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a study of price determination in the Alberta Hog Market

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SUMMARY

Hog production in Alberta is far in excess of provincial requirements. About 50 per cent of the pork from hogs slaughtered in the province is sold in markets in eastern Canada and about 18 per cent of the hogs produced in Alberta are slaughtered in British Columbia and the United States along the west coast. Prices in Alberta, therefore, are dependent upon the interaction of forces arising from two markets for pork. The price in the large eastern market, less freight charges to that market, establishes the lowest price which will be paid for Alberta hogs. The strength of the demand on the west coast and the organization of the market through which its effects are felt determine the actual prices which will be paid.

Three large national processing firms purchase 80 per cent of the hogs sold by Alberta producers, selling much of the pork in eastern markets. The remaining hogs are purchased by a number of small firms selling locally or on the west coast only. When supplies are scarce the strong demand of these firms in Alberta markets forces the large packers to pay higher prices or suffer a decrease in their proportion of the reduced total marketings. If the price rises above "freight-under" Toronto, the competitive position of the major packers in eastern markets is weakened considerably. To protect their position these firms attempt to attract the supplies they require by various forms of non-price competition.

Although individual producers have little opportunity to bargain with the large firms, a producer's organization, the Alberta Livestock Co-operative, has been able at times to strengthen the producer's position by capitalizing on the conflict of interest between the two groups of packers. When supply is plentiful, however this conflict subsides and along with it, much of the bargaining power of the Co-operative.

These forces acting within the limits of the market organization, are the fundamental determinants of the behavior of the market in Alberta. Their daily resolution, whether on the public markets or not, provides the Alberta producer with a market and a price for his hogs. In the past this conflict has often resulted in higher prices to Alberta producers than might have been expected. When supplies were plentiful, Alberta prices tended to follow closely the Toronto price less freight. When supplies were scarce relative to demand, however, Alberta prices often rose above this minimum level and Alberta producers received prices higher than those paid in Saskatchewan and often higher than those in Manitoba. This occurred even though much of the meat from all three provinces was consumed in eastern Canada.

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INTRODUCTION

The problem and its treatment

Price determination in agricultural markets has long been an object of study. Unfortunately, in a market which is less than perfectly competitive, many of the pricing forces turn on the market policies of the larger firms. Such policy is regarded, by those firms, as highly confidential and is not readily available to research workers. Yet it is important, particularly in an industry which is subject to some public direction and assistance, that some understanding be obtained of the basic forces influencing market development and price formation.

This study has been undertaken to provide some such understanding of the hog market in a very limited area - the Province of Alberta. The disadvantages of such a narrow approach are obvious. As is evident in the text, the markets of eastern Canada are the prime determinants of price behavior all over Canada. It is in these markets that the policies of the major firms are developed and it is these markets which, with sufficient perseverance, will yield the real secrets of the pricing process for hogs and for pork.

There are, however, some advantages to segregating and examining a small area of the market. Approaching the subject from the producer forward, made it possible to uncover details of the structure and organization of the market which would have been lost in the broader context of the Canadian market. It was also possible to uncover some of the basic forces at work in the market without having to sort them out too carefully from the policy considerations of the large firms. In Alberta the interaction of policy between the large firms and the market is limited mainly to non-price factors. Price policy is evolved in the eastern markets.

The selection of the Alberta market as opposed to some other segment of the Canadian market was not entirely fortuitous. Because of its geographical position and other factors, the Alberta market exhibited interesting phenomena not apparent in other western provinces. It was hoped that discovery and discussion of these forces and their influence on the market might constitute a useful addition to the understanding of the hog market, generally, in so far as these forces are operating throughout the entire Canadian hog market.

The description of the market in Part I has been built up on data obtained for 1957 and, to some extent, 1958. This material was then used as the basis of the analysis in Part II. The emphasis of the descriptive sections, therefore, has been on the market as it existed in 1957 even though substantial changes occurred in the latter part of 1958. These changes were not discussed in Part I but were left until later when their discussion served to strengthen the analysis.

Sources and limitations of the data

Much of the data used to describe the Alberta market has come from unpublished statistics collected by the Livestock Division of the Marketing Service, Canada Department of Agriculture. These statistics are built up in the following manner. At the first assembly point in the market channel, (a dealer, shipper, buying station or packing plant) each producer's hogs are tattooed for identification. The hogs are assembled in truck or carload lots and a manifest is then filled out recording the names, addresses and tattoo numbers of producers whose hogs are in the shipment. After slaughter and grading, the grades of each producer's hogs are added to the manifest. These manifests are then used by the processing company to make payments, either to the individual farmer or in a lump sum to the dealer who made up the manifest, if he is licensed and bonded. A copy of the manifest is sent to the local office of the Livestock Division where the information is used to make grade certificates and for the distribution of government premiums for grade A and B_1 carcasses. The manifests and copies of the certificates are then filed under each dealer's or shipper's name for future reference.

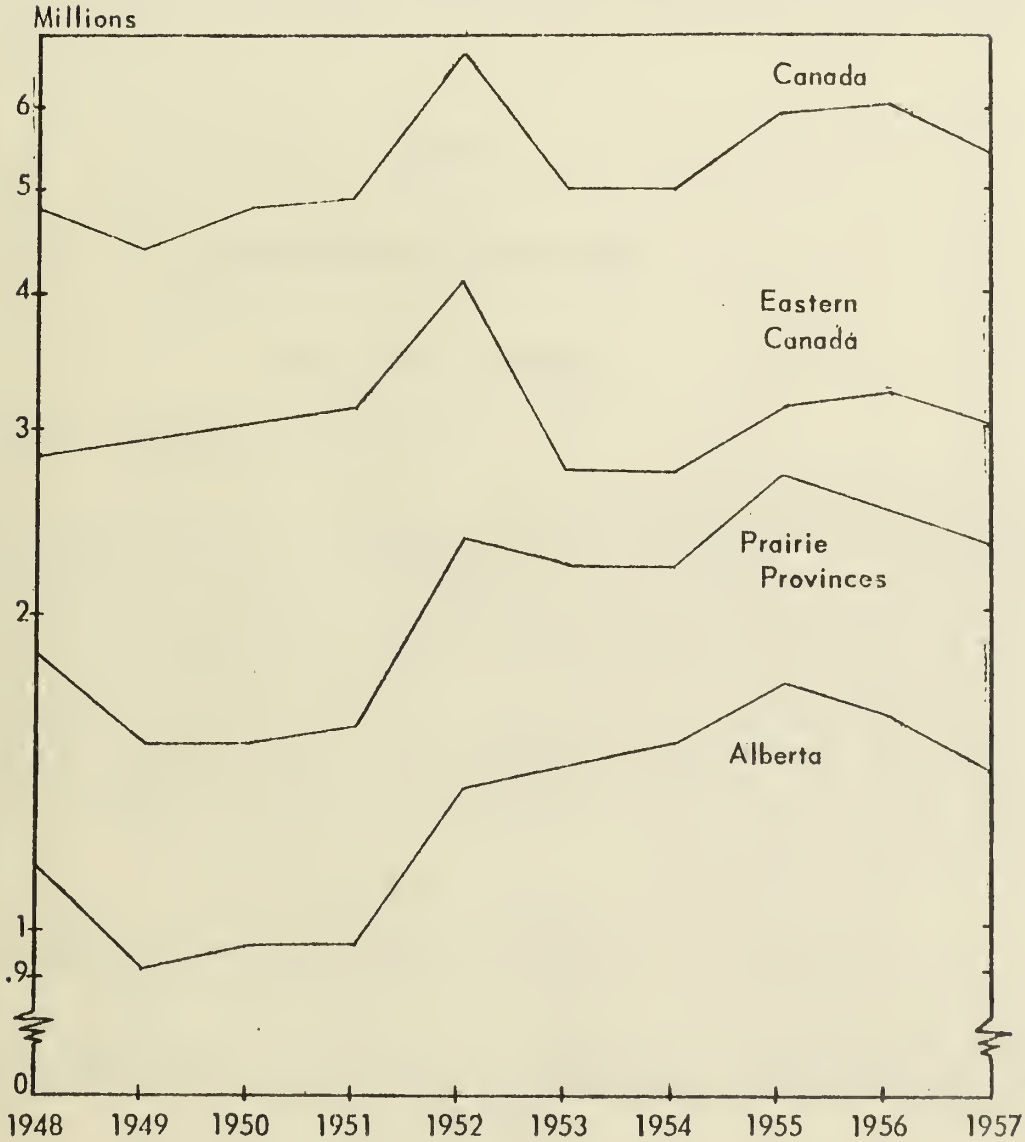
As well as completing these manifests, government graders at each of the inspected packing plants make a weekly summary of shipments to individual packing plants by crop district of origin. These data are summarized by month on origin cards which are used to build up the statistical data published by the Marketing Service.

By grouping this material in the several ways shown in Figure 1, a description of the relative importance of different market areas within the province of Alberta was made possible. It was possible also to deduce the relationships existing between various methods of marketing.

The data used for this analysis relate to the year 1957. It can be argued that the cyclical variation in hog production has some effect on the market picture and that an analysis of a group of years would have provided a firmer foundation. The work involved in tabulating data for one year alone was a formidable task and it was thought better to proceed with this, particularly since there was insufficient data to cover the full length of the hog cycle. Cyclical fluctuations have not been ignored entirely and their possible effects have been borne in mind throughout the analysis. The extent of cyclical variations is shown in Figure 1.

The "cyclical" nature of hog production appears most clearly in the total yearly marketings for all of Canada. The regional graphs show the influence of middle or long-term trends which tend to obscure the up and down movements in quantity of hogs supplied. It is evident that even in terms of total Canadian marketings the term "cycle" is perhaps not entirely appropriate. It is obvious, however, that the volume of marketings over the years is highly variable and in interpreting the discussion of the Alberta market as it existed in 1957, this variability must be kept in mind.

Figure 1. – Hog Slaughterings in Inspected Establishments
1948–1957



Source: Dominion Bureau of Statistics, Livestock and Animal Products Statistics.

Again, because of the nature of the data, the market has been described in relation to annual figures, whereas monthly figures might have revealed considerable seasonal variation. Wherever possible, therefore, figures for August and December have been included as well as those for the complete year. To the extent that seasonality affects the organization of the market it should be most evident in August and December since these are months of the very low and very high market offerings (Figure 2).

PART I

ORGANIZATION OF THE MARKET

The Alberta market

1. Importance of Alberta production

Alberta production of hogs has become an increasingly important source of Canadian pork. In support of this contention, a few figures showing the regional pattern of production are worth consideration. In the five year period, 1953-57, producers in the prairie provinces sold 44 per cent of the Canadian commercial hog marketings, whereas those of Ontario and Quebec sold 53 per cent of the total. The Alberta producers marketed 64 per cent of the prairie total and, therefore, 28 per cent of total Canadian marketings. Compared with the previous five years there is an increase in western marketings relative to eastern and also, an increase in Alberta marketings relative to the prairie total (Table 1).

Table 1.- Distribution of Canadian hog production

	Prairies as proportion of Canada	Ont. & Que. as proportion of Canada	Alberta as proportion of Canada	Alberta as proportion of Prairies	Canadian production
			- per cent -		- mil. hogs -
1948-52	34.0	61.6	21.0	61.8	5.1
1953-57	43.6	53.3	27.8	63.8	5.5
1957	42.5	54.7	26.5	62.3	5.6

Source: Canada Department of Agriculture. Annual Livestock Review.

Population is concentrated in eastern Canada and on the west coast. The main markets for prairie hogs are, therefore, in these regions. As a result there is a movement of live hogs and of pork out of the prairie region. For shorter distances the predominant movement is of live hogs, but longer shipments, Alberta to eastern Canada for example, occur primarily as shipments of pork.

For the five year period, 1953-57, live hog shipments from the Prairie Provinces to eastern Canada averaged 26,000 hogs annually, only one per cent of total western marketings. Shipments to the west coast in this period averaged 305,000 hogs, or 15 per cent of western marketings. West coast shipments, however, arise almost entirely from Alberta and, over the period, represented 20 per cent of the marketings from the province.1/

Table 2.- Production, consumption and movement of Canadian pork 1948-57

	Maritimes	Ont. & Que.	Prairies	Alberta	B.C.	Canada
			- million pounds -			
Apparent domestic consumption of pork a/						
1948-52	68.0	462.8	137.4	49.9	62.3	747.7
1953-57	63.6	467.5	133.8	52.0	64.7	752.8
1957	63.1	479.6	133.9	53.6	68.7	778.9
Pork production b/						
1948-52	39.3	549.7	270.6	138.6	c/40.6	900.2
1953-57	29.5	461.7	305.0	162.9	43.2	843.6
1957	25.9	474.6	302.5	168.7	47.4	846.1
Exports to U.S.A. d/						
1948-52	-	7.0	0.6	-	0.8	8.5
1953-57	-	31.3	12.0	7.0	9.6	53.0
1957	0.1	20.0	9.9	7.5	1.8	31.8
Interprovincial pork movements						
1948-52	-28.7	79.8	132.6	88.7	-22.5	144.0 e/
1953-57	-34.2	-37.1	159.2	103.9	-31.1	37.8
1957	-37.4	-25.0	158.7	107.6	-23.1	35.4

Source: Canada Department of Agriculture. Annual Livestock Review. Also unpublished production and export data supplied by the Dominion Bureau of Statistics.

a/ Average of annual figures for population & revised per capita pork consumption.

b/ D.B.S. estimates of hog production by province and yearly figures for average cold carcass weight.

c/ Pork processed in Vancouver from live hog shipments from Alberta has been deducted from Prairie and Alberta pork production and added to B.C.

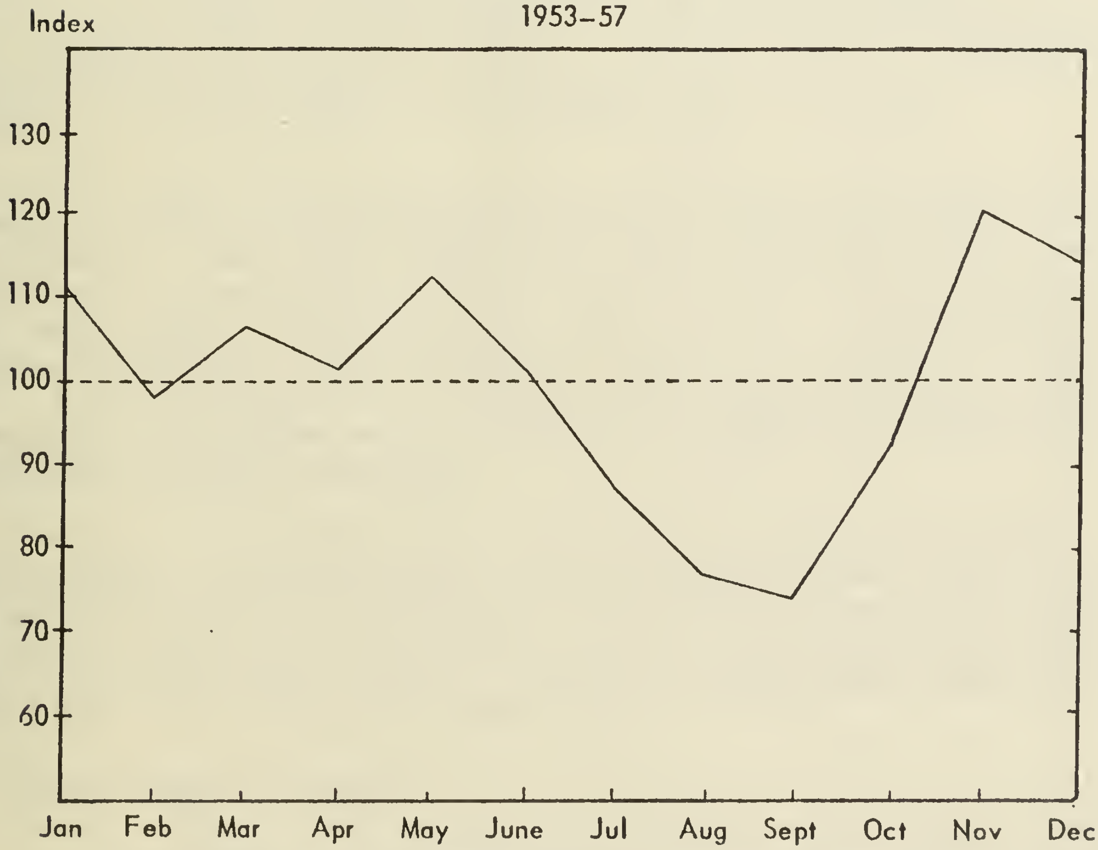
d/ D.B.S. data on U.S. Exports by province of exit.

e/ Residual includes non-U.S. exports and error arising from use of national per capita consumption figures. Average annual export to U.K. 1948-52 was 68 million pounds and was not deducted from residual figure. In recent years exports to U.K. were negligible.

In contrast, the movement of pork from the prairies is much greater. Because statistics showing the interprovincial movement of processed pork

1/ Canada Department of Agriculture. Annual Livestock Review. Livestock and Animal Products Statistics.

Figure 2. – Index of Monthly Hog Marketings, 5 year Average
1953–57



Source: Markets Information Section, Canada Department of Agriculture, Livestock and Meat Trade Report.

are unavailable, this movement can only be estimated by comparisons of provincial slaughterings with per capita consumption figures to estimate local requirements. Figures for total slaughter by provinces, including farm slaughter and non-inspected kill, were obtained from the Dominion Bureau of Statistics. The figures for per capita consumption, however, are not available on a regional basis. To the extent that pork consumption varies in different regions the estimates of total regional consumption will, therefore, be incorrect.

Using five year average figures for total pork production and five year averages of total pork consumption, the annual net movement of processed pork from the prairie provinces, as shown in Table 2, must have been about 132.6 million pounds for the period 1948-52 and 159.2 million pounds for the period 1953-57. In the latter period Alberta shipped 104 million pounds, roughly one-third of which must have been shipped to British Columbia, the balance going to the east.

It is obvious from these figures that Alberta producers must depend on markets outside of the province to absorb the major portion of production. Thus the relationship between the Alberta live hog market and outside markets should be fairly direct. Of the prairie provinces, however, Alberta is the only province in which producers have an alternative live hog market to the west as well as to the east. British Columbia is a deficit area for hogs and as a result provides a competitive pull on Alberta hogs which is not felt in either Saskatchewan or Manitoba.

In so far as the B.C. market for pork is independent of the eastern market this will affect the relationship between Alberta and the eastern market for live hogs. The effects of this on the Alberta hog prices depend upon the extent to which these competitive forces are allowed free play. This is a matter of considerable importance and is discussed in Part II of the study.

2. Market areas in Alberta

For the purposes of this study a market is considered to be an area over which price tends to equality. In this sense the market for carcass pork is large whereas the market for live hogs is much more limited. Obviously the market demand for live hogs is a derived demand arising from the consumer market for pork and affected by the ease of storing and processing meat. As we have chosen to begin with the producer and work forward, the first task is to describe the markets which exist for live hogs.

The market areas for which Edmonton, Calgary and Lethbridge are the centers can be studied individually even though the activity in each market is governed by the wider and more general market for pork. The main market centers are Edmonton and Calgary, particularly since all shipments to Vancouver from the province must be funnelled through one or other of these centers.1/ The relative importance of these

1/ Shipments to Vancouver from central Alberta were allocated through the Edmonton or Calgary markets on the basis of figures from manifests showing the allocation of dealer shipments to Vancouver from this area through these centers.

two areas can be deduced from Table 3.

Table 3.- Hog marketings through Alberta centers, 1957

Deliveries for	Marketing of Alberta hogs: Total province	Shipped through Edmonton	Shipped through Calgary a/	Proportion shipped through Edmonton	Proportion shipped through Calgary	Proportion of Edmonton receipts shipped to Vancouver	Proportion of Calgary receipts shipped to Vancouver
	- thousand hogs -				- per cent -		
August	77.2	50.7	26.5	65.7	34.3	17.4	29.0
December	156.4	112.1	44.3	71.7	28.3	18.6	26.0
Total year	1,367.4	944.0	423.4	69.0	31.0	17.2	26.2

Source: Origin Cards. Marketing Service, Canada Department of Agriculture:- See discussion page 2.

a/ Calgary receipts include all Lethbridge marketings except for a small number shipped east.

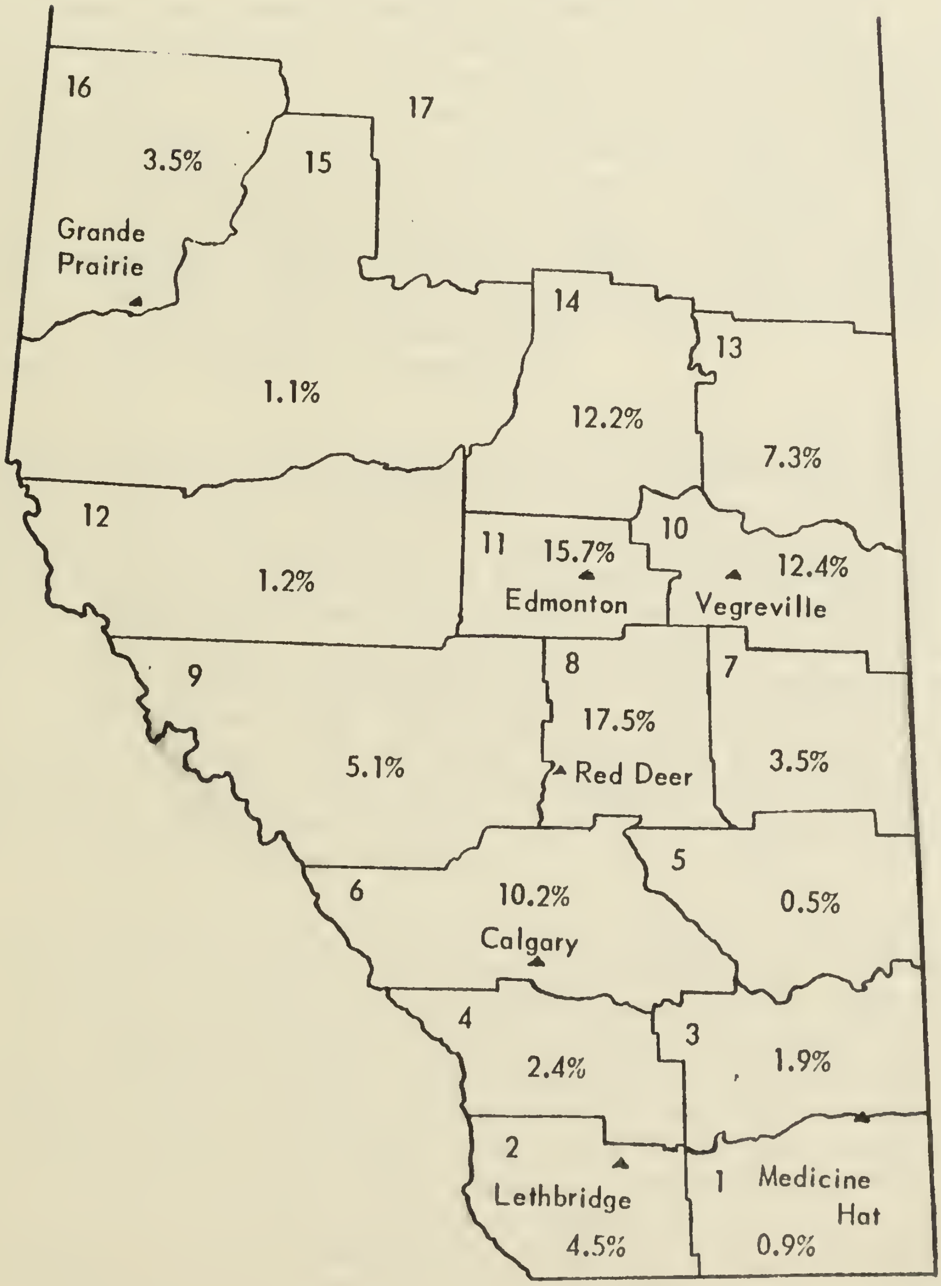
Production is concentrated mainly in the black and degraded black soil areas where mixed farming is prevalent. The map shown in Figure 3 gives the location of production by crop districts in the province and indicates the main producing areas relative to the market centers. The scattered nature of production indicated on the map makes the marketing services of collection, transportation and first sale very important in the marketing process. This marketing process will be examined in this part of the study. The pricing process and the competitive forces at work in the market will be discussed in Part II.

3. Market agents in Alberta

In a less scattered market it would be expected that a direct producer-processor relationship would develop in which the producer delivered his own hogs to the processor and bargained with him over price. The buying stations established around Edmonton by the packers do in fact encourage this sort of relationship. In actual practice few producers are able to deliver their own hogs to the market center and they must, therefore, rely on an agent.

There are three types of agents. First, a farmer in a district may find it worthwhile to make regular trips to the market center collecting hogs from his neighbors as well as taking in his own. In this case the packing plant or a commission firm on the stockyards is usually responsible for filling out manifests and distributing the payments due to each farmer. Second, there are part or full-time truckers (generally referred to as shippers) who are in the transportation business on a small scale. They collect hogs from the farms, tattoo them, fill out manifests and deliver hogs and manifests either to packers or the stockyards. Payment for these hogs is made by the packer or commission firm to the farmers as recorded on the manifests. The trucker

Figure 3. – Proportion of 10 Year Average Hog Marketings from Each Crop District, Alberta, 1947–1956



Source: Canada Department of Agriculture, Annual Livestock Review.

is sometimes paid by the farmer, but usually his freight charges are deducted from the farmer's cheque by the packer and paid on delivery of the hogs. Third, there are full-time livestock dealers assembling hogs and buying other livestock on a comparatively large scale.

The third process is by far the most common. Dealers handling livestock are licensed and bonded by the provincial government. They are situated in towns and country points throughout the province. It is their job to accept delivery from farmers in the area and to assemble truck or carload lots for shipment to packers in Calgary, Edmonton and Vancouver. They operate on a larger scale than either of the other agents described and their provincial license permits them to pay the farmers for hogs from bulk payments received from the packers. Often these dealers pay a substantial advance to farmers on receipt of hogs; the balance less handling charges to be paid when the hogs have been slaughtered and the weight, grade and final price are known. Because of the use of this rail-grading system, dealers do not actually buy or sell hogs but handle them for a commission.

In the collection process the other main agents are the commission firms buying and selling on the stockyards and the agents of the packing plants who go into the country as buyers for the plants. The position in the hog market held by the latter is unimportant since under the rail-grading system hogs are paid for on a grade established after the hogs are killed. Commission firms, on the other hand, do play an important part in the marketing process because they are responsible, ostensibly at least, for the establishment of a central market price. In the normal market process hogs are placed on sale in the yards and bid for, both by other buyers and by other commission firms until a price is established. This process was less important as a factor in price determination in 1957 than the above description would indicate, but this must be left for later comment.

Some of the agencies collecting hogs are organized as co-operative livestock shipping associations. The hogs they collect are sold by a central selling agency, the Alberta Livestock Co-operative. The A.L.C. in turn acts as a commission agent on the stockyards in Edmonton and Calgary, selling the hogs of member organizations and buying hogs to fill orders from distant processors. The A.L.C. also sells to local packers, but, during the period under study, did so on the basis of contracts negotiated with the packers. Packers accepted hogs delivered direct from the country branches of the co-operative at a price agreed upon in the contract. Private commission firms, as well as accepting and selling stock delivered to them, also negotiated similar contracts occasionally, usually with packers outside the province.

Thus producers may deliver their own hogs either to the packing plant or to a commission firm; they may allow a trucker or shipper to pick up their hogs for delivery to a packing plant or a commission firm on the stockyards; or they may deliver their hogs to a dealer, who, in turn, may negotiate terms of sale with a packer, either in a direct dealer-packer relationship or through a contract arranged by the A.L.C., or a private commission firm. An insignificant proportion is delivered to local butchers. The relative importance of each of these agents is shown in Table 4 and the whole process is summarized in Figure 4.

Table 4.- Hog shipments by market agents, Alberta 1957

	Total year	August	December	Total year	August	December
	- '000 hogs -			- per cent -		
Dealers	672.3	42.6	67.2	49.2	55.1	42.9
Shippers	153.8	8.4	12.5	11.2	10.9	8.6
Commission firm a/ and packing plant receipts	348.2	26.2	75.2	39.5	34.0	48.4

a/ A rough measure of farmer and farmer-trucker shipments. Data obtained from manifests and from meat packing companies.

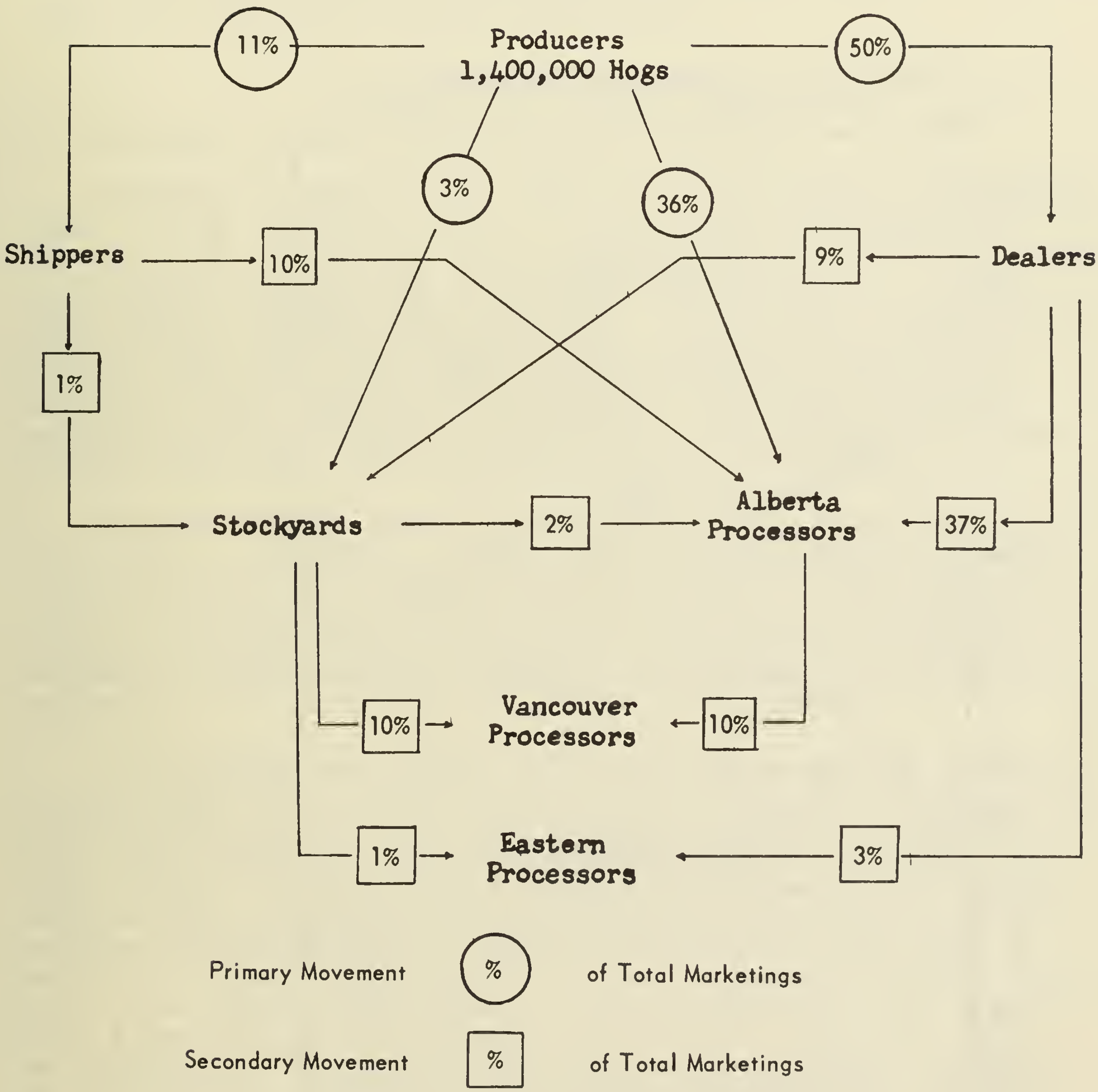
4. The stockyards

Three types of transactions occurred on the stockyards in 1958 and most of 1959. First, hogs could be billed through to a destination outside the province, stopping on the yards only for feed and water. They did not enter the market in a price determining sense. Second, hogs were shipped to commission firms by truckers and farmers. These commission firms, at least on the Edmonton market, usually had standing orders to buy as many hogs as they receive. Therefore, most of the hogs delivered to them were not offered for sale on the open market. They were billed through at the price prevailing on the day they were shipped from the yards to their destination. Third, the hogs shipped to the A.L.C. as a commission firm, and to the other commission firms on the Calgary market, were offered for sale in the market. It was this supply of hogs which established the daily market price. The proportion of the total number marketed which entered the market in this way was extremely small.

It can be seen from this description that a large portion of the hogs never went near the stockyards, but were sold to packers at a price related in some specific manner (to be discussed in Part II) to the stockyard price. Of the hogs which did go to the stockyards, the largest portion was billed through at the market price and did not enter the price determining process.

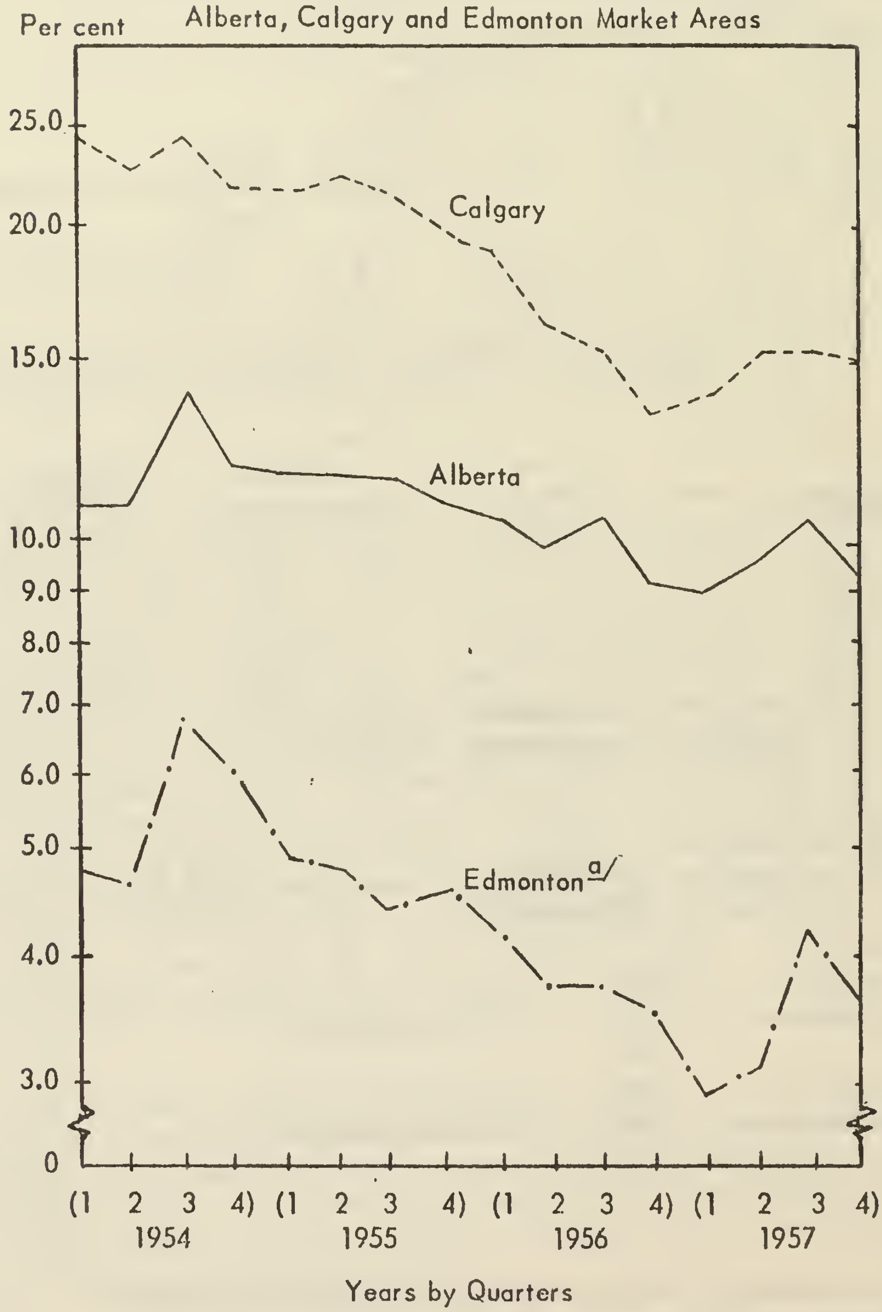
Over the past ten years the proportion of hogs marketed through the stockyards has declined slowly. More important, however, is that until very recently there was a considerable decline in the proportion of stockyard deliveries actually offered for sale (Figure 5). In Edmonton, in 1957, hardly three per cent of total Edmonton marketings were offered for public auction. In Calgary the proportion was somewhat higher since the exchange regulations compelled commission firms to offer for sale all hogs consigned to them.

Figure 4. – Channels of Marketing for Alberta Hogs[a]
1957



[a] By dividing this figure vertically through the centre it is possible to illustrate the channels of marketing for direct and public stockyards marketing. As can be seen, in this context marketing direct means bypassing the stockyards and does not necessarily mean direct from producer to processor.

Figure 5. – Proportion of Hogs Sold Through Stockyards in Alberta, Calgary and Edmonton Market Areas



a/ A.L.C. off-truck receipts – a maximum estimate of hogs offered for sale.

Source: Markets Information Section, Canada Department of Agriculture.
Canada Department of Agriculture, Annual Livestock Market Review.
Western Stockyards Annual Report (Unpublished).

A detailed discussion of the Edmonton and Calgary markets will now be presented to demonstrate some of the forces which shape each of them and to bring out contrasts between them.

The Edmonton market

1. The market area

Edmonton is located in the center of an area producing the largest number of hogs in western Canada. From every direction hogs arrive in the city at an average rate of over 3,000 per day, varying from 1,700 per day in August to over 4,500 in December. Approximately 17 per cent of these hogs are shipped live to Vancouver. The rest are slaughtered in packing plants located in Edmonton. Four of these plants slaughter 98.2 per cent of the total Edmonton kill leaving the insignificant balance for three small specialist packers. These small packers generally obtain the animals they require off the stockyards, whereas the other four firms seldom purchase through this channel.1/

In spite of this volume, however, the area from which the market draws hogs is comparatively small. Much of the meat must be exported from the area and, as a result, limits are placed on the distance over which live hogs move into Edmonton, particularly from the south and the east. Hogs destined for Vancouver, for example, are shipped from all areas of Alberta whereas producers in the Calgary area or on the extreme eastern Alberta border do not ship to Edmonton.

It is possible in a general way to distinguish sections or layers of the market according to the opportunities available to producers for marketing their hogs. Immediately surrounding the central market (for statistical convenience, crop district 11) producers are within easy reach of buyers. They can easily gather price information and deliver their own hogs. Surrounding crop district 11 to the west, north and northeast (crop districts 12, 15, 16, 14 and 13) is a large area of more or less scattered production, distant from Edmonton and with no alternative market. South and east of the central area (crop districts 7, 8, 9 and 10) producers, although some distance from market, have the opportunity of shipping to more than one market center. Producers in crop districts 7, 8 and 9 may ship either to Edmonton or Calgary. Those in crop district 7 have the additional alternative of shipping hogs east to Saskatoon, Regina, and Winnipeg. These markets also provide alternative outlets for producers in crop district 10 (Figure 6).

The lines dividing these areas, of course, are not clearly defined. It is not realistic to state that on one side of a line a producer is close to market and on the other side distant from market. Nor is it possible to delineate exactly the area over which the influence of two or more markets is felt since this area should be constantly changing. It is convenient, however, to make these distinctions between sections.2/

1/ Of the total slaughter in the four major plants less than one per cent was bought in the central market in 1957.

2/ See Figure 6.

and to do so on the basis of the crop district divisions as outlined.

2. Channels and methods of marketing

For the Edmonton market as a whole, channels and methods of marketing are similar to those described for the province. Shipment through dealers is the most common method of reaching the market. Over half of the hogs marketed are shipped in this manner. Farm truck shipments to stockyards and packing plants account for the collection of nearly one third of the hogs, and the balance is brought to market by independent unlicensed shipper and truckers.

As can be seen in Figure 5, showing the percentage of marketings sold on the Edmonton stockyards, the Edmonton market in this respect does not represent the provincial picture. Commission firms on the Edmonton yards, unlike those in Calgary, were not obliged to offer for sale on the yards, in 1957, any produce consigned to them. The A.L.C. adopted the policy of usually offering truck consignments for sale. Even some of these, however, as well as all rail shipments were shipped directly to buyers who had ordered hogs. This explains the decrease in sales shown by the chart.

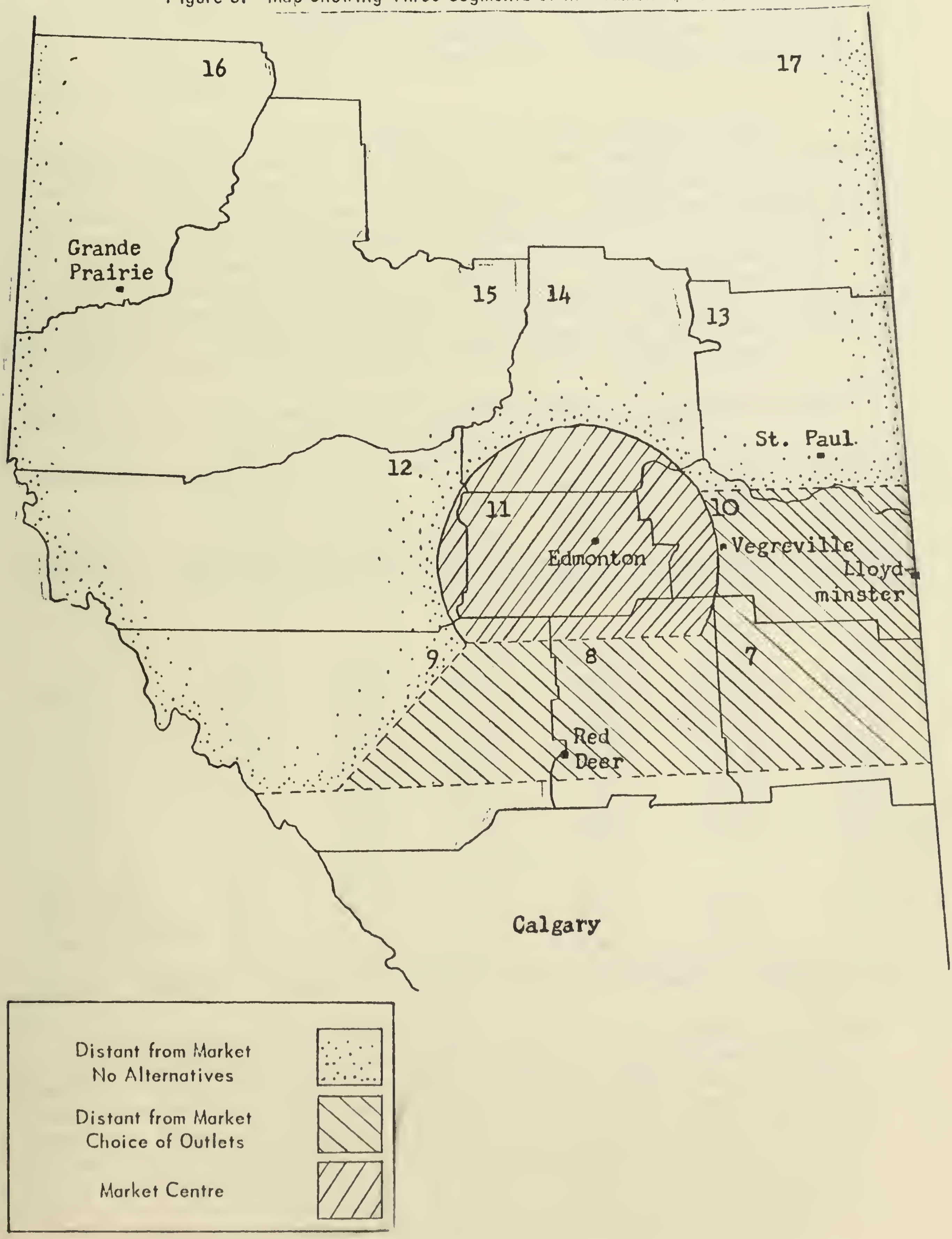
Variations in methods of marketing do occur in particular segments within the Edmonton market area. Factors affecting these local variations arise from competitive forces in the market, and also, from the purely physical factors of location, transportation costs, etc.

It is probably the physical characteristics which establish the general pattern. This pattern is then modified by forces arising from changing circumstances in the market. There are three fundamental physical factors influencing the relative importance of different marketing channels. From the producer's viewpoint, distance from market is probably the most significant. The farther he is from market the less likely is he to transport his own hogs, or alternatively the more likely that those hauling to market are dependent upon this work for most of their income.

Once it has been decided to employ an agent, the decision to market through a dealer or shipper will be based partly on personal preference, but mainly on the relative costs and convenience of the one channel compared with the other. This in turn depends upon the density of production and upon whether or not there are competitive markets. Density of production and the location of alternative markets are the other two physical factors in influencing organization.

Where production is concentrated but distant from market, dealers located in towns throughout the area are in a better competitive position than truckers. Producers need to travel only short distances to find a large, competent dealer who can market hogs with considerable efficiency. Shippers, who handle fewer hogs, have not the same opportunities to reduce their costs. Where there is an alternative market outlet it is to the advantage of packers in these markets to establish agencies (dealers) in the area in an attempt to increase

Figure 6. – Map Showing Three Segments of the Edmonton Market



the supply coming to their own particular market. More dealers in the area than production would warrant could be expected as a result of this. If they were subsidized by packers in any fashion they could compete easily with truckers, and the bulk of the supply would move to markets through dealers.

An examination of hog manifests for 1957 brings out these tendencies quite clearly. The figures are only approximations because farm deliveries to the central market cannot be directly obtained on a crop district basis and because dealers recorded as shipping hogs from one crop district often collect some hogs in another district. As a result, shipments recorded on the manifests do not equal total slaughterings from individual crop districts. These figures are approximately equal for the market as a whole but, because of deliveries by producers to buying stations, many more hogs are recorded as being collected in crop district 11 than were in fact produced there.

Table 5.- Relative importance of market channels by crop district for hogs coming to the Edmonton market 1957

Crop district	Share of total Edmonton marketings	Sold through dealers	Sold through shippers	Farmer shipments to yard and plant	Sales handled by co-ops.	Average size of dealer shipment
	- per cent -	- per cent of total sales -			- per cent -	'000/year -
11	20.2	14.1	2.1	83.8	10.1	4.5
7,8,9	21.9	80.9	15.1	4.0	18.1	5.1
10	17.7	64.6	6.1	29.3	12.1	3.0
13	11.4	77.6	6.8	15.6	41.4	6.0
14	18.1	27.9	22.5	49.6	4.2	3.6
12	1.5	59.9	44.8	-	41.4	4.2
15	2.0	74.4	14.9	10.7	45.0	3.6
16	7.0	76.8	9.4	13.8	54.0	5.6
17	0.2	-	-	-	-	4.0
Total year	100	55.5	11.4	33.1	19.0	4.3
Total August	100	65.7	11.7	22.6	19.7	0.27
Total December	100	36.6	9.4	54.0	17.6	0.34

Source: Markets Information Section, Canada Department of Agriculture.

If discrepancies resulting from collection, by dealers, of hogs outside the district of shipment are assumed to cancel out over the market, total marketings recorded on manifests from each crop district, when deducted from total production in the district, should roughly equal the figure for direct farm deliveries from that district. The assumption of cancellation is only an approximation, however, since it is not only in crop district 11 that recorded shipments exceed production. On the other hand, figures for all farm shipments direct to the plants were obtained from the Edmonton packers and these corresponded closely to the difference between total shipments and those recorded on manifests.

The relative importance of the crop districts is shown in Table 5. Using Figure 6 as a guide to the sub-market areas involved, some attempt will now be made to explain the variations in marketing methods shown in Table 5.

(a) Producers close to market

Looking first at the area immediately surrounding the market (crop district 11), it is evident that the activities of dealers and shippers are of relatively minor importance. It is not possible to separate farm deliveries to the stockyards from farm deliveries to plants for this area. Even if it is assumed that all of the receipts at the stockyards were from crop district 11 (which they obviously are not), farm shipments direct to plants would still constitute 60 per cent of the total marketings. In any case, shipments to commission firms recorded on commission firm manifests are nearly all farmer deliveries.

Thus, of the 190,000 hogs marketed from crop district 11 in 1957, over 80 per cent were brought to market by the producers themselves and most of the remaining shipments were made through dealers. It would appear that producers in this area have considerable freedom in the choice of their market outlet and are in a position to obtain the best price should there be price variations in the market.

Table 6.- Collection centers in crop district 11, 1957

Agent	Number of agents operating	Hogs handled	Share of total number of hogs assembled in C.D. 11
			- per cent -
Dealers	6	26,763	8.8
Shippers	3	3,952	1.4
Commission firms	4	49,311	16.3
Buying stations (local)	9	80,719	26.6
Locals to plant	4	142,188	46.9
Total	26	302,933	100.0
Less 1957 production CD 11		190,183	62.8
Farmer marketings collected from outside CD 11		112,750	37.2
			100.0

Source: Markets Information Section, Canada Department of Agriculture.

With the exception of the A.L.C. there are no co-operative shippers collecting hogs in crop district 11. A.L.C. handlings, of course, include shipments from outside the district, and therefore the 10.1 per cent shown in Table 5 is the maximum estimate of hog numbers handled by co-operatives. From Table 5 it would appear that the importance of co-operative shippers increases as the distance from market increases. The only exception to this seems to occur in the central area in crop districts 7, 8 and 9. Since production is high and competition stronger (there are two markets in this area) packers might be expected, by one means or another to encourage the operation of private dealers. This would reduce co-operative shipments from the area.

(b) Alternative markets available

In the area marked off on Figure 6, which includes the largest proportions of crop districts 7, 8, 9 and 10, producers have the choice of shipping hogs to at least one other market. Total production in this area in 1957 was 540,000 hogs, 72 per cent of which were marketed in Edmonton, 20 per cent in Calgary and eight per cent east outside Alberta. Calgary marketings arise primarily from crop districts 8 and 9, although a few hogs from crop district 7 are shipped south. Shipments to the east of Alberta are mainly from crop districts 10 and 7 and, in 1957, they represented 17 per cent of the marketings from these two crop districts. These movements are shown in Table 7.

Table 7.- Allocation of hog marketings from central Alberta
1957

C.D.	Total marketings	Shipments to Edmonton	Shipments to Calgary	Shipments east
		- per cent of total -		
7	59,315	53.5	7.9	38.6
8	237,678	71.5	28.4	-
9	54,818	35.1	64.6	-
10	187,656	90.0	-	10.0
Total	539,467	72.2	20.0	7.7

Source: Markets Information Section, Canada Department of Agriculture.

Most marketings from this area are handled by dealers, although about 30 per cent of those from crop district ten are farmer shipments. Most of these, however, come from the western portion of the district. Producers in the eastern half send much more of their product to market through dealers. Thus, east of the line drawn through crop district 10 on the map in Figure 6, roughly 85 per cent of shipments to market are through dealers; a figure large enough to substantiate the hypothesis that dealer deliveries are encouraged in areas shipping to two markets.

Over 80 per cent of the movement of hogs to the Edmonton market from the central area, crop districts 7, 8 and 9, is through dealers and 88 per cent of the movement to Calgary from this area is handled by dealers. There are probably several factors at work here which resulted in this distribution within the market channels. First, production, particularly in crop district 8, is concentrated and therefore creates circumstances favoring the establishment of dealerships. Secondly, the greater distance from market should serve also, to discourage farmer deliveries. This is borne out by the figures in Table 5. In addition to the 80 per cent moving to Edmonton through dealers, 15 per cent is delivered by shippers. Thus, less than five per cent of Edmonton marketings from this area are delivered by farmers. Lastly, the influence of possible alternative outlets could be expected to favor the establishment of hog dealerships. Because of the effect of the first two factors the influence of the alternative market is hard to establish.

Although two of the largest co-operative shipping organizations in Alberta, the Blindman Valley Co-operative and the Mountainview Co-operative, operate in this area, only 18 per cent of the Edmonton marketings are received from co-operative organizations. Two possible reasons may account for this, although there is little direct evidence to support them. It is possible that in an area of such concentrated production, smaller co-operative organizations find it hard to compete with large private dealers who can perhaps operate on a lower margin, Also packers, competing to draw supply from one market area to another, may encourage, by one means or another, the growth of private dealer business in the area. Since 38 per cent of the hogs produced in Alberta are from these four crop districts, shipments from this area should play an important role in price determination in the market and it would be in the packers' interest to secure as much control here as possible.

(c) Producers distant from market and with no alternative outlets

Except for the very recent possibility of shipments to Vancouver from the southwest tip of crop district 16, all hogs from the area to the west, north and northeast of Edmonton, must come to the Edmonton market. In total the six crop districts, 13, 14, 16, 12, 15 and 17, supply 40 per cent of the Edmonton marketings, but as can be seen from Table 7, 36 per cent comes from crop districts 13, 14 and 16. It would be unrealistic to attempt to describe these three districts as one area. Of the three factors mentioned which affect the method of marketing, the only one which applies equally to all districts is distance from market.

Producers in crop district 13 are located a considerable distance from market, but production in the district is concentrated in a relatively small area. The effect of this is to encourage a large number of dealers relative to shippers. Dealers account for 78 per cent of the marketings as opposed to seven per cent for shippers. The balance of 15 per cent is brought to market by the farmers themselves.

In crop district 14, production is scattered and the southern portion of the district is moderately close to the market. The result is that nearly 50 per cent of the hogs shipped out of the district are brought to market by the farmers themsleves. The other half is divided rather evenly between dealers and shippers; a fact which lends support to the hypothesis that scattered production tends to favor the establishment of the shipper rather than the dealer.

Production in crop district 16 is also relatively scattered, but the long distance to markets provides advantages to those who can ship in bulk. Thus, in spite of the scattered production, dealers, who on an average shipped 5.6 thousand hogs per dealer per year in 1957, shipped 77 per cent of the hogs from this area.

Because of the small numbers of hogs shipped from the three other districts, the estimates recorded cannot be used to examine the area. The low proportion 1/ of hogs reaching market as farmer shipments is, statistically, the result of collections in crop districts 12 and 15 by dealers and shippers located in crop districts 11 and 14. Although this has little influence on the figures for crop districts 11 and 14, it has a greater effect on the proportions shown for the other two districts.

Co-operative shipping associations are very active over this whole northern sector of the market except in crop district 14. With the information available it is possible to do little more than speculate on the reasons for this. Generally the co-operatives are large, even in the north, and the North Eastern Alberta Livestock Association in crop district 13 is one of the three largest in Alberta. A combination of good management, a generally co-operative spirit in the area, concentrated production in one area, and long distances to market in the other, probably are the main factors leading to large co-operative shipments from crop districts 13 and 16. In crop district 14 production is scattered and distance to market is not so great.

The Calgary market

1. The market area

Calgary is the main collection center and market for hogs produced in southern Alberta. Unlike Edmonton, however, Calgary is not the only price determining market in the area. Although there are no packing plants or slaughter houses located in Lethbridge, there are public stockyards where hogs are bought and sold.

Hogs bought in Lethbridge may be slaughtered in one of the three plants located in Calgary, or slaughtered in Vancouver but shipped via Calgary, or slaughtered in centers east of Alberta (Table 8). Excluding the hogs shipped east, there were 15.2 thousand hogs bought on the Lethbridge yards for slaughter in Calgary and 18.6 thousand bought for slaughter in Vancouver in 1957. 2/ Since even those hogs through billed to Vancouver have an indirect influence on the Calgary market, and since the volume on the Calgary market makes that market a price leader over Lethbridge, it is possible to discuss the Calgary market, including Lethbridge, as one unit without much sacrifice of accuracy.

1/ It is in fact negative in crop district 12 due to the difficulties involved in tracing hogs delivered from within a crop district to the crop district in which they were produced.

2/ Canada Department of Agriculture. Annual Livestock Market Review.

Table 8.- Disposition of hogs from the Lethbridge stockyards, 1957

Purchased by	Hogs for slaughter in Calgary	Vancouver	East	Total
Commission firms	8,389	14,068	774	23,231
Packers	6,824	4,507	-	11,331
Dealers	-	-	9,000	9,000
Total	15,213	18,575	9,774	43,562

Source: Markets Information Section, Canada Department of Agriculture.

Because of the existence of the Lethbridge yards, however, generalizations about the effect of physical factors on market organization are much more hazardous. To add to this hazard the actual volume of marketings for the Calgary market is much less than that for Edmonton. It can be seen from Table 3 that a volume of 423.4 thousand hogs, or 31 per cent of the total Alberta marketings, moved through the Calgary market in 1957. Of this quantity 26 per cent was slaughtered in Vancouver, and 18.6 thousand, or 17 per cent of these were bought in Lethbridge. These smaller figures do not permit generalizations with the same confidence as do the larger figures in the Edmonton market.

2. Channels and methods of marketing

The channels of marketing in the Calgary market area have developed along lines somewhat different from those in the Edmonton area. Commission firms on the stockyards play a more important role in Calgary than in Edmonton. Dealers are much less important.

Table 9.- Market channels for hogs in Alberta markets, 1957

Channel of marketing	Proportion of total provincial marketings	Proportion of Edmonton marketings	Proportion of Calgary marketings
		- per cent -	
Dealers	49.2	55.5	35.0
Shippers	11.2	11.4	10.9
Commission firms	8.6	5.2	16.3
Farmer to packer	30.9	27.9	37.8

Source: Markets Information Section, Canada Department of Agriculture and Courtesy of Canadian Meat Packers Council.

Two reasons, based on the physical relationships demonstrated for the Edmonton market, may help to explain the sizeable reduction in dealer shipments. First, because of the existence of the Lethbridge stockyards, the average distance to market is less in the Calgary area than in the Edmonton area. Since dealer operation appears to lose some of its advantages in areas closer to market this would account for some of the reduction in dealer activity. Second, the area does not produce large numbers of hogs and production tends to be scattered over a larger area. The result is increased difficulty of collection and a tendency to farmer deliveries.

The effects of these two factors can be traced by crop districts as was done for the Edmonton market, but the three layers delineated within the Edmonton area are not so easily found in the Calgary area. Even if they were marked off in an arbitrary fashion, production over most of the area is small enough to make percentage data unreliable.

Table 10.- Relative importance of market channels by crop district for hogs coming to the Calgary market -- 1957

CD	Share of Calgary marketings	Sold through dealers	Sold through shipper	Farmer shipped to yard & plant	Sales handled by co-ops.	Average size of dealer shipment
	- % -	- per cent of total sales			- % -	- '000/yr. -
6	31.1	6.0	5.4	88.6	22.2	3.9
7,8,9	29.0	84.3	9.2	6.5	46.8	6.4
4	11.3	16.1	-	83.9	-	3.8
2	13.4	17.2	21.1	61.7	42.8	4.9
5	2.7	22.3	-	77.7	-	2.5
3	7.7	37.5	40.1	22.4	9.3	6.1
1	4.8	22.2	13.7	64.1	12.8	1.0
Total	100.0	35.0	10.9	54.1	26.9	5.1
August	100.0	39.3	9.3	51.4	37.7	0.36
December	100.0	25.2	6.7	68.1	17.5	0.39

Source: Markets Information Section, Canada Department of Agriculture.

It is clear from Table 10 that the important producing area is the western half including crop districts 2, 4, 6 and 7, 8 and 9 (mainly 8); the eastern half, with the possible exception of part of crop district 3, is clearly unimportant as a hog producing area.

Producers in crop districts 2, 4 and 6 are relatively close to a market, a fact which helps to explain the high proportion, 61.7 per cent, 83.9 per cent and 88.6 per cent respectively, of hogs brought to market by the farmers themselves. Production in crop districts, 7, 8 and 9, on the other hand, is quite heavily concentrated, producers are located some distance from market and have the alternative of shipping to Edmonton. As would be expected, the proportion of farmer deliveries is small, 6.5 per cent, and that of dealers is large, 84.3 per cent.

The large proportion of market shipments which go to the Calgary stockyards cannot be explained on the basis of physical factors except to the extent that the increase is the result of the higher proportion of farmer deliveries. Hogs arriving at the yards must be put up for auction, so that private dealers, who have some knowledge of the market, tend to make arrangements to sell direct to one packer. Producers, and to some extent truckers, therefore, are the only sellers who must choose an outlet for each load of hogs. Because of this, and because of his generally inadequate knowledge of the market, the producer who delivers his own hogs is the one most likely to deliver to a commission firm on the stockyards.

Co-operative marketing assumes greater relative importance in the Calgary market area than in Edmonton. Nearly 27 per cent of total Calgary marketings were shipped through co-operatives. This contrasts with the figure of 19 per cent for Edmonton, and, on first inspection, tends to belie the relationship between distance and co-operative activity suggested from the examination of the Edmonton market.

There are, however, several significant differences in the pattern of co-operative operations in the Calgary market area. In contrast to the Edmonton area, most of the hogs marketed through co-operatives are brought by producers themselves to be marketed through the A.L.C. and, in Lethbridge, to the Southern Alberta Livestock Co-operative. With the exception of the central districts, 7, 8 and 9, only a very small number of hogs are collected in the country by co-operative shipping associations. The active part played by the associations in the central districts is probably a result of the particular competitive struggle for hogs occurring in that area (as described on pages 13 and 14).

One other difference in the organization of the two markets, which has some bearing on price determination, is that the Calgary stockyard exchange regulations, even at that time, required all hogs shipped to the stockyards to be offered for sale on public auction. At Edmonton this "offer for sale" regulation was not in force in 1957, and the few sales that were made on the yards were transactions by private treaty. In October 1958, the situation in the Edmonton market was changed. Hogs are now sold by auction, and the proportion of hogs sold on the yards is increasing.

Summary

Hog producers in Alberta over the period from 1953 to 1957 marketed more than one-quarter of the total Canadian hog slaughterings. Because of the relatively small population of the province a large amount of this production had to be shipped outside the province. Most of these shipments are in the form of processed pork, but even accepting the economies of shipping processed pork, nearly 25 per cent of Alberta hogs were slaughtered outside the province, mainly in Vancouver.

One of the major functions of the market is to collect hogs from the numerous scattered producing units and to transport them to the centers where they can be slaughtered and processed. In Alberta this follows two general patterns. In terms of numbers the most important of these is the collection at country points by dealers and shippers for delivery to either Edmonton or Calgary, the two market centers in the province. In 1957 over 60 per cent of Alberta marketings were shipped in this manner. The remaining 40 per cent were brought into market by the producers themselves. This does not necessarily mean that every producer brought in his own hogs, but that they were delivered by farmers bringing to market the hogs belonging to one or two of their neighbors as well as their own animals. Some producers in southern Alberta deliver their hogs to commission agents on the Lethbridge stockyards. Hogs sold in this way are bought by packers in Vancouver or Calgary, in which case they must still move to Calgary in the first instance; or they are bought by plants located east of Alberta and shipped in that direction.

Hogs brought by producers to Edmonton or Calgary are delivered either direct to packing plants or to a commission firm on the stockyards. In 1957 these hogs, delivered to commission firms, were sold on the public market (or used to fill orders) generally to Vancouver packers, but occasionally to packers east of Alberta. Hogs brought to the yards seldom moved to local packers.

Shipments arriving in Edmonton and Calgary from dealers and truckers usually went direct to one of the packers. Some dealers ship to Vancouver, through-billing the hogs directly to a plant in Vancouver and stopping them in the market centers only for feed, water and possible regrouping. Thus, broadly speaking, hogs from the country moved to the packing plants or to the stockyards for shipment outside the area.

From an examination of variations in the methods of marketing in different areas it can be seen that distance from market, concentration of production and the possibility of alternative outlets are three important physical factors shaping the market structure. But the market structure so formed has a strong influence on the forces operating to determine price, and in turn, these forces react back to modify this structure. Part II of this study will consider the pricing arrangements which arise out of the marketing channels described here. Far too little descriptive material exists on marketing procedures for Canadian livestock. It is partly for this reason that considerable time has been devoted to this detailed description. The description has a further purpose, however. It is not possible to discuss pricing without it, and having now set the stage a discussion of the influence of this setting on price arrangements follows in Part II.

PART II

ANALYSIS OF COMPETITIVE FORCES IN THE MARKET

The second part of this study is an analysis of the manner in which competitive forces affect the Alberta hog market. This will require an examination of the competitive position of the agents whose activities were outlined in Part I. It will require the identification and examination of some of the forces affecting the market which are beyond the control of the agents. And lastly, it will require an analysis of the interaction of these factors. Such examination and analysis will demonstrate the manner in which prices are actually determined and provide some estimate of the amount by which hog prices may be affected by the interaction of conflicting interests and changing circumstances.

Competitive position of agents in the market

The description of the agents in the market as presented in Part I of this study permits some observations on the competitive positions of the producers and other agents discussed there. First, the producers are generally price receivers with no competitive power except when organized into large groups. Second, dealers and shippers, since they do not buy and sell hogs, compete only on the basis of services offered and do not, therefore, influence the market greatly. Third, although also competing on the basis of services offered, commission firms are engaged in bulk buying and selling operations. Because of the size of their business it is likely that these firms will have some influence upon price. Fourth, the bulk of the supply of hogs is purchased by only a few firms so that the action of any one will have an important influence on the market. The competitive position of each of these agents will be examined in turn.

1. Producers

There can be little question of the tendency of the individual producer to accept the market price as given and unaffected by his actions. The 1956 census showed 45,600 Alberta farmers reporting hogs.1/ Based on commercial slaughterings, in that year there was an average of 34 hogs marketed per farm; an amount too small to affect the market and, therefore, too small to allow the producer any control over the market.

There are two means by which the producer may exert some influence on the market. The first is by becoming a member of a marketing association such as a co-operative and the second is by operating on a large enough scale to enable him to differentiate his hogs from those of other producers. This may be done by offering such services as regular volume shipments, uniform quality, or shipments on order.

1/ Dominion Bureau of Statistics Census of Agriculture, Alberta Bul. 2-9, 1956.

Co-operative marketing does, in fact, occupy an important place in the marketing system and its competitive influence is discussed in detail later. Some 75 to 80 per cent of the hog producers are not members of a co-operative. These producers remain as price receivers. There are even fewer producers operating on a scale large enough to differentiate their product or to bargain with a packer. Even if such operations are successful, they are small enough in relation to the total volume to have little effect on the position of the majority of producers.

The only influence of the producer on the market arises from his ability to transfer his business from one to another of the packers when variations occur in services or perhaps in prices offered. Because most producers ship to the market through country agents (as was demonstrated in Part I), they are not fully informed of small variations in the market. Thus, generally speaking, they are not able to use even this limited power with any degree of effectiveness.

2. Country agents

Apart from the producers, country dealers and truckers are the most numerous of any of the classes of agents in the market. In 1957 there were 279 such agents hauling hogs to packing plants or to the stockyards. These agents, particularly the licensed dealers, do handle fairly large quantities of hogs. In 1957 dealers shipped an average of 4,600 hogs each, enough perhaps to provide them with some influence in the market.

Country agents, however, do not buy or sell hogs. Under the rail grading system, final payment is made by the packer only after the hog has been slaughtered and graded. Dealers seldom purchase hogs from the producer. Price, therefore, is not of direct importance to the agent. He competes with other agents by offering various services to producers at competitive prices and by securing for the producer the best returns possible. Thus the country agent is concerned only that the price obtained for hogs he handles is not less than that obtained by other dealers in his area competing for his business. The absolute level of hog prices is, therefore, of only indirect concern to most dealers; it does not influence their profit margin. Their actions neither restrict nor increase price competition , although competition among dealers may result in smaller profit margins on their transactions.

2. Commission firms

The place of the commission firms in the competitive structure of the hog market is more difficult to define. If they are able to supervise the sale of large numbers of hogs in a public market to a number of active buyers, the commission firms should have an important part to play in maintaining a competitive market. If none of these conditions are met it is likely that the private commission firms, like the country agents, will have little influence on the competitiveness of the market.

An examination of the data presented in Part I on the operations of commission firms and on the volume of stockyard marketings during the years 1957 and 1958, suggests that private commission firms did not influence the Alberta market greatly. The small number of hogs moving to the stockyards would in itself tend to limit their activity. Most of the hogs, shipped to the Edmonton market were not offered for sale, but were merely shipped at "going" market prices to fill standing or special orders. In Calgary all shipments to the market were offered for sale but the number of hogs handled by commission firms there was small and the buying was erratic. The result was that the private firms, by themselves, were not effective in making the market competitive at either center.

Nothing has been said so far about the activities of the Alberta Livestock Co-operative as a commission firm. Unlike the other firms the A.L.C. is directly concerned with the absolute level of prices. Because of this the co-operative takes a more active part in the formation of market price. Since the dominant position in the market is occupied by the large packers, however, a detailed discussion of the competitive influence of the A.L.C. has been left until after an examination of the packers' position.

4. Packers

Within the province of Alberta there are seven federally inspected packing plants; four located in Edmonton and three in Calgary. These seven plants, in 1957, processed 93.5 per cent of the total number of all hogs slaughtered in Alberta. Since five per cent of the remaining kill was farm kill,1/ for most purposes it can be said that inspected plants handled the total commercial supply.

In addition to the processing done in Alberta, there are six or seven plants in Vancouver and several east of Alberta that process Alberta hogs. Most of these, however, including six of the seven plants located in Alberta, are branch plants of three national and international firms: Swift Canadian Co. Ltd., Canada Packers Co. Ltd., and Burns and Co. As shown in Table 11, these three firms processed 89.4 per cent of the commercial slaughter in Alberta in 1957 and between 78 per cent and 82 per cent of the total marketings of the hog producers in Alberta in that year. The balance of the production was processed by Gainer's Ltd., two or three other small firms in Edmonton, three small firms on the west coast and several independent packers in Saskatchewan, Manitoba and Ontario.

Table 11.- Purchases of Alberta hogs by three major firms, 1957

	Total number of hogs	Hogs slaughtered by three major firms	Proportion of total slaughtered by three major firms
	- '000 hogs -		- per cent -
Alberta slaughter	1,079	965	89
Alberta marketings a/	1,430	1,115b/ (1192)c/	78b/ (83)c/

Source: Markets Information Section, Canada Department of Agriculture.
a/ Inspected slaughter of Alberta hogs inside and outside the province.
b/ Assumes no eastern shipments slaughtered by major firms.
c/ Assumes all eastern shipments slaughtered by major firms.

1/ Unpublished data supplied by Agriculture Division, Dominion Bureau of Statistcs.

The degree of autonomy of various branches of any of the major firms is clearly a matter which cannot be measured in terms of statistics. It is likely that Edmonton and Calgary branches do have some independence in determining their buying policies, but it is interesting to note that all purchases of Alberta hogs for the Vancouver branch plants are made through the Edmonton and Calgary offices. It is not reasonable to suppose that one branch plant would be permitted, for long, to follow a policy detrimental to other branches of the same firm. It is highly unrealistic to believe that they would bid against each other in the market to raise prices.1/

The major firms purchase only an insignificant proportion of their supply in public markets and, therefore, do not bid actively against each other in the public market. Total purchases by the three major firms on the stockyards in Alberta amounted to 44,000 hogs in 1957. On the basis of the total kill of these firms, as shown in Table 11, these stockyard purchases accounted for less than 4.0 per cent of the total purchases of the three firms. Thus more than 96 per cent of the purchases of the major packing plants are direct shipments either from a producer or from a country agent.

Summarizing then, it can be said that the three major processing firms slaughter about 80 per cent of the Alberta hog production and 96 per cent of this quantity is purchased direct from the producers, who, as has been shown, have no competitive influence in the market. This defines a situation known to economists as an oligopsony, that is, a situation in which there are many sellers and few buyers.

Competitive forces acting in the market

1. Price and geographical position

Toronto and Montreal are the main centers for the establishment of wholesale prices for pork. Tables 1 and 2 in Part I give an indication of this volume. Packers shipping to these markets must buy hogs at prices low enough for them to compete there. As a result the Toronto hog price bears a direct, if complicated, relationship to the Toronto wholesale price of pork, and hog prices away from Toronto tend towards the Toronto price less freight; i.e. "freight-under" Toronto. Given total control of supply (which they have not), the major packers in Alberta would tend to offer a price that was "freight-under" Toronto in order to compete in that market with surplus western pork. The Toronto price less shipping costs of approximately $3.50 per cwt. would serve as a guide to each major firm, enabling it to fix a buying price without fear of competitive reprisal from the other firms.

Eastern markets, however, are not the only outlets for Alberta production. Figure 7 shows the destination of all hogs and pork produced

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1/ It would appear from this that the competitive area in crop districts 7, 8 and 9 discussed in Part I is perhaps not as competitive as first appearances indicated. Instead of six firms there are really only three competing for supply in terms little different than in other areas.

in Alberta. It is obvious from the diagram that Alberta is located between two market centers even though the distances to these centers are not equal. The disparity in distance is easily explained by the fact that Saskatchewan and Manitoba also produce a surplus of hogs. Alberta shipments, must, therefore, move all the way to eastern Canada and this is accomplished most economically in the form of pork. The larger proportion of the movement west occurs as live hogs.

In a situation where two competitive markets overlap (assuming transport costs are proportional to distance) the net cash returns to producers shipping to either market will be equal along some line dividing the two markets. The position of this line depends upon the price in each of the markets and upon the cost of transport. Because they are on the edge of both markets the net price to producers along this line will be lower than that of all producers closer to either market.1/

From Figure 7 it is obvious that Alberta is, in fact, an area in which two markets overlap. A similar diagram for Saskatchewan would show practically no westward movement of live hogs or pork. In spite of this fact, however, prices in Alberta are not the lowest of those in western markets. Over the years Edmonton and Calgary prices for hogs have been above Saskatoon prices, and for considerable periods, above even those of Winnipeg, 900 miles to the east.

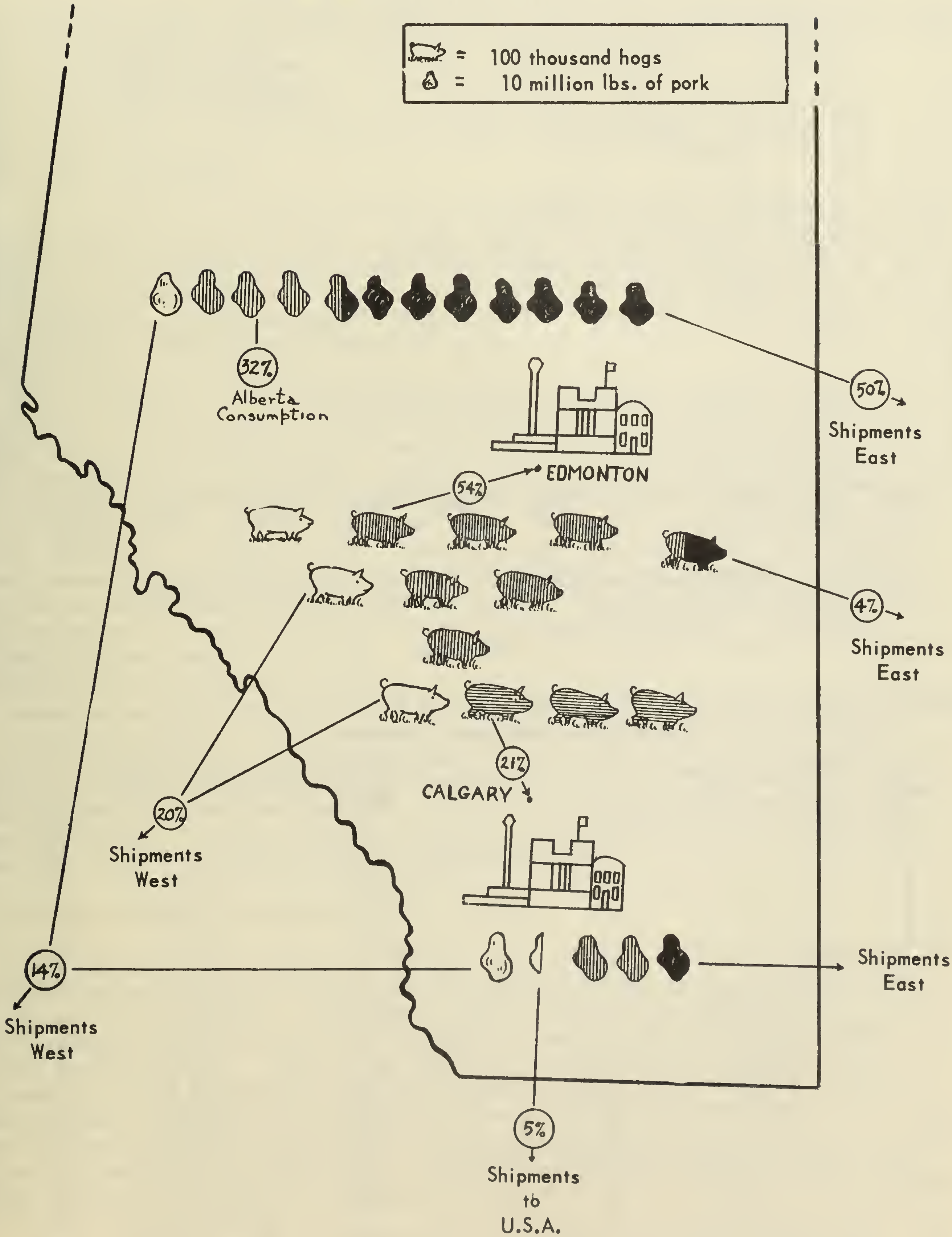
The relationships between the market centers is best shown by comparing the differences between prices for hogs in Toronto and those in western markets. This has been done and the results are shown in Figure 8. The margins shown on the graph are the differences between the monthly average prices in Toronto and those at the western centers. From this a 12-month moving average was plotted. The behavior of the Toronto-Calgary margin demonstrates clearly that the Calgary market is important as a market center. Some caution must be used in interpreting this graph, however, since the prices quoted are stockyard prices and these are not always the prices producers receive when they ship direct to the processing plants.

Hidden within this moving average are numerous observations, particularly if weekly average prices are used, in which the Toronto-Calgary margin is equal to or greater than the cost of freight of fresh pork to eastern Canada. Figure 7 and Table A (Appendix) show the frequency with which the Alberta price falls to the "freight-under" Toronto level -- the level at which the Alberta market ceases to be important in influencing price. This dividing line is located between class numbers 6 and 7. Although these lower prices occur with some frequency, in comparing the situation in Alberta markets with that in Saskatoon, 350 miles to the east, it is apparent that there are forces active in the Alberta market which do not affect markets to the east of the province.

The explanation of this unexpected price behavior lies in the conflict of interests existing between the major packers on one hand and the smaller

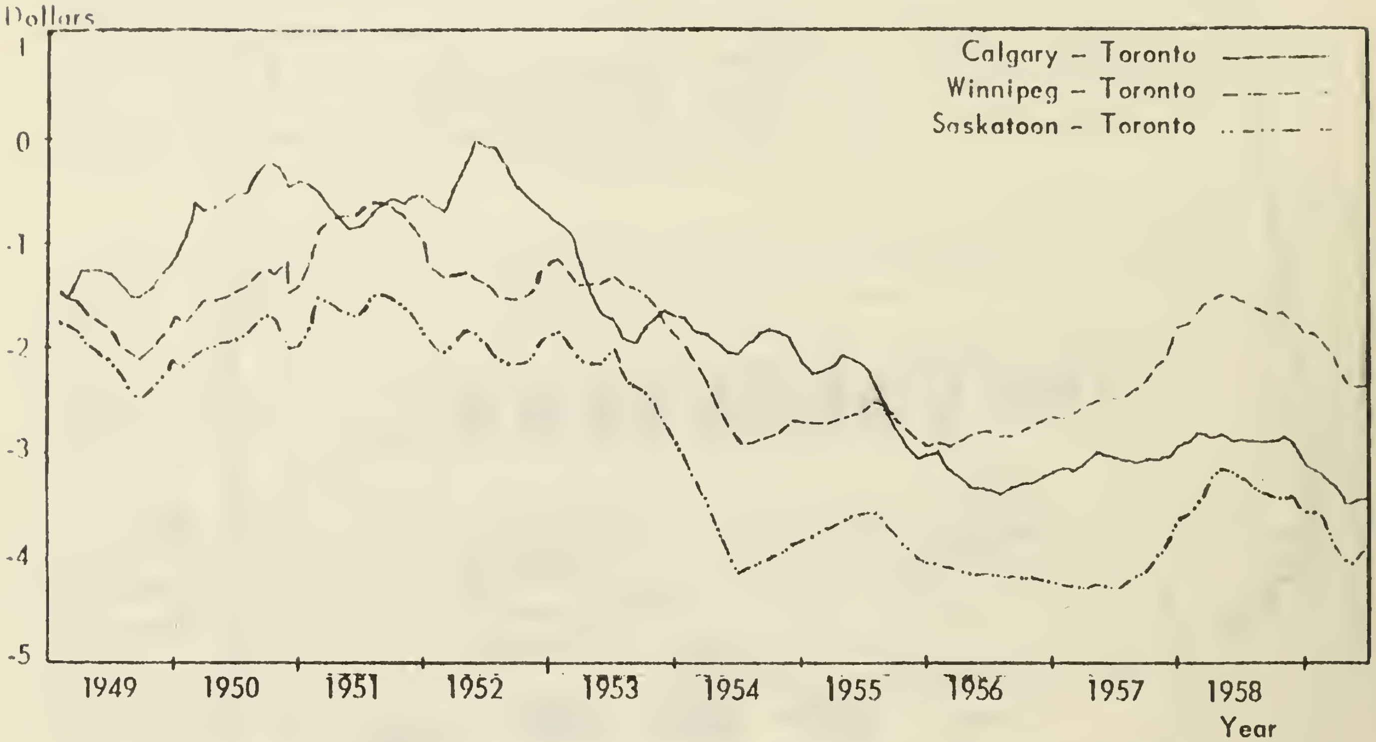
1/ Waite, W.C. and H. Trelogan. Agricultural Market Prices. John Wiley & Sons Inc. 1951 - Chapters 6-7.

Figure 7. – Destination of Hogs and Pork Produced and Processed in Alberta in 1957



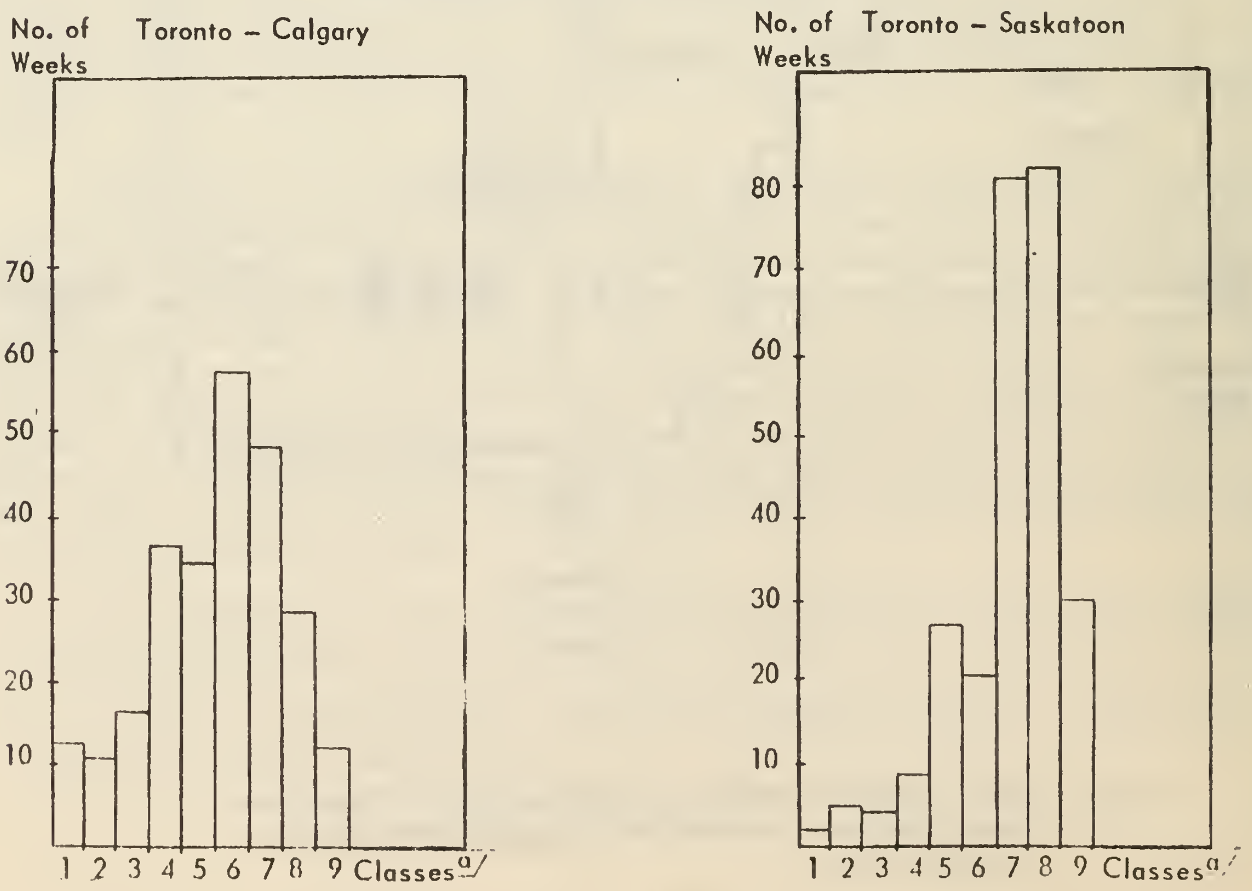
Source: Markets Information Section, Canada Department of Agriculture. Canada Department of Agriculture. Livestock Market Review. See Table 2, Part 1.

Figure 8. - Margins Between Twelve Month Moving Averages of Grade B_1 Hog Prices at Toronto and Selected Western Points, 1948–58



Source: Canada Department of Agriculture, Livestock and Meat Trade Report.

Figure 9. – A Frequency Distribution of the Margins Between Weekly Average B_1 Hog Prices in Toronto and Western Stockyards, 1954–1958



Source: Canada Department of Agriculture, Livestock and Meat Trade Report.

a/ For definition of classes see appendix Table A.

packers on the other. The three major plants must sell roughly half of their processed meat in eastern Canada at prices competitive in that market. The smaller packers supply only local requirements. If there is an increase in local demand -- i.e. on the west coast including the U.S. or in Alberta - these plants may raise their offer prices for hogs above comparable prices in Toronto or other eastern centers in order to fill their requirements.

The presence of these local firms, therefore, at times provides a limited outlet for hogs at prices higher than the major firms would be willing to pay if they were the only ones buying in the market. The fluctuations in the Toronto-Calgary price margins indicate changes in the importance of the west coast market and the reactions of the agents in the market towards these changes.

In periods of limited supply in relation to demand the activities of small local firms have considerable influence on the Alberta market. The major packers attempt to find measures which will enable them to maintain their share of Alberta supplies and at the same time purchase at a price which allows them to remain competitive in the Toronto market. One of the most important of these measures, perhaps, is the operation of branch plants on the west coast. The west coast plants of the three major firms processed 52 per cent of the British Columbia hog slaughter in 1957, most of which was purchased in Alberta by the branches located there. By this means and by the possibility of shipping pork processed in Alberta to the Vancouver market, the three major firms are able to protect their position quite effectively.

A second means of protecting their position is through the development of numerous non-price competitive practices. Such measures are employed with increasing urgency as supply becomes more scarce. The effect of short supplies on the market was evident over the period from 1956 to 1958 when competitive activity other than price competition led to the development of a rather complex system of marketing hogs.

2. Service differentiation and buying costs

The presence of a number of smaller firms in the market is likely to provide the major packers with a strong incentive to secure their sources of supply in the country. The small firms obtain their supplies from the stockyards and thus prevent the major packers from sharing the market at the market centers. The major packers, therefore, are interested as a group in encouraging direct shipments which reduce the extent to which they must buy through the stockyards. (There are other cost factors involved also. These are discussed below). Also, as individual firms, each of the major packers is interested in maintaining its own share of the market. These interests involve the packers in various forms of non-price competition.

Some information on the extent of such competition among the major packers was obtained for this study through a questionnaire which was mailed to 279 dealers and shippers in Alberta. The names of these agents were obtained from the files of manifests retained in the federal government offices at the Edmonton and Calgary stockyards. These files included names of all dealers and shippers of any size who assembled and delivered hogs to packers inside or outside the province or to the stockyards in Edmonton, Calgary or Lethbridge in the year 1957.

Of the questionnaires mailed out, 166 or 60 per cent were completed and returned. The response of the dealers was particularly good as 81 per cent returned the completed form. As might be expected from the more casual nature of their business, the response of the trucker-shippers was not great; only 49 shippers, 36 per cent of the total, returned the questionnaire. The replies established the fact that, to attract supply, packers did incur costs which did not appear in the returns of the producers. The returned forms, however, provided few clues to the attitude of the packers toward one another in the matter of soliciting the business of the agents.

It is obvious from Table 12 that packers were incurring buying costs in the form of bonus payments to country agents in 1957 and 1958. Dealers received a commission on the number of hogs shipped. Sometimes this was passed back to the producers in the form of reduced charges and sometimes it was not. Shippers, who by law are not permitted to handle producers' receipts, obtained their delivery charges from the packers who deducted them from the amount payable to the producer. The commissions or bonus payments received by the shippers were over and above their costs of handling. In addition to this the packers paid the transport costs for shipments from country points to the plants for about 90 per cent of the dealers, and for some of the shippers.

Table 12.- Relation of country agents and packers as illustrated by returns from questionnaire mailed October 1957

	Number			Proportion		
	Dealers	Shippers	Total	Dealers	Shippers	Total
				Per cent replying		
Total No. of country agents	144	135	279	81	36	60
Total No. of replies	117	49	166	per cent of those replying		
Agents stating that:						
1. Packers paid them a commission	73	25	98	62	51	59
2. They made no charge to producers	19	3	22	16	6	13
3. Packers purchased f.o.b. shipping point	105	29	134	90	59	81
4. Packers kept them competitive	98	21	119	84	43	72
5. They sometimes obtained more than market price	46	7	53	39	14	32
6. Packers assisted them financially	4	4	8	3	8	5

The major packers also advertised in an effort to encourage producers to ship direct rather than to the stockyards. These advertisements were carried in local newspapers and over radio stations. It is not possible to determine the size of such expenditures but, from the amount of advertising, it can be assumed to have been quite large. The establishment of buying stations and additional receiving facilities at strategic locations on the periphery of Edmonton is another example of expenditure to increase supply without raising price. Strictly speaking, the operation of these buying stations is not an addition to buying costs, since presumably such stations provide a service to producers. The effect is the same, however, because the facilities help to attract supply that might move to other buyers.

Whatever effect these activities have upon the distribution of supply among the major packers, they will certainly act to decrease the volume of hogs moving to the stockyards. Country agents find that if they ship to the packers they receive a bonus payment in addition to having the packer pay the cost of transport. Producers trucking their own produce to market, after first being encouraged to think in terms of direct marketing, are confronted with convenient stations at which to unload without having to drive across the city to the stockyards.

Over the period from 1954 to 1957, as the result of a strengthened demand, the efforts of the major packers to encourage direct marketing were intensified. The results of this can be seen clearly in the graph of percentage receipts on public stockyards as shown in Figure 5, Part I. Stockyard marketings, not large to begin with, continued to fall over this period. In the latter part of 1958 and in 1959, when supplies had increased considerably, all these practices, except the operation of buying stations, were discontinued and stockyard marketings rose substantially.

It is obvious, therefore, that in the matter of service differentiation and buying costs, the major packers have been acting in the manner expected of firms in an oligopsonistic market. The firms, because of their size, are aware that their activities can change the market picture. The smaller firms, on the other hand, act as if the market were competitive. They act on the assumption that they can acquire all the supply they want if they pay the going market price. If demand is strong enough their assumption turns out to be wrong and the result is a higher price, not only to the smaller firms, but to the major ones as well.

3. The Influence of the Alberta Livestock Co-operation

One of the important factors in the development of the Alberta market was the activity of the Alberta Livestock Co-operative. The A.L.C. acts as the selling agency for most of the numerous co-operative shipping associations handling hogs within the province. The co-operative also sells hogs consigned to it in its role of commission firm on both the Edmonton and Calgary stockyards. The A.L.C., in 1957, handled about 22 per cent of the total Alberta marketings, enough to assure a position of some importance in the marketing process.

Although there is a conflict of interests between the producers and the processing firms in the matter of price for hogs, both are interested in increased efficiency in marketing. Given an adequate price arbiter, marketing costs may be reduced by marketing direct to the plants rather than through the stockyards. The economies of direct marketing have always meant that a large proportion of the available supply bypasses the yards. In order to compete on a cost basis, the A.L.C. also found it necessary to ship direct to the plants from the country.

Shipping hogs direct to the plants renders the pricing process more difficult. With a large number of buyers and sellers in contact with each other in a central market, a price is established readily and most of the factors affecting the market are taken into consideration. When hogs are moved direct to plants this is not the case. To circumvent these difficulties the usual agreement is that shipments direct to plants will receive a price equivalent to, or at least related to the stockyard price less deductions for handling and other costs. It is on this basis that the major packers in Alberta purchase hogs from producers shipping through country agents, and it was on this basis that the A.L.C. authorized co-operative shipping associations to ship direct to packers.

In 1955, in an attempt to safeguard their bargaining position vis-a-vis the packers under this system of direct marketing, the A.L.C. began auctioning contracts to the major packers for the supplies of particular shipping associations. The province was divided into areas and the packers submitted bids on association hogs from each area. The bids for contracts, when successful, established price differentials between the current stockyard price and the price to be paid for shipments direct from the country. The main purpose of these contracts was to maintain the competitive position of livestock shipping associations and, at the same time, assure that the packers received all shipments from the contracting association. Since all bids were made basis f.o.b. country point, the zoning of the province allowed for an increase in the price differential in areas more distant from market. It also permitted price differentials to be quoted on the basis of the closest market center - Edmonton or Calgary.

In the years succeeding the signing of this first contract the conditions and terms of shipment and sale were tightened up to prevent abuses by either party. The last contracts in force in the province were negotiated in May of 1957 and were terminated after 60 days' notice by each individual packer in October of 1958. While they were in force the contracts required that direct shipments be bought at the price prevailing on the stockyards at the time of shipment, adjusted by the amount of the price differential agreed upon when the contracts were awarded. In addition the packers paid the freight costs and a "service" charge of 25 cents per cwt. to the A.L.C. to cover costs of handling; i.e. to compensate for bonuses and commissions paid to the private dealers and shippers.

To illustrate the effect of these contracts it might be useful to look at an example. Bidding for contracts in 1957 resulted in a price for hogs from the Peace River country, northwest of Edmonton, of 65 cents per cwt. under the price for Vancouver shipment quoted on the Edmonton market. This meant that if, on the Edmonton stockyards, the average of the Monday, Tuesday and Wednesday prices for Vancouver delivery was $30.00 per cwt., then producers shipping hogs that week received $29.35 per cwt. (basis grade A). The packer who bought the hogs, however, had to pay the freight of $1.12 per cwt. plus 25 cents per cwt. to the A.L.C. Some of this 25 cents was returned to the shipping associations and the rest retained by the A.L.C. The total cost to the packer of this operation, therefore, was $32.72 per cwt. or 72 cents per cwt. over and above the price on the stockyards for Vancouver delivery.

From the point of view of the packers the situation was much more serious than this. Having borne these costs to obtain supplies from the co-operative, the packers had to make certain that the private dealers and shippers supplying them remained on a competitive footing with the co-operatives in the country. If they had not, the packers would have been further increasing the strength of the co-operative. The contracts did not prohibit price variations in the country, but, under the terms of the agreements, if higher prices were paid for hogs in any area, A.L.C. hogs were also to receive that price. The agreements, therefore, established an effective minimum price differential for direct country-to-plant delivery, with the possibility of a higher price in the country if the packers had to secure additional supplies. It can be concluded from this that, in periods like that from 1956 to 1958, when supply is scarce relative to demand, packers will go to considerable expense to obtain their supplies. An attempt has been made in Part III to examine in more detail, the reasons for such behavior.

4. Market Sharing

It has been shown that over the period of study the major packers did incur buying costs to obtain supply. Each attempted to attract supplies through advertising and offering of services to producers and by attracting the business of the country agents through bonus payments and reimbursement of transport costs. The objective of this form of expenditure, which is analogous to the advertising and other selling costs of large manufacturing firms, was to retain or increase supplies without having to bid the Alberta price up to a level where the firms were no longer competitive on the Toronto pork market.

Apart from the collective interest of the major packers in keeping prices near the freight--under Toronto level, each packer is concerned with remaining competitive against the other firms on the market. At the same time, however, it was evident from discussions with packers that each of the major packers are concerned also that they retain their own individual proportionate share, regardless of the fluctuations in the total volume marketed. The extent of each packer's success in achieving this goal can be seen in the last column of Table 13 and in Figure 8. In spite of the changing volume of marketings over the year, each packer's monthly share of total marketings varied by only 0.2 per cent. It is evident, therefore, that packers have learned over time to respect their rivals' rights to a share in the market.

Table 13.- Variation in the share of Alberta hog marketings purchased by four processing firms, 1957

Packer	Variation a/						
	Crop district					Average 5 crop dist.	Province
	6	8	10	11	14		
	- per cent -						
A	6.6	3.3	4.7	8.4	7.0	6.4	0.2
B	10.2	4.1	6.4	7.2	5.4	6.7	0.2
C b/	5.8	4.3	5.9	4.5	6.4	5.4	0.2
D	-	-	5.8	8.1	11.3	8.4	3.7

Source: Markets Information Section, Canada Department of Agriculture.

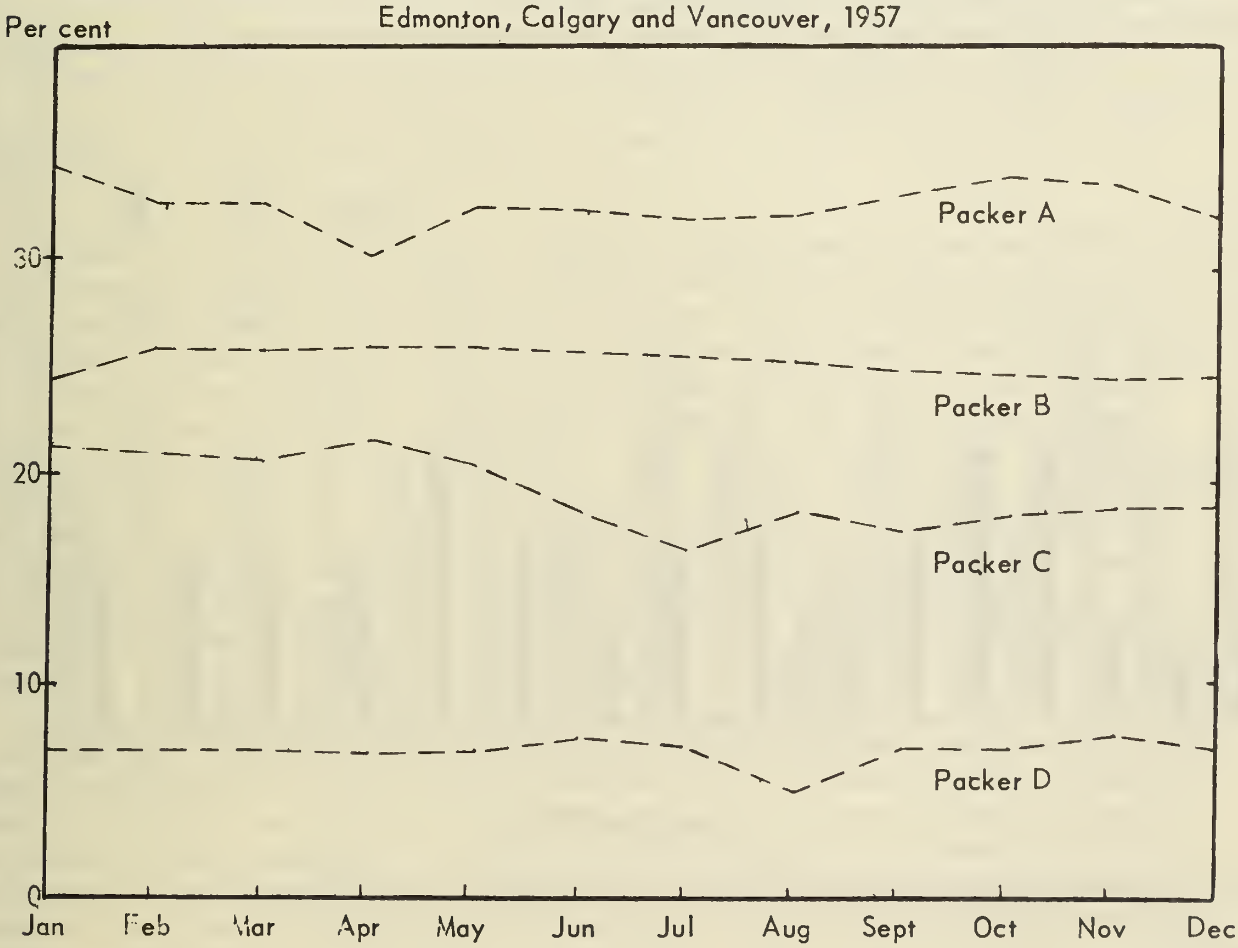
a/ The proportion of marketings handled by each firm for each month in 1957 was calculated from data procured from the origin cards. The average variation of these monthly figures was calculated and expressed as a percentage of the share of the market obtained by each firm for the year.

b/ In May, 1957, because of an arrangement described on page 28 this firm lost the business of several large suppliers. Because of the definite nature of this shift in the share of the market, the average deviation for this firm was calculated on the basis of deviation about two averages, January to May and June to December. This shift can be seen clearly in Figure 10.

This stability in the over-all market was not apparent within smaller areas, again, as indicated in Table 13. The table shows the percentage variation, from the average for the year, in the monthly share of Alberta hog marketings obtained by the three major firms and one local plant. The five crop districts selected market 65 per cent of the hogs produced in the province. The average per cent variation in each of these five districts, compared to the province as a whole, indicates that decreases in the share of hogs which a packer receives from one area are compensated for by increases in another area.

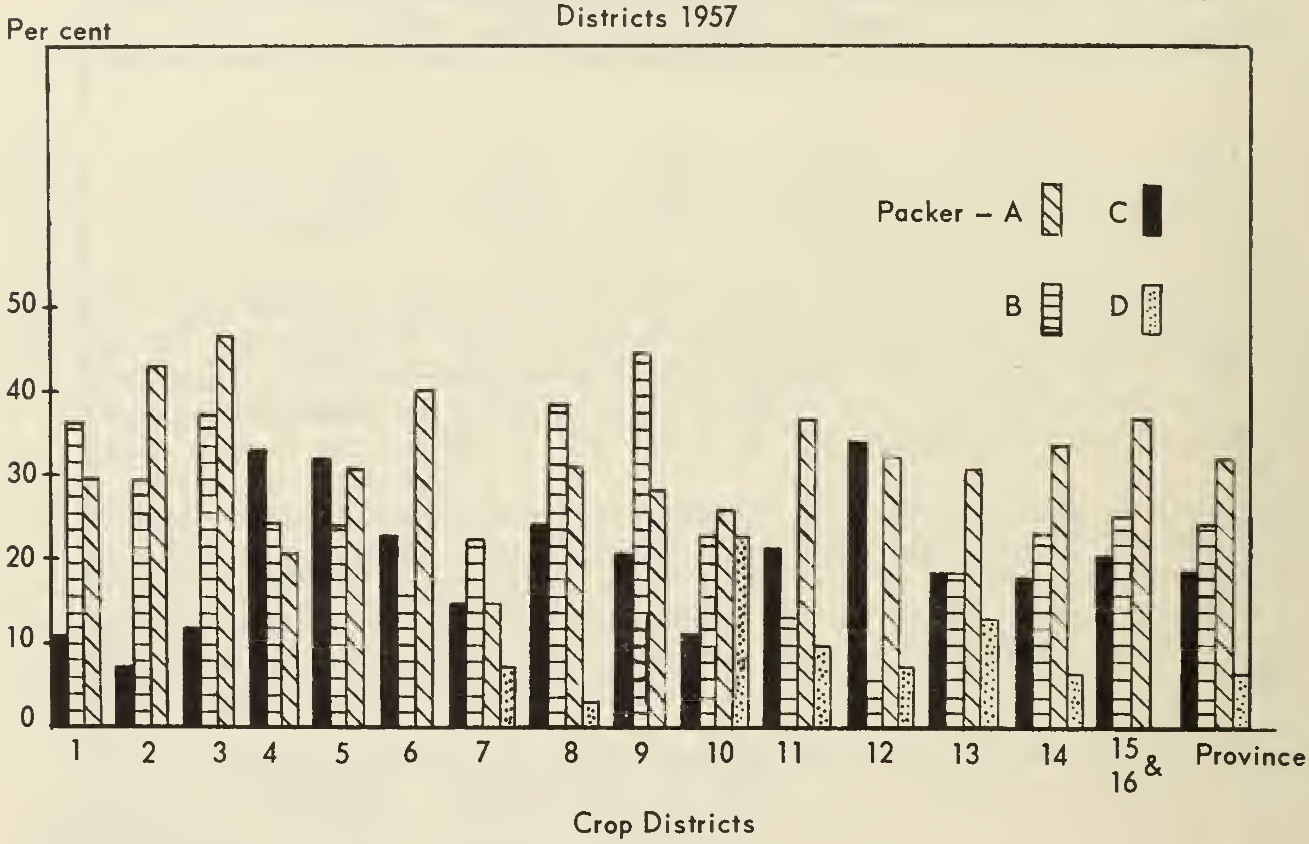
Some of this variation can be explained in terms of the organization of the collection process in the country. It has already been pointed out that packers attempt to attract the business of country agents by various means. This has resulted in a considerable amount of inflexibility in the market. An examination of the 1957 hog manifests showed that only six per cent of the dealers and 19 per cent of the shippers delivered hogs to more than one Alberta packer in 1957. Thus in most cases, producers shipping through a country agent must ship to the packer the agent chooses. In addition, in 1957 there were only 183 centers in Alberta at which dealers or shippers were located. At 65 per cent of these centers there was only one agent and at 20 per cent there were only two agents. Many producers, therefore, must choose their market destination when choosing their country agent and

Figure 10. – Proportion of Alberta Hog Marketings Slaughtered in Major Packing Plants in Edmonton, Calgary and Vancouver, 1957



Source: Markets Information Section, Canada Department of Agriculture.

Figure 11. – Proportion of Alberta Hog Marketings Slaughtered by Major Packers by Crop Districts 1957



Source: Markets Information Section, Canada Department of Agriculture.

often, unless they wish to travel a considerable distance, they have only one, or possibly two, agents through which they can direct shipments.

Unless producers change dealers with some frequency, it appears that the only supply which is not committed in advance is that brought to market centers by the producers themselves. It is possible that packers, while respecting their rivals' rights to hogs shipped through dealers, regard this "free" supply as fair game in the competitive struggle to maintain their market position. If the low variation in C.D. 8 as compared to that in C.D. 11 can be explained in terms of the differences in the proportion of producer shipments in each district (see Table 5, Part I) the figures in Table 13 would demonstrate this hypothesis.

Figure 11 provides further evidence that competition to shift the allegiance to the dealers and shippers from one packer to another is not extensive over the short period of one year. In a competitive market it would be expected that the share of marketings over a section of the market would tend to bear some relation to the share of marketings obtained by each firm for the area as a whole. It is obvious from Figure 11 that this is not the case. The largest firm obtains the largest proportion of supply in only eight of the 16 crop districts, whereas the next two firms each obtain the largest proportion in four of the 16 districts. In view of the fact, however, that competition for the allegiance of these country agents can show its effects only over a long period, the analysis of one year prevents any conclusion from being drawn.

On the other hand it would appear that individual packers did sometimes make rather strong bids to increase their share of the uncommitted supply moving to market. Because the firms are aware that aggressive action is almost certain to invite retaliation, it is likely that the strength of the competitive activity of individual firms at any particular time is governed largely by the changes in its position in the over-all market. A drop in its share of provincial marketings is likely to increase its competitive activity.

To summarize what has been developed in this section, it can be said that the major packers do behave in a manner expected of firms handling a large share of a market. When possible the major firms prefer to allow the eastern price to establish Alberta prices. Because they do not have control of the market, local influences often disturb this relationship. The packers all employ various means of securing their sources of supply by diverting shipments away from the stockyards and by encouraging producers to ship direct. Because over-aggressive action, even in this process, will lead to retaliation, competitive activity appears to be limited to long range programs and to intensive activity of short duration in specific areas to assure a constant proportion of total marketings.

The public markets in Alberta

It can be seen that, because of the A.L.C. packer contracts, the central markets had an important function as part of the mechanism for discovering prices. Since the major packers felt it was in their best interest to try to obtain their share of the supply through direct country buying, it is apparent that they could not, at the same time, afford to bid aggressively in the public markets. The plants, therefore, made every effort to stay off the yards except at times when they would bid without raising prices. In order to assess the effects of this situation it is first necessary to examine the operation of the public markets in some detail.

Measured by volume of sales and by its influence on Alberta hog prices, the Calgary livestock exchange is the most important of the three price determining centers in Alberta. Table 14 shows clearly the relative importance of the three central markets and the relative unimportance of central market buying by the three major firms.

Table 14.- Purchases and sales of hogs on the Calgary, Edmonton and Lethbridge stockyards, 1957

Market center	Stockyard sales	Purchases by 3 national packers for slaughter in Edmonton and Calgary	Total purchases of 3 national packers for slaughter in Edmonton, Calgary & Vancouver	Proportion of total stockyard offerings bought by other firms	Proportion of total stockyard purchases of 3 national firms, bought in each market
				- per cent -	
Calgary	51,336	6,179	11,163	78.3	25.1
Edmonton	31,834 a/	6,145	10,928	65.7	24.5
Lethbridge	43,874	8,389	22,457	48.8	50.4
Total	127,044	20,713	44,548	64.9	100.0

Source: Markets Information Section, Canada Department of Agriculture.
a/ A.L.C. off truck receipts at yards -- a maximum estimate of yard sales.

If the major packers refrain from bidding for fear of raising prices in the country, it is likely that they will be least active in the most important markets. Less than 22 per cent of the Calgary stockyard offerings were purchased by these three firms whereas on the Lethbridge yards, where market price was not related by contract to the price for direct purchases, 51.2 per cent of the offerings were bought by major packers. The last column of Table 14 provides additional evidence of the importance of the Calgary market and of the reluctance of the major firms to bid in these markets. Of the total purchases off the stockyards in Alberta by the major packers, 50.4 per cent were obtained at Lethbridge -- the smallest market center in Alberta; the only one at which the central price does not affect the country price; and a market center at which no processing plants are located.

Price is established in the Calgary market on sales by auction. Hogs received by each of the five commission firms, either direct from producers or through country agents, are offered for sale in the auction ring each afternoon. Buyers present usually include representatives of processing firms, the commission firms and a few independent buyers. The commission firms selling the hogs usually have been commissioned to buy for Vancouver processors and perhaps some eastern firms. Because the rules of the exchange forbid it, the commission firms are not allowed to clear these buying and selling orders within their own company. They must offer all hogs in the auction ring and fill the orders of their buying clients by bidding in competition with all other buyers.

If, during the course of the auction, a commission firm regards the final bid on a particular lot of hogs as being below the real market price, these hogs may be "passed through" the auction ring unsold. These hogs are offered again later in the day and, if still not sold may be held over until the next day. In order to avoid the cost of carrying the animals, however, the commission firm will attempt to find a buyer. In practice this means a telephone call to one or all of the processing firms located near the stockyards. Technically, if a processor is willing to take the hogs at a few cents below the average market price, the processor orders the commission firm to "buy" the hogs. The order is then made public and if no other buyers submit a bid the commission firm "buys" the hogs and delivers them to the packer. It is likely that much of the volume of the recorded stockyard purchases of the major processors shown in Table 14 was obtained in this manner.

In view of the small volume of hogs offered in the market each day, the small number of traders, and the non-aggressive attitude of the packers in the stockyards' markets, the central market is open to a certain amount of price manipulation. Such manipulation, however, is not the most serious cause of erratic fluctuations of Alberta prices relative to Toronto. These faults originate primarily from the limited active bidding on the market which is, of course, directly related to a limited supply available for sale in the public market.

Accepting the fact that the three major packers are not active buyers on the market by deducting their purchases from total market offerings it can be seen from Table 14 that in 1957 only 40,200 hogs were sold to active bidders in the Calgary market. Over the year this is an average of about 130 hogs per working day sold on the yards compared to average daily direct marketings of over 1,200 hogs moving to the three major plants in Calgary.

Whether these hogs sell for a high or low price relative to the Toronto price depends upon how successful the commission firms are in finding outlets which in some measure are independent of Toronto. There is, of course, some incentive for private commission firms to search for such markets since a profitable transaction may arise. The A.L.C. however, has an even greater incentive to search out such markets since the presence of an additional outlet means the possibility of a higher public market price and a resulting increase in price in the country. As with dealers in the country, the main concern of the private commission firm is that the returns to its producers are as high as returns from other sources. The actual price is not as important to these firms as it is to the A.L.C.

For these reasons the A.L.C. has been active in seeking new outlets-outlets which strengthen the demand and tend to raise Alberta prices relative to Toronto. These outlets are small, however, and the demand arising from them is erratic. The total market is so small that the gain and loss of these outlets may result in large price movements.

Most of these hogs, of course, move to the small local plants in Vancouver which process for sale on the west coast. At times the A.L.C. (and other firms) are able to find outlets for hogs in the United States. Under most circumstances, however, tariffs, loss of the Canadian Government quality premiums and the necessity to sell on a live ungraded basis preclude the possibility of a large or steady market to the south. Finally, the A.L.C. has managed to make sales (at times subsidized in order to strengthen the market) to independent packing houses in Ontario. The distance of shipping and the discontinuous nature of the demand render this market unreliable also.

It is the buyers from these three markets, then, which provide outlets serving as alternatives to the three major packers. Because of the organization of the market at that time it was mainly these buyers who determined the price of hogs at the stockyards and the related price for direct shipments. In view of the nature of these outlets it is not surprising that Alberta prices fluctuate vigorously.

Until November 1958 hogs were sold on the stockyards at Edmonton under different arrangements than at Calgary. In the first place, as can be seen from Table 4, fewer hogs were actually sold to buyers on the yards although more hogs were shipped to the yards at Edmonton than Calgary. Hogs consigned to commission firms at Edmonton did not have to be offered for auction sale, and in practice almost all sales that did occur were conducted by the A.L.C. under a system of private treaty selling. With the exception of truck shipments consigned to the A.L.C., all other consignments were used by the commission firms -- including the A.L.C. -- to fill orders placed by Vancouver firms. These hogs were never sold privately at the market price prevailing on the day they passed through the yards. Such shipments through the Edmonton market were, essentially, direct purchases by the local packers in Vancouver.

Because of the small number of public auction sales, the Edmonton market was even more subject to disturbances than the Calgary market. So much so, in fact, that often the Edmonton price was not settled until trading had finished at Calgary. The Edmonton and Calgary prices, until November 1958, were not directly comparable. The price quoted in Edmonton was for hogs bought for shipment to Vancouver and was on average 60 to 75 cents per cwt. higher than that in Calgary. This price differential was just sufficient to cover costs of shrinkage during transit and while waiting for kill in Vancouver. Dealers shipping to the west coast via Calgary obtained the Calgary price, but Vancouver packers slaughtering these hogs were required to make penalty payments to the producer of up to four per cent of the Calgary price for the hog, if the kill was delayed. Producers shipping direct to plants in Edmonton received not the Edmonton price, but a price 30 cents to $1.00 below it, depending upon the area of origin and upon the extent to which scarcity of supply had forced packers to widen the contracted stockyard -- country price differential.

Thus, the quoted Calgary price was the price paid at the plants in Calgary with, if necessary, a payment added for shrinkage resulting from delayed kill on shipments to Vancouver. The quoted price at Edmonton was the price paid for hogs shipped to Vancouver, the packers paying freight and the producers standing the loss of shrinkage. It may be assumed, since some large dealers can ship to either market, that the two markets are closely, if not perfectly, related and further, in view of the discussion above, it may be said that usually the Calgary price is the stronger of the two.

Although the Lethbridge market is also subject to local price fluctuations unrelated to other markets, trading on the Lethbridge yards usually begins after the Calgary price is established. Since price changes in Lethbridge have little effect on prices for direct shipments, the Lethbridge market is not an important factor in the establishment of Alberta prices.

When supplies are scarce enough to increase competition, the Edmonton and Calgary central markets do occupy an important place in the price determining process. When marketings become light in the central markets, however, small changes in demand of buyers at the yards can result in sharp changes in price. The result is instability in price and considerable uncertainty in the market.

In their attempts to maintain their supply, the major packers occasionally ended up by paying higher prices than those received by producers selling through the yards. Item 5 in Table 12 illustrates that at times the net price for direct shipments was higher than the price at the stockyards. This price differential would arise when other methods failed to attract the required supply to the major packers. The price increase, if it did encourage more direct shipments, also resulted in decreased offerings on the exchange. The smaller volume put up for sale on the exchange produced a market price above the "freight-under" Toronto price. This, in turn, meant that packers paid increased prices for direct shipments. Regarded in this light, the behavior of the major packers in 1957 and most of 1958 is almost paradoxical, and can only be explained by the presence of strong economic forces compelling each of the major packers to maintain their competitive position in the Alberta market and in the national market.

The problem for the major packers would have been even more serious had the reduced stockyard offerings not also forced some of the local plants to try to secure their sources of supply in the country. Much of this was done through the commission firms on the Edmonton stockyards because they were not obliged to offer for public sale the hogs consigned to them. The commission firms could and did arrange for private dealers (and co-operative shipping associations) to ship direct to Vancouver on a through-bill, permitting feeding and exercise at the stockyards. The commission firms received their fee for handling; cost advantages of through-billed freight were obtained, the hogs were listed as stockyard receipts although not offered for sale and, therefore had no direct influence on price. Indirectly such shipments reduced demand on both the Edmonton and Calgary stockyards (as well as reducing the supply at Edmonton) the result being a more erratic market and perhaps a lower price.

Influence of changing volume

It has been emphasized that the period for which the analysis of the behavior of the market agents was made was a period of decreased supply relative to demand. There is no doubt that this factor, along with the others discussed, was important in securing an Alberta market less dependent upon behavior in the Toronto market. There is evidence that variations in the extent of this independence occur both for seasonal fluctuations in the volume of marketings and for the cyclical shifts in hog production.

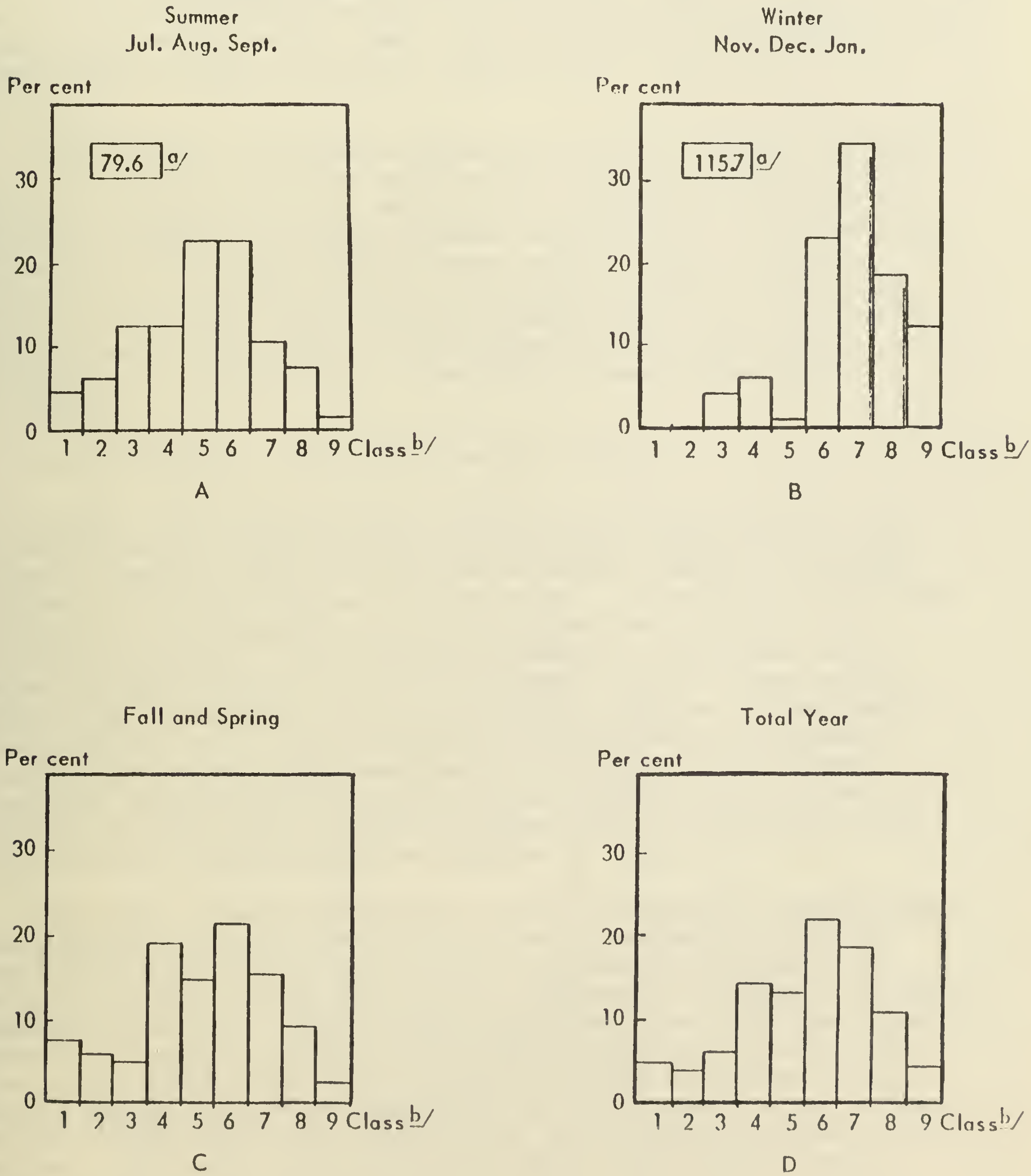
1. Seasonal Changes

If the analysis of the reasons for the behavior of Alberta prices relative to Toronto prices has been correct, it is reasonable to assume that high Alberta prices (relative to Toronto) should indicate a period of fairly active competition by Vancouver packers and low prices (again relative to Toronto) should indicate a period of decreased competitive activity. By comparing the behavior of the Toronto-Calgary price margins with seasonal changes in hog marketings, it should be possible, therefore, to show that the volume of marketings does indeed influence the competitive position of agents in the market.

A comparison of the behavior of the Toronto-Calgary price differential in the season of high supply and of low supply is shown in Figure 12 and Table B (Appendix). The difference between the average weekly prices in Toronto and Calgary (average margin) was calculated for each month over the five year period from 1954 to 1958. The year was divided into a period of low supply, July, August and September; a period of heavy supply, November, December and January; and of average supply including the remaining six months. Within each period the weekly margins were tabulated in a frequency distribution based on the classes as defined in Tables A and B (Appendix).

The results are shown on the graphs in Figure 12. For each graph the per cent of observations falling in classes one to six represent the frequency with which the weekly average Calgary price rose above the "freight-under" Toronto price; i.e. the Toronto-Calgary margin was less than $3.50.

Figure 12. – Variations in the Percentage Frequency of Occurrence of Differentials between Toronto and Calgary Weekly Average B_1 Hog Prices, 1954–58



a/ Index of Seasonal Marketings.
b/ For definition of classes see appendix Table A.
Source: Canada Department of Agriculture, Livestock and Meat Trade Report.

Over the total five year period the average weekly Calgary price for B_1 hogs was below this figure (classes 7, 8 and 9) only 34 per cent of the time. In the summer months of July, August and September hog marketings decrease considerably and in that period[1] the Calgary price fell lower than "freight-under" Toronto for only 20 per cent of the observations. In the winter period however, when supply increases substantially, the Toronto-Calgary margin was greater than $3.50 for 64 per cent of the observations.

This indicates a relation between the relative scarcity of supply and the Toronto-Calgary price differential. Further, if the earlier analysis is correct, the data indicate that competitive positions of the agents do change as volume increases and decreases. An organization such as the A.L.C., attempting to secure maximum benefits for the producer, is in a stronger position vis-a-vis the major packers when supply is restricted. Such restrictions mean a more active demand on the stockyards. Also it would appear likely that at such times packers would be most active in attempting to procure supplies in the country.

2. Cyclical Changes -- The Present Market Situation

Because of the lack of data it is not possible to evaluate the effects of seasonal changes in the supply of hogs upon this position of country agents or upon the attitude of packers toward the payment of bonuses and expenditure on other services. It has not been possible to discover if bonus payments to country agents were subject to a seasonal fluctuation. It is possible, however, to show that these bonuses and other expenditures are influenced, over a longer period, by the volume of supplies available relative to demand. Since August 1958, there has been a large increase in hog marketings in Alberta, as well as in the rest of Canada, and the influence of this large volume upon the competitive position of the country agents is not difficult to trace. This increase in volume has also, of course, had a considerable influence upon the position of the A.L.C.

The rising volume of marketings over 1958 resulted in considerable dissatisfaction among the packers with their commitments under the terms of the A.L.C. contracts. This led to several attempts by the packers to renegotiate the terms of the agreements in order to extricate themselves from their somewhat costly position. The A.L.C. was adamant, however, in insisting that, if the packers wished to renegotiate the terms of the price differentials paid, they would first have to discontinue paying bonuses and commissions to country dealers and shippers. The packers were more than willing to do this, if each could be assured that the others would also stop, and if they could continue paying commissions to their own established drovers. The A.L.C. could not accept the last condition and the result was that one by one each of the packers forwarded notice of cancellation of their contracts in September at the end of the 60 day notice period.

These cancellations occurred in August, a month in which marketings were 40 per cent greater than in the same month in 1957. This

1/ See Figure 12A.

followed an increase of 22 per cent in marketings in the first seven months of 1958 as compared with 1957 and surveys of farrowings showed that even greater increases were to be expected. Since total Canadian marketings increased by similar amounts over the period, there was a strong pressure of supply tending to drive down the price of hogs. By mid-October 1958 the price of hogs at Toronto had fallen to the floor price of $25.00 per cwt. and the Agricultural Stabilization Board began acquiring stocks of pork. The Edmonton and Calgary prices followed this downward movement and, in spite of the efforts of the A.L.C. to continue finding outside outlets, the Alberta price was soon down to the floor -- $3.50 below that of Toronto. The price has remained at that level, or slightly above it, until the time of writing.

As a result of the plentiful supply of hogs in August and September the major packers attempted to find other methods to safeguard their position. Towards the end of August the packers all ceased to pay bonuses to truckers and to most dealers. They began a practice of posting a plant price for direct deliveries which, although sometimes variable from plant to plant, was invariably below the price on the stockyards. The effect of this procedure was to substantially increase the volume of hogs moving to the stockyards and, by more than filling the requirements of the small firms selling in the local markets, it weakened demand in the central markets. This meant lower stockyard prices and made possible a further downward adjustment in plant prices to restore, for the packers, a more favorable relationship between Toronto and Alberta prices.

When the contracts with the A.L.C. expired in late September there was a general re-organization of the market and a considerable change in the relationship existing among the agents. The packers discontinued all bonus payments and commissions except to their own established larger dealers and they began purchasing supplies on the stockyards. The co-operative shipping associations are no longer bound to deliver to any particular packer, but ship hogs to wherever the A.L.C. directs. All this, of course, has resulted in a substantial increase in receipts and sales on both the Calgary and Edmonton stockyards.

To facilitate the handling and trading of the large increase in volume, the regulations and method of operation of the Edmonton stockyards have been changed to conform to the successful system developed on the Calgary exchange. It is now required that all hogs consigned to commission firms be offered for sale by auction in the ring at either Edmonton, Calgary or Lethbridge. The price arrived at in these transactions is the price to be paid for hogs killed locally, whether at Edmonton or Calgary with an adjustment to the producers for losses from shrinkage if the kill is delayed on shipments to Vancouver. Because supplies are plentiful and because the packers wish to keep the business of their large dealers, stockyard prices and direct purchase prices should not get far out of line in either direction.

Because of the freight advantages received for hogs through-billed to Vancouver, these hogs are auctioned by description at the yards in carload lots before leaving the country shipping point. After sale the carload can be billed through direct to the buyer to obtain the saving in freight cost. Such a buying procedure is possible only because the rail-grading system permits purchase by description. Final settlement is made after the hogs have been killed and the carcass graded.

In addition to volume consigned to private commission firms, the entire supply under the control of the A.L C. is now being offered for sale on the stockyards. The exchanges, therefore, have resumed their role as a direct price determining factor. The change in stockyard exchange regulations has also restored the Edmonton market to a place of importance more in line with the volume of hogs shipped from within the Edmonton area.

In terms of its present effect on Alberta prices, the position of the Edmonton market relative to Calgary is not too important. Trading is always at or near the floor price level. In future, however, it is to be expected that the Alberta market will again experience some measure of independence from the Toronto market. Unless other circumstances change drastically, the auction system and the new exchange regulations regarding conduct of sales should assure that the Edmonton market, rather than Calgary, will be the price leader. This is not to say that a decrease in supply will not cause the major packers to withdraw once again from the market. The new regulations and the auction system will, however, assure that all hogs which are shipped to the stockyards will be offered for sale by auction.

PART III

CONCLUSIONS

Variation of the Alberta hog prices relative to Toronto

As long as large quantities of surplus pork from Alberta move to the east, the controlling and limiting influence on Alberta hog prices will be the Toronto market. Even under the extreme limiting case of complete control of the Alberta market by the three major firms, Alberta hog prices are not likely to fall below those of Toronto by more than the cost of shipping live hogs to that market for any extended period of time. On the other hand, except under strong compulsion, the major packers would not be likely to offer a price for live hogs which did not permit them to recover the cost of shipping pork to eastern Canada.

While the lowest price relative to Toronto which will be offered by the packers is subject to only small variation, the maximum price which producers can obtain (again relative to Toronto) is much more variable and is dependent upon circumstances in the market. The main limiting factor is the freight cost of shipping fresh and processed pork. This cannot be considered as a fixed amount, however. The relation between the price of hogs and the freight cost which the resulting pork can maintain depends upon the type of cuts shipped. Thus, if Alberta prices are high it is likely that a larger proportion of the cheaper cuts will remain in western Canada and the more expensive cuts will be shipped east.1/

Freight cost, however, is not the only variable which might have some influence on the upper price limit which the major packers can afford to pay for hogs. The three major processing plants in Alberta are branch plants of national firms and provide what might be considered the marginal supply for the other branches in the eastern market. Thus the price which the companies can afford to pay need not be strictly determined by the costs of operation of the western branches. Also the western plants may still have unutilized capacity as the result of war-time extensions to the plants or, for other reasons, may have a lower cost of operation than the eastern branches. Finally, as the result of differences in the nature of the demand curves facing the major packers in the eastern and western markets, it is possible that at times the packers might be able to charge higher prices in local markets. In this event, the over-all price which they would be willing to pay for hogs would be higher than if demand in the local market was not more or less independent of the demand in eastern markets.

1/ Data are not available to check this hypothesis but it would be useful to know if the proportion of hams and loins in eastern shipments increased during 1957 and the first part of 1958.

To obtain an adequate measure of the influence, if any, of these factors would require a careful study of cost data and price relationships within each of the major packing plants. Most of such information is regarded by business firms as being highly confidential and it is not available. From the material presented in Part II it is known only that over some periods packers were willing to pay a price for hogs which was greater than the freight-under Toronto price based on carcass shipments. Although the three reasons above are advanced only as hypotheses to explain this action, nevertheless in some of the following discussion on the basic conflicts in the market it will be necessary to assume that these reasons are adequate to explain the packers' apparent paradoxical behavior. Having discussed the range over which the Alberta price for hogs may vary relative to the eastern market, it is necessary now to examine the underlying forces acting to establish a price within this range.

Market policies of the processors

It was pointed out in Part II that the processing industry in Alberta and British Columbia is made up of two groups of processors. The first group, which process only a minor proportion of the supply, is made up of a number of small independent plants processing for a local market. The other group consists of three large firms which together purchase about 80 per cent of the Alberta hog marketings. The principles governing the market behavior of processing plants differ considerably for each group and this has an important influence on the market.

1. The small processors

Taken together, all of the small firms process about 20 per cent of the total supply of hogs. Singly, therefore, each processor buys only a small portion of the total market offerings. As a result the small firm is not in a position to measure or take account of the effect of its buying activities upon the market. A large increase in one small firm's purchases by itself has little effect on the total demand in the market. Individual small firms, therefore, will tend to regard the market price as fixed and will expect to obtain all of the supply they require at that price. Thus, if the price of pork rises as a result of an increase in local demand, the small firm expects to be able to go to the market and, without going above the market price, obtain all of the hogs required.

It is not clear, however, to what extent the small local processors in Alberta and British Columbia can afford to ignore the effect of their activities in the pork market. Together they process about 50 per cent of the hogs slaughtered in British Columbia. Because of the possibility that the major firms in Alberta can ship pork to British Columbia and because data showing the amounts of such pork shipped are not available, it is not possible to determine the exact share of the local pork market which is served by the small processors. It is likely that, because in absolute size the local packers are small and because their individual share of the market is limited to a range of about five to eight per cent each, the small processors do not regard themselves as having an important influence on the market. Their ignorance of their combined impact on the market however, does not prevent them from being an important factor in price formation.

2. The major processors

In sharp contrast to the small firms, the three major firms each process a large share of the total market offerings and together purchase about 80 per cent of the total offerings of Alberta hogs. The large processor must realize, therefore, that its actions in the market will have a considerable influence on the market. An attempt on the part of one firm to increase its purchases by a small percentage will mean a relatively large increase in the absolute number of hogs desired. It is not likely that these can be obtained without affecting the market price. In fact, since the total supply is fixed at any given time and since the other major firms are not likely to permit a reduction in their volume, there is a strong possibility that the major firms cannot increase their share of the supply at all through regular channels.

For this reason the packers are likely to adopt a nonaggressive price policy towards the market. The three firms would realize that individual aggressive market activity would bring retaliatory action which would leave all of them worse off. These firms, therefore, weigh the consequences carefully before utilizing aggressive tactics.

The business philosophy supporting, or resulting in, such nonaggressive behavior was expressed concisely by George E. Putnam of Swift and Co. in 1923. There is little reason to expect that it has undergone much change in its transfer to western Canada three and a half decades later. Putnam wrote:

> "... Unquestionably there is an element of truth in the statement, (that formal independence is quite consistent with a simple tacit understanding to respect each other's position) but it might easily be misconstrued. It should be observed that the general practice among intelligent competitors respecting one another's position need not be a matter of "tacit understanding". In the case of Swift and Company it is an <u>individual commonsense policy</u>, arrived at independently, not to <u>invite retaliation and trade wars by using over-aggressive tactics</u>.1/ (Swift) has deliberately tried to avoid cutthroat competition whenever it was legally possible to do so.
>
> "... The same policy will always be followed by intelligent men. Purely as a matter of self-interest no intelligent and successful business man wants to destroy his competitors. He knows that he himself may not survive the struggle....

1/ Underlined by Wm. H. Nicholls.

It is clearly a matter of sound business policy to avoid cutthroat competition but, unfortunately, there are times when the tactics of a competitor may become intolerable and in the interests of self preservation one must have recourse to the same tactics. Thus a trade war may be provoked by an over-aggressive policy on the part of one competitor". 1/

In the Alberta hog market any attempt on the part of an individual firm to increase its share of the market would probably be regarded by the others as aggressive activity and would probably be subject to retaliatory action. The policy of the individual firms toward their competitors is one of discovering how far they can go with measures to increase their share of the market without inviting retaliaton. In general, firms in a market with few buyers prefer to use means other than aggressive pricing in attempting to increase their share of the market because of the relative ease with which a competitor can discover and outbid such prices.2/

3. Conflicting interests of the large and small firms

A nonaggressive attitude to pricing, resulting from fear of the retaliatory powers of the other major firms, would lead each firm to seek some outside agent to settle the price issue. All three firms sell pork in eastern Canada. To accept the price determined in this market less the amount for the freight costs of shipping to that market should provide a satisfactory solution. If the supply of hogs is plentiful the arrangement would appear to work to the satisfaction of the packers. If supplies become scarce, however, the major packers are likely to encounter some difficulties.

First, if the small packers do behave as though the market was competitive, an increase in local demand would provide an incentive for the small packers to increase their purchases. If, at the same time, the major packers continue to tacitly agree on the freight-under Toronto price in order to avoid uncertainty in the market, the small firms will make inroads into their supply. Second, because of the possibility that some of the other factors mentioned previously, such as price discrimination, under-utilized capacity, etc. will begin to have some influence, each of the major firms will be aware that more supply, not less, is desired in order to reach a point of maximum profit.

Here then is the major source of the conflict which causes Alberta hog prices to vary relative to Toronto. The minor firms are important enough in the local market to cause the major packers some concern

1/ Nicholls, Wm. H. Imperfect Competition within Agricultural Industries. Iowa State College Press, Iowa, 1947 p.128. Original source: Putnam, G.E. Supplying Britain's Meat. Geo. C. Harrop & Co. London 1923, pp. 124-6.

2/ Stigler, Geo. J. Notes on the Theory of Duopoly. Journal of Political Economy. Vol. 48, 1940. p.536.

when supply is limited. To avoid conflict among themselves the major packers would prefer to allow the stockyards price to remain at the freight-under Toronto level while attempting to maintain their shares of the supply by other means. They, therefore, will attempt to increase their supplies of hogs buying directly from the country. This is done by advertising, offering new services and, as the pressure for supply becomes more acute, by offering bonuses and larger commissions to country dealers and shippers.

The results of such practices in 1957 and 1958 were discussed in Part II. The major packers obtained a larger supply direct from the country and consequently the stockyard marketings declined. The result, of course, was an increase in competition among the small firms and an increase in the stockyards' price. In order to prevent a rediversion of hogs to the stockyards the major packers were forced to raise the price (less marketing charges). Thus, while the major packers shied away from aggressive bidding in the central market, they were willing to use other forms of aggressive activity to protect their individual positions and to prevent the smaller firms from acquiring a larger share of the market.

The policy and influence of the Alberta livestock co-operative

1. The underlying principles

It is obvious from the foregoing that the bargaining position of the Alberta Livestock Co-operative is severely limited. The co-operative does market over a fifth of the Alberta production, however, and, within the limits outlined, does have some influence in the market. First, at a level closer to the producer, the co-operative livestock shipping associations compete with private dealers in the collection and delivery of hogs. Secondly, as long as demands are reasonable in terms of the upper price limit, and as long as there are sales outlets other than the major packers, the A.L.C. can influence the market price. It is likely that, as a result of the activities of the A.L.C., prices have been higher in Alberta and generally more uniform throughout the province than they would have been had the processing firms been left to their own devices.

In effect the hog marketing policy of the A.L.C. has been to take advantage of the conflicting interests of the large and small processors. During periods of plentiful supply this conflict subsides and, during such periods, the co-operative is unable to exercise any degree of bargaining power. In periods of short supply, the small processors provide an effective outlet for marketing A.L.C. hogs. During these periods the possibility of diverting supply from the major packers to the small packers constitutes a form of control. Without such alternative outlets the only effective means of controlling supply would be through the control of production. Under existing legislation this is impossible. Thus, if supply increases beyond a point where the small packers are operating at full capacity and the major packers at or near normal capacity, the price of hogs in Alberta tends to decline toward the bottom of the Toronto-Alberta margin.

The methods by which the A.L.C. exercises its power, in that portion of the hog cycle where such power is present, are subject to change. The methods of contract selling and other activities as outlined in Part II of this study provide only one example of the many possible superstructures which may be erected. Such an edifice is built as the result of actions and counteractions of the agents in the market. As experience is accumulated new tactics are substituted for the old and in ensuing periods similar conditions may result in different responses.

As an example, it is possible that major packers will learn from experience that aggressive non-price activity in the country invites retaliation almost as quickly and severely as aggressive activity in the central market.1/ This will mean a change in the packers' action in active markets in the future and, therefore, a change in the means through which the A.L.C. attempts to take advantage of the conflict in the market. Much depends upon the circumstances existing at the time but as long as supply is scarce enough that the major packers have to consider the actions of the smaller firms the A.L.C. is likely to have some influence.

2. The influence of the public stockyards markets

It is clear that prices are determined as the result of the interaction of the forces described above and are influenced only slightly by the mechanism through which these prices are "discovered". The central stockyards markets, through the provision of handling facilities and standardized rules of trading, are an important means of facilitating this process of price discovery. The effectiveness of the central exchange in performing this function should not be confused with the influence of the exchange upon the forces acting in the market.

A common misconception is that an increase in direct marketing must necessarily weaken "competition" at the public markets, thereby lowering prices to producers both for direct and central market shipments.2/ While it is true that direct purchase of a given volume of hogs by packers reduces, by that amount, the demand for hogs at the public market, it is equally true that over a period of time the supply of hogs coming to the public markets is correspondingly reduced.3/ This narrowing of the public market, while likely to result in somewhat greater sensitivity to insignificant changes in the amount of stock traded, does not mean that the central and the country markets can show price disparities for more than the shortest periods of time.

1/ There have been several periods in the past, however, when packers paid bonuses to truckers to obtain supply so it would appear that they learn slowly. In the recent situation, however, the A.L.C. was able to strengthen its position considerably. The actions of the A.L.C. in this period may cause packers to reconsider before attempting such measures in the future.

2/ Royal Commission on Price Spreads. Report Ottawa, 1935, pp.158-173.

3/ See detailed discussion of direct vs. stockyard marketing in U.S.D.A. The Direct Marketing of Hogs. Misc. Pub. No. 222, Washington, D.C. 1935.

Under most circumstances, and certainly in the Alberta hog markets the withdrawal of the major packers from the stockyards is not likely to alter the nature of competition for the supply of the product. In the present circumstances it is obvious that the competitive activity in the market is dependent upon the relationships among the large packers and among the small packers, between the large and the small packers and between the packers and the producers. Where a few large firms purchase most of the supply, as in Alberta, it makes little difference in the extent of competition whether these firms buy direct or off the stockyards. If they found they were able to divide the supply among themselves at an agreed price they would do it just as effectively if the entire supply moved to the central market. There is no evidence that direct purchasing increases the tendency towards concentration on the buying side. Judging by the material found in this study, if anything, the influence worked in the reverse way.

3. The present market situation

Under the present system of marketing the stockyards have once again become important as a source of supply for the major packers. All of the hogs sold by the A.L.C. are now sold on public auction as are the receipts of the other commission firms. Because of the rail grading system, hogs may be bought by description and producers need not incur the expense of shipping to the yards. This means that the A.L.C. can auction the hogs from the co-operative shipping associations on the open market at a cost which is little more than that for direct shipments.

The main result of these operations is to increase the efficiency of the stockyard's price as an indicator of the true demand and supply situation in the western market. Of the total marketings from January to June, 1959, of 1.2 million hogs, 17 per cent were reported as being sold through stockyards.1/ Since all of the sales of the A.L.C. are made on the basis of an open bid, rather than on contract as before, then at least 25 per cent of the hogs are sold in an open market. The effect of this is a wider dissemination of more accurate market information and producers should be able to use this information as a basis for more rational action.

Such marketing procedures help keep the market price more in tune with the real situation in both western and eastern markets. For the past nine or ten months the larger increase in hog slaughterings has meant that local markets have been saturated and the requirements of the small firms easily met. There has, therefore, been no necessity for the major processors to act to prevent the losses of their supplies. Thus, since the new selling methods came into operation in the fall of 1958, there has been little cause for the price in Alberta to move from the lower levels of the Toronto-Alberta margin. Whether or not the present system can withstand the renewal of the conflict and prevent, effectively, the major packers from circumventing the public markets remains to be seen.

1/ Canada Department of Agriculture, Livestock and Meat Trade Report, (June and July issues, 1959).

Even if the present system does break down, however, as long as the small firms buying for the local market threaten the supplies of the major firms, the producers' organization should be able to exert some influence in the market. The disappearance of this threat can come about only through the restriction of the independent action of these small firms for any reason whatever. The most obvious restriction would arise through outright elimination of these small firms by the major packers or at least a drastic curtailment of their activities. The recent purchase of the Alberta Meat Processing Company in Vancouver by Swift Canadian Co. Ltd., while not necessarily part of such a program, will have the effect of reducing the influence of the smaller firms.

Another restriction of the independent action of the small firms would be an increase in their size to the point where they become aware of their influence on the market and begin to adopt a non-aggressive attitude towards the market. The advent of any of these circumstances, although not apparently likely, would cause the Alberta price to settle down towards the bottom of the Toronto-Alberta margin.

APPENDIX I

Letter and questionnaire mailed to livestock dealers and shippers in Alberta, September 1958

Dear Sir:

The Agricultural Economics Department here at the University is making a study of hog marketing in Alberta. We are trying to find out among other things, how much agents in the market - such as yourself - can influence the direction of marketings and other factors. Obviously as an individual operator your influence will be limited but the reactions of a larger number of agents, particularly if all react in a similar manner, can have important effects.

In the accompanying questionnaire we are attempting to find out, first, your own particular position and policies and, second, how much you are alike or differ from other agents to whom we have written. The completed forms will be treated as confidential and once collected will lose their individual identity.

Your co-operation in filling out and returning this questionnaire will be greatly appreciated as we expect it to constitute an important part of our study.

Directions for answering the questionnaire:

1. The questions apply only to hogs.
2. The market for hogs has been unstable over the past few weeks and your relationship with other agents - particularly packers - may have changed somewhat. Would you please answer the questions according to your position before these recent changes and, if you will, you may note your present position on the back.
3. Do not feel obliged to answer all the questions but please answer those which you feel you can and return the partially completed questionnaire.

Questionnaire for hog shippers

1. Number of years you have handled hogs as a licensed (dealer / agent) __________. or as an unbonded trucker or shipper __________. Do you ship hogs to more than one packer? __________. If no, for how long have you shipped to your present outlet? __________.

2. Do you ship hogs to one particular packer on the basis of a verbal understanding or do you ship under a written contract? __________. Does the packer to whom you ship always keep you competitive in price with other dealers in your area? _______. Are you paid a commission by the packer for your services rendered in collecting hogs? __________.

3. Do you collect hogs right from the farm? ________. Do you tattoo hogs? ___________; make out manifests? __________; distribute returns from bulk payments made to you from the packer? _____________.

4. Did the packer to whom you ship assist you to establish your business through loans, cash advances, provision of equipment or any other means? ______________. If yes, would you please state the nature of assistance ____.

5. Do you ship your hogs f.o.b. collection point or do you pay delivery costs? _____________. Have there been periods when packers would not pay delivery costs? If so, roughly, when did they occur? ___________. What is your usual charge to farmers for handling their hogs? _________.

6. Are you usually able to return producers the full market price? ______. Have you ever been able to return net to producers more than the Calgary stockyards price or more than the Edmonton price less 75 cents? _________. If yes, would you please state how much more? ____________________. Did this occur for considerable periods of time? _______________.

7. Have you any comments you would care to make on present methods of marketing hogs or suggestions for improvements? ____

APPENDIX II

Table A.- A frequency distribution of the margins between weekly average B_1 hog prices in Toronto and Western stockyards, 1954-1958

Class intervals	Class no.	Number of observations — Quarters — First	Second	Third	Fourth	Total
Toronto-Calgary						
Under - $1.00	1	4	4	3	2	13
$1.01 - $1.50	2	3	4	4	0	11
1.51 - 2.00	3	4	4	8	1	17
2.01 - 2.50	4	7	14	8	8	37
2.51 - 3.00	5	10	10	15	2	37
3.01 - 3.50	6	12	12	15	19	58
3.51 - 4.00	7	13	8	7	21	49
4.01 - 4.50	8	11	5	5	8	29
4.51 - plus	9	3	3	1	5	12
Toronto-Saskatoon						
Under - $1.00	1	-	1	1	-	2
$1.01 - $1.50	2	-	3	2	-	5
1.51 - 2.00	3	2	-	2	-	4
2.01 - 2.50	4	3	5	1	-	9
2.51 - 3.00	5	4	18	2	3	27
3.01 - 3.50	6	7	7	5	2	21
3.51 - 4.00	7	14	14	23	30	81
4.01 - 4.50	8	26	14	23	19	82
4.51 - plus	9	9	2	7	12	30

Source: Canada Department of Agriculture, Markets Information Section, Livestock & Meat Trade Reports.

Table B.- Per cent of Toronto-Calgary hog price differences falling in each class -- weekly average B_1 hog prices, 1954-58

Class	No.	Nov. Dec. Jan.	July Aug. Sept.	Other six months	Total year
			- per cent -		
0 -$1.00	1	-	4.5	7.7	5.0
1.01 - 1.50	2	-	6.1	5.4	4.2
1.51 - 2.00	3	4.6	12.1	4.6	6.5
2.01 - 2.50	4	6.2	12.1	19.2	14.2
2.51 - 3.00	5	1.5	22.7	14.6	13.4
3.01 - 3.50	6	23.0	22.7	21.5	22.2
3.51 - 4.00	7	33.8	10.6	15.4	18.8
4.01 - 4.50	8	18.4	7.6	9.2	11.1
4.51 - plus	9	12.3	1.5	2.3	4.6
3.51 - 4.51 plus	7-9	64.5	19.7	26.9	34.5
Index of seasonal marketings		112.1	90.2	100.1	100.0

Source: Canada Department of Agriculture. Livestock & Meat Trade Report.