,083	9,418	10,158	4,712	5,752	9,945	11,730	4,741	4,794	3,681	4,411	4,384	10,842	8,168	12,445	9,620	7,536	5,617	8,145	5,828	8,034
Dec. 3	1,912	1,655	3,145	7,267	10,872	7,127	6,518	8,863	9,798	4,505	4,802	2,911	3,535	4,421	8,454	10,343	9,940	9,350	8,240	4,989	8,497	9,639	6,045
10	1,304	1,161	2,969	5,343	9,695	7,194	6,106	6,341	7,102	4,958	6,032	2,752	3,439	4,541	7,321	10,604	11,001	7,966	9,557	5,109	5,493	8,776	7,408
17	2,100	1,329	2,227	4,089	8,524	5,769	7,039	6,770	8,794	3,879	3,220	2,332	2,015	3,977	6,621	6,951	10,994	12,119	10,821	6,497	6,311	8,849	8,418
24	2,112	1,494	1,936	2,934	8,581	4,218	5,730	5,014	8,728	2,371	2,980	2,063	3,071	5,734	8,563	6,406	5,786	25,522	10,690	3,593	5,506	8,454	9,739
31	1,187	609	1,338	1,632	6,743	3,330	4,346	4,098	4,991	2,049	2,233	1,897	3,027	4,881	6,437	5,334	8,173	12,331	8,444	2,915	7,554	6,357	5,973
Jan. 7	1,200	886	619	1,206	3,040	1,801	3,559	5,385	3,514	2,101	2,779	2,538	3,437	1,901	4,560	8,472	9,525	4,991	5,673	3,869	6,000	5,531	5,419
14	809	2,132	1,063	1,100	5,787	2,218	4,757	4,647	4,729	4,687	3,721	2,900	3,195	1,903	3,879	7,365	7,168	5,740	8,656	4,770	3,418	8,712	6,216
21	565	1,643	1,241	1,051	5,374	3,010	3,447	5,578	7,210	4,178	1,798	1,650	3,622	1,750	5,663	3,238	8,669	3,837	5,346	5,721	5,813	8,320	8,465
28	507	925	1,164	720	3,138	2,704	804	7,595	6,386	2,418	2,499	1,503	1,118	1,353	3,013	2,995	10,513	1,019	4,252	4,478	4,721	7,380	4,165
Feb. 4	448	573	1,062	900	4,788	1,924	1,953	8,195	5,415	1,427	1,187	1,419	1,422	618	1,364	6,209	6,843	1,446	3,816	5,622	7,566	6,746	6,976
11	471	628	594	1,203	5,807	1,788	2,671	7,755	3,225	872	933	904	1,381	1,277	1,295	5,228	8,416	4,686	3,090	4,689	6,730	4,942	4,693
18	1,234	479	313	1,414	4,221	1,543	1,519	5,014	2,961	1,017	1,817	832	739	2,201	1,492	5,547	6,206	3,789	1,804	6,197	6,976	3,829	4,417
25	949	714	581	1,431	2,773	1,194	3,016	5,531	2,431	1,097	2,337	557	721	2,172	1,943	4,473	5,159	3,031	2,806	2,523	3,887	4,555	5,191
Mar. 4	938	1,399	1,268	1,343	2,885	7,649	2,769	6,195	3,797	1,637	2,179	833	1,324	1,943	2,331	5,987	4,324	3,164	1,526	2,206	6,927	5,092	8,204
11	1,394	1,204	1,350	1,688	4,925	2,255	2,120	5,491	3,333	1,754	2,647	862	1,829	1,632	1,340	5,835	9,612	2,248	1,890	4,788	6,607	4,096	6,967
18	1,422	1,015	1,275	1,954	4,526	2,029	2,350	6,219	3,928	1,609	2,837	1,078	1,894	2,077	470	4,683	9,303	2,590	3,833	3,137	7,090	3,781	6,504
25	1,387	742	1,153	1,869	4,460	1,719	1,968	6,146	2,759	1,644	1,948	1,202	1,641	2,234	676	4,463	5,393	2,308	2,892	5,581	6,656	3,867	5,022
Apr. 1	1,327	607	1,110	1,908	3,696	1,383	2,060	7,406	2,187	1,033	1,150	835	1,201	1,389	784	3,569	2,690	2,873	2,188	6,384	4,401	2,836	3,846
8	1,284	1,140	989	1,800	3,516	1,938	1,789	4,818	2,761	1,183	754	733	1,282	909	1,281	1,409	2,850	2,504	3,575	3,103	4,276	1,892	5,137
15	946	1,139	1,443	1,376	4,490	1,636	2,534	4,705	4,767	2,158	1,062	674	2,077	781	1,470	1,992	5,672	3,687	2,787	3,774	4,707	5,500	7,577
22	921	1,108	1,419	1,086	7,801	1,602	4,249	6,046	3,776	2,623	2,454	470	2,787	1,432	2,335	9,821	7,983	2,512	6,071	4,384	2,922	11,095	7,833
29	592	1,168	1,080	1,337	8,631	1,456	4,595	5,664	5,281	3,519	4,604	427	2,345	2,081	2,256	19,765	6,664	3,432	3,127	6,629	3,901	8,172	7,183
May 6	758	689	892	1,414	7,071	1,069	3,884	3,862	3,377	2,759	4,735	739	1,699	3,677	2,548	14,519	8,225	3,844	3,567	12,607	7,511	8,326	5,622
13	897	539	1,056	1,683	6,676	1,425	3,152	2,773	2,711	2,069	4,136	1,224	1,605	3,628	5,127	10,220	12,552	4,888	4,445	13,015	5,017	5,636	4,652
20	893	606	1,288	1,672	7,357	1,901	4,373	2,715	2,548	2,210	3,618	1,440	1,831	2,521	6,677	12,749	6,709	4,336	5,471	10,537	4,941	5,863	3,904
27	1,156	755	1,103	1,164	7,120	2,100	4,861	3,228	2,210	1,972	4,429	1,371	1,863	1,871	4,107	12,442	6,976	3,954	5,139	8,491	7,917	7,793	5,921
June 3	1,395	843	1,275	1,808	8,652	2,190	5,615	3,588	3,970	2,688	6,380	2,821	1,742	3,039	6,646	9,655	7,918	5,561	6,398	10,673	11,290	15,010	8,604
10	891	744	1,459	2,331	8,887	3,254	5,714	6,253	4,089	2,195	5,000	4,109	1,842	4,248	8,096	9,616	7,671	8,393	9,166	13,832	13,024	15,324	10,388
17	702	806	1,087	2,203	7,917	2,863	9,726	11,882	4,925	2,033	6,903	4,451	2,273	4,824	7,607	5,909	11,357	4,220	13,699	14,907	9,434	14,778	10,592
24	722	1,017	1,100	3,485	7,764	2,023	9,056	8,995	4,609	2,804	7,089	4,188	1,956	5,472	9,992	7,815	8,725	11,841	13,802	14,129	10,835	13,677	11,003
July 1	511	697	1,137	4,236	4,947	2,155	4,806	9,191	5,232	3,072	5,431	2,816	1,892	4,270	7,131	7,326	5,524	11,074	13,022	12,230	10,281	10,039	8,778
8	979	932	2,069	3,074	3,040	3,467	4,850	9,897	2,506	3,011	3,387	2,508	1,817	3,823	4,862	6,111	9,508	9,393	9,390	9,622	9,758	9,488	10,978
15	865	771	2,489	4,174	7,203	4,879	4,427	8,027	4,616	1,225	2,589	1,537	1,134	2,735	4,670	5,970	18,171	10,952	7,838	10,632	8,407	9,286	11,346
22	705	646	1,981	4,159	6,187	5,690	4,690	8,801	5,261	1,402	3,885	1,255	1,625	2,691	5,595	7,840	7,840	13,088	12,471	12,019	11,111	12,942	13,009
29	579	580	1,280	4,074	7,608	12,993	6,641	10,715	6,631	2,292	5,830	2,851	9,965	9,758	11,970	16,821	39,459	26,788	44,856	13,357	24,252	34,823	40,972
Aug. 5	-	40	-	4,982	-	-	5,981	16,578	11,795	3,762	-	4,693	-	-	7,979	-	-	-	-	32,304	-	-	-
Residual[c]		-40	-320	+602	+192	0	-5,981	-16,578	-11,795	+420	+134	-4,693	-2,513	-2,438	+504	0	-5,647	-8,932	-11,214	+12	0	-4,973	-10,246

Data as follows: 1936/37 to 1940/41, from the Wheat Situation; 1941/42, to 1958/59, from the Annual Crop Year Statements by the Board of Grain Commissioners. Country deliveries include receipts of all wheats at **at country, interior private and mill elevators and platform loadings.**

[a]Adjustment of dates on the basis of week ending days. The dates on which reporting weeks end (Fridays up to 1946-47, Thursdays from then till 1953-54 and up to 1946-47, Thursdays from then till 1953-54 and Wednesdays thereafter), as shown in first column, apply in crop years beginning in 1937, 1943, 1953, 1958 and from March 4 in 1947-48. Otherwise, dates are those in first column plus or minus correction values in this line.

[b]Correction for dates after February 28.

[c]Adjustment to place deliveries on August 1-July 31 basis.

TABLE II. FARM STOCKS, JULY 31, 1937-59*

(Thousand bushels)

Year	Volume	Year	Volume
1937	3,392	1949	42,000
1938	3,579	1950	11,000
1939	2,805	1951	20,000
1940	14,250	1952	18,000
1941	11,500	1953	91,000
1942	9,200	1954	228,000
1943	187,000	1955	134,000
1944	52,850	1956	202,000
1945	27,000	1957	319,000
1946	25,841	1958	229,000
1947	24,487	1959	126,000
1948	38,000		

*Data from Handbook of Agricultural Statistics, Part I: Field Crops, Dominion Bureau of Statistics.

TABLE III. LAKEHEAD VESSEL MOVEMENT DATES OF OPENING AND CLOSING OF NAVIGATION*

Date of Opening of Navigation	Date of Closing of Navigation
1935	December 10th
1936 May 5th	December 10th
1937 April 19th	December 9th
1938 April 19th	December 9th
1939 May 1st	December 12th
1940 April 25th	December 12th
1941 April 17th	December 12th
1942 March 31st	December 15th
1943 April 24th	December 12th
1944 April 9th	December 12th
1945 March 27th	December 10th
1946 April 7th	December 12th
1947 April 19th	December 13th
1948 April 19th	December 15th
1949 April 6th	December 12th
1950 April 29th	December 14th
1951 April 9th	December 15th
1952 April 3rd	December 18th
1953 March 27th	December 14th
1954 April 16th	December 13th
1955 April 14th	December 15th
1956 April 5th	December 18th
1957 April 10th	December 14th
1958 April 18th	December 13th
1959 April 20th	December 17th
1960 April 10th	December 13th
1961 April 9th	

*Date of arrival of first inbound grain vessel and date of leaving of last outbound grain vessel. Data from Statistics Branch, the Board of Grain Commissioners.