

A DEMAND ANALYSIS OF CANADIAN OILSEEDS  
IN THE JAPANESE MARKET

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## ABSTRACT

### A Demand Analysis of Canadian Oilseeds in the Japanese Market

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As the largest single market for Canadian oilseeds, the Japanese oilseed market is of major interest to producers and exporters who are dependent on this outlet for the financial returns which it provides. In order that producers may make rational decisions about the volume of oilseeds which they should produce, it is necessary that some information regarding the market be available. In order that exporters recognize the factors which determine Japanese oilseed import requirements and Canadian oilseed export supplies, it is essential that information be provided on these factors governing Japanese import demand and Canadian export supply. This study is basically an analysis of these factors. A method of regression analysis is used to estimate Japanese import demand and Canadian export supply of rapeseed and flaxseed.



This study was constructed in order to determine to what extent the price of Canadian oilseeds, the price of U.S. soybeans, the level of Japanese domestic oilseed production and the cost of transportation determine the volume of Canadian oilseed which the Japanese import. This study also considers the degree to which Canadian oilseed stocks in store, the Japanese import quota, Canadian exports of oilseeds to countries other than Japan and Canadian oilseed prices determine the supply of Canadian oilseeds available to Japanese importers and crushers. The necessity of obtaining the most accurate estimates possible required analysing those years for which exports of Canadian oilseeds to Japan moved on a regular basis. In the case of flaxseed, the years 1958 through 1968 were analysed and in the case of rapeseed, the years 1963 through 1968 were analysed.

The major results of the study are as follows:

1. The two most important factors affecting the Japanese demand for Canadian oilseed are the prices of Canadian flaxseed and rapeseed and the level of Japanese domestic production of these oilseeds. Decreased production in Japanese rapeseed and flaxseed and decreased prices in Canadian oilseeds are estimated to result in increased imports of Canadian flaxseed and rapeseed.
2. The cross elasticity of demand of soybeans for rapeseed indicates that a 1.89 percent increase in the amount of

rapeseed demanded results from a one percent increase in the price of soybeans. The same measure for flaxseed indicates that a 0.86 percent increase in the amount of flaxseed demanded results from a one percent increase in the price of soybeans.

3. With respect to rapeseed, the two most important factors governing the supplies of Canadian rapeseed to the Japanese market are; (1) the Japanese rapeseed import quota, and (2) the rapeseed stocks in store in Canada. Results indicate that both rapeseed stocks in store and the Japanese import quota were positively related to the quantity of rapeseed supplied to Japan by Canada during the period analysed. A one percent increase in the Japanese import quota resulted in a 0.71 percent increase in the amount of rapeseed supplied to Japan by Canadian exporters. A one percent increase in rapeseed stocks in store was associated with 0.48 percent increase in rapeseed supplied to Japan. In the flaxseed supply estimate, a one percent increase in the flaxseed stocks in store was associated with a 0.16 percent increase in the flaxseed supplied to Japan.

4. In both the rapeseed and flaxseed estimates of supply, the exports of oilseeds to countries other than Japan were negatively associated with exports to Japan. In the case of rapeseed, a one percent increase in exports to other

countries was associated with a 0.098 percent decrease in exports to Japan. In the flaxseed estimate, a one percent increase in flaxseed exports to countries other than Japan was associated with a 0.12 percent decrease in exports to Japan.

## CHAPTER I

### INTRODUCTION

#### (A) ISSUES TO BE EXAMINED

The Japanese market for Canadian oilseeds is of timely interest to the Western Canadian agricultural community. In 1968 this market accounted for some 40 million dollars in Western Canadian farm income.<sup>1</sup> Japan has become Canada's largest market for oilseeds, accounting for 75 percent of all exported rapeseed and 35 percent of all exported flaxseed.<sup>2</sup> It is, therefore, fitting to investigate empirically the market factors which affect supply and demand in the Canada-Japan oilseed trade in order that policy decisions, consistent with maintaining our prime position in this market, can be made. Specifically, the question to be pursued is whether we can maintain, and in fact enhance, our position solely on the basis of either a pricing policy or a merchandising policy, or some consistent combination of the two.

The Japanese oils and fats industry derives its supply of raw materials from two sources: (1) limited domestic

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<sup>1</sup>Dominion Bureau of Statistics, Exports By Commodity, Vol. 25 - No. 12, Catalogue Number 65-004, Ottawa, Canada, The Queen's Printer, February 1969, p. 81.

<sup>2</sup>Ibid.

production of soybeans, rapeseed and flaxseed, and (2) imports from numerous different countries. The imported sources are by far the most important in this market, amounting to some 4 million metric tons in 1968 worth approximately half a billion dollars.<sup>3</sup> Though the number of countries supplying the Japanese market is large, there exists a distinct group of major suppliers to the market which is limited in number. This group in the main is composed of the United States, China and Canada who together supply about 80 percent of the import market by value. In 1968, the United States supplied approximately 57 percent of the market, China supplied 13 percent and Canada supplied 10 percent.

An important characteristic of the supply of the oilseeds, oils and fats market in Japan is that it is dominated by a differentiated oligopoly.<sup>4</sup> Numerous suppliers compete in this market, but the majority of the commodity flow into Japan is derived from three countries, namely, the United States, China and Canada. Although the commodities which these countries supply are similar in many respects, they are

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<sup>3</sup>The Japan Oil and Fat Importers and Exporters Association, Statistics for 1968 of Oilseeds, Oils and Oilcakes, Tokyo, Japan (Mimeo), 1969, p. 5.

<sup>4</sup>The conclusion drawn here is not only based on the observation of a few major suppliers, but also on the mutual interdependence of their competitive actions. The type of competition alluded to here offers unique policy implications which are discussed more fully in the theoretical framework of this market.

substitutable only to a certain degree. This degree of substitutability is derived not only from the physical attributes of the imports, but also from the use which is made of the product, the degree of acceptability by the processors, and even the characteristics of the supply market. The implications of this are discussed in the concluding chapter in the light of results gained through an examination of those factors which determine Canada's position in the Japanese oilseed import market.

Expansion of market outlets for Canadian oilseeds is of major interest not only to the Canadian farmer, but to all those engaged in the formulation of agricultural policy. The basic interest is supported by the desire for an alternative crop to wheat which has historically dominated production in Western Canadian agriculture. The world wheat surpluses have severely limited the export market potential of Canadian wheat and have stimulated diversification into such crops as flaxseed and rapeseed. It appears that rapeseed has offered more potential for expansion in production than flaxseed. Views held by policymakers are reflected in such typical statements as the following:

From a production point of view, this crop [rapeseed] has been grown primarily because of the relatively more favorable delivery quotas, the possible higher returns as opposed to cereals, the ease with which it can fit into most acceptable crop rotations, and the better

potential of this crop over cereals as a late seeded crop.<sup>5</sup>

With so rapid a rate of growth, rapeseed may well become an even more important crop in the future and will assist in providing alternatives to wheat production. Certainly the prospects are brighter than for wheat. But to enable this growth to take place, substantially greater research and promotion appear to be required. Assuming this, rapeseed production could occupy up to 3 million acres or more by 1980.<sup>6</sup>

In contrast to rapeseed, flaxseed production has declined substantially in recent years. Acreage declined from a peak of 3.4 million acres in 1957-58 (a year of record wheat surpluses), to 1.5 million acres in 1968-69. Yields are lower than for rapeseed, and prices only slightly higher, so that gross returns per acre are only comparable rather than higher than for feed grains.<sup>7</sup>

Almost all Canadian flaxseed is exported, with domestic utilization small and not increasing. The principle competition in export markets is flaxseed from the United States. The major revenue earner is linseed oil which is facing substitution in industrial uses from synthetics. In production, flaxseed is being replaced to some extent by other cash crops such as mustard seed and rapeseed.<sup>8</sup>

During recent years, much emphasis has also gone into the development of marketing programs, especially for rapeseed. In March 1967, The Rapeseed Association of Canada was set up in order to assist in the development of coordinated programs

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<sup>5</sup>Federal Task Force on Agriculture, Wheat, Feed Grains and Oilseeds, a paper submitted to the Canadian Agricultural Congress, Ottawa, (Mimeo), March 24-27, 1969, p. 19.

<sup>6</sup>Ibid., p. 21.

<sup>7</sup>Ibid.

<sup>8</sup>Ibid.

in research, production and market development. One of the prime efforts of this organization has been to increase the returns to Western Canadian farmers from expanded export sales, especially to the Japanese market. Since Canada supplies virtually all of the import requirements of rapeseed and flaxseed to Japan and is a major member of the group of countries which supplies Japan with the necessary oilseed imports, the attempt to maximize returns from this market must recognize certain possible outcomes. Although direct price cuts by exporters are not possible in the system of the oilseed pricing mechanism in Canada, any attempts by exporters to lower prices through specific contracts with the Japanese may be met with retaliatory price cuts from other suppliers to the Japan market. Such price cuts, therefore, may not result in an increased share of the market and could serve as a disincentive to growers of Canadian oilseeds and thus threaten the supply and the very ability to meet the Japanese requirements. In the case of rapeseed, the quota restriction on imports which Japan maintains would limit the effectiveness of price cuts to increase the market share.

In any event, it is reasonable to assume that the attempt by Canadian rapeseed and flaxseed exporters to gain an increased proportion of the Japanese oilseed import market, whether through pricing or merchandising policies, will be countered by some form of opposition. Each supplier who



wishes to maintain his share of the market would remain ready to defend his share by following any price decrease tactics of Canadian suppliers.<sup>9</sup>

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<sup>9</sup>Canadian oilseeds have close substitutes in the Japanese market, and if exporters should lower their prices, and prices charged by other suppliers remained unchanged, Canadian oilseeds would command a larger share of the market. If, however, the Canadian oilseed prices rose independently of other prices, exports of flaxseed and rapeseed would fall off as the Japanese shifted to cheaper substitutes. This mechanism in itself is evidence of the existence of the kinked demand curve. In the upper price ranges, demand is more sensitive to independent price changes, and in the lower reaches demand elasticity is less.

## (B) SCOPE AND OBJECTIVES

As the situation exists at the present, the pattern of production in Western Canadian agriculture is undergoing certain changes which have been made necessary by changing world markets. The decreasing trend in wheat acreage has stimulated expansion in oilseed acreage. Rapeseed, because of its expanding markets, both domestic and export, has exhibited the greatest acreage expansion. Flaxseed has tended to decrease somewhat in importance due to the erosion of its markets by synthetic replacements, but is still favored by producers because of the immediate cash return it offers. Mustard seed, an oilseed crop that has also served as an alternative to traditional prairie grains, has seen some acreage expansion, but has not played as important a role as have rapeseed and flaxseed in the Japanese market. Canadian rapeseed and flaxseed, however, have been well accepted in the Japan oilseed crushing industry. In 1968, sales of flaxseed to Japan amounted to 13 million dollars and sales of rapeseed to Japan amounted to 24.6 million dollars while mustard seed sales amounted to 1.3 million dollars.<sup>10</sup>

In planning any further acreage expansion, it is necessary that producers are aware of the market potential

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<sup>10</sup>Dominion Bureau of Statistics, Exports By Commodity, Vol. 25 - No. 12, Catalogue Number 65-004, Ottawa, Canada, The Queen's Printer, February 1969, p. 81.

for their product. Since Japan is Canada's major export market for rapeseed and flaxseed, it is necessary that the major factors pertaining to the supply-demand situation in this market are delineated before any effective policy decisions are made.<sup>11</sup> On the basis of such information, then, specific policies with respect to production and market development can be implemented.

Some of the basic questions to which producers and exporters seek answers concern both the demand and supply sectors of the market. Specifically:

- 1) What factors in the Japanese market influence the demand for Canadian rapeseed and flaxseed?
- 2) What factors regulate the flow of supplies of rapeseed and flaxseed from Canada to Japan?
- 3) What direction should market development follow; should oilseed exporters engage strictly in either pricing or merchandising policies?
- 4) What trend can the Canadian producers expect the Japanese oilseed import market to follow?

Answers to these questions would provide direction for producers in their decisions to expand or contract oilseed acreage in Western Canada.

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<sup>11</sup>A logical distinction should be drawn here between selling and marketing. Selling pertains to the search for consumers of goods which have already been produced. Marketing is an integrated program of coordinating production with the determined consumer demand. Marketing, therefore, includes the act of selling.